Attachment 1

University of California Retirement Plan

Actuarial Valuation and Review

As of July 1, 2023

Segal

Segal

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October 25, 2023

Ms. Cheryl Lloyd
Vice President, Human Resources
University of California, Office of the President
1111 Franklin Street, 10th Floor
Oakland, CA 94607

Dear Vice President Lloyd:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2023 for the University of California Retirement Plan ("UCRP" or "the Plan"). It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and determines the total funding policy contribution rate for fiscal year 2024-2025.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the University of California to assist in administering the Plan. The census information and financial information on which our calculations were based was prepared by the UC HR Staff. That assistance is gratefully acknowledged.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

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; and changes in plan provisions or applicable law.

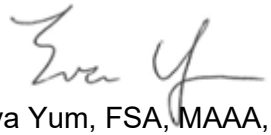
Ms. Cheryl Lloyd
October 25, 2023

The actuarial calculations were directed 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 this actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were approved by the Regents based upon our analysis and recommendations. In our opinion, the assumptions are reasonable and take into account the experience of the Plan and reasonable expectations. In addition, in our opinion, the combined effect of these assumptions is expected to have no significant bias.

We look forward to reviewing this report at the November 2023 Regents meeting.

Sincerely,

Paul Angelo, FSA, MAAA, FCA, EA
Senior Vice President and Actuary



Eva Yum, FSA, MAAA, EA
Vice President and Actuary

OH/jl

Segal

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report was prepared by Segal to present a valuation of the University of California Retirement Plan ("UCRP" or "the Plan") as of July 1, 2023. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Plan, as administered by the UC HR Staff;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of July 1, 2023, provided by the UC HR Staff;
- The assets of the Plan as of June 30, 2023, provided by the UC Finance Staff;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. and
- The funding policy adopted by the Regents.

Certain disclosure information required by Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 as of June 30, 2023 for the Plan is provided in a separate report.

Valuation highlights

Experience study

1. Following the completion of the July 1, 2018 through June 30, 2022 Actuarial Experience Study, new assumptions were approved by the Regents and used for this valuation. See *Section 4, Exhibit 1* for more information on the actuarial assumptions used, starting on page 60.

   As a result of these assumption changes, the total normal cost decreased by 0.65% of covered payroll and the actuarial accrued liability increased by $0.67 billion. The total impact was a decrease in the total funding policy contribution of 0.61% of covered payroll.

Total funding policy contributions

2. The total funding policy contribution is determined as a percentage of payroll. The total funding policy contribution provides a payment for both normal cost and to amortize any unfunded or overfunded actuarial accrued liabilities. In this valuation, we have applied the funding policy most recently adopted by the Regents on September 17, 2015. Details of the funding policy are provided in *Section 4, Exhibit 3* starting on page 91.

   A schedule of current amortization balances and payments may be found in *Section 3, Exhibit F* on page 56. A graphical projection of the Unfunded Actuarial Accrued Liability (UAAL) amortization balances and payments has been included in *Section 3, Exhibit G* starting on page 58.

3. Segal recommends an actuarial funding policy that targets 100% funding of the actuarial accrued liability. Generally, this implies funding policy contributions that are ultimately enough to cover normal cost, interest on the UAAL and the principal balance of that liability. The total funding policy contribution adopted by the Regents meets this standard, however, actual contributions are determined and set each year by the Regents based on various factors as noted in *Section 4, Exhibit 2* on page 89.

4. The total funding policy contribution rate for the non-laboratory segment of UCRP increased from 32.87% of covered payroll to 32.88% of covered payroll as shown in *Section 2, Subsection F* on page 33. The experience that increased the total funding policy contribution rate can be found in *Section 2, Subsection F* on page 34 and was mainly salary increases higher than expected, actual contributions less than expected under the actuarial funding policy, investment return less than expected (after asset smoothing), and actual annuitant COLA higher than the assumed 2.00% COLA. This experience was mostly offset by the effect of total payroll growth greater than expected on the UAAL amortization rate and the impact of the assumption changes. This total funding policy contribution rate is for the 2024-2025 Plan Year and applies to the non-laboratory segment of UCRP (i.e., campuses, medical centers and UC College of the Law, San Francisco).

Contributions for the Lawrence Berkeley National Laboratory (LBNL), Lawrence Livermore National Laboratory (LLNL), and Los Alamos National Laboratory (LANL) are subject to the terms of the University's contracts with the Department of Energy (DOE). More information on the various UCRP segments can be found in *Section 1*, page 16. Unless otherwise noted, results shown in this report are for all segments of UCRP in total.

Approved contributions

5. For the 2022-2023 Plan Year, actual contributions (including the Short-Term Investment Pool transfer) totaled $3.8 billion. While the actual contributions were sufficient to pay the normal cost, they were less than the total funding policy contributions and insufficient[1] to reduce the unfunded actuarial accrued liability. The actual contributions were about 85% of the total funding policy contribution for 2022-2023 Plan Year. In the prior year, actual contributions were about 92% of the prior year total funding policy contribution.

6. Based on the employer contribution schedule as adopted by the Regents, for the 2023-2024 Plan Year, the University contribution rate is 14.0% of covered compensation while the employer contribution rate that goes towards funding UCRP's UAAL for members that elected Savings Choice is 6.0% on pay up to the IRC Section 401(a)(17) limit. Effective July 1, 2024, the University contribution rate will increase to 15.0% of covered compensation and will then increase by 0.5% of covered compensation on each future July 1 until it reaches an ultimate rate of 17.0% of covered compensation. The employer contribution rate that goes towards funding UCRP's UAAL for members that elected Savings Choice will increase to 7.0% effective July 1, 2024 and will then increase by 0.5% per year on each future July 1 until it reaches an ultimate rate of 9.0%. The average member rate is about 8% of covered compensation and member rates are subject to collective bargaining for represented employees. Additional information on the University and member contribution rates can be found in *Section 4, Exhibit 2* on pages 89 and 90.

   In November 2021, the Regents approved transfers from the UC Short-Term Investment Pool (STIP) of $500 million during each of fiscal years 2022-2023 and 2023-2024. A transfer of $500 million from the UC STIP to UCRP was made during the 2022-2023 fiscal year. The transfer is reflected in the results shown in this valuation report. Future amounts will be reflected in future actuarial valuations as they are contributed to UCRP.

7. For the 2023-2024 Plan Year, total contributions to UCRP are projected to fall short of the total funding policy contribution by about $1.1 billion. For years in which the actual contributions are less than the total funding policy contributions, future actuarial losses are generated that will lead to increases in future total funding policy contributions. Starting on page 93, *Appendix A* contains projections that illustrate the effect of such actuarial losses on both future total funding policy contributions and future funded status.

[1] Under the adopted contribution schedule total contributions are expected to exceed the normal cost plus interest on the UAAL starting in 2037.

8. For the 2024-2025 Plan Year, total contributions to UCRP are projected to fall short of the total funding policy contribution by about $1.5 billion. In particular, total university contributions are expected to be 15.73% of covered payroll (including the UAAL surcharge for Savings Choice members) and member contributions are on average about 8% of covered payroll. This results in a total contribution of 23.73%, which results in a shortfall of 9.15% of covered payroll when compared to the total funding policy contribution of 32.88%.

   The calculated employer normal cost of 12.05% of covered payroll is fully covered by the expected 15.73% University contribution rate. However, for the 2024-2025 Plan Year the remaining 3.68% of covered payroll contribution rate (i.e., 15.73% - 12.05%) is not projected to be sufficient to pay the interest on the unfunded actuarial accrued liability. The unfunded actuarial accrued liability will continue to grow until 2037 unless the contributions are increased or there are significant gains from investments or other sources. Also, the unfunded actuarial accrued liability is projected to be fully amortized in about 33 years based on the current contribution schedule and assuming all assumptions are realized.

Assets

9. During the 2022-2023 Plan Year, the rate of return on the market value of assets was approximately 9.5% as shown in *Section 2, Subsection C* on page 26. Based on a partial recognition of this return as well as prior investment experience, the rate of return on the actuarial value of assets was 6.1%. This resulted in an actuarial loss when compared to the assumed rate of return of 6.75% for the 2022-2023 Plan Year (based on the July 1, 2022 valuation). This actuarial investment loss increased the total funding policy contribution rate by 0.30% of pay.

10. The net total unrecognized investment loss as of July 1, 2023 is about $1.9 billion as compared to a $4.4 billion net unrecognized loss in the previous valuation. This investment loss will be recognized in the determination of the actuarial value of assets for valuation purposes over the next few years. This means that, if the Plan earns the current assumed rate of investment return of 6.75% per year (net of investment expenses) on a market value basis, then the deferred losses will be recognized over the next few years as shown in the footnote in *Section 2, Subsection B* on page 23.

11. This actuarial valuation report as of July 1, 2023 is based on financial information as of June 30, 2023. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

Actuarial experience

12. The actuarial loss of $3.0 million, or 2.7% of actuarial accrued liability, is due to an investment loss of $0.6 million, or 0.5% of actuarial accrued liability, and a loss from sources other than investments of $2.4 million, or 2.2% of the actuarial accrued liability prior to reflection of assumption changes. This non-investment loss was primarily due to individual salary increase greater than expected, actual contributions less than expected under the actuarial funding policy, and actual annuitant COLA higher than the assumed 2.00% COLA. Further information on the factors impacting the actuarial experience can be found in *Section 2, Subsection E* on page 31.

Funded ratio

13. The Plan's funded ratio on an actuarial value basis decreased from 83.5% as of July 1, 2022 to 81.8% as of July 1, 2023, due to similar reasons as noted in item 12 above. This ratio is one measure of funding status, and its history is a measure of funding progress. On a market value basis, the Plan's funded ratio increased from 79.2% as of July 1, 2022 to 80.1% as of July 1, 2023 due to the full recognition of the 2022-2023 investment gain experience. These measurements are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for, or the amount of, future contributions. The Plan is in an underfunded position as the Actuarial Accrued Liability (AAL) exceeds the actuarial value of assets by $20.0 billion. Information on the funded ratio and UAAL for each UCRP segment can be found in *Section 1*, page 16 and a history of these measures is shown in *Section 2, Subsection G* starting on page 36.

Future expectations

14. The unrecognized investment losses of $1.9 billion represent about 2.1% of the market value of assets. Unless offset by future investment gains or other favorable experience, the future recognition of the $1.9 billion in market losses is expected to have an impact on the Plan's future funded ratio and future total funding policy contributions. This potential impact may be illustrated as follows:
    a. If the deferred losses were recognized immediately in the actuarial value of assets, the funded percentage would decrease from 81.8% to 80.1%.

       For comparison purposes, if all the deferred losses in the July 1, 2022 valuation had been recognized immediately in the July 1, 2022 valuation, the funded percentage would have decreased from 83.5% to 79.2%.
    b. If the deferred losses were recognized immediately in the actuarial value of assets, the total funding policy contribution would increase from 32.88% of covered payroll to 33.84% of covered payroll.

For comparison purposes, if all the deferred losses in the July 1, 2022 valuation had been recognized immediately in the July 1, 2022 valuation, the total funding policy contribution rate would have increased from 32.87% of covered payroll to 35.40% of covered payroll.

15. Starting on page 93, *Appendix A* presents projected valuation results for the non-laboratory segment of UCRP based on the current contribution schedule approved by the Regents ("approved contributions") versus the total funding policy contributions. The scenarios vary based on the 2023-2024 investment returns and the payroll growth assumption. Under all Scenarios, our longer-term projections indicate that the current assets combined with projected future contributions and investment earnings are expected to be sufficient to pay all future expected benefits for all plan members (both current and future).

Demographic Experience

16. Overall, the number of active members increased by 4.8% from 134,900 as of July 1, 2022 to 141,416 as of July 1, 2023. The Plan has 87,282 members currently receiving benefits, an increase of 2.1% from 2022. Total monthly benefits in pay status increased by 6.3%, to a level of $372 million. There are also 120,556 inactive members in the Plan who are entitled to future benefits. Within this group of inactive members there are 39,149 inactive members with a vested right to a deferred or immediate vested benefit and 78,012 inactive non-vested members who are entitled to a return of their member contributions or distribution of their Capital Accumulation Provision (CAP) balance. There are also 3,395 members that transferred to the Los Alamos National Security (LANS) or Lawrence Livermore National Security (LLNS) defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS. Additional information on changes in demographics since the prior year can be found in *Section 3, Exhibit A* starting on page 44.

Risk

17. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2023. 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 July 1, 2023 due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.

18. Actuarial Standard of Practice No. 51 (ASOP 51) requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition". Examples of key risks listed in ASOP 51 that are particularly relevant to the UCRP are asset/liability mismatch risk, investment risk, and longevity risk. The standard also requires an actuary to consider if there is any ongoing contribution risk to the plan, however it does not require the actuary to evaluate the particular ability or willingness of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequences of future changes in applicable law.

The actuary's assessment can be qualitative or quantitative (e.g., based on numerical demonstrations). The actuary may use non-numerical methods for assessing risks that might take the form of commentary about potential adverse experience and the likely effect on future results. While the standard does not require that every valuation include a quantitative risk assessment, the actuary may recommend that a more detailed risk assessment be performed. When making that decision, the actuary will take into account such factors as the Plan's design, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan. We have not performed a detailed analysis of the potential range of the impact of risk relative to the future financial condition of this plan, but have included a brief discussion of key risks that may affect the Plan in *Section 2, Subsection J* starting on page 40. As noted earlier, *Appendix A* also contains projections under various scenarios. A more detailed assessment of the risks tailored to specific interests or concerns of the Regents would provide the Regents with a better understanding of the inherent risks. This assessment would further discuss and highlight information and risks particular to UCRP such as detailed historical experience and key events, growing plan maturity, heightened contribution sensitivity to asset and liability changes, and projected sensitivity to potential future investment returns through selected scenario or stress test projections.

Note that this year the risk assessment section includes the disclosure of a "Low-Default-Risk Obligation Measure" (LDROM). This disclosure, along with commentary on the significance of the LDROM, is a new requirement under Actuarial Standard of Practice No. 4 (ASOP 4) for all pension funding actuarial valuation reports.

GASB

19. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the Plan's funding policy and measuring the progress of that funding policy. The Net Pension Liability (NPL) and pension expense under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, for inclusion in the Plan's and employer's financial statements as of June 30, 2023, will be provided separately.

Summary of key valuation results

		July 1, 2023 ($ in '000s)	July 1, 2022 ($ in '000s)
Contributions	Total funding policy contribution rate[1]	32.88%	32.87%
	Estimated covered payroll[1]	$15,962,999	$13,805,295
	Estimated annual dollar amount[2]	5,248,634	$4,537,800
Actuarial Accrued Liabilities	Retired members and beneficiaries	$52,975,155	$50,420,718
	Inactive vested members	8,928,163	8,454,254
	Active members	48,153,923	43,840,816
	Total actuarial accrued liability	$110,057,241	$102,715,788
	Normal cost for plan year beginning July 1[3]	$3,078,471	$2,809,624
	Normal cost as a percentage of payroll (beginning of year)	19.40%	20.03%
	Normal cost as a percentage of payroll (middle of year)	20.04%	20.69%
Assets	Market Value of Assets (MVA)	$88,194,785	$81,363,023
	Actuarial Value of Assets (AVA)	90,044,950	85,720,233
	AVA as a percentage of MVA	102.10%	105.36%
Funded Status	Unfunded actuarial accrued liability on MVA basis	$21,862,456	$21,352,765
	Funded percentage on MVA basis	80.1%	79.2%
	Unfunded actuarial accrued liability on AVA basis	$20,012,291	$16,995,555
	Funded percentage on AVA basis	81.8%	83.5%
Key Assumptions	Net investment return	6.75%	6.75%
	Price inflation	2.50%	2.50%
	Payroll growth	3.25%	3.25%
	Cost-of-living adjustment	2.00%	2.00%

[1] Total funding policy contributions and estimated covered payroll are for the Plan Year starting one year after the date of the actuarial valuation. They are shown for the non-laboratory segment of UCRP and exclude the LBNL Segment, the LLNL Retained Segment and the LANL Retained Segment of UCRP. Page 16 shows contributions for each of those segments. The normal cost plus interest on the July 1, 2023 UAAL represents 28.23% of covered payroll.

[2] Actual contributions are set by the Regents and will be made based on actual payroll.

[3] Includes assumed administrative expenses.

Summary of key valuation results (continued)

		July 1, 2023	July 1, 2022	Change from Prior Year
Active Members	Number of members	141,416	134,900	4.8%
	Average age	44.8	44.9	(0.1)
	Average service credit	9.3	9.5	(0.2)
	Total covered compensation	$16,694,399,736	$15,179,060,333	10.0%
	Average covered compensation	$118,052	$112,521	4.9%
Retired Members and Beneficiaries	Number of members			
	• Service retired	75,992	74,468	2.0%
	• Disability retired	966	1,069	(9.6%)
	• Beneficiaries[1]	10,324	9,929	4.0%
	– Total	87,282	85,466	2.1%
	Average age	73.2	72.8	0.4
	Average monthly benefit[2]	$4,260	$4,095	4.0%
Inactive Vested Members	Number of members[3]	120,556	112,927	6.8%
	Average age[4]	50.7	50.4	0.3
Total Members	**Number of members**	**349,254**	**333,293**	**4.8%**

[1] Includes deferred beneficiaries who are entitled to future benefits.
[2] Includes temporary Social Security Supplement, if applicable.
[3] Includes inactive non-vested members due a refund of member contributions or CAP balance payment and members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.
[4] Includes inactive vested members only.

Five-year history of total funding policy contributions and funded status

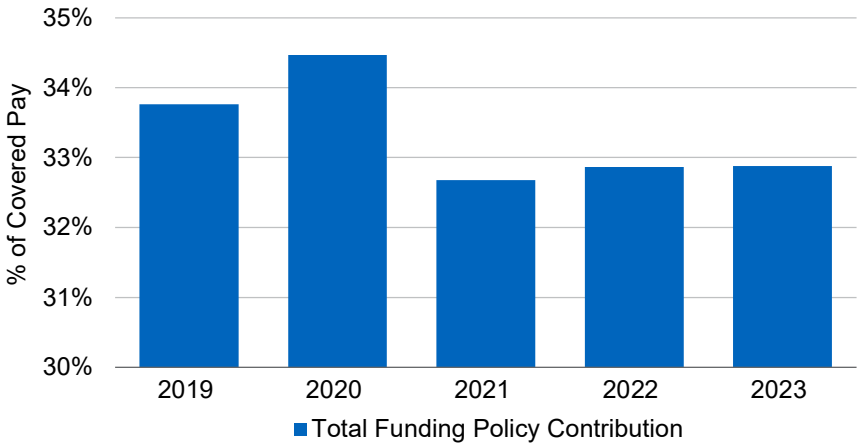
Effective with the July 1, 2008 valuation, a funding policy was adopted that determines total funding policy contributions based on the Plan's normal cost adjusted by an amortization of any surplus or underfunding. The total funding policy contribution rate is effective for the Plan Year starting one year after the date of the actuarial valuation and applies to the non-laboratory segment of UCRP. The total funding policy contribution rate for the 2024-2025 Plan Year is based on this valuation and is 32.88% of payroll.

The Plan's funded percentage (AVA divided by AAL) over the past five years is shown below:

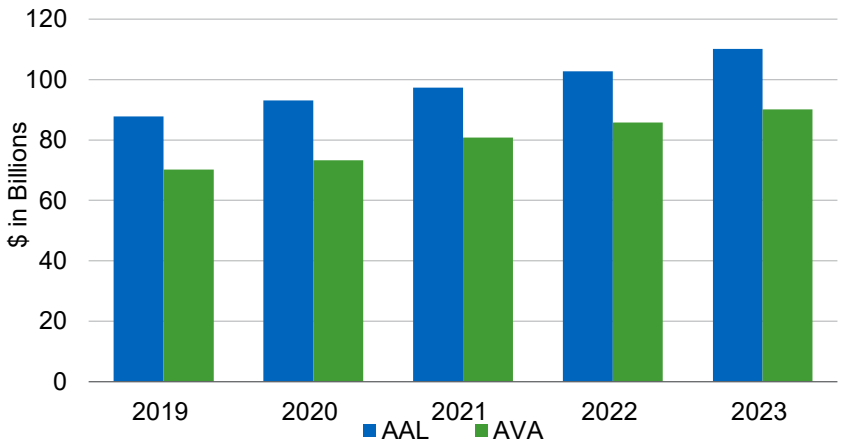
As of July 1,	AAL ($ in Billions)	AVA ($ in Billions)	Funded Percentage
2019	$87.8	$70.2	80%
2020	93.1	73.3	79%
2021	97.2	80.8	83%
2022	102.7	85.7	83%
2023	110.1	90.0	82%

Five-Year History as of July 1 Valuation Date

Total Funding Policy Contribution Rate



Actuarial Accrued Liability and Actuarial Value of Assets



Summary of UCRP July 1, 2023 valuation results by segment ($ in '000s)

	Total UCRP	Campus and Medical Centers	LBNL	LLNL	LANL
Normal Cost (beginning of year)	$3,078,471	$3,010,894	$67,577	$0	$0
Market Value of Assets (MVA)	88,194,785	78,873,985	2,862,665	3,612,294	2,845,841
Actuarial Value of Assets (AVA)	90,044,950	80,528,640	2,922,679	3,688,061	2,905,570
Actuarial Accrued Liability (AAL)	110,057,241	99,948,781	3,406,759	3,732,271	2,969,430
Unfunded Actuarial Accrued Liability on AVA basis	20,012,291	19,420,141	484,080	44,210	63,860
Unfunded Actuarial Accrued Liability on MVA basis	21,862,456	21,074,796	544,094	119,977	123,589
Funded Ratio (AVA/AAL)	81.8%	80.6%	85.8%	98.8%	97.8%
Funded Ratio (MVA/AAL)	80.1%	78.9%	84.0%	96.8%	95.8%
Estimated Covered Payroll for 2023-2024 Plan Year[1]	$15,871,668	$15,514,974	$356,694	$0	$0
Estimated Covered Payroll for 2024-2025 Plan Year[2]	16,320,043	15,962,999	357,044	0	0
Total Funding Policy Contribution Rate[3] for 2024-2025 Plan Year		**32.88%**	**N/A**	**N/A**	**N/A**
Total Funding Policy Contribution		**$5,248,634**	**N/A**	**N/A**	**N/A**
Expected Employer Contributions[4] for 2024-2025 Plan Year		**15.00%**	**15.00%**	**$16,478**	**$23,823**
Average Expected Employee Contribution Rate		**8.00%**	**7.55%**	**N/A**	**N/A**
Total Expected Contributions for 2024-2025 Plan Year[5]		**$3,787,860**	**$87,511**	**$16,478**	**$23,823**
Number of retired members and beneficiaries	87,282	74,654	2,435	5,344	4,849
Number of inactive members	120,556	112,989	2,006	2,657	2,904
Number of active members	141,416	138,961	2,455	0	0
Average covered compensation (actual dollars)	$118,052	$117,439	$152,744	N/A	N/A

[1] Estimated Covered Payroll for 2023-2024 for Savings Choice members is $1,480,213 for Campus and Medical Centers and $87,853 for LBNL (also in thousands).

[2] Estimated Covered Payroll for 2024-2025 for Savings Choice members is $1,665,571 for Campus and Medical Centers and $100,214 for LBNL (also in thousands).

[3] Please see *Section 2, Subsection F* page 32 for more detailed information on this calculation. The total funding policy contribution is based on valuation results as of July 1, 2023 and is shown as a percent of payroll for the Plan Year beginning July 1, 2024.

[4] Employer contributions for each of the segments are determined as follows:

Campus and Medical Centers: Actual contributions for the Campus and Medical Centers are set by the Regents. The employer contribution for the 2024-2025 Plan Year is 15.0% of payroll and the estimated annual dollar amount of the contribution is $2.4 billion. The UAAL Surcharge on behalf of employees that elect Savings Choice for the 2024-2025 Plan Year is 7.0% of pay up to the IRC limit and the estimated annual dollar amount of the contribution is $116.6 million.

LBNL: The contractual contribution for the 2024-2025 Plan Year is 15.0% of payroll and the estimated annual dollar amount of the contribution is $53.6 million. The UAAL Surcharge on behalf of employees that elect Savings Choice for the 2024-2025 Plan Year is 7.0% of pay up to the IRC limit and the estimated annual dollar amount of the contribution is $7.0 million.

LLNL & LANL: The required contractual contributions are shown as an annual dollar amount for the LLNL and LANL Retained Segments. These contributions are required (subject to available funding by the National Nuclear Security Agency (NNSA)) for the Plan Year beginning July 1, 2023 under the terms of the University's contracts with the Department of Energy and are due by February 28, 2025. They are not included in the asset values shown above.

[5] Total expected contributions include the expected employer and employee contribution rates shown above multiplied by the estimated covered payroll for the 2024-2025 Plan Year plus the UAAL Surcharge contributions as described in footnote 4.

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 provisions	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. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant information	An actuarial valuation for a plan is based on data provided to the actuary by the University of California (UC). 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.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the UC. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted 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. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.
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. Deterministic cost projections are based on a proprietary forecasting model. 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 actuarial valuation is prepared at the request of UC. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.

If UC 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 provisions, but they may be subject to alternative interpretations. UC should look to their other advisors for expertise in these areas.

While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

Segal's report shall be deemed to be final and accepted by the Regents upon delivery and review. UC should notify Segal immediately of any questions or concerns about the final content.

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

Section 2: Actuarial Valuation Results

A. Member data

The actuarial valuation and review considers the number and demographic characteristics of covered members, including active members, inactive vested members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups. More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B, and C*.

