Los Angeles City Employees' Retirement System

Risk Assessment

Based on the Actuarial Valuation and Review of the Retirement and Health Plans as of June 30, 2024

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March 11, 2025

Board of Administration
Los Angeles City Employees' Retirement System
977 N. Broadway
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Dear Board Members:

We are pleased to submit this Risk Assessment based on the Actuarial Valuation and Review of the Retirement and Health Plans for the Los Angeles City Employees' Retirement System ("LACERS" or "the System") as of June 30, 2024.

This risk report has been prepared at the request of the Board of Administration to assist in administering the Plans. It includes discussion of the key risks that may have an ongoing influence on the Plans' financial health, as well as various projections of future results under different investment return scenarios together with the assumptions adopted for the June 30, 2024 valuations.

The actuarial calculations in this report were completed under the supervision of Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary and Mehdi Riazi, FSA, MAAA, FCA, Enrolled Actuary.

The actuarial opinions expressed in this report were prepared by Todd Tauzer, FSA, MAAA, FCA, CERA, Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary and Emily Klare, ASA, MAAA and 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.

Sincerely,

Todd Tauzer, FSA, MAAA, FCA, CERA
Senior Vice President and Actuary

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

Emily Klare, ASA, MAAA, EA
Senior Actuary

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Section 1: Introduction and Executive Summary

Introduction

The purpose of this report is to assist the Board of Administration, participating employers and members and other stakeholders to better understand and assess the risk profile of the System, as well as the particular risks inherent in using a fixed set of actuarial assumptions in preparing the results in our June 30, 2024 funding valuations for LACERS.

The results included in our June 30, 2024 funding valuation reports for the Retirement and Health Plans ("the Plans") were prepared based on a specific set of economic and non-economic actuarial assumptions under the premise that future experience of LACERS would be consistent with those assumptions. While those assumptions are generally reviewed every three years (with the assumptions from the last triennial experience study adopted by the Board of Administration for use starting with the June 30, 2023 valuations), there is a risk that emerging results may differ significantly as actual experience is fluid and will not completely track current assumptions.

It is important to note that this risk assessment is based on plan assets as of June 30, 2024. The System'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. While it is impossible to determine the market conditions and other demographic experience of the plan in future valuations, the single year investment return scenario test included within this report provides an illustration of the impact of short-term market fluctuations on the plan. Besides the stochastic projections included in this report, Segal is available to prepare other projections of selected potential outcome scenarios upon request.

The Health Plan has remained fully funded since June 30, 2023. Also, the projections provided in this report reveal a possibility that the Retirement Plan could become 100% funded in slightly over 15 years under the deterministic projections and slightly under 15 years under the stochastic projections (when the margin built into the 7% investment return assumptions is taken into consideration). As favorable investment and/or other actuarial experience might cause the Retirement Plan to become fully funded sooner, in order to aid in the preparation of such a strong funding state, we have included a discussion on **surplus management considerations** in this report so that the Board could begin to have discussions in the next few years on how to preserve its 100% funded status once it becomes fully funded. These considerations also have value for the ongoing management of the Health Plan.

Actuarial standard of practice on risk assessment

The Actuarial Standards Board approved the Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment when performing a funding valuation and it was effective with LACERS' June 30, 2019 actuarial valuation for benefits provided by the

Retirement Plan.[1] 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 that are particularly relevant to LACERS are asset/liability mismatch risk, investment risk, and longevity and other demographic risks. ASOP 51 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 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 initial assessment can be strictly a qualitative discussion about potential adverse experience and the possible effect on future results, but it may also include quantitative numerical demonstrations where informative. The actuary is also encouraged to consider a recommendation as to whether a more detailed risk assessment would be significantly beneficial for the intended user to examine particular financial risks. When making that recommendation, the actuary will consider such factors as the plan's design, risk profile, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions. This report incorporates a more detailed risk assessment as agreed upon with LACERS.

Plan risk assessment

In *Section 2*, we start by discussing some of the historical factors that have caused changes in LACERS' funded status and employer contribution rates. It is important to understand how the combination of decisions and experience has led to the current financial status of the plan.