Member Population

As of July 1,	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries[2]	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2014	120,568	78,229	64,191	142,420	1.18	0.53
2015	123,768	75,165	67,321	142,486	1.15	0.54
2016	128,513	81,595	70,077	151,672	1.18	0.55
2017	129,382	87,052	72,995	160,047	1.24	0.56
2018	129,879	92,617	75,924	168,541	1.30	0.58
2019	127,927	100,864	79,084	179,948	1.41	0.62
2020	134,953	99,156	80,745	179,901	1.33	0.60
2021	131,098	106,291	83,012	189,303	1.44	0.63
2022	134,900	112,927	85,466	198,393	1.47	0.63
2023	141,416	120,556	87,282	207,838	1.47	0.62

[1] Includes inactive members due a refund of member contributions or CAP balance payment and members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.

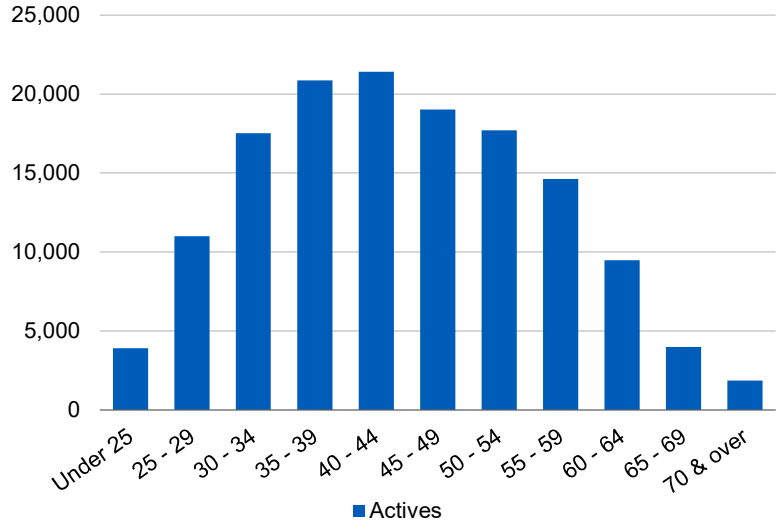
[2] Beginning in 2017, this figure includes deferred retirees and deferred beneficiaries who are entitled to future benefits.

Active members

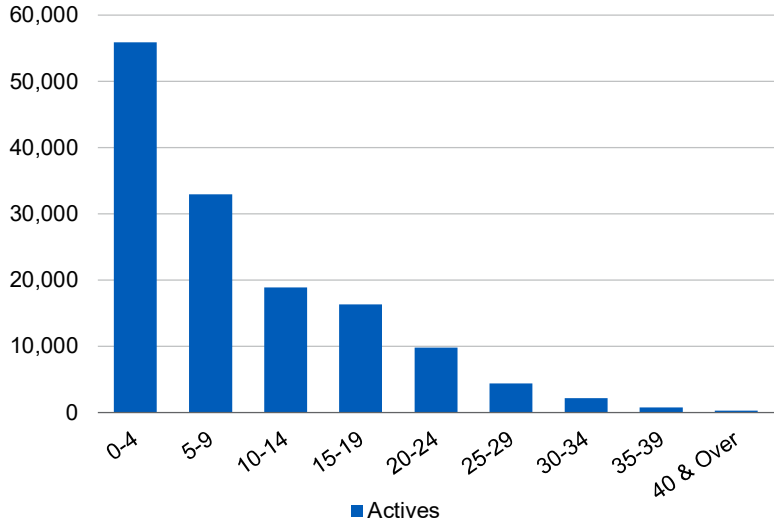
As of July 1,	2023	2022	Change
Active participants	141,416	134,900	4.8%
Average age	44.8	44.9	(0.1)
Average years of service	9.3	9.5	(0.2)
Average covered compensation	$118,052	$112,521	4.9%

Distribution of Active Members as of July 1, 2023

By Age



By Years of Service



Inactive members

As of July 1,	2023	2022	Change
Inactive vested[1]	39,149	38,119	2.7%
Inactive non-vested[2]	78,012	71,133	9.7%
LANS/LLNS transfer[3]	3,395	3,675	(7.6%)
Total inactive members	**120,556**	**112,927**	**6.8%**

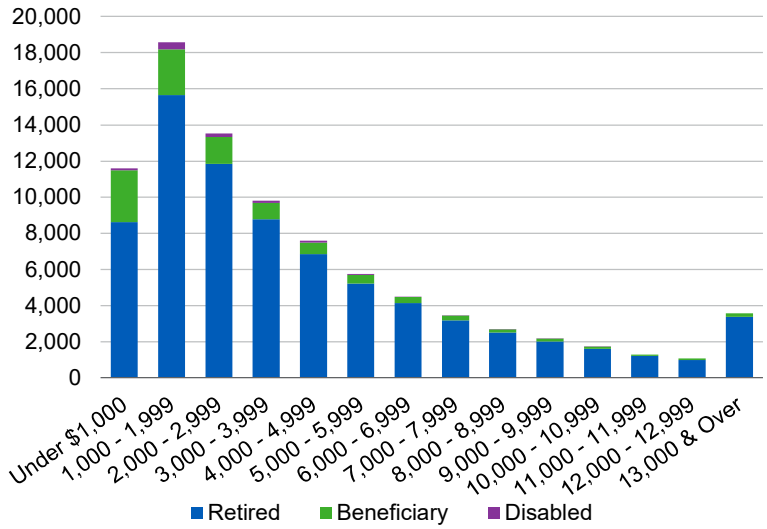
[1] Entitled to a deferred or immediate vested benefit.
[2] Entitled to a return of member contributions and/or a CAP balance payment.
[3] Entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.

Retired members

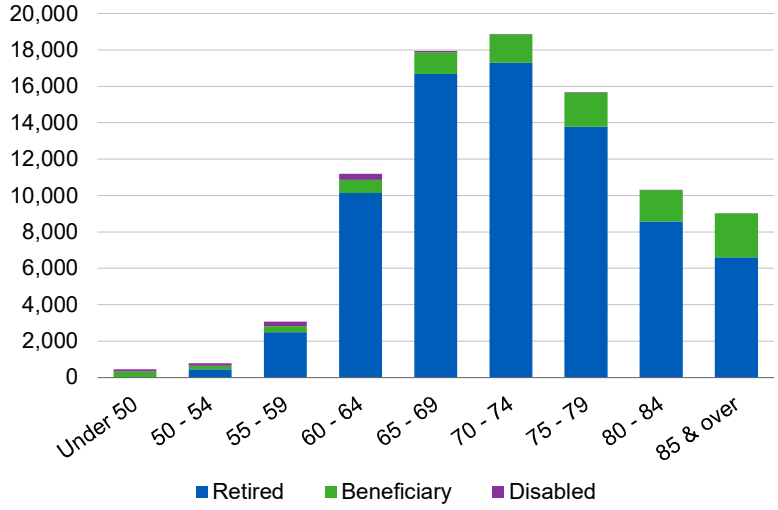
As of July 1,	2023	2022	Change
Retired members	76,958	75,537	1.9%
Beneficiaries	10,324	9,929	4.0%
Average age	73.2	72.8	0.4
Average monthly amount[1]	$4,260	$4,095	4.0%
Total monthly amount	$371,823,087	$349,941,937	6.3%

Distribution of Retired Members and Beneficiaries as of July 1, 2023

By Type and Monthly Amount



By Type and Age



[1] Includes temporary Social Security Supplement, if applicable.

Historical plan population

The chart below demonstrates the progression of the active population over the last ten years. The chart also shows the growth and aging among the retired population over the same time period.

Member Statistics

	Active Members			Retired Members and Beneficiaries		
As of July 1,	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount[1]
2014	120,568	44.9	9.6	64,191	70.8	$3,194
2015	123,768	44.8	9.4	67,321	71.0	3,281
2016	128,513	44.6	9.2	70,077	71.3	3,376
2017	129,382	44.7	9.3	72,995	71.5	3,471
2018	129,879	44.8	9.4	75,924	71.7	3,574
2019	127,927	45.0	9.4	79,084	71.9	3,671
2020	134,953	44.8	9.4	80,745	72.3	3,794
2021	131,098	45.0	9.6	83,012	72.5	3,903
2022	134,900	44.9	9.5	85,466	72.8	4,095
2023	141,416	44.8	9.3	87,282	73.2	4,260

[1] Includes temporary Social Security Supplement, if applicable.

B. Financial information

Retirement plan funding anticipates that, over the long term, both contributions (net of administrative expenses) and investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits D* and *E*.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Regents have approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the valuation asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Determination of Actuarial Value of Assets ($ in '000s)

1.	Market Value of Assets					$88,194,785
2.	Calculation of unrecognized return	**Expected Return**	**Actual Return**	**Original Amount**	**Percent Deferred**	**Unrecognized Amount[1]**
	a. Year ended June 30, 2019	$4,828,130	$4,018,599	$(809,531)	0%	$0
	b. Year ended June 30, 2020	4,732,663	1,184,937	(3,547,726)	20%	(709,545)
	c. Year ended June 30, 2021	4,784,696	21,439,295	16,654,599	40%	6,661,840
	d. Year ended June 30, 2022	6,195,340	(9,765,876)	(15,961,216)	60%	(9,576,730)
	e. Year ended June 30, 2023	5,478,437	7,696,274	2,217,837	80%	1,774,270
	f. Total unrecognized return[2]					$(1,850,165)
3.	**Actuarial Value of Assets[3] 1 – 2f**					**$90,044,950**

[1] Recognition at 20% per year over 5 years.

[2] Deferred return as of June 30, 2023 recognized in each of the next four years:

Amount recognized on June 30, 2024	$(127,300)
Amount recognized on June 30, 2025	582,244
Amount recognized on June 30, 2026	(2,748,676)
Amount recognized on June 30, 2027	443,567
Total unrecognized return as of June 30, 2023	$(1,850,165)

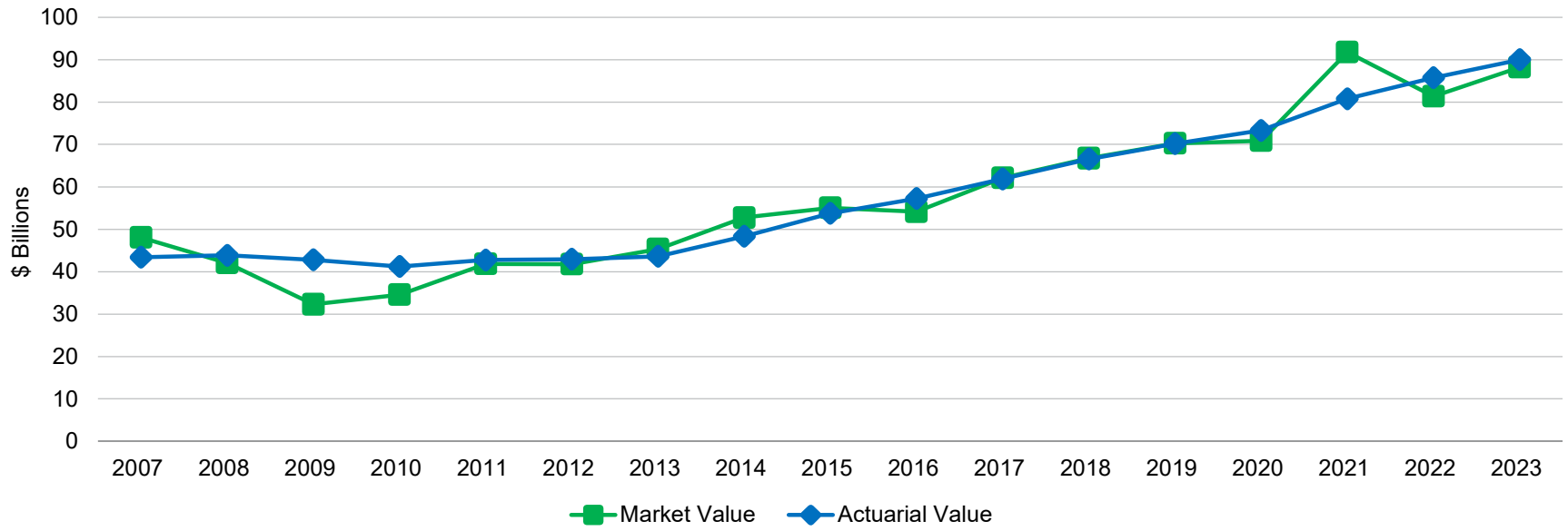
[3] The actuarial value of assets as a percentage of market value of assets is 102.10%.

Section 2: Actuarial Valuation Results

The market value and actuarial value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial value of assets is significant because UCRP's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining future contribution rates.

We have included years prior to 2014 in the graph below to show the effect of the Plan's asset smoothing method on the actuarial value of assets during periods of high market volatility. As shown in the graph, the market value of assets takes a sharp decline from 2007 to 2009. Over this same period the actuarial value of assets has a more gradual decrease due to the Plan's asset smoothing method.

Market Value and Actuarial Value of Assets as of June 30, 2007 – 2023



C. Actuarial experience

To calculate any actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the actuarially determined contribution will decrease from the previous year. On the other hand, the actuarially determined contribution will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. This valuation does reflect changes in actuarial assumptions.

The total loss is $2.98 billion, which includes $0.58 billion from investment losses (after asset smoothing), a loss of $0.65 billion from contribution experience and $1.74 billion in losses from all other sources. The net experience variation from individual sources other than investments was 2.2% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2023 ($ in '000s)

	Experience Item	Amount
1.	Net loss from investments, after asset smoothing[1]	$583,319
2.	Net loss from contributions less than expected under funding policy	653,275
3.	Net loss from other experience[2]	1,744,973
4.	**Net experience loss:[3] 1 + 2 + 3**	**$2,981,567**

[1] Details on next page.
[2] See *Section 2, Subsection E* for further details. Does not include the effect of plan or assumption changes, if any.
[3] Non-laboratory segment amount is an actuarial experience loss of $2,881,694.

Investment experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on UCRP's investment policy. The rate of return on the market value of assets was 9.48% for the year ended June 30, 2023.

For valuation purposes, the assumed rate of return on the actuarial value of assets was 6.75% for the 2022-2023 Plan Year. The actual rate of return on an actuarial basis for the 2022-2023 Plan Year was 6.07%. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended June 30, 2023 with regard to its investments.

Investment Experience for Year Ended June 30, 2023

Item	Market Value ($ in '000s)	Actuarial Value ($ in '000s)
1. Net investment income	$7,696,274	$5,189,229
2. Average value of assets[1]	81,162,024	85,519,234
3. Rate of return: 1 ÷ 2	9.48%	6.07%
4. Assumed rate of return	6.75%	6.75%
5. Expected investment income: 2 × 4	$5,478,437	$5,772,548
6. Actuarial gain/(loss): 1 − 5	**$2,217,837**	**$(583,319)**

[1] Assumes that non-investment cash-flows (i.e., benefit payments, contributions, and administrative expenses) all occur at mid-year on average, except for the following: STIP transfers are assumed to occur at the beginning of the year, and LLNL and LANL employer contributions are assumed to occur ten months into the year on average.

Section 2: Actuarial Valuation Results

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the actual market value investment return for the last ten years, including averages over select time periods.

Market Value and Actuarial Value Investment Return

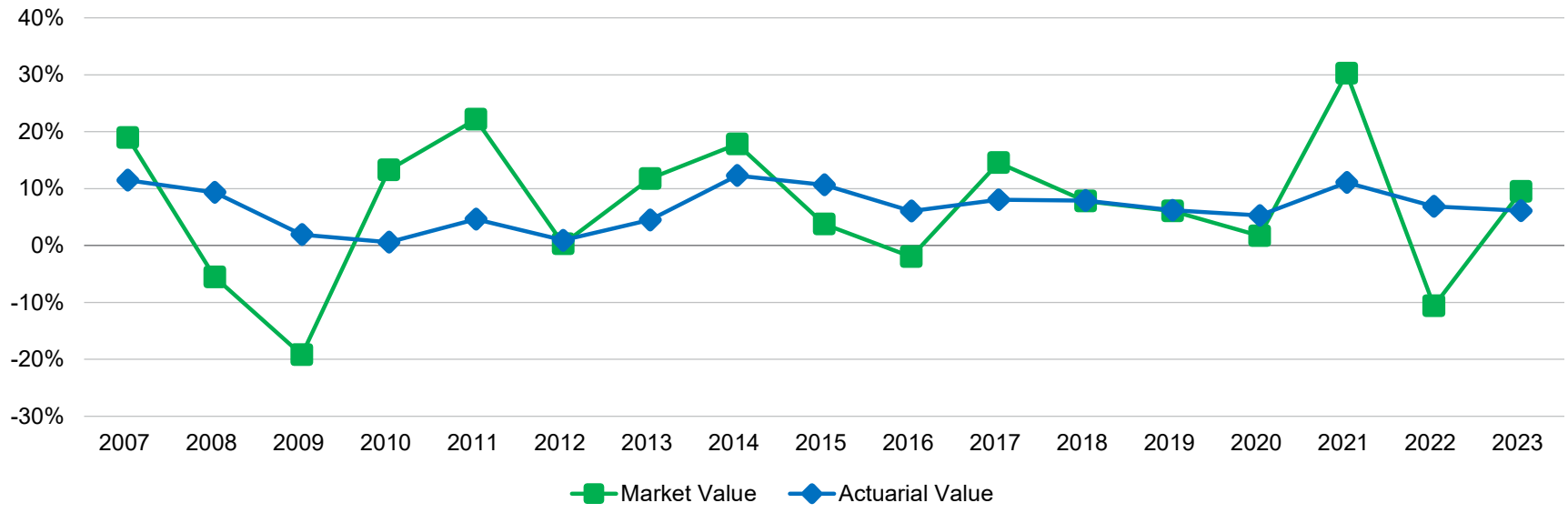
Year Ended June 30	Market Value Investment Return ($ in '000s)	Market Value Investment Return Percentage	Actuarial Value Investment Return ($ in '000s)	Actuarial Value Investment Return Percentage
2014	$8,009,979	17.78%	$ 5,322,468	12.30%
2015	1,993,802	3.77%	5,156,527	10.64%
2016	(1,104,655)	(2.00%)	3,252,517	6.04%
2017	7,866,282	14.53%	4,572,541	8.00%
2018	4,837,553	7.79%	4,871,066	7.87%
2019	4,018,599	6.03%	4,106,050	6.18%
2020	1,184,937	1.69%	3,696,118	5.28%
2021	21,439,295	30.25%	8,099,159	11.05%
2022	(9,765,876)	(10.64%)	5,529,056	6.84%
2023	7,696,274	9.48%	5,189,229	6.07%
Five-year geometric average return		**6.56%**		**7.06%**
Ten-year geometric average return		**7.35%**		**8.00%**

Section 2: Actuarial Valuation Results

Section 2, Subsection B described the actuarial asset valuation method that gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

We have included years prior to 2014 in the graph below to show the effect of the Plan's asset smoothing method on the actuarial value of assets rate of return during periods of high market volatility. As shown in the graph, the market value of assets rate of return has changed drastically from one year to the next over the 2007 to 2023 period shown. Over this same period the actuarial value of assets rate of return has been more stable from one year to the next due to the Plan's asset smoothing method.

Market Value and Actuarial Value Rates of Return for Years Ended June 30, 2007 – 2023



Contribution experience

Contributions for the year ended June 30, 2023 totaled $3.98 billion, compared to the projected total funding policy contribution amount of $4.63 billion. This resulted in a loss of $0.65 billion for the year, when adjusted for timing.

Non-investment experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among participants,
- retirement experience (earlier or later than projected),
- mortality (more or fewer deaths than projected),
- the number of disability retirements (more or fewer than projected),
- salary increases (greater or smaller than projected),
- cost-of-living adjustments (COLAs) higher or lower than anticipated, and
- administrative expenses different than assumed.

The net loss from this other experience for the year ended June 30, 2023 amounted to $1.74 billion, which is 1.6% of the actuarial accrued liability. See *Section 2, Subsection E* for a detailed development of the unfunded actuarial accrued liability.

D. Other changes in the actuarial accrued liability

The actuarial accrued liability as of July 1, 2023 is $110.1 billion, an increase of $7.4 billion, or 7.1%, from the actuarial accrued liability as of the prior valuation date. The liability is expected to grow each year with normal cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection).

Actuarial assumptions

The assumption changes reflected in this report were based on the July 1, 2018 through June 30, 2022 Actuarial Experience Study report dated June 15, 2023.

- These changes increased the actuarial accrued liability by $0.67 billion (or a 0.6% increase) and decreased the total normal cost by 0.65% of covered payroll (or a 0.17% decrease). The total funding policy contribution rate decreased as a result of the assumption changes by 0.61% of covered payroll.
- The assumption changes include changes to the administrative expenses, merit and promotion increases, mortality, disability incidence, termination, retirement, lump sum assumptions, and decrement timing.

Details on actuarial assumptions and methods are provided in *Section 4, Exhibit 1*.

Plan provisions

There were no changes in plan provisions since the prior valuation that had a material impact on this valuation.

A summary of plan provisions is provided in *Section 4, Exhibit 2.*

E. Development of unfunded actuarial accrued liability

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2023 ($ in '000s)

1.	Unfunded actuarial accrued liability at beginning of year		$16,995,555
2.	Total normal cost at beginning of year		2,809,624
3.	Expected total funding policy and required contractual contributions		(4,625,812)
4.	Interest		
	a. For whole year on 1 + 2	$1,336,851	
	b. For partial year on 3[1]	(151,952)	
	c. Total interest		$1,184,899
5.	Expected unfunded actuarial accrued liability at end of year		$16,364,266
6.	Changes due to:		
	a. Investment return less than expected, after asset smoothing	$583,319	
	b. Actual contributions less than expected under funding policy	653,275	
	c. Individual salary increases greater than expected	850,409	
	d. Actual July 1, 2023 annuitant COLA experience greater than expected	485,678	
	e. Other experience loss[2]	408,886	
	f. Changes in actuarial assumptions	666,458	
	g. Total changes[3]		$3,648,025
7.	**Unfunded actuarial accrued liability at end of year**		**$20,012,291**

Note: The sum of items 6c through 6e equals the "Net loss from other experience" shown in *Section 2, Subsection C*.

[1] Expected contributions for LLNL and LANL are calculated as of the end of the year, therefore no interest has been included on those amounts.
[2] Primarily a result of a loss due to new members, higher than expected increase in 415 dollar limit thereby increasing the benefit that can be paid by the qualified plan (UCRP), and the effect of differences in actual versus expected experience including mortality, disability, termination and retirement experience. That net loss is partially offset by a service gain for continuing active members.
[3] Non-laboratory segment amount is a net actuarial experience loss of $3.6 billion, which includes a loss of $0.7 billion from the changes in actuarial assumptions.

F. Total funding policy contribution

The total funding policy contribution rate applies to the non-laboratory segment of UCRP (i.e., campuses, medical centers and UC College of the Law, San Francisco). Contributions for the laboratories are subject to the terms of the University's contracts with the Department of Energy. For more information on the various UCRP segments see *Section 1*, page 16. For more details on the UCRP funding policy see *Section 4, Exhibit 3*.

The funding policy adopted determines total funding policy contributions equal to the Plan's normal cost adjusted by an amortization of any unfunded actuarial accrued liability (underfunding) or surplus (overfunding). As of July 1, 2023, the total funding policy contribution rate is 32.88% of covered payroll and is for the Plan Year beginning one year after the valuation date.

The Regents set the funding policy used to calculate the total funding policy contribution based on layered 20-year amortization periods for actuarial gains and losses and assumption changes as a level dollar.[1] See *Section 4, Exhibit 3* for further details on the elements of the funding policy. Based on the amortization method as part of the funding policy, the total funding policy contribution has no negative amortization[2] and each amortization layer is fully funded in about 20 years. The average effective remaining amortization period as of July 1, 2023 is 15.55 years.

The current funding policy is intended to provide an actuarially determined contribution that systematically funds the cost of the benefits with predictable and stable employer and employee contributions. As such, the total funding policy contributions determine the amount that would fully amortize the unfunded actuarial accrued liability (UAAL) within about 20 years. Each year, the Regents will determine the actual total contribution based on the total funding policy contribution and various other factors, including the availability of funds, the impact of employee contributions on the competitiveness of UC's total remuneration package and collective bargaining.

Based on the current contribution schedule adopted by the Regents (before the Regent's review of the total funding policy contribution as determined in this report), the total expected contributions for the 2024-2025 Plan Year is about 23.73% of covered payroll. [3] Since the total funding policy contribution is 32.88% of covered payroll, the total contributions are expected to fall short of the total funding policy contribution by about 9.15% of covered payroll for the 2024-2025 Plan Year. The calculated normal cost (including expenses) is 20.05% of covered payroll. The remaining 3.68% of covered payroll is insufficient to cover the interest on the UAAL and therefore the UAAL is expected to grow in the 2024-2025 Plan Year.

[1] The restart amortization established as of July 1, 2010 and amortization of actuarial gains and losses prior to July 1, 2015 are based on layered 30-year period. As of July 1, 2023, the remaining amortization period for all bases are 21 years or less.

[2] Negative amortization means that the calculated amortization payment towards the UAAL is less than the interest on the UAAL and therefore the outstanding balance of the UAAL increases.

[3] This includes university contributions of 15.0% of payroll, member contributions of about 8.0% of payroll and a surcharge university contribution for employees that elect Savings Choice of 7.0% of payroll for Saving Choice employees (this is about 0.7% expressed as percentage of payroll for UCRP members).

Section 2: Actuarial Valuation Results

Under the adopted contribution schedule, total contributions are not expected to exceed the normal cost plus interest on the UAAL until 2037. However, the funded ratio is expected to begin increasing starting in 2027, and the UAAL is expected to be fully amortized by 2056 assuming there are no future actuarial gains or losses and contributions are made based on the current contribution schedule.

The total funding policy contribution rate as of July 1, 2023 is based on all of the data described in the previous sections, the actuarial assumptions described in *Section 4, Exhibit 1* and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions. The calculation of the total funding policy contribution rates for the current and prior valuation are shown below.