We follow this with a discussion of the most significant risk factors going forward. Based on our discussions with LACERS, we have provided a more detailed risk assessment that illustrates the impact on the funded status and employer contribution rates using relevant economic scenario tests. These tests illustrate the effect of future investment returns on the System's portfolio coming in differently from the current 7.00% annual investment return assumption used in the June 30, 2024 valuations. We have also included a projection of future results based on stochastic modeling of future investment returns for 2024/2025 and thereafter. The stochastic modeling is useful for assessing the distribution of future results based on random variations in actual investment returns each year and introduces a relative likelihood to the range of potential outcomes.

ASOP 51 also requires disclosure of plan maturity measures and other historical information that are significant to understanding the risks associated with the Retirement and Health Plans and this information is included at the end of *Section 2*.

[1] ASOP 51 does not apply to actuaries performing services related to other post-employment benefits; however, as the same kind of information is useful for the administration of the Health Plan, after discussions with LACERS the System has requested Segal to include information on the Health Plan in this risk report.

Executive summary

Historical funded status and employer contribution rates

The following table provides a summary of financial changes to the Retirement and Health Plans combined over the last 10 valuations. In the June 30, 2015 through June 30, 2024 valuations, the unfunded actuarial accrued liability (UAAL) increased primarily as a result of the strengthening of the actuarial assumptions used in preparing the valuations ($1.5 billion net increase), partially offset by the favorable non-investment experience ($0.5 billion net decrease) as well as favorable investment experience ($0.3 billion net decrease). The contribution rates increased due to similar experience. More details on the impact of actuarial assumption changes on the UAAL and the total aggregate employer contribution rate can be found on pages 14-15 and 22-23, respectively.

Valuation Date	Funded Status Market Value Basis	UAAL Market Value Basis	Funded Status Actuarial Value Basis	UAAL Actuarial Value Basis	Total Aggregate Employer Contribution Rate (% of Payroll)[1]
June 30, 2015	71.9%	$5.5 billion	70.7%	$5.7 billion	27.62%
June 30, 2024	76.3%	$7.1 billion	77.5%	$6.8 billion	31.44%

Future funded status and employer contribution rates

In this report, we highlight key factors besides assumption changes that may affect the financial profile of the Plans going forward. As investment experience in the past 10 years has had a significant impact on the funded status and employer contribution rates, we have also provided deterministic projections (using select scenarios for illustration) under hypothetical favorable and unfavorable future market experience so that the impact of market performance can be better understood. We have also included stochastic projections to assess the projected distribution of future results along with introducing a relative likelihood to the range of those potential outcomes.

Deterministic projections

The total aggregate employer contribution rate for the Retirement and Health Plans is 31.44% of payroll in the June 30, 2024 valuations. Using a deterministic projection, this report shows the effect of unfavorable (0.00%), baseline (7.00%) or favorable (14.00%) hypothetical market returns for 2024/2025 on key valuation results. In particular, the projected changes in the total

[1] Assumes employer contributions received on July 15.

aggregate employer contribution rate (relative to the total aggregate employer contribution rate of 31.44% in the June 30, 2024 valuations) in the June 30, 2025 valuations and in the June 30, 2031 valuations (when all the investment gains or losses are fully recognized at the end of the seven-year asset smoothing period) are shown in the following table. These projections assume no further assumption changes or method changes, and no non-investment experience that differs significantly from the assumptions.

Total Aggregate Employer Contribution Rate Change

Valuation Date	0.00% Return for 2024/2025	7.00% Return for 2024/2025	14.00% Return for 2024/2025
June 30, 2025[1]	+1.1% of payroll	+0.4% of payroll	-0.2% of payroll
June 30, 2031	+8.5% of payroll	+2.7% of payroll	-2.9% of payroll

Under the unfavorable (0.00%), baseline (7.00%), and favorable (14.00%) hypothetical market return scenarios for 2024/2025, the Plans would be expected to reach full funding in 2042, 2041, and 2039, respectively.[2] The total aggregate employer contribution rate would be expected to range from 8.1% to 8.4% of payroll at the end of the 23-year projection period under the three scenarios modeled. That employer contribution rate reflects the employer normal cost, offset by the amortization of any surplus pursuant to the Board's Actuarial Funding Policy when the Plans become fully funded. This shows that the Board's funding policy is very effective in achieving the general policy goal of achieving the long-term full funding of the costs of the benefits paid by LACERS.

Stochastic projections

The stochastic projection models market returns over the next 20 years by using expected return, standard deviation and other information specific to LACERS' asset portfolio. For the stochastic modeling, we have used the breakdown of LACERS' asset portfolio into the different asset classes that we used in developing the 7.00% expected investment return assumption we recommended to the Board for the June 30, 2023 valuations. However, instead of using the expected return from the 2022 capital market assumptions compiled by Horizon Actuarial Services based on their then most recent survey published in August 2022, we have used the 2024 capital market assumptions they published in August 2024. As we pointed out in our triennial experience study recommending the 7.00% investment return assumption, we anticipated increase in the likelihood of achieving the 7.00% investment return assumption when we switch to the 2023 and later capital market assumptions. (We also noted that the increase in the real

[1] Out of the 7% member rate paid by Tier 1 and Tier 1 Enhanced members towards the cost of the Retirement benefit, 1% of that rate will no longer be paid starting July 1, 2026 or until the ERIP Cost Obligation is fully paid, whichever comes first. Consistent with our June 30, 2024 valuation, which established the funding requirements for fiscal year 2025/2026, we have assumed that Tier 1 and Tier 1 Enhanced members will continue paying the 1% rate up until June 30, 2026. The contribution rate changes shown for valuation date June 30, 2025 for the employer include the sunsetting of the 1% ERIP Cost Obligation for the Tier 1 and Tier 1 Enhanced members.

[2] The Plans are projected to reach full funding by 2042 when measured using the combined assets and liabilities of the Retirement and Health Plans. When measured separately, the Retirement Plan is projected to reach full funding in the June 30, 2042, June 30, 2042, and June 30, 2041 valuations under the unfavorable, baseline, and favorable scenarios, respectively, while the Health Plan has already reached full funding as of June 30, 2024.

rates of return provided by the investment consulting firms for 2023 versus 2022 might be "due to the very low returns earned in the 2021-2022 plan year, as well as the increase in the federal funds rate during 2022, and so should be used with caution in selecting a long-term investment return assumption.") The stochastic projections in this report show there is a 50% chance that the employer contribution rates would be between 0%[1] and 44% of payroll at the end of 10 years (with a median rate of 24% of payroll) and between 0%[1] and 26% of payroll at the end of 20 years (with a median rate of 0% of payroll). Furthermore, there is a 43% chance LACERS would be fully funded at the end of 10 years and a 65% chance LACERS would be fully funded at the end of 20 years. The stochastic projections reflects the margin of better than 50% chance of achieving the 7% investment return assumptions in our future valuations. Note that these stochastic projections and the resulting probabilities of contribution rates assume no further surplus management policies are employed. However, as the Retirement Plan nears full funding, Segal would recommend using strategies to stabilize and strengthen the Plan that would likely affect these metrics.

Plan maturity measures

During the past 10 valuations, the Plans have become more mature as evidenced by an increase in the ratio of members in pay status (retirees and beneficiaries) to active members (as shown in *Section 2, Chart 12a* and *Chart 12b* on pages 40 and 41) and by an increase in the ratios of plan assets and liabilities to active member payroll (as shown in *Section 2, Chart 13a* and *Chart 13b* on pages 42 and 43). While there were some reversals observed in the June 30, 2023 and 2024 valuations due to an increase in the number of actives (about a 3.8% increase between the 2022 and 2023 valuations and a 3.5% increase between the 2023 and 2024 valuations, for a total increase of 7.5%) and payroll (about an 11.2% increase between the 2022 and 2023 valuations and an 8.7% increase between the 2023 and 2024 valuations, for a total increase of 20.9%), we expect the trend of increased plan maturity to continue going forward. This is significant for understanding the volatility of both historical and future employer contribution rates because any increase in UAAL due to unfavorable investment and non-investment experience for the relatively larger group of non-active members would have to be amortized and funded over the payroll of the relatively smaller group of active members. Put another way, as a plan grows more mature, its contribution rate becomes more sensitive to investment volatility and liability changes. As the Plans continue to mature with time, their risk profile will continue to evolve in this way and contributions will grow more sensitive to plan experience.