Total Funding Policy Contribution (Non-Laboratory Segment of UCRP)

		July 1, 2023		July 1, 2022	
		Amount ($ in '000s)	**% of Covered Payroll**	**Amount ($ in '000s)**	**% of Covered Payroll**
1.	Total normal cost (beginning of year)	$3,010,894	19.41%	$2,745,402	20.04%
2.	Actuarial accrued liability	99,948,781		92,554,670	
3.	Actuarial value of assets	80,528,640		76,123,853	
4.	Unfunded actuarial accrued liability 2 – 3	19,420,141		16,430,817	
5.	Amortization of unfunded actuarial accrued liability[1]	1,925,191	12.41%	1,612,852	11.77%
6.	Total funding policy contribution 1 + 5	4,936,085	31.82%	4,358,254	31.81%
7.	Estimated covered payroll[2]	15,962,999		13,805,295	
8.	**Total funding policy contribution, adjusted for timing[3]**	**$5,248,634**	**32.88%**	**$4,537,800**	**32.87%**

[1] Layered amortization of Unfunded Actuarial Accrued Liability (UAAL). See *Section 3, Exhibit F* for more details.
[2] Estimated covered payroll shown for July 1, 2023 is for the 2024-2025 Plan Year and for July 1, 2022 is for the 2023-2024 Plan Year.
[3] The total funding policy contribution includes an adjustment to account for contributions made throughout the year. No additional adjustment is included to account for contributions not starting until the beginning of the next Plan Year. Actual contributions are set by the Regents and will be made based on actual payroll.

Reconciliation of total funding policy contribution rate

The chart below details the changes in the total funding policy contribution from the prior valuation to the current year's valuation for the non-laboratory segment of UCRP.

Reconciliation of Total Funding Policy Contribution Rate from July 1, 2022 to July 1, 2023

		Contribution Rate
1.	Total Funding Policy Contribution Rate as of July 1, 2022	32.87%
a.	Effect of investment return less than expected, after asset smoothing	0.30%
b.	Effect of actual contributions less than expected	0.40%
c.	Effect of individual salary increases greater than expected	0.49%
d.	Effect of total payroll growth greater than expected on UAAL amortization rate	(1.12%)
e.	Effect of increase in proportion of payroll for members enrolled in the lower Normal Cost 2013, Modified 2013, and 2016 Tiers	(0.01%)
f.	Effect of actual July 1, 2023 annuitant COLA experience greater than expected	0.25%
g.	Effect of other losses[1]	0.31%
h.	Effect of change in assumptions	(0.61%)
2.	Total change	0.01%
3.	**Total Funding Policy Contribution Rate as of July 1, 2023**	**32.88%**

[1] Includes a loss due to new members, higher than expected increase in 415 limit, and the effect of differences in actual versus expected experience including mortality, disability, termination and retirement experience.

Normal cost

The derivation of the employer normal cost for the total UCRP is shown below:

		July 1, 2023		July 1, 2022	
		Amount ($ in '000s)	% of Covered Payroll	Amount ($ in '000s)	% of Covered Payroll
1.	Estimated covered payroll[1]	$15,871,668		$14,028,545	
2.	Total normal cost (middle of year)	3,180,673	20.04%	$2,902,900	20.69%
3.	Expected employee contributions (middle of year)	1,266,375	7.98%	(1,117,252)	(7.96%)
4.	**Employer normal cost 2 – 3**	**$1,914,298**	**12.06%**	**$1,785,648**	**12.73%**

The total normal cost as a percentage of payroll (middle of year) for each tier is as follows:

Tier	July 1, 2023	July 1, 2022
1976 Tier	21.12%	21.73%
2013 Tier	18.64%	19.17%
Modified 2013 Tier	20.29%	20.65%
2016 Tier	17.90%	18.35%
Safety	29.08%	30.52%
Tier Two	10.56%	10.87%

[1] Estimated covered payroll shown for July 1, 2023 is for the 2023-2024 Plan Year and for July 1, 2022 is for the 2022-2023 Plan Year. These are covered payroll for the total UCRP.

G. Funded status

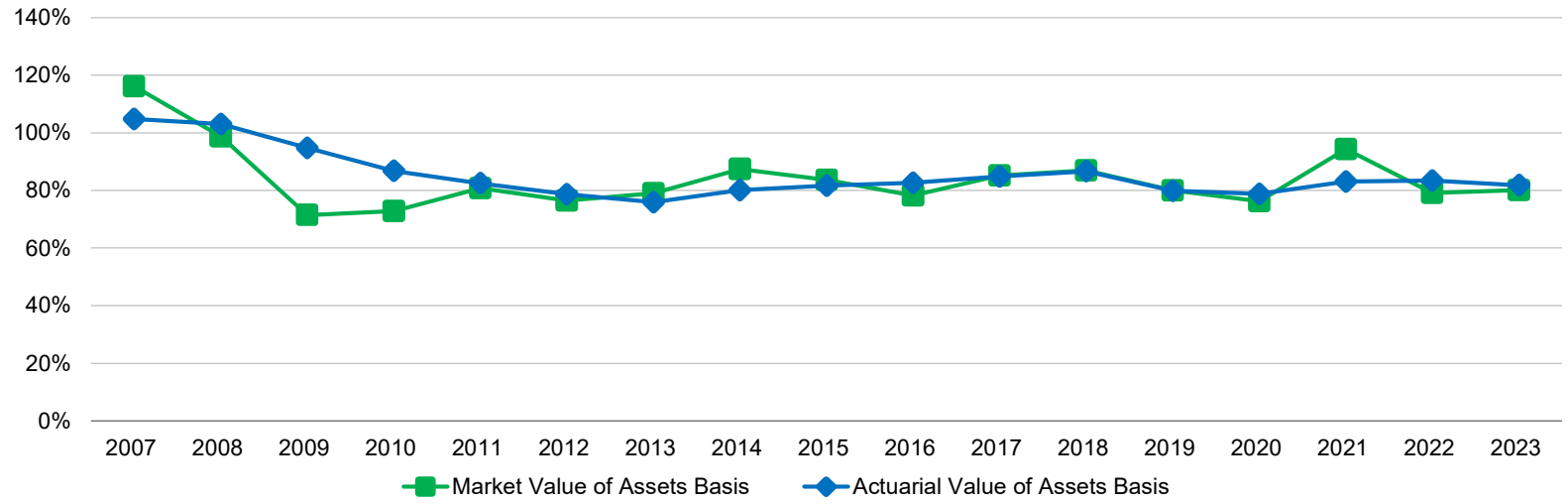
A commonly reported piece of information regarding the Plan's financial status is the funded ratio. These ratios compare the market and actuarial value of assets to the actuarial accrued liability of the Plan. High ratios indicate a well-funded plan with assets sufficient to cover the Plan's actuarial accrued liability. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

The chart below depicts a history of the funded ratio for the Plan. The chart on the next page shows the Plan's schedule of funding progress for the last ten years.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the actuarial or market value of assets is used.

We have included years prior to 2014 in the graph below to show the effect of the Plan's asset smoothing method on the funded ratio on an actuarial value of assets basis during periods of high market volatility. As shown in the graph, the funded ratio on a market value of assets basis takes a sharp decline from 2007 to 2009. Over this same period the funded ratio on an actuarial value of assets basis has a more gradual decrease due to the Plan's asset smoothing method.

Funded Ratio as of July 1, 2007 – 2023



Section 2: Actuarial Valuation Results

Schedule of Funding Progress as of July 1, 2014 – 2023 ($ in '000s)

As of July 1,	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b) – (a)	Funded Ratio (a) ÷ (b)	Projected Covered Payroll[1] (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] ÷ (c)
2014	$48,327,981	$60,417,177	$12,089,196	80.0%	$9,299,817	130.0%
2015	53,762,286	65,841,255	12,078,969	81.7	9,927,833	121.7
2016	57,228,542	69,305,423	12,076,881	82.6	10,607,630	113.9
2017	61,884,530	72,965,272	11,080,742	84.8	11,095,864	99.9
2018	66,577,372	76,881,052	10,303,680	86.6	11,596,220	88.9
2019	70,170,196	87,782,652	17,612,456	79.9	12,301,154	143.2
2020	73,318,652	93,088,224	19,769,572	78.8	13,109,921	150.8
2021	80,812,073	97,243,831	16,431,758	83.1	13,283,034	123.7
2022	85,720,233	102,715,788	16,995,555	83.5	14,028,545	121.1
2023	90,044,950	110,057,241	20,012,291	81.8	15,871,668	126.1

[1] Covered payroll is reduced to anticipate members who leave active status during the year.

H. Actuarial liabilities

Actuarial Accrued Liability ($ in '000s)

		July 1, 2023	July 1, 2022
1.	Members in pay status		
a.	Retirees[1]	$49,077,929	$46,691,071
b.	Beneficiaries[2]	3,427,498	3,228,280
c.	Disableds	469,728	501,367
d.	Total in pay status	$52,975,155	$50,420,718
2.	Active members		
a.	1976 Tier members	$37,791,604	$35,791,441
b.	2013 Tier members	3,385,294	2,868,467
c.	Modified 2013 Tier members	4,055,447	3,063,795
d.	2016 Tier members	2,677,729	1,886,827
e.	Safety	243,849	230,286
f.	Total actives	$48,153,923	$43,840,816
3.	Inactive members		
a.	Vested	$8,148,209	$7,772,644
b.	Non-vested	779,954	681,610
c.	Total inactive	$8,928,163	$8,454,254
4.	**Total Actuarial Accrued Liability**	**$110,057,241**	**$102,715,788**

Actuarial Present Value of Projected Benefits ($ in '000s)

	July 1, 2023	July 1, 2022
Members in pay status[1,2]	$52,975,155	$50,420,718
Active members	76,576,911	69,744,402
Inactive members	8,928,163	8,454,254
Total Present Value of Projected Benefits	**$138,480,229**	**$128,619,374**

[1] For July 1, 2023, includes a liability of $112.5 million for lump sum cashouts, CAP balance payments and refunds of member contributions that were paid on or after July 1, 2023. For July 1, 2022, includes a liability of $140.9 million for lump sum cashouts, CAP balance payments and refunds of member contributions that were paid on or after July 1, 2022.

[2] Includes liability for deferred beneficiaries.

I. Volatility ratios

Retirement plans are subject to volatility in the level of total funding policy contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of the potential funding policy contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measurement since it is based on the current level of assets.

The current AVR is about 5.6. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 5.6% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.5% of payroll decrease/(increase) in the total funding policy contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the actuarial accrued liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities.

The LVR also indicates how volatile contributions will be in response to changes in the actuarial accrued liability due to actual experience or to changes in actuarial assumptions. The current LVR is about 6.9. This is about 23.2% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long term.

Volatility Ratios for Years Ended June 30, 2014 – 2023

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2014	5.7	6.5
2015	5.5	6.6
2016	5.1	6.5
2017	5.6	6.6
2018	5.8	6.6
2019	5.7	7.1
2020	5.4	7.1
2021	6.9	7.3
2022	5.8	7.3
2023	5.6	6.9

J. Risk

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

This section does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the Plan's future financial condition. Note that *Appendix A* presents projected valuation results for the non-laboratory segment of UCRP based on the contribution schedule approved by the Regents versus the total funding policy contributions. The scenarios vary 2023-2024 investment returns and the payroll growth assumption.

A more detailed assessment of the risks would provide the Regents with a further understanding of the risks inherent in the Plan that can inform both financial preparation and future decision making. This assessment would enable us to work with the Regents to highlight and illustrate particular risks or potential future outcomes they may be interested in discussing and could include tailored scenario testing, sensitivity testing, stress testing and stochastic modeling.

Risks

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the Plan's financial health, as well as a discussion of historical trends and maturity measures.

- **Asset/Liability Mismatch Risk** (the potential that future plan experience does not affect asset and liability values in the same way, causing them to diverge)

  The most significant asset/liability mismatch risk to the Plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first mismatch is evident in annual valuations: when asset values deviate from assumptions, they are typically independent from liability changes. The second mismatch can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any changes in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by demographic assumption risk such as longevity, which affects liabilities but have no impact on asset levels. This risk is also discussed below.

- **Investment Risk** (the risk that investment returns will be different than expected)

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial health of the system, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through

the actuarial value of assets, however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection I, Volatility Ratios* on page 39, a 1% asset gain or loss (relative to the assumed investment return) translates to about 5.6% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.5% of payroll decrease/(increase) in the total funding policy contribution for each 1% asset gain/(loss).

The single period market value rate of return over the last 10 years has ranged from a low of -10.64% to a high of 30.25%.

- **Longevity Risk** (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. This risk can be reduced by using tables appropriate for the Plan (public experience tables) that are weighted by benefit levels, and by using generational mortality projections. Effective with the July 1, 2019 valuation, the Regents of the University of California adopted benefit weighted mortality tables with the generational mortality projections.

- **Contribution Risk** (the risk that actual contributions will be different from the actuarially determined contribution)

  This risk is defined as the potential for actual future contributions deviating from expected future contributions. For years in which the actual contributions are less than the total funding policy contributions, future actuarial losses are generated that will lead to increases in future total funding policy contributions. As noted earlier, *Appendix A* contains projections that illustrate the effect of such actuarial losses on both future total funding policy contributions and future funded status.

  In particular, the total actual contributions to UCRP for the 2022-2023 Plan Year did not meet the total funding policy contribution for that Plan Year and were insufficient to reduce the unfunded actuarial accrued liability. Furthermore, for the 2023-2024 Plan Year, total contributions to UCRP for the non-laboratory segment (including the approved transfers from STIP) are projected to fall short of the total funding policy contribution by about $1.1 billion and are expected to be insufficient to reduce the unfunded actuarial accrued liability.

- **Other Risks**

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. One example is projected salary scales over time. As salary is central to the determination of benefits paid in retirement, deviations from the projected salary scales could have a material impact on the benefits anticipated for each member. Examples of demographic assumptions include retirement, termination and disability assumptions, and will likely vary in significance for different cost groups (for example, disability assumptions are typically more significant for safety groups).

Evaluation of historical trends

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past ten years:

- The funded percentage on the actuarial value of assets basis has increased from 80.0% to 81.8%. This is primarily due to average investment returns higher than the assumption on a smoothed basis, offset to some degree by the strengthening of actuarial assumptions through multiple assumption changes. For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 36.
- The primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2015 changed the discount rate from 7.50% to 7.25% and updated mortality tables, adding $2.2 billion in unfunded liability. The assumption changes in 2019 changed the discount rate from 7.25% to 6.75% and updated mortality tables, adding $7.5 billion in unfunded liability. The assumption changes in 2023 updated mortality tables along with other assumption changes, adding $0.6 billion in unfunded liability. For more details on the unfunded liability changes for the non-laboratory segment of UCRP see *Section 3, Exhibit F, Table of Amortization Bases* starting on page 56.
- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in *Section 3, Exhibit G, Projection of UAAL Balances and Payments* starting on page 58.

Maturity measures

In the last ten years the ratio of members in pay status to active participants has increased from 0.53 to 0.62. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected but is also informative for understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on page 19.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities. For the prior year, benefits paid and administrative expenses were $865 million more than contributions received. Plans with high levels of negative cash flows have a need for a larger allocation to income generating assets, which can create a drag on investment return. This plan currently has relatively moderate levels of negative cash flows.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection I, Volatility Ratios* on page 39.

Low-Default-Risk Obligation Measure (LDROM)

In December 2021, the Actuarial Standards Board issued a revision of Actuarial Standard of Practice No. 4 (ASOP 4) Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. One of the revisions to ASOP 4 requires the disclosure of a Low-Default-Risk Obligation Measure (LDROM) when performing a funding valuation. The LDROM presented in this report is calculated using the same methodology and assumptions used to determine the Actuarial Accrued Liability (AAL) used for funding, except for the discount rate. The LDROM is required to be calculated using "a discount rate…derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future."

The LDROM is a calculation assuming a plan's assets are invested in an all-bond portfolio, generally lowering expected long-term investment returns. The discount rate selected and used for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index Rate, published at the end of each week. The last published rate in June of the measurement period, by The Bond Buyer, is 3.65% for use effective July 1, 2023. This is the rate used to determine the discount rate for valuing reported public pension plan liabilities in accordance with Governmental Accounting Standards when plan assets are projected to be insufficient to make projected benefit payments, and the 20-year period reasonably approximates the duration of plan liabilities. The LDROM is not used to determine a plan's funded status or Actuarially Determined Contribution Rate. The plan's expected return on assets, currently 6.75%, is used for these calculations.

As of July 1, 2023, the LDROM for the Plan is $168.5 billion. The difference between the plan's AAL of $110.1 billion and the LDROM can be thought of as the increase in the AAL if the entire portfolio were invested in low-default-risk securities. Alternatively, this difference could also be viewed as representing the expected savings from investing in the plan's diversified portfolio compared to investing only in low-default-risk securities.

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. In general, if plan assets were invested exclusively in low-default-risk securities, the funded status would be lower and the Actuarially Determined Contribution would be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce investment volatility and the volatility of employer contributions, it also may be more likely to result in higher employer contributions or lower benefits.

Section 3: Supplemental Information

Exhibit A – Table of plan coverage

Active Members

Membership	Statistic	July 1, 2023	July 1, 2022	Change from Prior Year
1976 Tier[1]	Number	51,825	55,330	(6.3%)
	Average age	52.4	51.8	0.6
	Average service credit	18.1	17.3	0.8
	Total covered compensation	$7,250,597,729	$7,233,187,486	0.2%
	Average covered compensation	$139,905	$130,728	7.0%
2013 Tier[2]	Number	13,595	14,351	(5.3%)
	Average age	45.5	44.6	0.9
	Average service credit	8.4	7.4	1.0
	Total covered compensation	$1,701,142,266	$1,647,545,151	3.3%
	Average covered compensation	$125,130	$114,804	9.0%
Modified 2013 Tier[2]	Number	42,334	37,518	12.8%
	Average age	38.4	38.1	0.3
	Average service credit	3.5	3.4	0.1
	Total covered compensation	$4,385,261,422	$3,702,628,652	18.4%
	Average covered compensation	$103,587	$98,689	5.0%

[1] Includes 2 members with Tier Two benefits as of July 1, 2023 and 2 members with Tier Two benefits as of July 1, 2022.
[2] Includes multi-tier members earning future Service Credit under this tier.

Exhibit A – Table of plan coverage (continued)

Active Members (continued)

Membership	Statistic	July 1, 2023	July 1, 2022	Change from Prior Year
2016 Tier[1]	Number	33,286	27,309	21.9%
	Average age	40.8	40.6	0.2
	Average service credit	3.4	3.2	0.2
	Total covered compensation	$3,304,062,801	$2,544,598,317	29.8%
	Average covered compensation	$99,263	$93,178	6.5%
Safety	Number	376	392	(4.1%)
	Average age	42.1	42.4	(0.3)
	Average service credit	9.9	9.8	0.1
	Total covered compensation	$53,335,518	$51,100,727	4.4%
	Average covered compensation	$141,850	$130,359	8.8%
All Active Members[2]	Number	141,416	134,900	4.8%
	Average age	44.8	44.9	(0.1)
	Average service credit	9.3	9.5	(0.2)
	Total covered compensation	$16,694,399,736	$15,179,060,333	10.0%
	Average covered compensation	$118,052	$112,521	4.9%

[1] Includes multi-tier members earning future Service Credit under this tier.
[2] As of July 1, 2023 there were also 16,060 active employees who were part of the Savings Choice plan and 13,589 as of July 1, 2022, as reported by Fidelity.

Exhibit A – Table of plan coverage (continued)

Non-Active Members

Status	Statistic	July 1, 2023[1]	July 1, 2022[2]	Change from Prior Year
Inactive Vested	Number	39,149	38,119	2.7%
	Average age	50.7	50.4	0.3
	Total monthly benefit[3]	$73,739,419	$71,180,365	3.6%
	Average monthly benefits	$1,884	$1,867	0.9%
Inactive Non-Vested	Number[4]	81,407	74,808	8.8%
	Average member refund and CAP balance	$9,581	$9,111	5.2%
Retired	Number in pay status	75,992	74,468	2.0%
	Average age	73.0	72.6	0.4
	Total monthly benefit	$338,443,954	$318,795,655	6.2%
	Average monthly benefit	$4,454	$4,281	4.0%
Disabled	Number in pay status	966	1,069	(9.6%)
	Average age	58.6	58.7	(0.1)
	Total monthly benefit	$2,340,797	$2,507,025	(6.6%)
	Average monthly benefit	$2,423	$2,345	3.3%
Beneficiaries	Number in pay status[5]	10,324	9,929	4.0%
	Average age	76.1	75.8	0.3
	Total monthly benefit	$31,038,336	$28,639,257	8.4%
	Average monthly benefit	$3,006	$2,884	4.2%

Note: Monthly benefits shown include temporary Social Security Supplement, if applicable.

[1] CAP balances total $0.97 billion as of July 1, 2023 for all active and non-active members.
[2] CAP balances total $1.00 billion as of July 1, 2022 for all active and non-active members.
[3] Benefit is calculated based on assumed retirement age or current age if later.
[4] For July 1, 2023, includes 3,395 members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate employment with LANS or LLNS. For July 1, 2022, 3,675 members were included.
[5] For July 1, 2023, includes 116 deferred beneficiaries who are entitled to future benefits. For July 1, 2022, 107 deferred beneficiaries were included.

Exhibit B – Members in active service as of July 1, 2023 by age, years of service, and average covered compensation

All Active Members

Age	Total	0 – 4 Years	5 – 9 Years	10 – 14 Years	15 – 19 Years	20 – 24 Years	25 – 29 Years	30 – 34 Years	35 – 39 Years	40 Years & Over
Under 25	3,901	3,899	2	—	—	—	—	—	—	—
	$64,940	$64,947	$50,238	—	—	—	—	—	—	—
25 – 29	10,996	10,086	906	4	—	—	—	—	—	—
	$82,025	$81,684	$85,888	$66,758	—	—	—	—	—	—
30 – 34	17,530	11,931	4,995	590	14	—	—	—	—	—
	$98,948	$97,789	$101,959	$97,511	$73,003	—	—	—	—	—
35 – 39	20,874	10,014	7,223	2,866	769	2	—	—	—	—
	$111,817	$106,999	$118,512	$116,075	$95,907	$73,458	—	—	—	—
40 – 44	21,421	7,204	6,806	4,114	2,772	516	9	—	—	—
	$119,888	$106,507	$126,170	$135,670	$118,440	$105,803	$120,307	—	—	—
45 – 49	19,028	4,784	4,593	3,865	3,576	1,823	380	7	—	—
	$126,898	$105,899	$128,101	$144,118	$139,127	$120,459	$117,642	$112,488	—	—
50 – 54	17,711	3,592	3,364	3,091	3,677	2,689	1,080	215	3	—
	$129,968	$104,252	$125,990	$138,935	$143,482	$142,274	$128,308	$116,287	$127,811	—
55 – 59	14,635	2,405	2,425	2,135	2,776	2,592	1,424	716	161	1
	$130,511	$98,048	$120,148	$131,288	$134,923	$149,040	$160,175	$133,091	$113,007	$135,400
60 – 64	9,478	1,396	1,700	1,429	1,761	1,438	940	586	212	16
	$134,236	$100,729	$119,338	$129,238	$125,964	$145,642	$178,104	$189,525	$149,715	$165,044
65 – 69	3,991	457	721	566	664	509	379	431	212	52
	$157,895	$107,637	$133,055	$139,072	$135,618	$161,555	$202,970	$226,346	$234,252	$190,340
70 & Over	1,851	161	230	208	282	230	166	207	156	211
	$201,735	$129,173	$153,056	$164,146	$178,196	$203,946	$225,002	$234,652	$269,003	$275,934
Total	**141,416**	**55,929**	**32,965**	**18,868**	**16,291**	**9,799**	**4,378**	**2,162**	**744**	**280**
	$118,052	**$96,731**	**$119,505**	**$133,184**	**$132,887**	**$141,014**	**$158,552**	**$174,964**	**$190,784**	**$253,199**

Exhibit B – Members in active service as of July 1, 2023 (continued) by age, years of service, and average covered compensation

1976 Tier Active Members

Age	Total	0 – 4 Years	5 – 9 Years	10 – 14 Years	15 – 19 Years	20 – 24 Years	25 – 29 Years	30 – 34 Years	35 – 39 Years	40 Years & Over
Under 25	1	1	—	—	—	—	—	—	—	—
	$30,346	$30,346	—	—	—	—	—	—	—	—
25 – 29	8	—	4	4	—	—	—	—	—	—
	$61,133	—	$55,509	$66,758	—	—	—	—	—	—
30 – 34	750	4	170	562	14	—	—	—	—	—
	$100,340	$102,866	$115,965	$96,276	$73,003	—	—	—	—	—
35 – 39	3,789	6	418	2,609	754	2	—	—	—	—
	$113,001	$93,537	$132,065	$115,067	$95,543	$73,458	—	—	—	—
40 – 44	7,307	23	475	3,629	2,665	506	9	—	—	—
	$126,868	$113,774	$134,212	$135,348	$118,293	$105,030	$120,307	—	—	—
45 – 49	9,386	25	380	3,391	3,431	1,775	377	7	—	—
	$137,469	$110,420	$151,637	$145,015	$139,705	$120,406	$117,570	$112,488	—	—
50 – 54	10,500	23	277	2,760	3,559	2,617	1,054	207	3	—
	$140,003	$134,161	$140,505	$138,705	$143,970	$142,533	$128,280	$116,956	$127,811	—
55 – 59	9,536	23	172	1,875	2,665	2,529	1,405	706	160	1
	$141,027	$128,515	$137,451	$130,116	$134,926	$149,282	$160,256	$133,025	$112,150	$135,400
60 – 64	6,242	12	125	1,274	1,676	1,413	934	581	211	16
	$145,555	$141,146	$126,472	$128,761	$125,789	$145,513	$178,585	$188,804	$149,033	$165,044
65 – 69	2,798	8	65	518	641	502	374	427	211	52
	$172,075	$136,292	$148,965	$137,266	$134,711	$161,281	$202,457	$227,384	$234,919	$190,340
70 & Over	1,508	18	54	199	273	227	165	205	156	211
	$215,166	$182,202	$153,759	$164,439	$177,931	$204,758	$225,014	$233,151	$269,003	$275,934
Total	**51,825**	**143**	**2,140**	**16,821**	**15,678**	**9,571**	**4,318**	**2,133**	**741**	**280**
	$139,905	**$129,270**	**$136,854**	**$132,701**	**$133,011**	**$141,115**	**$158,735**	**$175,104**	**$190,696**	**$253,199**

Exhibit B – Members in active service as of July 1, 2023 (continued) by age, years of service, and average covered compensation

2013 Tier Active Members

Age	Total	0 – 4 Years	5 – 9 Years	10 – 14 Years	15 – 19 Years	20 – 24 Years	25 – 29 Years	30 – 34 Years	35 – 39 Years	40 Years & Over
Under 25	24	24	—	—	—	—	—	—	—	—
	$65,085	$65,085	—	—	—	—	—	—	—	—
25 – 29	169	53	116	—	—	—	—	—	—	—
	$73,810	$67,430	$76,725	—	—	—	—	—	—	—
30 – 34	1,569	74	1,484	11	—	—	—	—	—	—
	$89,412	$84,272	$89,505	$111,507	—	—	—	—	—	—
35 – 39	2,556	78	2,380	93	5	—	—	—	—	—
	$114,276	$107,057	$114,285	$120,307	$110,410	—	—	—	—	—
40 – 44	3,203	85	2,860	232	24	2	—	—	—	—
	$132,159	$117,662	$131,900	$142,277	$112,882	$174,922	—	—	—	—
45 – 49	2,150	54	1,822	216	46	12	—	—	—	—
	$134,563	$115,209	$134,046	$145,775	$130,248	$114,841	—	—	—	—
50 – 54	1,473	51	1,221	121	49	19	10	2	—	—
	$134,869	$114,908	$134,738	$151,650	$124,397	$128,967	$114,590	$122,517	—	—
55 – 59	1,099	28	908	101	27	24	7	3	1	—
	$134,221	$97,031	$133,871	$137,561	$148,549	$160,657	$140,404	$81,335	$250,230	—
60 – 64	822	31	674	67	34	12	3	1	—	—
	$137,224	$115,401	$138,301	$136,731	$137,046	$136,387	$80,502	$307,449	—	—
65 – 69	390	21	328	22	11	5	2	1	—	—
	$149,937	$133,751	$149,776	$137,689	$190,820	$148,443	$278,955	$111,996	—	—
70 & Over	140	21	107	4	4	2	1	1	—	—
	$176,220	$155,460	$174,631	$211,202	$261,504	$159,760	$223,108	$287,146	—	—
Total	**13,595**	**520**	**11,900**	**867**	**200**	**76**	**23**	**8**	**1**	**—**
	$125,130	**$104,179**	**$124,562**	**$140,933**	**$135,817**	**$141,217**	**$137,011**	**$149,454**	**$250,230**	**—**

Exhibit B – Members in active service as of July 1, 2023 (continued) by age, years of service, and average covered compensation

Modified 2013 Tier Active Members

Age	Total	0 – 4 Years	5 – 9 Years	10 – 14 Years	15 – 19 Years	20 – 24 Years	25 – 29 Years	30 – 34 Years	35 – 39 Years	40 Years & Over
Under 25	2,747	2,746	1	—	—	—	—	—	—	—
	$67,837	$67,844	$46,832	—	—	—	—	—	—	—
25 – 29	6,689	6,242	447	—	—	—	—	—	—	—
	$89,970	$89,693	$93,840	—	—	—	—	—	—	—
30 – 34	9,288	7,043	2,239	6	—	—	—	—	—	—
	$108,424	$106,202	$115,446	$97,127	—	—	—	—	—	—
35 – 39	7,950	5,008	2,844	95	3	—	—	—	—	—
	$117,348	$112,274	$125,464	$142,993	$81,684	—	—	—	—	—
40 – 44	5,433	3,265	1,989	147	30	2	—	—	—	—
	$113,490	$106,898	$122,218	$141,946	$111,933	$127,699	—	—	—	—
45 – 49	3,743	2,207	1,381	118	32	5	—	—	—	—
	$109,963	$102,946	$119,307	$130,070	$117,817	$101,653	—	—	—	—
50 – 54	2,914	1,648	1,139	80	25	16	3	3	—	—
	$104,245	$94,323	$115,726	$137,168	$121,515	$119,186	$131,430	$67,223	—	—
55 – 59	1,973	1,088	768	71	27	15	3	1	—	—
	$92,447	$83,438	$100,425	$131,058	$130,457	$89,135	$71,429	$113,397	—	—
60 – 64	1,172	602	513	26	25	5	1	—	—	—
	$89,166	$82,889	$93,821	$97,949	$130,693	$119,167	$63,209	—	—	—
65 – 69	347	155	183	6	2	—	—	—	1	—
	$88,870	$83,954	$92,246	$81,126	$181,715	—	—	—	$93,657	—
70 & Over	78	33	42	2	—	1	—	—	—	—
	$95,503	$95,281	$96,693	$67,924	—	$108,000	—	—	—	—
Total	**42,334**	**30,037**	**11,546**	**551**	**144**	**44**	**7**	**4**	**1**	**—**
	$103,587	**$98,043**	**$116,331**	**$133,991**	**$121,973**	**$107,080**	**$95,969**	**$78,767**	**$93,657**	**—**

Exhibit B – Members in active service as of July 1, 2023 (continued) by age, years of service, and average covered compensation

2016 Tier Active Members

Age	Total	0 – 4 Years	5 – 9 Years	10 – 14 Years	15 – 19 Years	20 – 24 Years	25 – 29 Years	30 – 34 Years	35 – 39 Years	40 Years & Over
Under 25	1,118	1,117	1	—	—	—	—	—	—	—
	$57,497	$57,501	$53,643	—	—	—	—	—	—	—
25 – 29	4,088	3,757	331	—	—	—	—	—	—	—
	$69,095	$68,336	$77,707	—	—	—	—	—	—	—
30 – 34	5,864	4,791	1,069	4	—	—	—	—	—	—
	$86,060	$85,575	$87,937	$165,549	—	—	—	—	—	—
35 – 39	6,531	4,903	1,567	58	3	—	—	—	—	—
	$103,285	$101,587	$108,516	$104,458	$122,958	—	—	—	—	—
40 – 44	5,416	3,819	1,471	96	28	2	—	—	—	—
	$109,284	$105,837	$117,683	$119,773	$105,590	$62,248	—	—	—	—
45 – 49	3,696	2,496	1,005	132	47	14	2	—	—	—
	$112,318	$108,261	$120,386	$130,591	$110,555	$94,462	$81,592	—	—	—
50 – 54	2,772	1,852	721	127	37	26	7	2	—	—
	$115,940	$112,045	$121,679	$132,986	$134,211	$125,946	$121,131	$85,825	—	—
55 – 59	1,992	1,256	565	88	52	19	7	5	—	—
	$115,271	$109,807	$118,658	$149,246	$129,757	$138,075	$187,469	$168,597	—	—
60 – 64	1,232	750	382	59	26	8	2	4	1	—
	$117,404	$113,650	$116,866	$142,896	$118,164	$198,934	$157,093	$264,794	$293,687	—
65 – 69	452	272	143	20	9	2	3	3	—	—
	$129,729	$117,907	$138,799	$204,740	$122,085	$263,093	$216,251	$116,740	—	—
70 & Over	125	89	27	3	5	—	—	1	—	—
	$134,562	$124,813	$153,826	$146,117	$126,042	—	—	$490,000	—	—
Total	**33,286**	**25,102**	**7,282**	**587**	**207**	**71**	**21**	**15**	**1**	**—**
	$99,263	**$94,705**	**$110,868**	**$133,635**	**$120,946**	**$133,277**	**$156,491**	**$194,269**	**$293,687**	**—**

Exhibit B – Members in active service as of July 1, 2023 (continued) by age, years of service, and average covered compensation

Active Safety Members

Age	Total	0 – 4 Years	5 – 9 Years	10 – 14 Years	15 – 19 Years	20 – 24 Years	25 – 29 Years	30 – 34 Years	35 – 39 Years	40 Years & Over
Under 25	11	11	—	—	—	—	—	—	—	—
	$100,832	$100,832	—	—	—	—	—	—	—	—
25 – 29	42	34	8	—	—	—	—	—	—	—
	$112,212	$108,471	$128,111	—	—	—	—	—	—	—
30 – 34	59	19	33	7	—	—	—	—	—	—
	$123,998	$110,839	$129,015	$136,061	—	—	—	—	—	—
35 – 39	48	19	14	11	4	—	—	—	—	—
	$132,345	$117,050	$139,368	$148,249	$136,681	—	—	—	—	—
40 – 44	62	12	11	10	25	4	—	—	—	—
	$150,441	$120,452	$138,541	$159,699	$161,662	$179,849	—	—	—	—
45 – 49	53	2	5	8	20	17	1	—	—	—
	$156,565	$110,146	$152,174	$149,850	$161,717	$156,853	$217,163	—	—	—
50 – 54	52	18	6	3	7	11	6	1	—	—
	$154,197	$143,049	$141,915	$137,042	$156,567	$175,771	$162,968	$173,464	—	—
55 – 59	35	10	12	—	5	5	2	1	—	—
	$162,085	$143,477	$166,127	—	$137,498	$192,152	$209,537	$177,381	—	—
60 – 64	10	1	6	3	—	—	—	—	—	—
	$178,833	$209,028	$179,576	$167,280	—	—	—	—	—	—
65 – 69	4	1	2	—	1	—	—	—	—	—
	$185,059	$207,392	$196,986	—	$138,872	—	—	—	—	—
70 & Over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**376**	**127**	**97**	**42**	**62**	**37**	**9**	**2**	**—**	**—**
	$141,850	**$119,833**	**$142,627**	**$149,808**	**$157,176**	**$169,733**	**$179,338**	**$175,423**	**—**	**—**

Exhibit C – Reconciliation of member data

Line Description	Active	Inactive[1]	Retired	Disabled	Beneficiaries[2]	Total
Count as of July 1, 2022	134,900	112,927	74,468	1,069	9,929	333,293
New members	20,448	0	0	0	849[3]	21,297
Terminations – with vested rights	(12,111)	12,111	0	0	0	0
Contribution refunds[4]	(867)	(1,402)	0	0	0	(2,269)
Retirements	(2,245)	(928)	3,279	(106)	0	0
New disabilities	(14)	(38)	(8)	60	0	0
Lump sum cashouts	(275)	(403)	(1)	(15)	0	(694)
Benefits expired	0	0	0	0	(14)	(14)
Return to work	1,709	(1,692)	(16)	(1)	0	0
Died with or without beneficiary	(127)	(47)	(1,731)	(17)	(440)	(2,362)
Data adjustments	(2)	28	1	(24)	4	7
Count as of July 1, 2023	**141,416**	**120,556**	**75,992**	**966**	**10,328**	**349,258**

Note: There were approximately 3 QDRO/Alternate Payees who received a lump sum cashout during 2022-2023.

[1] Includes inactive non-vested members due a refund of member contributions or CAP balance payment and members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate employment with LANS or LLNS.
[2] Includes 116 deferred beneficiaries who are entitled to future benefits as of July 1, 2023. Includes 107 deferred beneficiaries as of July 1, 2022.
[3] Includes 33 new QDRO/Alternate Payees.
[4] Includes those members who terminated and received a refund of member contributions or a distribution of their CAP balance.

Exhibit D – Summary statement of income and expenses on a market value basis

	Year Ended June 30, 2023 ($ in '000s)	Year Ended June 30, 2022 ($ in '000s)
Net assets at market value at the beginning of the year	$81,363,023	$91,749,794
Contribution income		
• Employer contributions[1]	$2,770,474	$2,892,621
• Member contributions	1,206,097	1,105,405
• Less administrative expenses	(76,629)	(84,759)
Net contribution income	*$3,899,942*	*$3,913,267*
Investment income		
• Interest and dividends	$4,901,383	$1,057,634
• Asset appreciation	2,789,442	(10,828,603)
• Securities lending income	215,839	21,663
• Less investment expenses	(210,390)	(16,570)
Net investment income	*$7,696,274*	*$(9,765,876)*
Total income available for benefits	**$11,596,216**	**$(5,852,609)**
Less benefit payments:	$(4,764,454)	$(4,534,161)
Change in net assets at market value	$6,831,762	$(10,386,770)
Net assets at market value at the end of the year	**$88,194,785**	**$81,363,023**

[1] Including STIP Transfers of $500 million for 2022-2023 and $700 million for 2021-2022. Also includes employer contributions towards paying down UCRP's UAAL on behalf of members in the Savings Choice Plan.

Exhibit E – Summary statement of plan assets

	Year Ended June 30, 2023 ($ in '000s)	Year Ended June 30, 2022 ($ in '000s)
Cash equivalents	$4,129,298	$1,814,213
Accounts receivable		
• Contributions	$69,515	$194,130
• Interest and dividends	200,363	51,462
• Investment of cash collateral	5,100,826	7,198,909
• Securities sales and other	792,891	568,356
Total accounts receivable	*$6,163,595*	*$8,012,857*
Investments		
• Equity securities	$39,653,328	$35,671,649
• Fixed income securities	11,636,106	11,174,724
• Real estate	8,357,605	6,995,089
• Commingled funds	23,889,016	25,796,750
• Derivative investments	11,728	12,567
Total investments at market value	*$83,547,783*	*$79,650,779*
Total assets	**$93,840,676**	**$89,477,849**
Accounts payable		
• Payable for securities purchased	$(383,900)	$(162,052)
• Member withdrawals, refunds and other	(161,190)	(753,864)
• Collateral held for securities lending	(5,100,800)	(7,198,909)
Total accounts payable	*$(5,645,890)*	*$(8,114,826)*
Net assets at market value	**$88,194,785**	**$81,363,023**
Net assets at actuarial value	**$90,044,950**	**$85,720,233**

Exhibit F – Table of amortization bases

Non-Laboratory Segment of UCRP

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment[1] ($ in '000s)
Restart Amortization[2]	July 1, 2010	$5,389,886	30	$4,260,155	17	$401,706
Actuarial Loss	July 1, 2011	905,208	30	736,367	18	67,343
Change in Assumptions	July 1, 2011	1,513,127	15	438,666	3	155,870
Plan Amendment	July 1, 2011	(59,179)	15	(17,157)	3	(6,096)
Actuarial Loss	July 1, 2012	2,457,582	30	2,052,023	19	182,513
Actuarial Loss	July 1, 2013	1,866,282	30	1,595,680	20	138,367
Actuarial Gain	July 1, 2014	(886,657)	30	(774,637)	21	(65,630)
Actuarial Gain	July 1, 2015	(1,440,456)	20	(1,079,490)	12	(125,625)
Change in Assumptions	July 1, 2015	1,850,713	20	1,386,940	12	161,404
Actuarial Loss	July 1, 2016	450,296	20	354,855	13	39,212
Actuarial Gain	July 1, 2017	(452,535)	20	(372,933)	14	(39,350)
Actuarial Gain	July 1, 2018	(208,223)	20	(178,601)	15	(18,080)
Actuarial Loss	July 1, 2019	157,072	20	139,655	16	13,620
Change in Assumptions	July 1, 2019	6,850,706	20	6,091,076	16	594,049
Actuarial Loss	July 1, 2020	2,481,861	20	2,282,344	17	215,211
Actuarial Gain	July 1, 2021	(2,223,897)	20	(2,108,642)	18	(192,842)

[1] Level dollar amount. Payment shown is as of beginning of year. The amounts shown are based on results for the non-laboratory segment of UCRP (i.e., campuses, medical centers and UC College of the Law, San Francisco). They are used in the determination of the total funding policy contribution shown in *Section 2, Subsection F*, page 32. For more details on the UCRP funding policy please see *Section 4, Exhibit 3*.

[2] The July 1, 2010 amortization bases were combined into a single amortization base and amortized over 30 years as a level dollar amount.

Exhibit F – Table of amortization bases (continued)

Non-Laboratory Segment of UCRP (continued)

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment[1] ($ in '000s)
Actuarial Loss	July 1, 2022	$1,015,181	20	$989,734	19	$88,030
Plan Amendment	July 1, 2022	23,893	10	22,143	9	3,150
Actuarial Loss	July 1, 2023	2,881,694	20	2,881,694	20	249,882
Change in Assumptions	July 1, 2023	720,269	20	720,269	20	62,457
Total				**$19,420,141**		**$1,925,191**

The average effective remaining amortization period as of July 1, 2023 is 15.55 years.

Note: Effective with the July 1, 2015 valuation, the Regents approved a change to the amortization periods used for actuarial experience and changes in actuarial assumptions to be 20 years. Any change in UAAL due to a Plan amendment affecting active members is amortized over 15 years, and a Plan amendment affecting non-active members is amortized over 10 years. The amortization periods for amortization bases established in prior valuations were not affected.

[1] Level dollar amount. Payment shown is as of beginning of year. The amounts shown are based on results for the non-laboratory segment of UCRP (i.e., campuses, medical centers and UC College of the Law, San Francisco). They are used in the determination of the total funding policy contribution shown in *Section 2, Subsection F*, page 32. For more details on the UCRP funding policy please see *Section 4, Exhibit 3*.

Exhibit G – Projection of UAAL balances and payments

Outstanding Balance of $19.4 Billion in Net UAAL as of July 1, 2023 ($ in billions)
Non-Laboratory Segment of UCRP

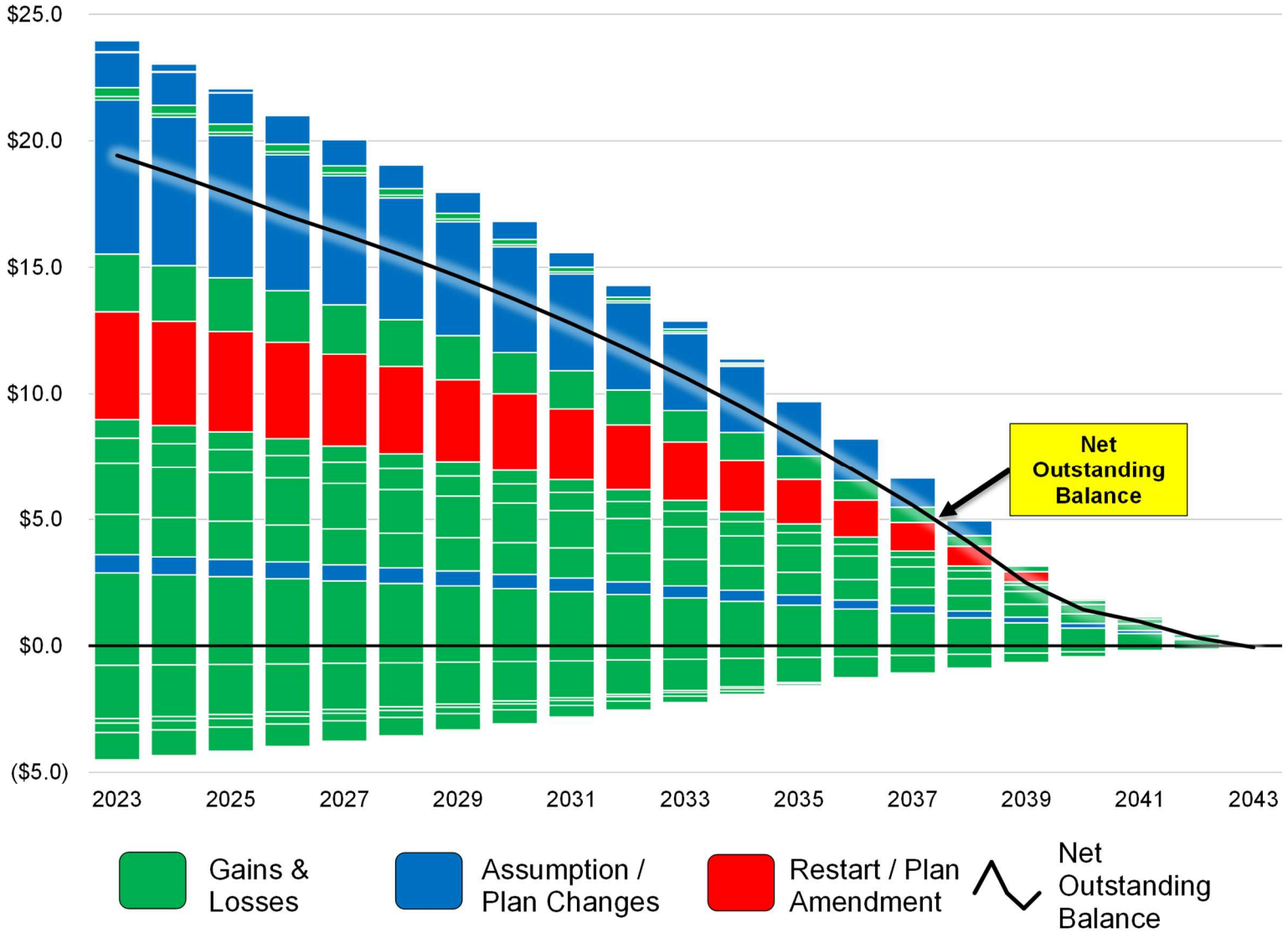
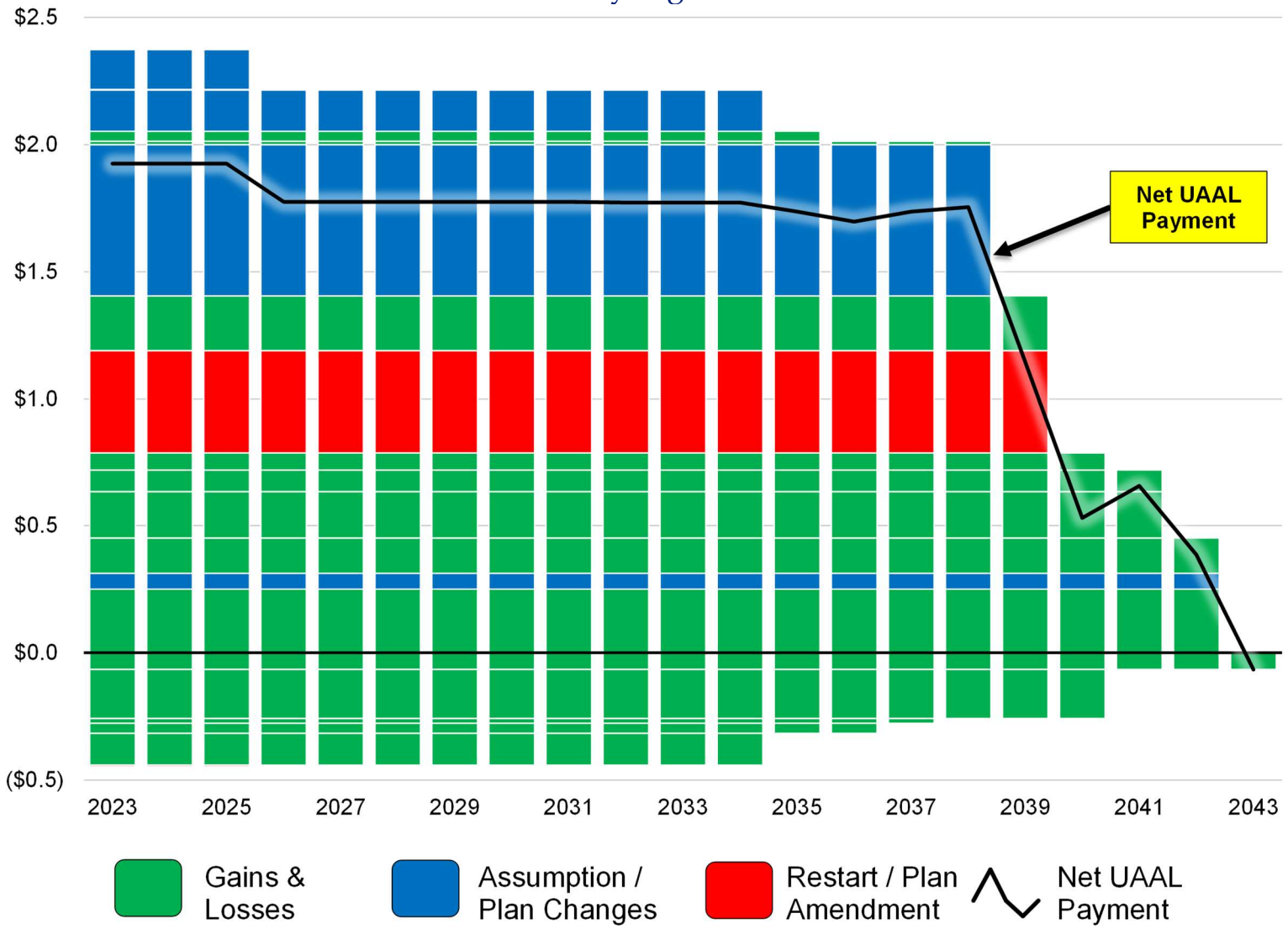


Exhibit G – Projection of UAAL balances and payments (continued)

Annual Payments Required to Amortize $19.4 Billion in Net UAAL as of July 1, 2023 ($ in billions)
Non-Laboratory Segment of UCRP



Section 4: Actuarial Valuation Basis

Exhibit 1 – Actuarial assumptions and methods

Rationale for assumptions

The information and analysis used in selecting the assumptions that have a significant effect on this actuarial valuation are shown in the UCRP July 1, 2018 through June 30, 2022 Actuarial Experience Study dated June 15, 2023.

Economic assumptions

Assumption	Value Used
Inflation	Increase of 2.50% per year.
Net investment return	6.75%; net of investment expenses (including 2.50% for inflation).
Cost-of-living adjustments	Increase of 2.00% per year.
Increase in Internal Revenue Code Section 401(a)(17) and PEPRA compensation limits	Increase of 2.50% per year from the valuation date.
Increase in 415 dollar limit	Increase of 2.50% per year from the valuation date.
Administrative expenses	0.45% of covered payroll added to normal cost.