[1] The 0% contribution rate would be attained when the actuarial surplus of the Plans, after it is amortized over 30 years, is sufficient to fully offset the normal cost.

Section 2: Key Plan Risks

Evaluation of historical trends

Funded status and change in unfunded actuarial accrued liabilities

One common measure of LACERS' financial status is the funded ratio. This ratio compares the valuation and market value of assets to the actuarial accrued liabilities (AAL) of LACERS. After accounting for contributions made at the Actuarially Determined Contribution (ADC) amount, the overall funded ratio for LACERS on a valuation basis has increased for both the Retirement Plan and the Health Plan as a result of favorable investment and non-investment experience, offset to some degree by the strengthening of the actuarial assumptions. The UAAL and funded ratios are provided separately for the Retirement and Health Plans for the past 10 valuations from June 30, 2015 to June 30, 2024 measured using both valuation and market value of assets in *Chart 1a* and *Chart 1b*, respectively.

The factors that caused the changes in the UAAL in the past 10 valuations from June 30, 2015 to June 30, 2024 are specified separately for the Retirement and Health Plans, in *Chart 2a* and *Chart 2b*, respectively. The results in *Chart 2a* and *Chart 2b* show that the reductions in the investment return assumption in the June 30, 2017[1] and 2020 valuations, together with the changes in the mortality tables and other assumptions from the triennial experience studies recommending assumptions used in the June 30, 2018[1] and 2020 valuations, have had the most impact on the UAAL for LACERS. In particular, the assumption changes during the last ten valuations have had the following impact on the combined UAAL for the Retirement and Health Plans:

[1] The Board has a practice of reviewing the investment return and other actuarial assumptions at the same time in the triennial experience study. However, the full (economic and demographic) 2017 experience study was delayed one year to 2018 to allow more time for Segal to study and the Board to discuss and approve the assumptions, and a 2017 study of only the economic assumptions was completed as part of the June 30, 2017 valuations.

Section 2: Key Plan Risks

UAAL Impact from Assumption Changes
Retirement and Health Plans Combined

Valuation Date	Total UAAL Change
June 30, 2017	$461.9 million
June 30, 2018	$593.6 million
June 30, 2020	$626.6 million
June 30, 2023	$(170.3) million
Net Change	**$1,511.8 million**

For the Retirement Plan, *Chart 2a* shows unfavorable non-investment experience, which included higher than expected COLAs granted to retirees and beneficiaries, and higher than expected salary increases for continuing actives. For the Health Plan, *Chart 2b* shows favorable non-investment experience, which was mainly due to lower than expected premiums and medical subsidies. The non-investment experience for both plans also included the scheduled 12-month delay in implementing the contribution rates determined in the annual valuation.

Finally, *Charts 2a* and *2b* shows some "negative amortization" due to the initial 30-year amortization of the combined base established June 30, 2012. Current assumptions and amortization policy generally will not entail negative amortization in the future. For the Health Plan, there was some additional "negative amortization" in past years through the operation of the amortization policy. Reductions in UAAL from favorable premium renewal and other experience gains were amortized over 15 years while increases in UAAL from assumption changes were amortized over 20 years. However, as part of the June 30, 2022 valuation, LACERS aligned the amortization periods for the recent experience gains and had them amortized over the same 20-year period used to amortize the total pre-June 30, 2021 bases.

Chart 2c and *Chart 2d* display the aggregate change in unfunded liability by source over the last ten years. In particular, they show the continued effort made by LACERS in strengthening the actuarial assumptions. *Chart 2c* also shows the strength of the System's adopted funding policy working to reduce the unfunded liability consistently each year.

It is important to note that LACERS has taken strides in risk management and resulting long-term plan sustainability. This includes strengthening of assumptions (particularly lowering the expected investment rate of return from 7.50% to 7.00% over the last ten years and adopting amount-weighted generational mortality for the Retirement Plan) and adopting a funding policy that eliminates negative amortization and promotes intergenerational equity. Assumptions will continue to be reviewed in future experience studies to reflect the Plans' experience as well as future expectations. Those changes may result in higher contributions in the short term, but

in the medium to longer term **avoid** both deferring contributions and allowing unmanaged growth in the UAAL. We believe these actions are essential for LACERS' fiscal health going forward.