Section 4: Actuarial Valuation Basis

Assumption	Value Used
Salary increases	The annual rate of compensation increase includes: • Inflation at 2.50%, plus • "Across the board" salary increases of 0.75% per year, plus • The following merit and promotion increases:

Years of Service	Faculty	Staff and Safety
Less than 1	2.00%	1.80%
1 – 2	2.70%	2.30%
2 – 3	2.70%	2.25%
3 – 4	2.65%	2.00%
4 – 5	2.65%	1.90%
5 – 6	2.65%	1.80%
6 – 7	2.65%	1.70%
7 – 8	2.60%	1.55%
8 – 9	2.55%	1.50%
9 – 10	2.50%	1.40%
10 – 11	2.45%	1.30%
11 – 12	2.40%	1.15%
12 – 13	2.30%	1.10%
13 – 14	2.25%	1.05%
14 – 15	2.20%	1.00%
15 – 16	2.15%	0.95%
16 – 17	2.15%	0.90%
17 – 18	2.15%	0.80%
18 – 19	2.10%	0.80%
19 – 20	2.05%	0.80%
20 – 21	2.05%	0.75%
21 – 22	2.05%	0.70%
22 – 23	2.00%	0.70%
23 – 24	2.00%	0.65%
24 – 25	1.95%	0.65%
25 – 26	1.90%	0.65%
26 – 27	1.80%	0.65%
27 – 28	1.70%	0.65%
28 – 29	1.65%	0.65%
29 – 30	1.50%	0.60%
30 & Over	1.20%	0.40%

Covered compensation for the year following the valuation date is calculated by:

- Estimating a full-time equivalent salary generally based on the member's compensation earned in the 12-months prior to the valuation date divided by their service credit earned over the same period.
- Increasing the full-time equivalent salary by the salary increase assumption based on the member's service as of the valuation date reduced by one year of assumed service accrual. For members with less than one year of service as of the valuation date, no salary increase assumption is applied.
- Applying any applicable compensation limits.

Demographic assumptions

Assumption	Value Used
Post-retirement mortality rates	**Healthy** • **Faculty Members:** Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), decreased by 15% for males and decreased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP 2021. • **Staff & Safety Members:** Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), unadjusted for males and increased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2021. **Disabled** • Pub 2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) unadjusted for males and decreased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2021. **Beneficiary** • **Beneficiaries in Pay Status as of Valuation:** Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) unadjusted for males and decreased by 10% for females, projected generationally with the two-dimensional mortality improvement scale MP-2021. • **Beneficiaries not in Pay Status as of Valuation:** Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), unadjusted for males and increased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2021. 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. **Notes:** The above listed table for Teacher Healthy Retiree only provides rates for ages 55 and older. To develop mortality rates for ages 45 through 55, we have smoothed the difference between the rates at age 45 from the Pub-2010 Teacher Employee Amount-Weighted Above-Median Mortality Tables and the rates at age 55 from the Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Tables. To develop the mortality rates before age 45, we have used the Pub-2010 Teacher Employee Amount-Weighted Above-Median Mortality Tables rates. The above listed table for Contingent Survivor only provides rates for ages 45 and older. To develop mortality rates for ages 35 through 45, we have smoothed the difference between the rates at age 35 from the Pub-2010 Teacher Employee Amount-Weighted Above-Median Mortality Tables and the rates at age 45 from the Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Tables. To develop the mortality rates before age 35, we have used the Pub-2010 Teacher Employee Amount-Weighted Above-Median Mortality Tables rates. This methodology for developing extended annuitant mortality tables is similar to the method used by the IRS to develop the base mortality table for determining minimum funding standards for single-employer defined benefit pension plans under Internal Revenue Code Section 430. While Section 430 is not applicable to UCRP, we believe this is a reasonable method for developing annuitant mortality rates at earlier ages.

Section 4: Actuarial Valuation Basis

Assumption	Value Used
Pre-retirement mortality rates	• Pub-2010 Teacher Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), decreased by 10% for males and decreased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP 2021.

Age	Male	Female
20	0.03%	0.01%
25	0.01%	0.01%
30	0.02%	0.01%
35	0.02%	0.02%
40	0.03%	0.03%
45	0.05%	0.04%
50	0.09%	0.06%
55	0.14%	0.09%
60	0.22%	0.14%
65	0.35%	0.24%
70	0.58%	0.43%

All pre-retirement deaths are assumed to be non-duty related.

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

Disability incidence

All disabilities are assumed to be non-duty related.

Age	All Members
20	0.01%
25	0.01%
30	0.01%
35	0.02%
40	0.05%
45	0.09%
50	0.15%
55	0.19%
60	0.21%
65	0.20%
70	0.12%
75	0.08%

Assumption	Value Used
Termination	The greater of a refund of member contributions and a deferred annuity or lump sum (if eligible) is valued when a member terminates. No termination is assumed after a member is first assumed to retire.

Years of Service	Faculty	Staff & Safety
Less than 1	17.50%	17.50%
1 – 2	11.00%	16.00%
2 – 3	7.50%	13.00%
3 – 4	6.25%	10.00%
4 – 5	5.25%	9.25%
5 – 6	5.50%	9.00%
6 – 7	5.25%	8.00%
7 – 8	5.00%	7.00%
8 – 9	4.50%	6.25%
9 – 10	4.00%	5.50%
10 – 11	3.75%	5.00%
11 – 12	3.50%	4.50%
12 – 13	3.00%	4.00%
13 – 14	3.00%	4.00%
14 – 15	2.75%	3.50%
15 – 16	2.50%	3.25%
16 – 17	2.25%	3.00%
17 – 18	2.00%	3.00%
18 – 19	1.50%	2.50%
19 – 20	1.50%	2.00%
20 & Over	1.00%	1.50%

Section 4: Actuarial Valuation Basis

Assumption	Value Used				
Retirement rates	**Age**	**Faculty 1976 Tier < 20 Years**	**Faculty 1976 Tier 20+ Years**	**Faculty 2013/2016 Tier <20 Years**	**Faculty 2013/2016 Tier 20+ Years**
	50	1.00%	1.25%	0.00%	0.00%
	51	0.75%	1.00%	0.00%	0.00%
	52	1.00%	1.00%	0.00%	0.00%
	53	1.00%	1.00%	0.00%	0.00%
	54	1.00%	1.00%	0.00%	0.00%
	55	1.25%	1.50%	0.75%	1.00%
	56	1.75%	2.00%	1.25%	1.25%
	57	2.00%	2.00%	1.25%	1.25%
	58	2.00%	2.00%	1.25%	1.25%
	59	3.00%	3.75%	2.00%	2.75%
	60	4.50%	4.75%	3.25%	3.50%
	61	4.50%	5.00%	3.50%	4.00%
	62	5.25%	5.50%	4.25%	4.50%
	63	6.00%	6.00%	5.25%	5.25%
	64	6.50%	7.25%	6.25%	6.75%
	65	9.50%	10.00%	15.00%	15.00%
	66	10.00%	11.00%	15.00%	15.00%
	67	10.00%	12.00%	15.00%	15.00%
	68	10.00%	12.00%	15.00%	15.00%
	69	13.00%	15.00%	13.00%	15.00%
	70	13.00%	15.00%	13.00%	15.00%
	71	13.00%	14.00%	13.00%	14.00%
	72	13.00%	15.00%	13.00%	15.00%
	73	13.50%	16.00%	13.50%	16.00%
	74	15.00%	16.00%	15.00%	16.00%
	75	15.00%	16.00%	15.00%	16.00%
	76	15.00%	16.00%	15.00%	16.00%
	77	18.00%	20.00%	18.00%	20.00%
	78	18.00%	20.00%	18.00%	20.00%
	79	18.00%	20.00%	18.00%	20.00%
	80 & Over	100.00%	100.00%	100.00%	100.00%

Section 4: Actuarial Valuation Basis

Assumption	Value Used					
Retirement rates (continued)	**Staff 1976 Tier < 10 Years**	**Staff 1976 Tier 10-20 Years**	**Staff 1976 Tier 20+ Years**	**Staff Mod 2013 Tier <10 Years**	**Staff Mod 2013 Tier 10-20 Years**	**Staff Mod 2013 Tier 20+ Years**
Age						
50	2.00%	2.50%	4.00%	1.25%	1.50%	2.25%
51	1.90%	2.00%	2.25%	1.25%	1.50%	1.75%
52	1.90%	2.00%	3.50%	1.25%	1.25%	2.00%
53	2.00%	2.50%	4.00%	1.25%	1.50%	2.50%
54	2.00%	3.00%	4.50%	1.25%	1.75%	2.50%
55	3.25%	3.75%	6.00%	1.75%	2.00%	3.00%
56	3.00%	4.00%	6.50%	1.75%	2.25%	3.50%
57	3.25%	4.25%	8.00%	2.00%	2.50%	5.00%
58	4.50%	5.75%	11.50%	3.00%	3.00%	5.75%
59	6.00%	9.75%	23.00%	5.00%	5.50%	12.75%
60	8.50%	11.00%	23.00%	7.00%	11.00%	23.00%
61	9.50%	13.00%	24.00%	8.00%	9.50%	17.50%
62	11.00%	15.25%	24.00%	10.00%	10.00%	15.25%
63	13.00%	15.25%	24.00%	12.00%	12.00%	15.00%
64	14.50%	20.00%	27.00%	20.00%	20.00%	20.00%
65	22.00%	27.00%	28.00%	30.00%	43.25%	45.00%
66	24.00%	27.00%	28.00%	28.00%	32.50%	33.50%
67	24.00%	26.00%	28.00%	28.00%	31.25%	33.50%
68	24.00%	26.00%	28.00%	28.00%	31.25%	33.50%
69	24.00%	26.00%	28.00%	24.00%	26.00%	28.00%
70	24.00%	26.00%	28.00%	24.00%	26.00%	28.00%
71	24.00%	26.00%	28.00%	24.00%	26.00%	28.00%
72	24.00%	26.00%	28.00%	24.00%	26.00%	28.00%
73	24.00%	26.00%	28.00%	24.00%	26.00%	28.00%
74	24.00%	26.00%	28.00%	24.00%	26.00%	28.00%
75	40.00%	60.00%	80.00%	40.00%	60.00%	80.00%
76	40.00%	60.00%	80.00%	40.00%	60.00%	80.00%
77	40.00%	60.00%	80.00%	40.00%	60.00%	80.00%
78	40.00%	60.00%	80.00%	40.00%	60.00%	80.00%
79	40.00%	60.00%	80.00%	40.00%	60.00%	80.00%
80 & Over	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Section 4: Actuarial Valuation Basis

Assumption	Value Used				
Retirement rates (continued)	**Age**	**Staff 2013/2016 Tier < 10 Years**	**Staff 2013/2016 Tier 10-20 Years**	**Staff 2013/2016 Tier 20+ Years**	**Safety**
	50	0.00%	0.00%	0.00%	24.00%
	51	0.00%	0.00%	0.00%	17.00%
	52	0.00%	0.00%	0.00%	9.00%
	53	0.00%	0.00%	0.00%	17.00%
	54	0.00%	0.00%	0.00%	21.00%
	55	2.00%	2.25%	3.75%	22.00%
	56	2.00%	2.50%	4.25%	22.00%
	57	2.25%	2.75%	5.25%	23.00%
	58	3.00%	4.00%	6.50%	23.00%
	59	4.25%	6.75%	11.00%	24.00%
	60	6.00%	8.00%	13.00%	27.00%
	61	7.25%	9.25%	15.00%	37.00%
	62	9.25%	11.50%	16.50%	37.00%
	63	11.50%	12.50%	18.00%	40.00%
	64	13.75%	17.00%	20.00%	40.00%
	65	25.00%	27.00%	35.00%	40.00%
	66	30.00%	32.00%	35.00%	40.00%
	67	30.00%	32.00%	35.00%	100.00%
	68	30.00%	32.00%	35.00%	100.00%
	69	30.00%	32.00%	35.00%	100.00%
	70	30.00%	32.00%	35.00%	100.00%
	71	30.00%	32.00%	35.00%	100.00%
	72	30.00%	32.00%	35.00%	100.00%
	73	30.00%	32.00%	35.00%	100.00%
	74	30.00%	32.00%	35.00%	100.00%
	75	40.00%	60.00%	80.00%	100.00%
	76	40.00%	60.00%	80.00%	100.00%
	77	40.00%	60.00%	80.00%	100.00%
	78	40.00%	60.00%	80.00%	100.00%
	79	40.00%	60.00%	80.00%	100.00%
	80 & Over	100.00%	100.00%	100.00%	100.00%
Decrement timing	Future decrements from active status are assumed to occur at the middle of the year, on average.				

Section 4: Actuarial Valuation Basis

Assumption	Value Used
Inactive COLA for future retirements	For future retirements from active status, a 1.00% increase in 1976 Tier and Safety benefits is reflected.
Retirement age for deferred vested members	Safety, 1976 Tier, and Modified 2013 Tier: Age 60 2013 Tier and 2016 Tier: Age 63
Benefit for inactive non-vested members	For current inactive non-vested members, 5-year certain only annuity of member contributions and CAP balance. For future inactive non-vested members, an immediate refund is valued.
Disability income cross over age	Age 65.
Percent with eligible survivors	For all active and inactive members, 80% of male members and 60% of female members are assumed to have eligible survivors at time of pre-retirement death, retirement, or disability.
Eligible survivor gender and age	For all active and inactive members, male members are assumed to have a female eligible survivor who is three years younger than the member and female members are assumed to have a male eligible survivor who is two years older than the member.
Number of survivors	Disability and pre-retirement death benefits for Safety members and 1976 Tier members whose benefits are not coordinated with Social Security are dependent on how many eligible survivors the member has. The assumed number of survivors for these members is as follows:

Age	Male Member	Female Member
20	1.00	1.00
25	1.80	2.10
30	2.20	2.70
35	2.70	2.80
40	3.00	2.40
45	2.80	2.10
50	2.50	1.70
55	2.00	1.40
60	1.50	1.20
65	1.30	1.10

Sick leave	Only for purposes of determining projected benefits, service has been increased by 0.15% for Faculty, 1.50% for Staff, and 2.00% for Safety members to account for unused sick leave. This assumption applies only for members retiring from active membership and not electing a lump sum cashout. For all other benefits there is assumed to be no conversion of unused sick leave to service credit.

Section 4: Actuarial Valuation Basis

Assumption	Value Used
Form of payment	It is assumed that a percentage of 1976 and Modified 2013 Tier future retirees will elect a lump sum cashout (see lump sum assumptions) and the remaining will elect an annuity benefit. 1976 Tier future retirees not electing a lump sum cashout: • Life annuity for members without an eligible survivor; • 25% contingent annuity for 1976 Tier members with Social Security who have an eligible survivor; • 50% contingent annuity for 1976 Tier members without Social Security who have an eligible survivor; • 50% contingent annuity for Safety members who have an eligible survivor. 2013 Tier and 2016 Tier future retirees are assumed to elect a life annuity. Modified 2013 Tier future retirees not electing a lump sum cashout are assumed to elect a life annuity.
Lump sum assumptions – conversion basis	Discount Rate: 6.75% COLA: 2.00% Member Mortality: Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Table decreased by 5% for males and increased by 5% for females, projected 25 years (from 2010) with the two dimensional mortality improvement scale MP-2021; weighted 40% male and 60% female. Beneficiary Mortality: Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), unadjusted for males and increased by 5% for females, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2021; weighted 60% male and 40% female.

Section 4: Actuarial Valuation Basis

Assumption	Value Used			
Lump sum assumptions – take-rate for eligible members electing a lump sum cashout	**Years of Service**	**Active**	**Deferred Vested**	**Disability Cross Over**
	Less than 5	38%	45%	19%
	5 – 6	38%	45%	19%
	6 – 7	36%	44%	17%
	7 – 8	36%	44%	17%
	8 – 9	34%	44%	15%
	9 – 10	23%	40%	15%
	10 – 11	21%	40%	13%
	11 – 12	19%	39%	10%
	12 – 13	18%	39%	10%
	13 – 14	16%	38%	10%
	14 – 15	16%	38%	10%
	15 – 16	14%	37%	10%
	16 – 17	13%	33%	10%
	17 – 18	12%	33%	7%
	18 – 19	10%	33%	7%
	19 – 20	9%	26%	7%
	20 – 21	8%	23%	7%
	21 – 22	7%	23%	7%
	22 – 23	7%	22%	7%
	23 – 24	7%	22%	6%
	24 – 25	7%	22%	5%
	25 – 26	5%	19%	5%
	26 – 27	5%	17%	5%
	27 – 28	5%	17%	5%
	28 – 29	5%	15%	5%
	29 – 30	5%	14%	5%
	30 & Over	4%	11%	3%
Unknown data for members	Same as those exhibited by members with similar known characteristics. If not specified, LBNL members are assumed to be male and all other members are assumed to be female.			
Members with Tier Two benefits	Assumptions specific to the 1976 Tier are also applied to members with Tier Two benefits.			
Future benefit accruals	1.0 year of service per year for the full-time employees. Part-time employees are assumed to earn full-time service for all future years.			

Assumption	Value Used
Definition of Active Members	All members of UCRP who are not separated from active membership as of the valuation date or have not started receiving a monthly pension on or before the valuation date.
Covered compensation	Covered compensation for a Plan Year is determined by annualizing actual payroll for the prior Plan Year increased by the total assumed salary increases.
Covered payroll	Covered payroll is covered compensation reduced to anticipate members who leave active status during the year. Covered payroll shown for the 2024-2025 Plan Year is based on the assumptions used in the projections for Scenario #1 in *Appendix A*, with the additional assumption that eligible future hires for LBNL will have an election rate of 50% Savings Choice and 50% Pension Choice (UCRP 2016 Tier).

Changes in actuarial assumptions

Based on the UCRP July 1, 2018 through June 30, 2022 Actuarial Experience Study dated June 15, 2023, the following actuarial assumptions were changed since the prior valuation.

Changed Assumption	Prior Value Used
Administrative expenses	0.40% of covered payroll added to normal cost.

Changed Assumption	Prior Value Used
Salary increases	The annual rate of compensation increase includes: • Inflation at 2.50%, plus • "Across the board" salary increases of 0.75% per year, plus • The following merit and promotion increases:

Years of Service	Faculty	Staff and Safety
Less than 1	2.70%	2.50%
1 – 2	2.70%	2.30%
2 – 3	2.65%	2.10%
3 – 4	2.65%	1.90%
4 – 5	2.65%	1.80%
5 – 6	2.65%	1.65%
6 – 7	2.60%	1.50%
7 – 8	2.60%	1.45%
8 – 9	2.55%	1.40%
9 – 10	2.50%	1.35%
10 – 11	2.40%	1.25%
11 – 12	2.40%	1.10%
12 – 13	2.30%	1.00%
13 – 14	2.20%	1.00%
14 – 15	2.10%	0.95%
15 – 16	2.00%	0.95%
16 – 17	2.00%	0.90%
17 – 18	2.00%	0.85%
18 – 19	2.00%	0.80%
19 – 20	2.00%	0.80%
20 – 21	2.00%	0.75%
21 – 22	2.00%	0.70%
22 – 23	2.00%	0.65%
23 – 24	2.00%	0.65%
24 – 25	2.00%	0.65%
25 – 26	1.90%	0.65%
26 – 27	1.80%	0.65%
27 – 28	1.70%	0.65%
28 – 29	1.60%	0.65%
29 – 30	1.50%	0.50%
30 & Over	1.25%	0.40%

Changed Assumption	Prior Value Used
Post-retirement mortality rates	**Healthy** • **Faculty Members:** Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) decreased by 10% for males and decreased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP 2018. • **Staff & Safety Members:** Pub-2010 Teacher Healthy Retiree Amount-Weighted Above Median Mortality Table (separate tables for males and females) unadjusted for males and increased by 10% for females, projected generationally with the two-dimensional mortality improvement scale MP 2018. **Disabled** • Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two dimensional mortality improvement scale MP 2018. **Beneficiary** • **All Beneficiaries:** Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) unadjusted for males and decreased by 10% for females, projected generationally with the two-dimensional mortality improvement scale MP 2018.
Pre-retirement mortality rates	• Pub-2010 Teacher Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two dimensional mortality improvement scale MP-2018.

Age	Male	Female
20	0.03%	0.01%
25	0.02%	0.01%
30	0.02%	0.01%
35	0.03%	0.02%
40	0.04%	0.03%
45	0.06%	0.05%
50	0.10%	0.07%
55	0.16%	0.10%
60	0.24%	0.15%
65	0.39%	0.25%
70	0.64%	0.45%

All pre-retirement deaths are assumed to be non-duty related.

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

Changed Assumption | **Prior Value Used**

Disability incidence

All disabilities are assumed to be non-duty related.

Age	Males	Females
20	0.01%	0.01%
25	0.01%	0.01%
30	0.02%	0.02%
35	0.03%	0.03%
40	0.05%	0.08%
45	0.08%	0.14%
50	0.13%	0.22%
55	0.18%	0.28%
60	0.20%	0.30%
65	0.15%	0.23%
70	0.12%	0.18%

Termination

The greater of a refund of member contributions and a deferred annuity or lump sum (if eligible) is valued when a member terminates.

No termination is assumed after a member is first assumed to retire.

Years of Service	Faculty	Staff & Safety
Less than 1	21.00%	20.00%
1 – 2	13.00%	17.50%
2 – 3	8.75%	14.00%
3 – 4	7.25%	11.00%
4 – 5	5.75%	9.25%
5 – 6	5.50%	8.75%
6 – 7	5.25%	7.50%
7 – 8	5.00%	6.75%
8 – 9	4.50%	5.75%
9 – 10	4.00%	5.25%
10 – 11	3.50%	4.75%
11 – 12	3.25%	4.25%
12 – 13	3.00%	4.00%
13 – 14	2.75%	3.75%
14 – 15	2.50%	3.50%
15 – 16	2.25%	3.25%
16 – 17	2.00%	3.00%
17 – 18	1.75%	2.75%
18 – 19	1.50%	2.50%
19 – 20	1.50%	2.25%
20 & Over	1.25%	2.00%

Section 4: Actuarial Valuation Basis

Changed Assumption	Prior Value Used			
Retirement rates				
Age[1]	**Faculty 1976 Tier < 20 Years[2]**	**Faculty 1976 Tier 20+ Years[2]**	**Faculty 2013/2016 Tier <20 Years[2]**	**Faculty 2013/2016 Tier 20+ Years[2]**
50	1.00%	1.15%	0.00%	0.00%
51	1.00%	1.15%	0.00%	0.00%
52	1.00%	1.15%	0.00%	0.00%
53	1.00%	1.15%	0.00%	0.00%
54	1.00%	1.15%	0.00%	0.00%
55	1.50%	1.73%	1.00%	1.15%
56	1.50%	1.73%	1.00%	1.15%
57	1.50%	1.73%	1.00%	1.15%
58	1.50%	1.73%	1.00%	1.15%
59	2.75%	3.16%	1.00%	1.15%
60	4.00%	4.60%	1.50%	1.73%
61	4.50%	5.18%	1.50%	1.73%
62	5.00%	5.75%	1.50%	1.73%
63	5.00%	5.75%	1.50%	1.73%
64	6.00%	6.90%	2.75%	3.16%
65	8.00%	9.20%	20.00%	23.00%
66	8.00%	9.20%	15.00%	17.25%
67	10.00%	11.50%	15.00%	17.25%
68	10.00%	11.50%	15.00%	17.25%
69	13.00%	14.95%	13.00%	14.95%
70	13.00%	14.95%	13.00%	14.95%
71	13.00%	14.95%	13.00%	14.95%
72	13.00%	14.95%	13.00%	14.95%
73	13.00%	14.95%	13.00%	14.95%
74	13.00%	14.95%	13.00%	14.95%
75	13.00%	14.95%	13.00%	14.95%
76	13.00%	14.95%	13.00%	14.95%
77	13.00%	14.95%	13.00%	14.95%
78	13.00%	14.95%	13.00%	14.95%
79	13.00%	14.95%	13.00%	14.95%
80 & Over	100.00%	100.00%	100.00%	100.00%

[1] Retirement rate assumptions for all tiers are set to zero until the next July 1 following the valuation date. In other words, we assume no retirements until the next July 1. Rates are rounded to two decimals for illustration only.

[2] These rates are first developed for members with less than 20 years of service. 115% of the base rates are then used for members with 20 or more years of service.

Section 4: Actuarial Valuation Basis

Changed Assumption	Prior Value Used					
Retirement rates (continued)	**Staff 1976 Tier < 10 Years[2]**	**Staff 1976 Tier 10-20 Years[2]**	**Staff 1976 Tier 20+ Years[2]**	**Staff Mod 2013 Tier <10 Years[2]**	**Staff Mod 2013 Tier 10-20 Years[2]**	**Staff Mod 2013 Tier 20+ Years[2]**
Age[1]						
50	2.25%	3.00%	5.25%	1.31%	1.75%	3.06%
51	1.50%	2.00%	3.50%	1.13%	1.50%	2.63%
52	1.88%	2.50%	4.38%	1.13%	1.50%	2.63%
53	1.88%	2.50%	4.38%	1.13%	1.50%	2.63%
54	2.25%	3.00%	5.25%	1.31%	1.75%	3.06%
55	3.00%	4.00%	7.00%	1.50%	2.00%	3.50%
56	3.38%	4.50%	7.88%	1.88%	2.50%	4.38%
57	3.38%	4.50%	7.88%	2.06%	2.75%	4.81%
58	4.50%	6.00%	10.50%	2.25%	3.00%	5.25%
59	7.13%	9.50%	16.63%	3.94%	5.25%	9.19%
60	8.25%	11.00%	19.25%	8.25%	11.00%	19.25%
61	9.75%	13.00%	22.75%	7.13%	9.50%	16.63%
62	11.25%	15.00%	26.25%	7.13%	9.50%	16.63%
63	12.00%	16.00%	28.00%	7.50%	10.00%	17.50%
64	14.25%	19.00%	28.00%	8.63%	11.50%	17.50%
65	22.50%	25.00%	25.00%	36.00%	40.00%	40.00%
66	22.50%	25.00%	25.00%	27.00%	30.00%	30.00%
67	22.50%	25.00%	25.00%	27.00%	30.00%	30.00%
68	22.50%	25.00%	25.00%	27.00%	30.00%	30.00%
69	22.50%	25.00%	25.00%	22.50%	25.00%	25.00%
70	22.50%	25.00%	25.00%	22.50%	25.00%	25.00%
71	22.50%	25.00%	25.00%	22.50%	25.00%	25.00%
72	22.50%	25.00%	25.00%	22.50%	25.00%	25.00%
73	22.50%	25.00%	25.00%	22.50%	25.00%	25.00%
74	22.50%	25.00%	25.00%	22.50%	25.00%	25.00%
75 & Over	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

[1] Retirement rate assumptions for all tiers are set to zero until the next July 1 following the valuation date. In other words, we assume no retirements until the next July 1. Rates are rounded to two decimals for illustration only.

[2] These rates are first developed for members with 10 to 20 years of service. For ages under 65, 75% of the base rates are used for those with less than 10 years of service. For ages under 65, 175% of the base rates are used for those with 20 or more years of service, except the age 64 rate is set equal to age 63. For ages over 65, 90% of the base rates are used for those with less than 10 years of service.

Section 4: Actuarial Valuation Basis

Changed Assumption	Prior Value Used				
Retirement rates (continued)	**Age[1]**	**Staff 2013/2016 Tier < 10 Years[2]**	**Staff 2013/2016 Tier 10-20 Years[2]**	**Staff 2013/2016 Tier 20+ Years[2]**	**Safety**
	50	0.00%	0.00%	0.00%	22.00%
	51	0.00%	0.00%	0.00%	17.00%
	52	0.00%	0.00%	0.00%	8.00%
	53	0.00%	0.00%	0.00%	15.00%
	54	0.00%	0.00%	0.00%	20.00%
	55	2.25%	3.00%	5.25%	20.00%
	56	1.50%	2.00%	3.50%	25.00%
	57	1.88%	2.50%	4.38%	25.00%
	58	1.88%	2.50%	4.38%	25.00%
	59	2.25%	3.00%	5.25%	25.00%
	60	3.00%	4.00%	7.00%	25.00%
	61	3.38%	4.50%	7.88%	35.00%
	62	3.38%	4.50%	7.88%	35.00%
	63	4.50%	6.00%	10.50%	40.00%
	64	7.13%	9.50%	10.50%	50.00%
	65	31.50%	35.00%	35.00%	100.00%
	66	31.50%	35.00%	35.00%	100.00%
	67	31.50%	35.00%	35.00%	100.00%
	68	27.00%	30.00%	30.00%	100.00%
	69	22.50%	25.00%	25.00%	100.00%
	70	22.50%	25.00%	25.00%	100.00%
	71	22.50%	25.00%	25.00%	100.00%
	72	22.50%	25.00%	25.00%	100.00%
	73	22.50%	25.00%	25.00%	100.00%
	74	22.50%	25.00%	25.00%	100.00%
	75 & Over	100.00%	100.00%	100.00%	100.00%
	[1] Retirement rate assumptions for all tiers are set to zero until the next July 1 following the valuation date. In other words, we assume no retirements until the next July 1. Rates are rounded to two decimals for illustration only.				
	[2] These rates are first developed for members with 10 to 20 years of service. For ages under 65, 75% of the base rates are used for those with less than 10 years of service. For ages under 65, 175% of the base rates are used for those with 20 or more years of service, except the age 64 rate is set equal to age 63. For ages over 65, 90% of the base rates are used for those with less than 10 years of service.				
Decrement timing	Future decrements from active status are assumed to occur at the beginning of the year, on average.				
Inactive COLA for future retirements	For future retirements from active status, a 2.00% increase in 1976 Tier and Safety benefits is reflected.				

Section 4: Actuarial Valuation Basis

Changed Assumption		Prior Value Used
Lump sum assumptions – conversion basis	Discount Rate:	6.75%
	COLA:	2.00%
	Member Mortality:	Pub-2010 Teacher Healthy Retiree Amount-Weighted Above-Median Mortality Table decreased by 5% for males and increased by 5% for females, projected 20 years (from 2010) with the two dimensional mortality improvement scale MP-2018; weighted 40% male and 60% female.
	Beneficiary Mortality:	Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table unadjusted for males and decreased by 10% for females, projected 20 years (from 2010) with the two-dimensional mortality improvement scale MP-2018; weighted 60% male and 40% female.

Lump sum assumptions – take-rate for eligible members electing a lump sum cashout

Years of Service	Active	Deferred Vested	Disability Cross Over
Less than 5	40%	45%	19%
5 – 6	40%	45%	19%
6 – 7	39%	45%	19%
7 – 8	38%	45%	18%
8 – 9	35%	45%	15%
9 – 10	25%	42%	15%
10 – 11	21%	42%	12%
11 – 12	18%	40%	12%
12 – 13	17%	40%	12%
13 – 14	16%	40%	12%
14 – 15	15%	40%	12%
15 – 16	14%	40%	7%
16 – 17	13%	35%	7%
17 – 18	12%	35%	7%
18 – 19	10%	35%	7%
19 – 20	9%	30%	7%
20 – 21	8%	25%	5%
21 – 22	8%	25%	5%
22 – 23	7%	25%	5%
23 – 24	7%	25%	5%
24 – 25	7%	25%	5%
25 – 26	6%	17%	4%
26 – 27	5%	17%	4%
27 – 28	5%	17%	4%
28 – 29	5%	17%	4%
29 – 30	5%	17%	4%
30 & Over	4%	12%	2%

Changed Assumption	Prior Value Used
Unknown data for members	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Actuarial funding policy

Policy Component	Description
Actuarial cost method	Entry age actuarial cost method. Entry age is calculated as the age on the valuation date minus years of service. Normal cost and actuarial accrued liability are calculated on an individual basis and are allocated by salaries as if the current benefit accrual rate has always been in effect ("replacement life within each tier").
Actuarial value of assets	The market value of assets less unrecognized returns in each of the last five years. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value, and are recognized over a five-year period. The actuarial value of assets allocated to the non-laboratory segment is approximated as the total UCRP actuarial value multiplied by the ratio of the market value of the non-laboratory segment allocated assets to the total UCRP market value.

Other actuarial methods

Component	Description
Internal Revenue Code Section 415	Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan. A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets. In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of $160,000 indexed for inflation. That limit is $245,000 for 2022 and $265,000 for 2023. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions. The University pays benefits in excess of the limits through a 415(m) Restoration Plan. These costs are excluded in this valuation. Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Exhibit 2 – Summary of plan provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Provision	Description
Effective date	April 24, 1954. Includes amendments through July 1, 2023.
Plan Year	July 1 through June 30.
Covered employees	Generally all employees who are not members of another retirement system to which the Regents contribute, and who: • Are appointed to work 50% time or more for one year or longer or • Have generally accumulated at least 1,000 hours in a 12-month period.
Membership classification	Members are divided into four classes: 1. Members with coordinated benefits (covered under Social Security); 2. Members with non-coordinated benefits (not covered under Social Security); 3. Members with Tier Two benefits; and 4. Members with Safety benefits. The classes of members with coordinated benefits and members with non-coordinated benefits have the following member tiers: the 1976 Tier, the 2013 Tier, the Modified 2013 Tier, and the 2016 Tier. Generally, members hired before July 1, 2013 accrue service under the 1976 Tier, members hired on or after July 1, 2013 and before July 1, 2016 accrue service under the 2013 Tier, and members hired on or after July 1, 2016 and elect to be covered under UCRP accrue service under the 2016 Tier. Members who are represented by the CNA, UPTE, and AFSCME bargaining units, who were generally hired (or rehired after a break in service) on or after July 1, 2013 accrue service under the Modified 2013 Tier. A member who has service credit in two or more tiers is referred to as a multi-tier member. Unless otherwise noted, Plan provisions for Tier Two members are the same as those for 1976 Tier members.
Compensation Limit	*1976 Tier, 2013 Tier, Modified 2013 Tier, and Safety Service* Annual compensation is limited based on Internal Revenue Code (IRC) Section 401(a)(17). The limit for the Plan Year beginning July 1, 2023 is $330,000 for employees who became members on or after July 1, 1994. The limit is $490,000 for those active members who became employees before July 1, 1994. The compensation limit is indexed for inflation on an annual basis. *2016 Tier Service* Annual compensation is limited similar to the limit prescribed by the California Public Employees' Pension Reform Act of 2013 (PEPRA). The limit for the Plan Year beginning July 1, 2023 is $146,042 ($175,250 for members with non-coordinated benefits). The PEPRA compensation limit is indexed for inflation on an annual basis.

Section 4: Actuarial Valuation Basis

<table>
<tr><th>Plan Provision</th><th>Description</th></tr>
<tr><td>Highest Average Plan Compensation (HAPC)</td><td>Highest average monthly full-time-equivalent base compensation rate received during any period of 36 consecutive months.</td></tr>
<tr><td>Normal retirement age</td><td>Safety Members
Attainment of age 50 with five years of service credit.
All Other Members
Attainment of age 60 (age 65 for the 2013 Tier and the 2016 Tier) with five years of service credit.</td></tr>
<tr><td>Age factor</td><td>Percentage of HAPC per year of service credit (interpolated for fractional ages).
1976 Tier and Modified 2013 Tier Service
<table>
<tr><th>Age</th><th>Factor</th><th>Age</th><th>Factor</th></tr>
<tr><td>50</td><td>1.10%</td><td>56</td><td>1.94%</td></tr>
<tr><td>51</td><td>1.24%</td><td>57</td><td>2.08%</td></tr>
<tr><td>52</td><td>1.38%</td><td>58</td><td>2.22%</td></tr>
<tr><td>53</td><td>1.52%</td><td>59</td><td>2.36%</td></tr>
<tr><td>54</td><td>1.66%</td><td>60 & Over</td><td>2.50%</td></tr>
<tr><td>55</td><td>1.80%</td><td></td><td></td></tr>
</table>
2013 Tier and 2016 Tier Service
<table>
<tr><th>Age</th><th>Factor</th><th>Age</th><th>Factor</th></tr>
<tr><td>55</td><td>1.10%</td><td>61</td><td>1.94%</td></tr>
<tr><td>56</td><td>1.24%</td><td>62</td><td>2.08%</td></tr>
<tr><td>57</td><td>1.38%</td><td>63</td><td>2.22%</td></tr>
<tr><td>58</td><td>1.52%</td><td>64</td><td>2.36%</td></tr>
<tr><td>59</td><td>1.66%</td><td>65 & Over</td><td>2.50%</td></tr>
<tr><td>60</td><td>1.80%</td><td></td><td></td></tr>
</table>
Safety Service
3.0% at all ages 50 and above.
Tier Two Service
Equal to one-half of the age factor for 1976 Tier service.</td></tr>
<tr><td>Benefit percentage</td><td>Age factor multiplied by years of service credit.</td></tr>
</table>

Section 4: Actuarial Valuation Basis

Plan Provision	Description
Basic Retirement Income (BRI)	*1976 Tier Members with Social Security* Benefit Percentage x HAPC in excess of $133 per month. *Multi-Tier Members* The applicable benefit percentages from the 1976 Tier, the 2013 Tier, the Modified 2013 Tier and the 2016 Tier are multiplied by HAPC or HAPC - $133, if applicable. These benefits are subject to a limit of 100% of HAPC or HAPC - $133, if applicable. *All Other Members* Benefit Percentage x HAPC.
Service retirement	*Eligibility* Age 50 (age 55 for the 2013 Tier and the 2016 Tier) with 5 years of service credit, or Age 62 regardless of service credit if membership began on or before July 1, 1989, or Retirement on Normal Retirement Date. *Benefit* BRI. *Form of payment* Single Life Annuity plus any Postretirement Survivor Continuance. *Optional forms of payment* Full continuance to contingent annuitant; two-thirds continuance to contingent annuitant; one-half continuance to contingent annuitant; one-half continuance (including Postretirement Survivor Continuance) to surviving spouse or domestic partner (for 1976 Tier Members with Social Security only). *Lump sum cashout* May be elected in lieu of non-2013 Tier and non-2016 Tier monthly retirement income.
Temporary social security supplement	*Eligibility* For 1976 Tier Members with Social Security and retirement must occur before age 65. *Benefit* Annuity in the amount of $133 per month multiplied by 1976 Tier Benefit Percentage. *Form of payment* Temporary Single Life Annuity plus any Postretirement Survivor Continuance payable to age 65. *Optional forms of payment* None.

Plan Provision	Description
Disability income	*Eligibility* Disablement after five years of service credit. Safety members are eligible for duty disability without regard to years of service credit. Service credit continues to accrue during disabled period. *Benefit* 1976 Tier members with Social Security • The sum of: – 15% of final salary, plus – 2.5% of final salary per year of service credit greater than two, total not to exceed 40% of final salary, less – $106.40 per month. 1976 Tier members without Social Security and Safety members (non-duty) • The sum of: – 25% of final salary, plus – 5% of final salary per year of service credit greater than two, total not to exceed 40% of final salary, plus – 5% of final salary for each eligible child, total not to exceed 20% of final salary. Safety members (duty) • 50% of HAPC, or non-duty disability benefit if greater. 2013 Tier, Modified 2013 Tier and 2016 Tier members • The sum of: – 13.1% of final salary, plus – 1.7% of final salary per year of service credit greater than five, total not to exceed 25% of final salary. Multi-Tier Members • Benefit calculated for each tier is multiplied by the ratio of service credit accrued under that tier to total service. Not less than the result under the 1976 Tier benefit formula using 1976 Tier service only. *Form of payment* Single life annuity payable until end of disability income period or retirement date if earlier.

Plan Provision	Description
Disability income (continued)	*Disability income period* Disabled before November 5, 1990 • The earliest of: – Date member is eligible to retire and retirement income equals or exceeds disability income, – Age 62 (age 67 for members without Social Security), or – Date member retires. Disabled on or after November 5, 1990 • If under age 65 at disablement: – 1976 Tier Members with Social Security, 2013 Tier Members, Modified 2013 Tier Members and 2016 Tier Members: • The later of age 65 or five years. – 1976 Tier Members without Social Security and Safety Members: • The later of age 67 or five years. • If age 65 or older at disablement: – The later of age 70 or 12 months. Disability income ends if member is no longer disabled.
Inactive member	Former UCRP member who retains right to vested benefits.

Plan Provision	Description
Vested termination	*Eligibility* Five years of service credit, or age 62 regardless of service credit if membership began on or before July 1, 1989. *Benefit* BRI beginning at age 50 or later, calculated using HAPC at termination date, adjusting for CPI changes (see Cost-of-Living Adjustment), and benefit formula in effect when benefits commence. 2013 Tier and 2016 Tier benefits cannot commence earlier than age 55. HAPC for the 2013 Tier, the Modified 2013 Tier and the 2016 Tier benefit is not adjusted for CPI changes. *Form of payment* Same as for service retirement. *Optional forms of payment* Same as for service retirement. *Refund option* Member may elect a refund of contributions with interest, thereby forfeiting all other benefits. *Lump sum cashout* May be elected in lieu of non-2013 Tier and non-2016 Tier retirement income, available only if at least age 50 with five years of service credit at date of termination.
Eligible survivor	*Eligible Spouse or Domestic Partner* Spouse or domestic partner of deceased active or disabled member in relationship for at least one year before date of death and who is: • Responsible for care of eligible child, • Disabled, or • Age 60 (age 50 if spouse of member without Social Security and in Plan prior to October 19, 1973). *Eligible Child* Child that is either under age 18, under age 22 and a full-time student, or disabled, if disability occurred prior to age 18 or age 22 if a full-time student. *Eligible Dependent Parent* Parent of deceased active, disabled or retired member, supported by 50% or more by member for one year prior to earliest of death, disablement or retirement.

Plan Provision

Description

Preretirement survivor income (death while not eligible to retire)

Eligibility

Eligible survivor of deceased active or disabled member with two or more years of service credit; no service requirement for duty-related death of Safety Member.

Benefit

1976 Tier Members with Social Security

- 25% of final salary less $106.40 per month.

1976 Tier Members without Social Security and Safety Members (Non-Duty Death)

- Percent of final salary as follows:

Eligible Survivors	Percent	Minimum Benefit
1	25%	$200
2	35%	$300
3	40%	$300 plus 5% of final salary
4	45%	$300 plus 10% of final salary
5 or More	50%	$300 plus 15% of final salary

Members with Safety Benefits (Duty Death)

- Percentage of HAPC as follows, but not less than benefit for non-duty death:

Eligible Survivors	Percent of HAPC
1	50.0%
2	62.5%
3	70.0%
4 or More	75.0%

2013 Tier, Modified 2013 Tier and 2016 Tier Members

- 15% of final salary.

Multi-Tier Members

- Benefit calculated for each tier is multiplied by the ratio of service credit accrued under that tier to total service.

Plan Provision	Description
Preretirement survivor income (death while eligible to retire)	*Eligibility* Surviving spouse or surviving domestic partner of active, disabled or inactive member who dies while eligible to retire. *Benefit* Greater of benefit described above or monthly benefit (including the Temporary Social Security Supplement) to eligible spouse or eligible domestic partner assuming member had retired on date of death and elected full continuance option with spouse or domestic partner as contingent annuitant.
Postretirement survivor continuance	*Eligibility* Eligible surviving spouse, eligible surviving domestic partner, eligible children or eligible dependent parent of deceased retired member. Not applicable for 2013 Tier, Modified 2013 Tier and 2016 Tier benefit for multi-tier members, 2013 Tier Members, Modified 2013 Tier Members, or 2016 Tier Members. *Benefit* 1976 Tier Members with Social Security • 25% of BRI including COLA, plus 25% of Temporary Social Security Supplement (ends when member would have reached age 65). 1976 Tier Members without Social Security • 50% of BRI including COLA. Safety Members • 50% of BRI including COLA.
Lump sum death benefit	*Eligibility* Beneficiary of active, inactive, disabled, or retired member. *Basic Benefit* Active Member who became a Member before October 1, 1990 • Greater of: – $1,500 plus one month's final salary, or – $7,500. All Others • $7,500 *Residual Benefit* Refund of member contributions plus interest, reduced by a portion of benefits received (100% of retirement income, 50% of preretirement survivor income or disability income) payable to beneficiary if no survivor, surviving spouse, domestic partner, or contingent annuitant.

Section 4: Actuarial Valuation Basis

Plan Provision	Description
Cost-of-living adjustment	*Eligibility* Retired members, survivors, disabled members, and contingent annuitants receiving retirement income with benefits in pay status one or more years on July 1. For multi-tier members, separate dates apply to 1976 Tier, 2013 Tier and 2016 Tier benefits based on the dates those benefits start. *Basic* 100% of annual Consumer Price Index (CPI) increase up to 2% per year. *Supplemental* Generally 75% of annual CPI increase above 4%. The sum of the Basic and Supplemental COLA's cannot exceed 6% in a year. *Ad Hoc* Ad hoc COLAs may be granted subject to funding availability and approval by the Regents. *Additional* 1976 Tier and Safety Members • HAPC is adjusted for COLA up to 2% per year from separation date to retirement date prior to calculating service retirement benefit Disabled Members Receiving Disability Income prior to November 5, 1990 • HAPC is adjusted for COLA up to COLA formula above for years from disablement to retirement date.
Capital Accumulation Provision (CAP)	*Eligibility* Various UCRP non-retired members have CAP balances from allocations made periodically in the past. These balances are all vested. *Interest Credit* Regents' approved interest rate; currently 8.50% per year for pre-2002 CAPs and the assumed rate of investment return used in the actuarial valuation (currently 6.75%) for 2002 and later CAPs (CAP II). *Payment* Lump sum payment upon termination, retirement or death.

Plan Provision	Description
University contributions	Each year the Regents determine the actual total contributions and the split between member contributions and University contributions based on the total funding policy contribution and various other factors, including the availability of funds, the impact of employee contributions on the competitiveness of UC's total remuneration package, and collective bargaining. In no event will the University Contributions be lower than the member contributions. The total funding policy contribution is based on the Regents' funding policy as described in *Section 4, Exhibit 3*. Based on the contribution schedule adopted by the Regents in November 2021, the employer contribution rate decreased to 14.0% of covered compensation for the non-laboratory segment of UCRP effective July 1, 2022. The employer contribution rate will increase to 15.0% of covered compensation effective July 1, 2024 and will increase by 0.5% per year on each future July 1 until it reaches an ultimate employer contribution rate of 17.0% of covered compensation. Contributions for the LBNL, LLNL and LANL segments are based on the University's contracts with the Department of Energy. • As of July 1, 2023, the contribution rate for the LBNL segment is 14.0%. For eligible new employees that elect Savings Choice, the Regents approved similar changes to the employer contribution rate that goes towards funding the non-laboratory segment of UCRP's UAAL. This contribution rate decreased to 6.0% on pay up to the IRC Section 401(a)(17) limit effective July 1, 2022. The employer contribution rate will increase to 7.0% effective July 1, 2024 and will then increase by 0.5% per year on each future July 1 until it reaches an ultimate contribution rate of 9.0% on pay up to the IRC Section 401(a)(17) limit. There is a corresponding employer contribution for LBNL members who elect Savings Choice that goes towards funding the LBNL segment UAAL. • As of July 1, 2023 the contribution rate for both the non-laboratory segment and the LBNL segment is 6.0%.

Plan Provision	Description
Member contributions	*Contributions* 1976 Tier Members • 9% of covered compensation for members represented by the CNA, UPTE, or AFSCME bargaining units. • 8% of covered compensation for all other 1976 Tier Members. 2013 Tier and 2016 Tier Members • 7% of covered compensation. Modified 2013 Tier Members • 9% of covered compensation. Safety Members • 9% of covered compensation. Tier Two Members • None. *Offset* All contributions for 1976 Tier and Safety members are reduced by $19 per month. *Interest Credit* Regents' approved interest rate; currently 6.00% per year. *Cessation* Members are exempt from contributing once the benefit percentage reaches 100%.

Changes in plan provisions

There have been no changes in plan provisions since the last valuation that had a material impact on this valuation.

Note

The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the University of California should find the plan summary not in accordance with the actual provisions, the University of California should alert the actuary so they can both be sure the proper provisions are valued.

Exhibit 3 – UCRP Funding Policy

Effective with the July 1, 2008 valuation, a funding policy was adopted that determines total funding policy contributions based on the Plan's Normal Cost adjusted by an amortization of any surplus or underfunding. The funding policy was last amended in September 2015, effective with the July 1, 2015 actuarial valuation.

The UCRP funding policy has the following structure and parameters:

1. The funding policy is effective with the July 1, 2008 actuarial valuation and determines total funding policy contributions starting with the Plan Year beginning July 1, 2009.
2. Each year the funding policy contributions would be effective for the Plan Year starting one year after the date of the actuarial valuation.
3. Each year the Regents will determine the actual total contributions and the split between Member Contributions and University Contributions based on the total funding policy contributions and various other factors, including the availability of funds, the impact of employee contributions on the competitiveness of UC's total remuneration package, and collective bargaining. In no event shall the University Contributions be lower than the Member Contributions.
4. The funding policy determines total funding policy contribution rates based on an actuarial valuation of the non-laboratory segment of UCRP (i.e., campuses, medical centers and UC College of the Law, San Francisco). The Lawrence Berkeley National Laboratory contributes accordingly to the funding policy outlined in the terms of the University's contract with the Department of Energy. The Lawrence Livermore National Laboratory and Los Alamos National Laboratory Retained Segments in UCRP are subject to the funding policies outlined in the University's contracts with the Department of Energy. Throughout this funding policy, the term "UCRP" refers to the non-laboratory segment of UCRP.
5. The total funding policy contributions to UCRP consists of the Normal Cost plus an amortization charge for any Unfunded Actuarial Accrued Liability (UAAL) or minus an amortization credit for any surplus.
6. The Regents' Consulting Actuary conducts an annual actuarial valuation of UCRP. The Normal Cost and the Actuarial Accrued Liability (AAL) in each actuarial valuation is determined under the Entry Age Actuarial Cost Method, using actuarial assumptions adopted by the Regents.
7. The asset smoothing method used to determine the Actuarial Value of Assets is based on the Market Value of Assets adjusted for "unrecognized returns" in each of the last five years. Unrecognized return is the difference between actual and expected returns on a market value basis and is recognized over a five-year period.
8. As of the original effective date of this policy, any initial surplus as of that date is amortized as a level dollar amount over a period of three years.

a. Any changes in surplus after the effective date due to actuarial gains and losses (including contribution gains and losses) is amortized as a level dollar amount over 15 years.
b. Any change in surplus due to a change in actuarial assumptions, cost method or asset smoothing method is amortized as a level dollar amount over 15 years.
c. Any change in surplus due to a Plan amendment is amortized as a level dollar amount over 15 years.
d. In the first year after the effective date when UCRP has a UAAL all amortization bases are considered fully amortized and contributions would be determined under the remaining provisions of this policy.

9. For any year when UCRP has a UAAL, the calculation of the UAAL would be maintained by source (as listed below) and each new portion of or change in UAAL is amortized as a level dollar amount over a fixed amortization period. For any UAAL identified prior to the July 1, 2015 actuarial valuation, the following applies:
   a. Any initial UAAL (after a period of surplus) or change in UAAL due to actuarial gains and losses (including contribution gains and losses) is amortized over 30 years.
   b. Any change in UAAL due to a change in actuarial assumptions, cost method or asset smoothing method is amortized over 15 years.
   c. Any change in UAAL due to a Plan amendment is amortized over 15 years, unless a shorter period is adopted by the Regents reflecting the nature of the Plan amendment.
10. For any UAAL identified beginning with the July 1, 2015 actuarial valuation (including the 2014-15 actuarial gain or loss), the following applies:
   a. Any initial UAAL (after a period of surplus) or change in UAAL due to actuarial gains and losses (including contribution gains and losses) is amortized over 20 years.
   b. Any change in UAAL due to a change in actuarial assumptions, cost method or asset smoothing method is amortized over 20 years.
   c. Any change in UAAL due to a Plan amendment affecting active members is amortized over 15 years.
   d. Any change in UAAL due to a Plan amendment affecting non-active members is amortized over 10 years.
11. For any year in which UCRP has a surplus, such surplus would be amortized as a level dollar amount over 30 years, and all prior UAAL amortization bases would be considered fully amortized.
12. Effective July 1, 2010, all UAAL amortization bases as of July 1, 2010 were combined and the combined base is amortized as a level dollar amount over 30 years.
13. This funding policy supersedes any previous funding policies.

Appendix A: Projections for Non-Laboratory Segment of UCRP

This appendix includes 20-year projections for the non-laboratory segment (i.e., campus and medical center segment) of UCRP under various scenarios. The results shown include projected employer contribution rates, actuarial accrued liability (AAL), actuarial value of assets (AVA) and funded ratios. A description of the actuarial assumptions and methods used in the projections is included at the end of this appendix.

Under each scenario we illustrate the impact of making the "approved contributions" versus the "total funding policy contributions".

The "approved contribution" illustration reflects the current contribution schedule that has been adopted by the Regents. Those contributions are listed below and do not include any future transfers from STIP (or other sources) other than those explicitly stated:

- Employer contribution rate equal to 14.0% of covered compensation
  - Increases to 15.0% on July 1, 2024, and further increases by 0.5% per year on each future July 1 to a maximum of 17.0%
- STIP transfer of $500 million for 2023-2024
- UAAL Surcharge contribution rate equal to 6.0% of compensation (up to the IRC Section 401(a)(17) limit)
  - Increases to 7.0% on July 1, 2024, and further increases by 0.5% per year on each future July 1 to a maximum of 9.0%
  - UAAL Surcharge is paid on behalf of employees that elect Savings Choice and goes towards paying down UCRP's UAAL
- Member contributions
  - Member contribution rates vary by tier and are about 8% on average
  - Member contributions are reflected in the projections but are not displayed in the projected UCRP employer contribution graphs

The "total funding policy contribution" illustration assumes that in addition to the above approved contributions, additional contributions (e.g., transfers from STIP or other sources) will be made so that the total funding policy contribution is met each year.

In general, funding for the laboratory segments of UCRP is governed by provisions of the contracts between UC and the DOE. Various funding projections for those segments are provided at least semi-annually to the DOE under separate cover.

Scenario #1: Market value return of 6.75% per year beginning July 1, 2023

The first (baseline) scenario shows results based on a 6.75% market value return per year beginning July 1, 2023.

Projected UCRP Contributions

The first graph shows the total funding policy contribution, which is the total of each bar and consists of the annual normal cost plus an amount to amortize the UAAL. The normal cost is shown as the black line going across the bars. The portion of the total funding policy contribution above that line represents the UAAL payment under the funding policy. That UAAL amortization payment includes both interest on the UAAL and a payment to reduce the outstanding balance of the UAAL. The dotted black line represents the normal cost plus interest on the UAAL component (sometimes called the modified actuarially determined contribution or modified ADC); if actual contributions are less than this amount, the UAAL will continue to increase.

The green bars are the projected member contributions, which are about 8% of payroll on average. The blue bars are the approved employer contributions, currently at 14% of payroll and increasing as noted on the prior page. The tan bars represent the transfers from STIP that have been approved through Plan Year 2023-24. The small orange bars are the approved UAAL surcharge that is contributed by the University for participants in Savings Choice.

The difference between the total funding policy contribution (total of each bar) and the approved contributions is the funding shortfall, which is represented by the red bars and is shown as both a dollar amount and as a percentage of compensation.

- The funding shortfall is currently $1.1 billion for the Plan Year 2023-2024:
  - The annual funding shortfall is expected to increase to $1.76 billion for the Plan Year 2032-2033 under the current schedule of approved contributions.
- During the ten-year projection period, approved contributions do not meet the normal cost plus interest on the UAAL, and therefore the UAAL is expected to increase over this period.

Projected UCRP Employer Contributions

The second graph shows a comparison of various employer contribution rates. The red line is the approved employer contributions. As noted above, they include the STIP transfers and borrowing through 2023-2024, as well as the UAAL Surcharge for years in which the non-laboratory segment of UCRP is projected to be less than 100% funded.

The blue line is the employer portion of the total funding policy contribution rate assuming that the total funding policy contribution is made each year. This rate declines for various reasons including lower UAAL amortization rates when the level dollar payments are

expressed as a percentage of an increasing amount of compensation, lower dollar payments as UAAL amortization layers are paid off, and the lower normal cost for future hires under the 2016 Tier.

The green line is the employer portion of the total funding policy contribution rate assuming that only the approved contributions are made. The shortfall between the approved and total funding policy contributions is represented by the gray area in the graph. These shortfalls are recognized as actuarial losses under UCRP's funding policy and amortized over 20 years. Over time these losses lead to higher total funding policy contribution rates (green line) and increased contribution shortfalls represented by the orange area.

- The total funding policy contribution rate under the approved contribution illustration (green line) increases over the period due to the shortfalls between this rate and the approved employer contributions (red line).
  - By the end of the projection period, the total funding policy contribution is about 15% of compensation higher under the approved contribution illustration than the total funding policy contribution illustration (i.e., the difference between the green line and the blue line).

Projected UCRP Funded Status

The third graph that follows shows the projected AAL, AVA and funded ratio under the approved contribution illustration. Additionally, the projected funding ratio under the total funding policy contribution illustration has been included for comparison and is represented by the dashed black line.

- Under the approved contribution illustration:
  - The funded ratio decreases from 2023 to 2026 and then begins to increase gradually and is about 88.8% by 2042[1].
  - The AVA increases at a slower pace than the AAL which results in an increase in the UAAL from about $19.4 billion in 2023 to about $24.7 billion in 2042, despite there being an increase in the funded ratio over this same period.
- Under the total funding policy contribution illustration:
  - The funded ratio increases faster due to the higher contributions being made and reaches 100% by 2041.
  - UCRP is projected to be in an overfunded position of $1.4 billion by 2042.

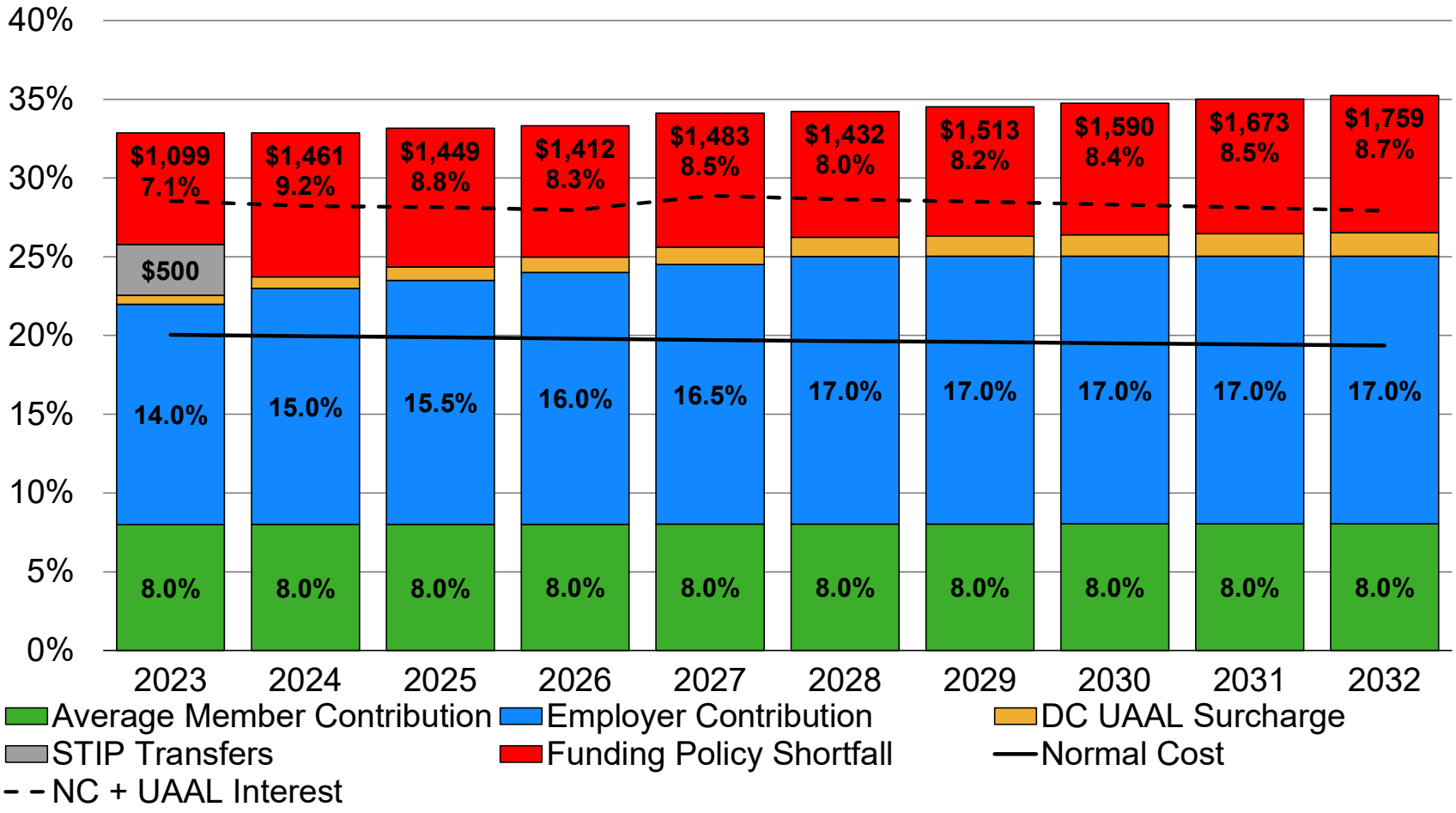
Our longer-term projections indicate that the current assets combined with projected future approved contributions and investment earnings are expected to be sufficient to pay all future expected benefits for all plan member (both current and future).

[1] The funded ratio is projected to reach 100% by 2056 under the approved contribution illustration.

Appendix A: Projections for Non-Laboratory Segment of UCRP

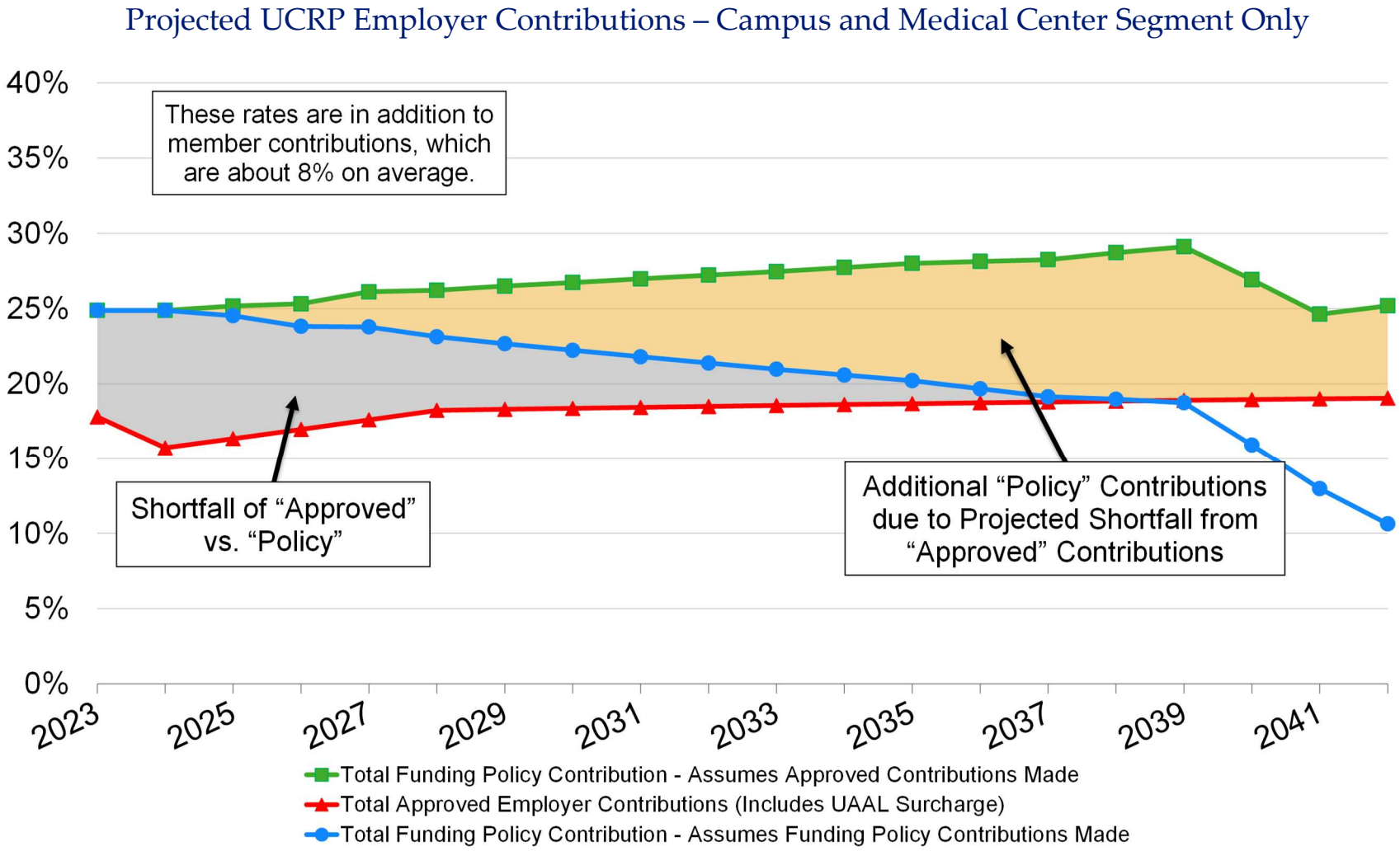
Scenario #1: Market value return of 6.75% per year beginning July 1, 2023

Projected UCRP Contributions – Campus and Medical Center Segment Only ($ in millions)



Appendix A: Projections for Non-Laboratory Segment of UCRP

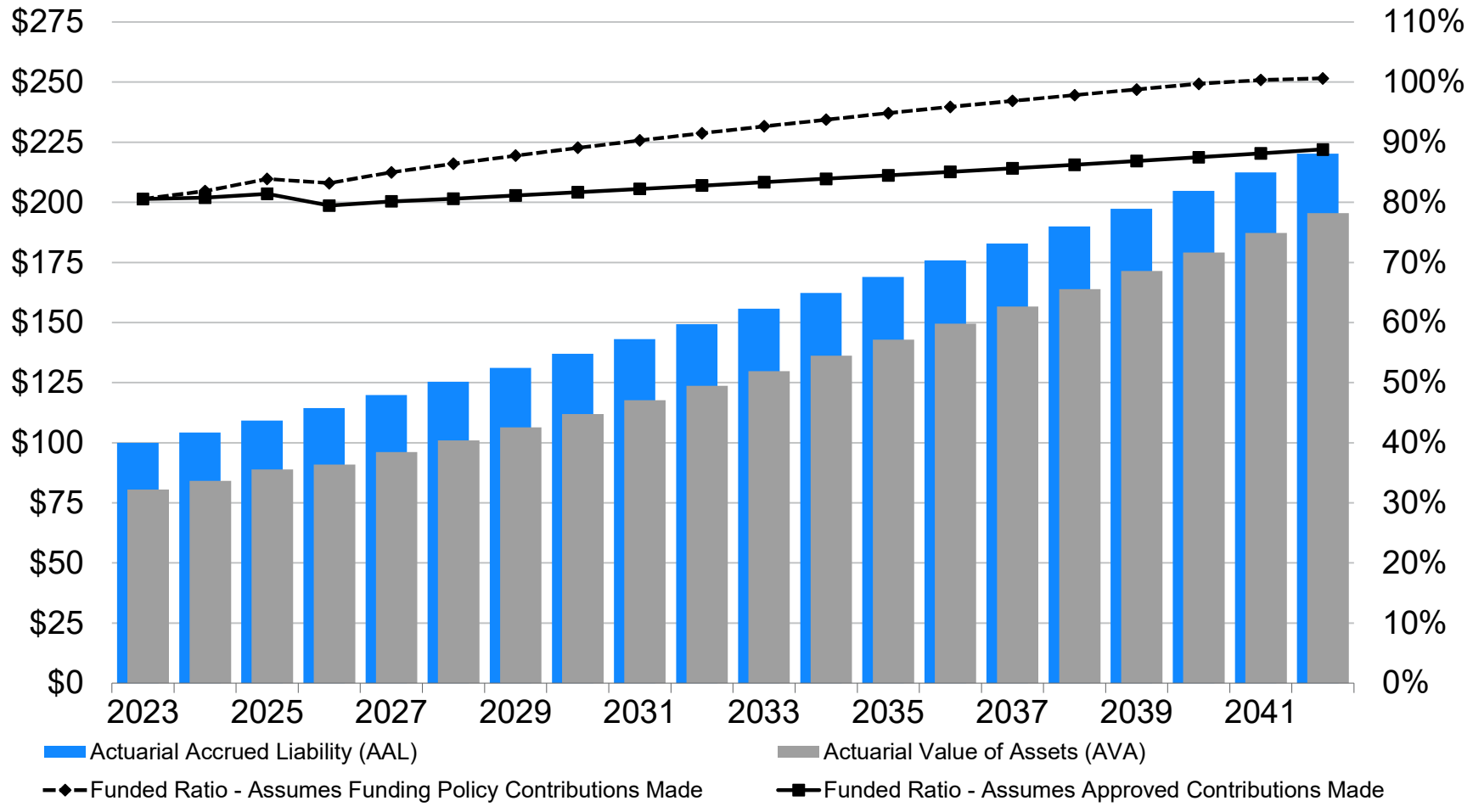
Scenario #1: Market value return of 6.75% per year beginning July 1, 2023



Appendix A: Projections for Non-Laboratory Segment of UCRP

Scenario #1: Market value return of 6.75% per year beginning July 1, 2023

Projected UCRP Funded Status – Campus and Medical Center Segment Only ($ in billions)



Scenario #2: Market value return of 0.00% during 2023-2024

The second scenario is the same as the first, except that we assume a 0% market value return during 2023-2024. Market value returns of 6.75% per year are assumed thereafter. This projection illustrates the impact of one year of low investment returns.

Projected UCRP Contributions

- The annual funding shortfall is expected to increase to $2.6 billion for the Plan Year 2032-3033.
  - This represents an increase of $0.8 billion compared to the projected funding shortfall of $1.8 billion in Scenario #1
  - The cumulative funding shortfall (total during the 10-year projection period without considering the time value of money) is $4.2 billion higher than in Scenario #1.
- Similar to Scenario #1, the approved contributions do not meet the normal cost plus interest on the UAAL during the ten-year projection period.

Projected UCRP Employer Contributions

- The total funding policy contribution rate under the approved contribution illustration (green line) shows an increase over the period due to the 2023-2024 investment loss and by 2042 is about 8% of compensation higher than in Scenario #1.

Projected UCRP Funded Status

- Under the approved contribution illustration:
  - The funded ratio decreases from 2023 to 2028 and then begins to slowly increase from 75.2% in 2028 to 81.1% in 2042[1].
    - This represents a decrease in the funded ratio of about 8% compared to the funded ratio in 2042 under Scenario #1.
  - The UAAL increases from $19.4 billion in 2023 to about $41.7 billion in 2042.
    - This represents an increase in the UAAL of $17 billion compared to the UAAL in 2042 under Scenario #1.
- Under the total funding policy contribution illustration:
  - The funded ratio is expected to reach 100% in 2043.
    - This is two years later than under Scenario #1.

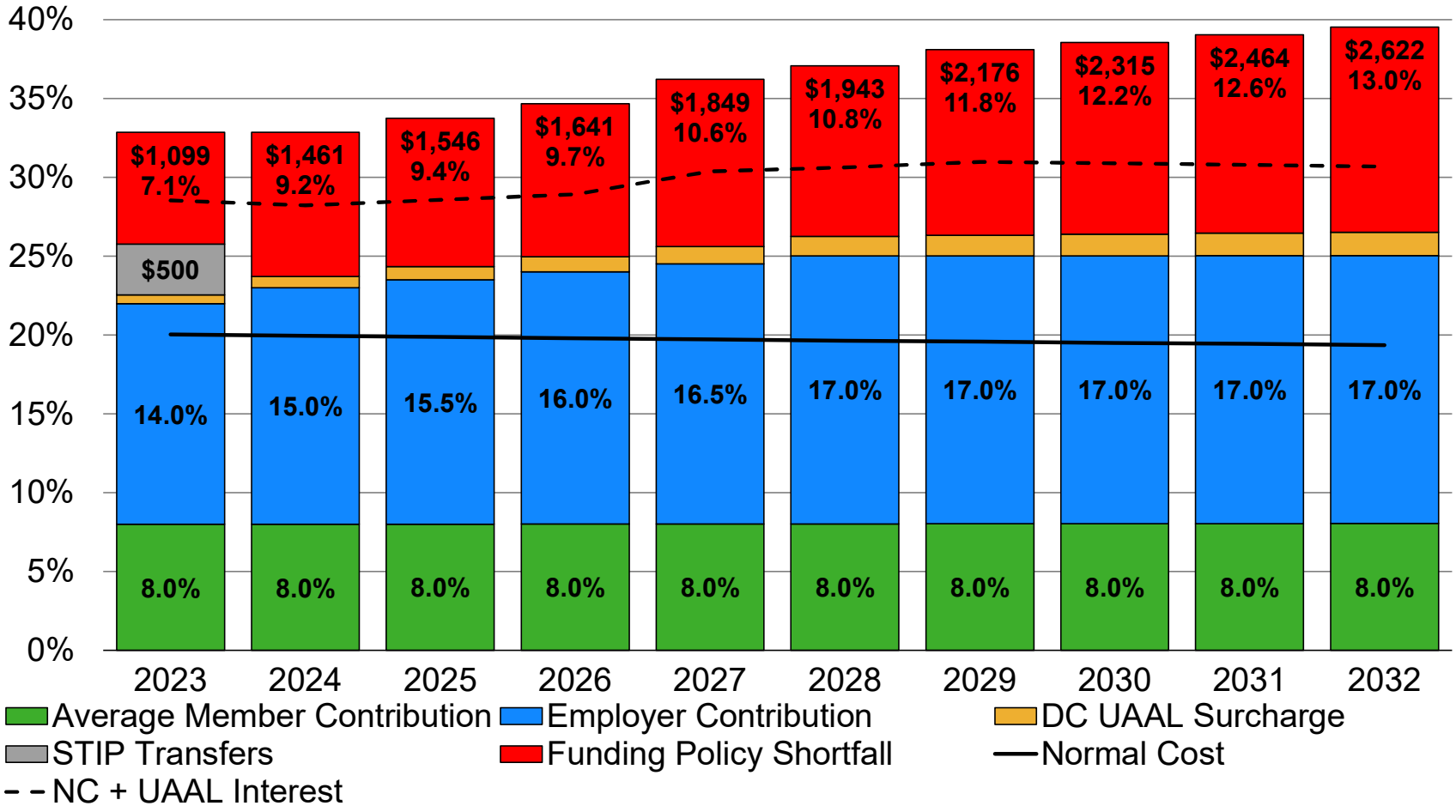
Our longer-term projections indicate that, under Scenario #2, the current assets combined with projected future approved contributions and investment earnings are expected to be sufficient to pay all future expected benefits for all plan member (both current and future).

[1] The funded ratio is projected to reach 100% by 2070 under the approved contribution illustration.

Appendix A: Projections for Non-Laboratory Segment of UCRP

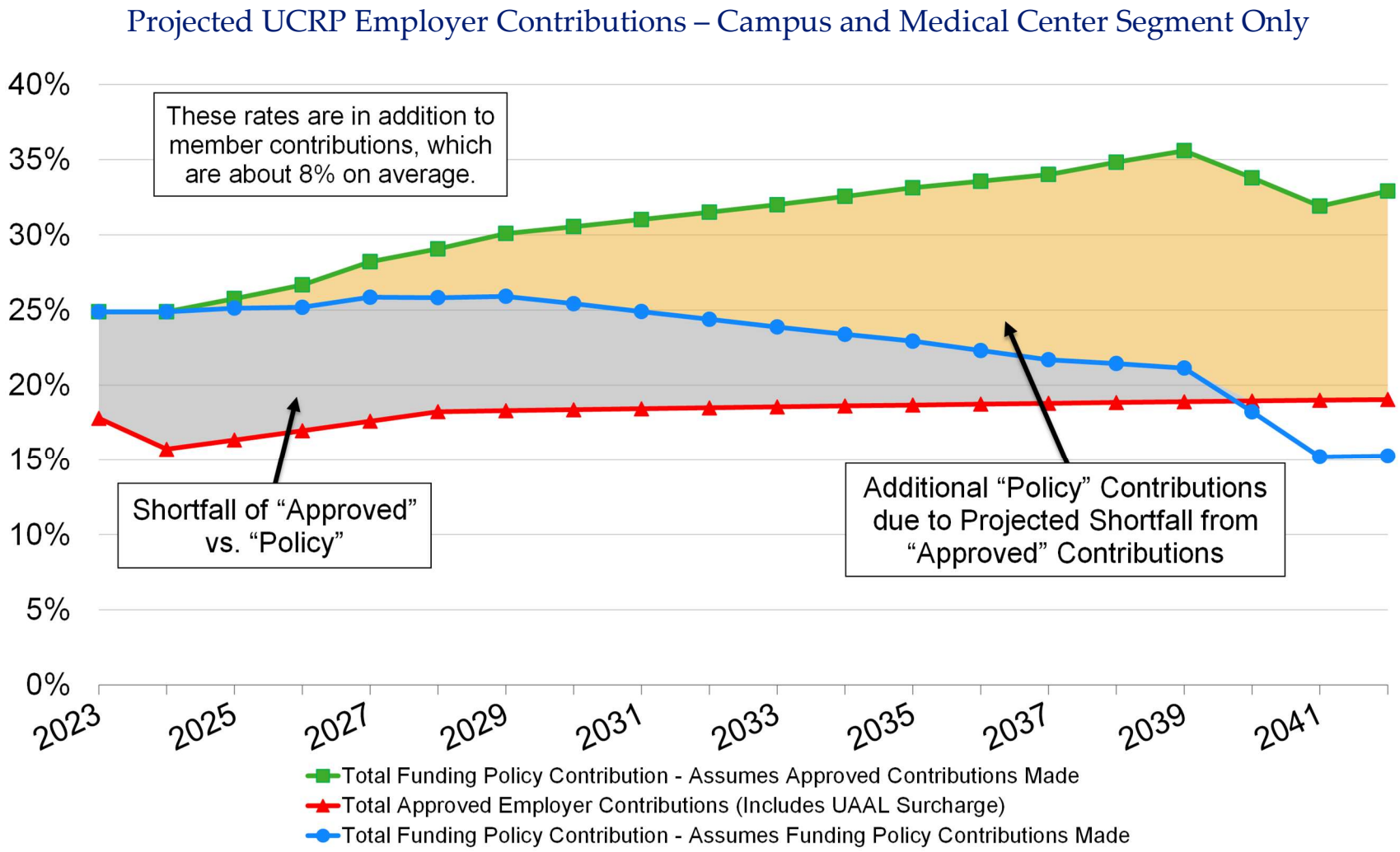
Scenario #2: Market value return of 0.00% during 2023-2024

Projected UCRP Contributions – Campus and Medical Center Segment Only ($ in millions)



Appendix A: Projections for Non-Laboratory Segment of UCRP

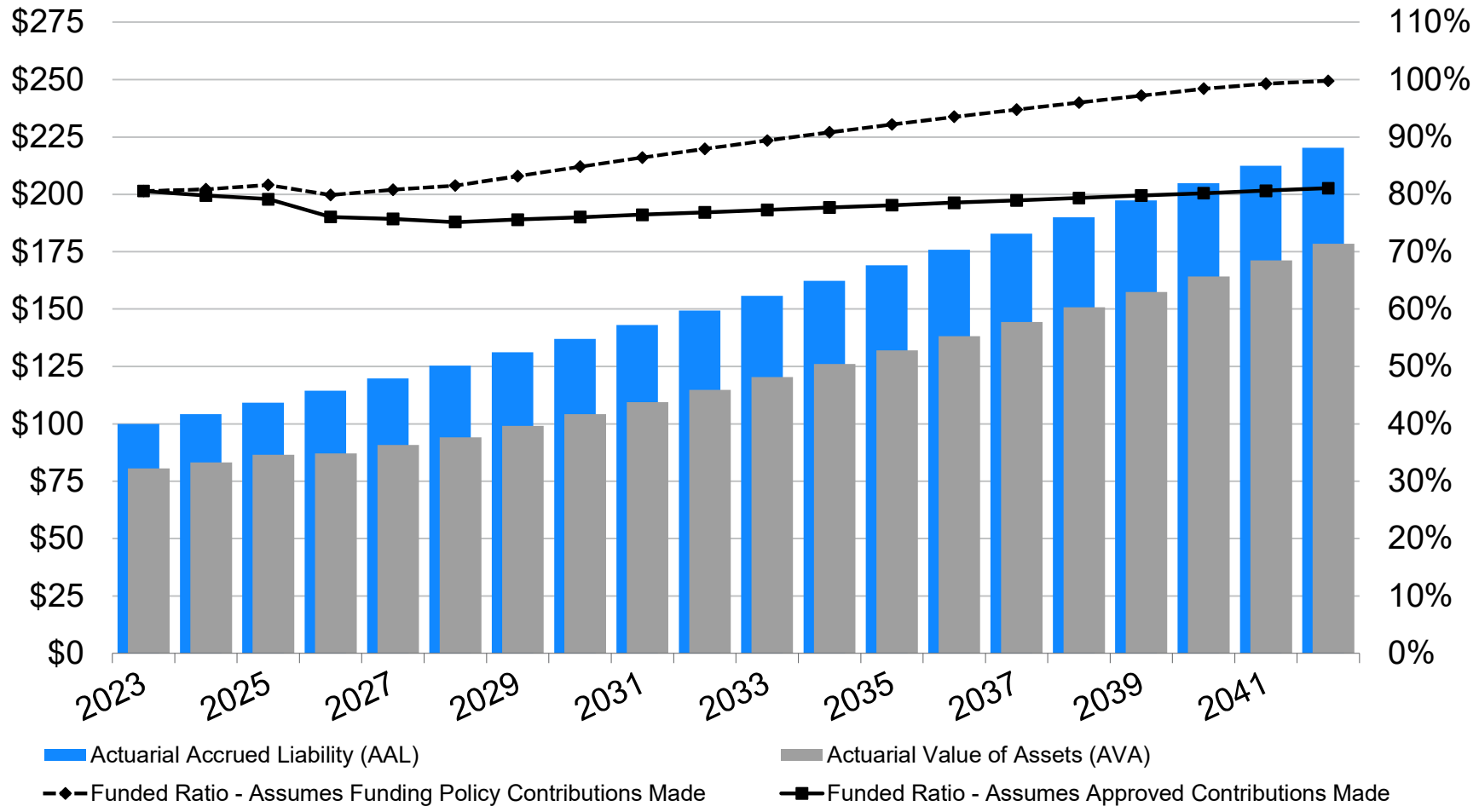
Scenario #2: Market value return of 0.00% during 2023-2024



Appendix A: Projections for Non-Laboratory Segment of UCRP

Scenario #2: Market value return of 0.00% during 2023-2024

Projected UCRP Funded Status – Campus and Medical Center Segment Only ($ in billions)



Scenario #3: Four years of increased salary growth

The third scenario is the same as the first, except that we assume four years of salary growth increased by 0.50% per year, for a total salary growth assumption of 3.75%. This projection illustrates the impact of higher salary increases.

Projected UCRP Contributions

- The annual funding shortfall is expected to increase to $1.84 billion for the Plan Year 2032-3033
  - This represents an increase of $80 million compared to the projected funding shortfall of $1.76 billion in Scenario #1.
  - The cumulative funding shortfall (total during the 10-year projection period without considering the time value of money) is $0.5 billion higher than in Scenario #1.
- Similar to Scenario #1, the approved contributions do not meet the normal cost plus interest on the UAAL during the ten-year projection period.

Projected UCRP Employer Contributions

- The total funding policy contribution rate under the approved contribution illustration (green line) shows an increase over the period and by 2042 is about 0.5% of compensation higher than in Scenario #1.

Projected UCRP Funded Status

- Under the approved contribution illustration:
  - The funded ratio decreases from 2023 to 2026 and then begins to slowly increase from 79.0% in 2026 to 88.2% in 2042[1].
    - This represents a decrease in the funded ratio of 0.6% compared to the funded ratio in 2042 under Scenario #1.
  - The UAAL increases from $19.4 billion in 2023 to about $26.3 billion in 2042.
    - This represents an increase in the UAAL of $1.6 billion compared to the UAAL in 2042 under Scenario #1.
- Under the total funding policy contribution illustration:
  - The funded ratio is expected to reach 100% in 2041.
    - This is the same year as projected under Scenario #1.

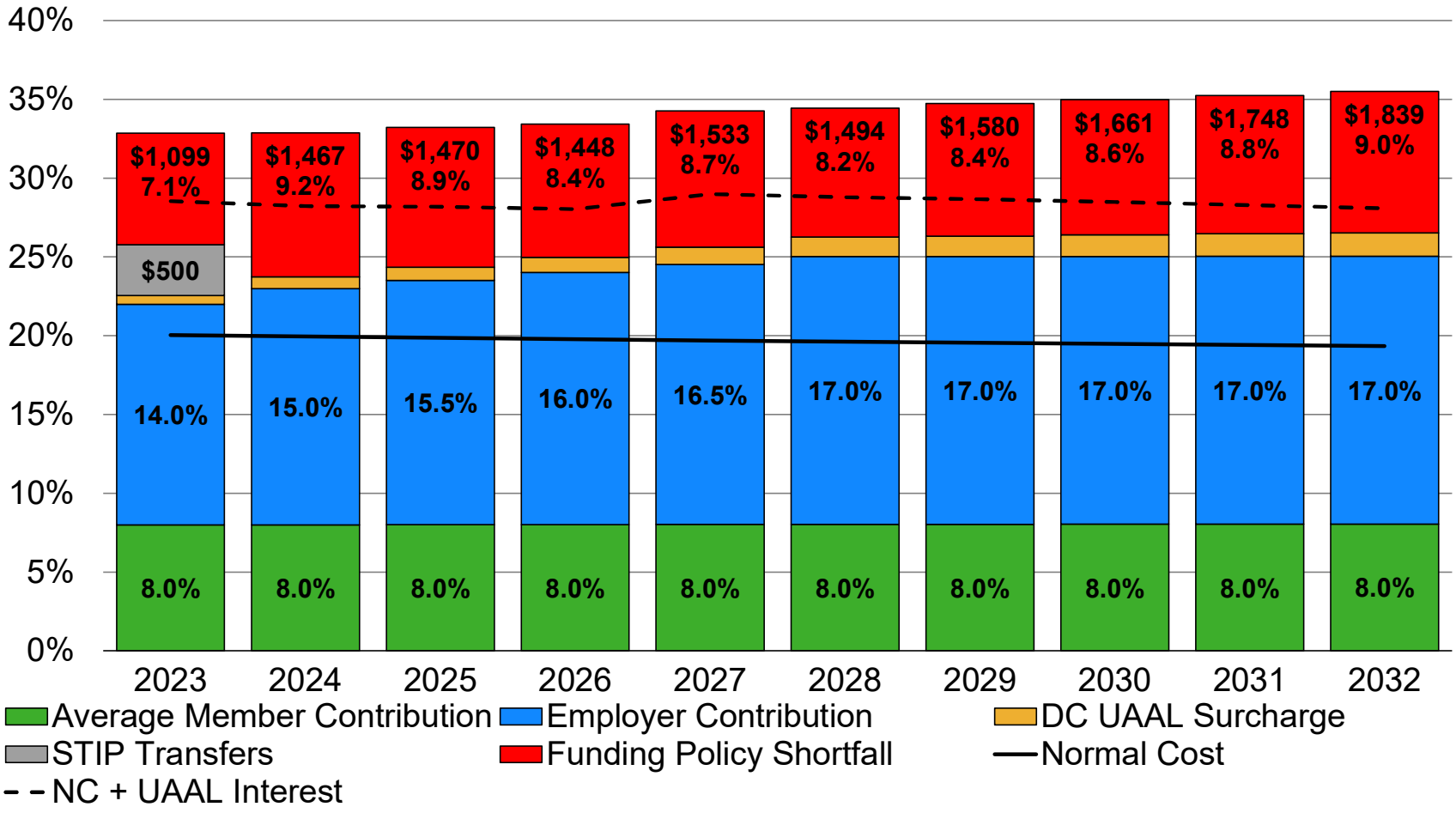
Our longer-term projections indicate that, under Scenario #3, the current assets combined with projected future approved contributions and investment earnings are expected to be sufficient to pay all future expected benefits for all plan member (both current and future).

[1] The funded ratio is projected to reach 100% by 2057 under the approved contribution illustration.

Appendix A: Projections for Non-Laboratory Segment of UCRP

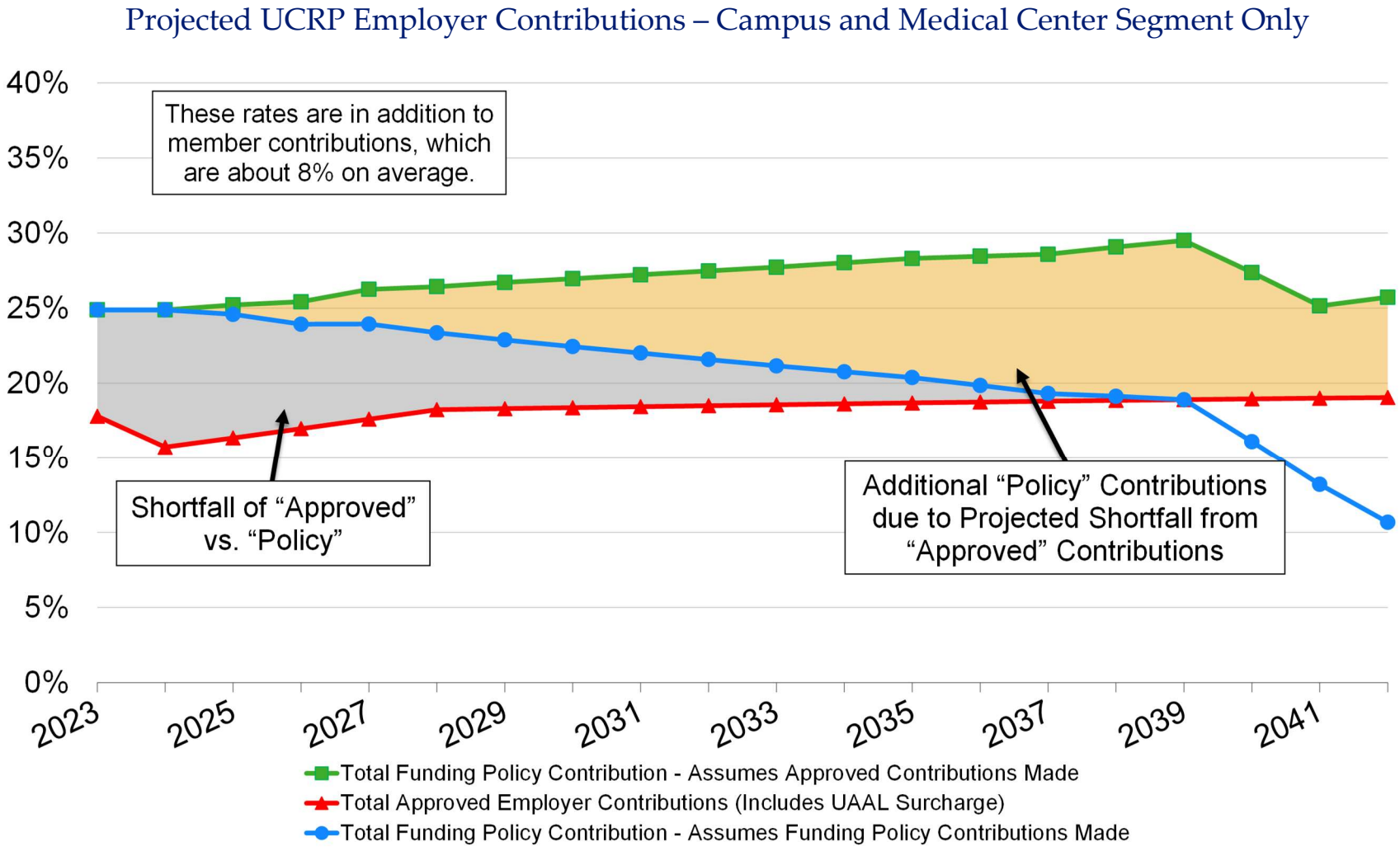
Scenario #3: Four years of increased salary growth

Projected UCRP Contributions – Campus and Medical Center Segment Only ($ in millions)



Appendix A: Projections for Non-Laboratory Segment of UCRP

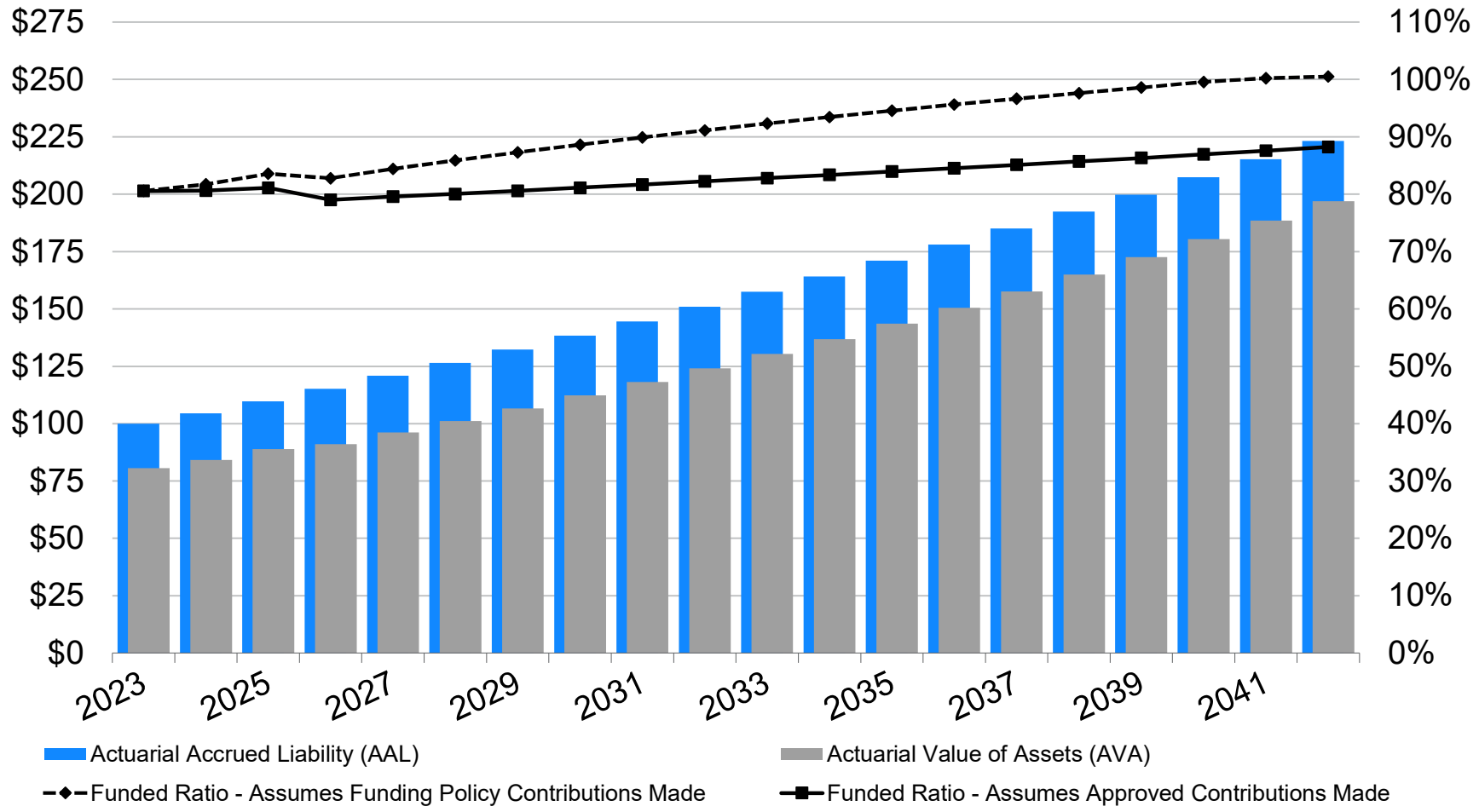
Scenario #3: Four years of increased salary growth



Appendix A: Projections for Non-Laboratory Segment of UCRP

Scenario #3: Four years of increased salary growth

Projected UCRP Funded Ratio – Campus and Medical Center Segment Only ($ in billions)



Actuarial assumptions and methods used in projections

The projections shown in *Appendix A* were made using generally accepted actuarial practices and are based on the July 1, 2023 actuarial valuation results. This includes the participant data, actuarial assumptions and plan provisions on which that valuation was based. We have used a forecast model that includes new hires and calculates normal costs, AAL and other results consistent with the UCRP actuarial valuation throughout the 20 year projection period, as if all the actuarial assumptions have been met. Here are some of the important assumptions used:

- Includes non-laboratory segment (i.e., campus and medical centers segment) only.
- For Scenario #1 and #3, assumes market value returns of 6.75% per year beginning July 1, 2023. Scenario #2 assumes a 0% market value return during 2023-2024 and returns of 6.75% per year thereafter.
- Reflects choice of either the UCRP 2016 Tier ("Pension Choice") or the defined contribution plan ("Savings Choice") for all new hires on or after July 1, 2023, with the exception of new hires under CNA, AFSCME, and UPTE who enter the Modified 2013 Tier. The UAAL Surcharge for employees that elect Savings Choice goes towards paying down UCRP's UAAL.
  - Reflects an election rate of 35% Savings Choice and 65% Pension Choice is assumed for new hires on or after July 1, 2023, with the exception of new hires under CNA, AFSCME, and UPTE who enter the Modified 2013 Tier. All scenarios include a cost of initial and second choice of 0.6% of total new hire compensation added to UCRP's normal cost for new hires.
- Assumes a 0.7% per year growth in the total (UCRP and Savings Choice) active member population. This means that members that leave active employment are assumed to be replaced with an amount of new hires such that the active member population increases by 0.7% per year throughout the projection.
- Employer contribution rate to UCRP is equal to 14.0% of compensation for one year, then the rate increases to 15.0% on July 1, 2024 and increases by 0.5% per year on each July 1 to a maximum of 17% of compensation. The UAAL Surcharge is equal to 6.0% of compensation for one year, then the rate increases to 7.0% on July 1, 2024 and increases by 0.5% per year on each July 1 to a maximum of 9% of compensation.
- Approved transfer from STIP of $500 million for 2023-2024 is reflected in all scenarios.
- Total of employer and member contribution rates may exceed the total funding policy contribution rate for any year in which the non-laboratory segment is projected to be less than 100% funded.
- The employer contribution rate can be no less than the member contribution rate.
- Demographics for future new entrants are assumed to be the same as those for members hired during the two years prior to July 1, 2023.

Appendix A: Projections for Non-Laboratory Segment of UCRP

Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as illustrations of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

Appendix B – Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Pension Term	Definition
Actuarial accrued liability for actives	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial accrued liability for retirees and beneficiaries	Actuarial present value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial cost method	A procedure allocating the actuarial present value of future benefits to various time periods; a method used to determine the normal cost and the actuarial accrued liability that are used to determine the actuarially determined contribution.
Actuarial gain or loss	A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates. To the extent that actual experience differs from that assumed, actuarial accrued liabilities emerge which may be the same as forecasted or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially equivalent	Of equal actuarial present value, determined as of a given date and based on a given set of actuarial assumptions.
Actuarial present value	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions. Each such amount or series of amounts is: • Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) • Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and • Discounted according to an assumed rate (or rates) of return to reflect the time value of money.
Actuarial present value of future benefits	The actuarial present value of benefit amounts expected to be paid at various future times under a particular set of actuarial assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The actuarial present value of future benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Appendix B: Definition of Pension Terms

Pension Term	Definition
Actuarial valuation	The determination, as of a valuation date, of the normal cost, actuarial accrued liability, actuarial value of assets, and related actuarial present values for a plan, as well as actuarially determined contributions.
Actuarial value of assets	The value of the Plan's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially determined contribution.
Actuarially determined	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Plan.
Actuarially determined contribution or Total Funding Policy Contribution	The employer's contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The actuarially determined contribution consists of the employer normal cost and the amortization payment.
Amortization method	A method for determining the amortization payment. The most common methods used are level dollar and level percentage of payroll. Under the level dollar method, the amortization payment is one of a stream of payments, all equal, whose actuarial present value is equal to the unfunded actuarial accrued liability. Under the level percentage of pay method, the amortization payment is one of a stream of increasing payments, whose actuarial present value is equal to the unfunded actuarial accrued liability. Under the level percentage of pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization payment	The portion of the pension plan contribution, or actuarially determined contribution, that is intended to pay off the unfunded actuarial accrued liability.
Assumptions or actuarial assumptions	The estimates upon which the cost of the Plan is calculated, including: • Investment return – the rate of investment yield that the Plan will earn over the long-term future; • Mortality rates – the rate or probability of death at a given age for employees and retirees; • Retirement rates – the rate or probability of retirement at a given age or service; • Disability rates – the rate or probability of disability retirement at a given age; • Termination rates – the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; • Salary increase rates – the rates of salary increase due to inflation, real wage growth and merit and promotion increases.
Closed amortization period	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements	Those causes/events due to which a member's status (active, inactive, retiree, beneficiary) changes, that is: death, retirement, disability, or termination.

Appendix B: Definition of Pension Terms

Pension Term	Definition
Defined benefit plan	A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service.
Defined contribution plan	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer normal cost	The portion of the normal cost to be paid by the employer. This is equal to the normal cost less expected member contributions.
Experience study	A periodic review and analysis of the actual experience of the Plan that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary.
Funded ratio	The ratio of the actuarial value of assets to the actuarial accrued liability. Plans sometimes also calculate a market funded ratio, using the market value of assets, rather than the actuarial value of assets.
GASB 67 and GASB 68	Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
Investment return	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Normal cost	The portion of the actuarial present value of future benefits and expenses, if applicable, allocated to a valuation year by the actuarial cost method. Any payment with respect to an unfunded actuarial accrued liability is not part of the normal cost (see amortization payment). For pension plan benefits that are provided in part by employee contributions, normal cost refers to the total of member contributions and employer normal cost unless otherwise specifically stated.
Open amortization period	An open amortization period is one which is used to determine the amortization payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the amortization period.
Unfunded actuarial accrued liability	The excess of the actuarial accrued liability over the actuarial value of assets. This value may be negative, in which case it may be expressed as a negative unfunded actuarial accrued liability, also called the funding surplus or an overfunded actuarial accrued liability.
Valuation date or actuarial valuation date	The date as of which the value of assets is determined and as of which the actuarial present value of future benefits is determined. The expected benefits to be paid in the future are discounted to this date.

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