Chart 1a

Retirement Plan – UAAL ($ in Billions) and Funded Ratio as of June 30

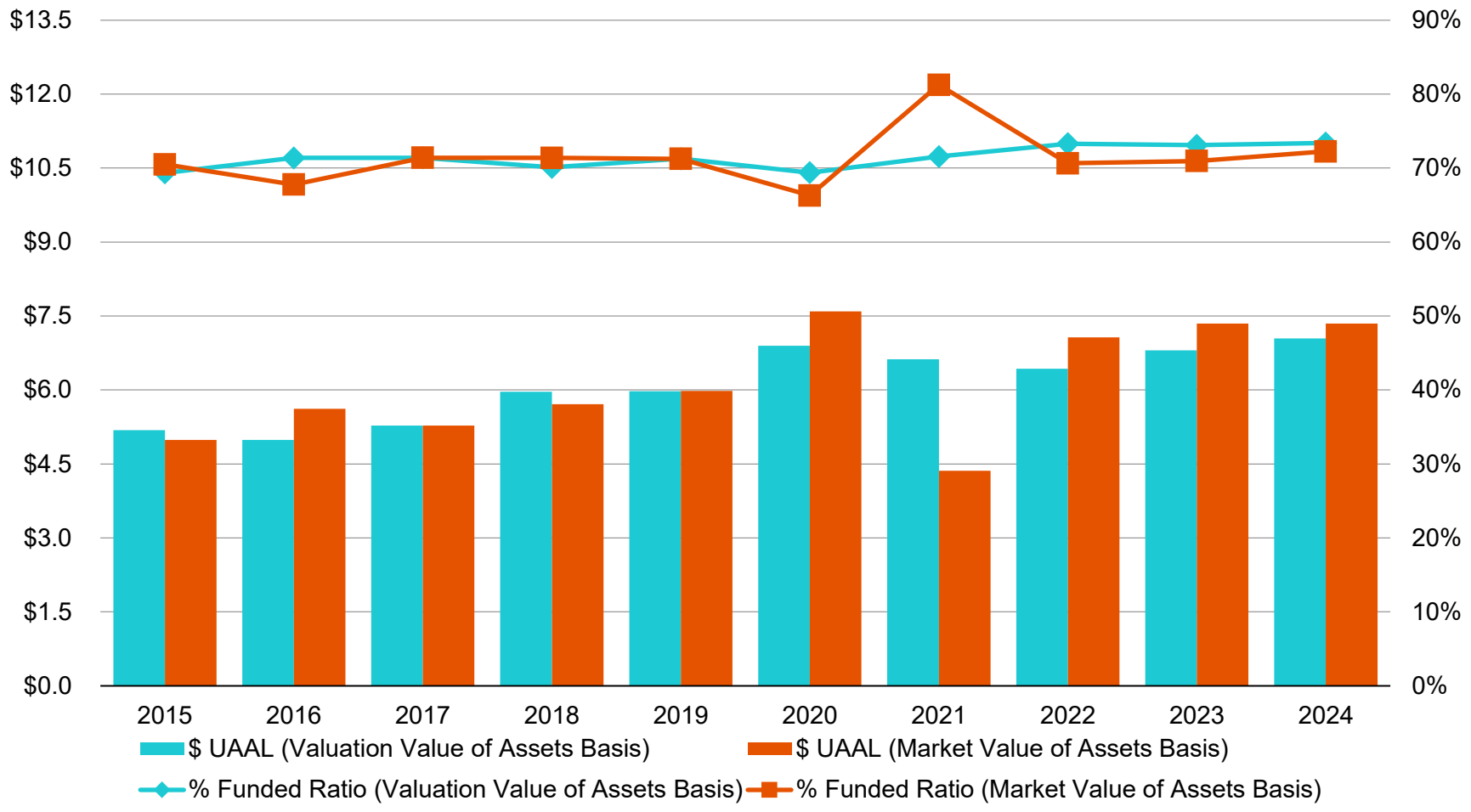


Chart 1b

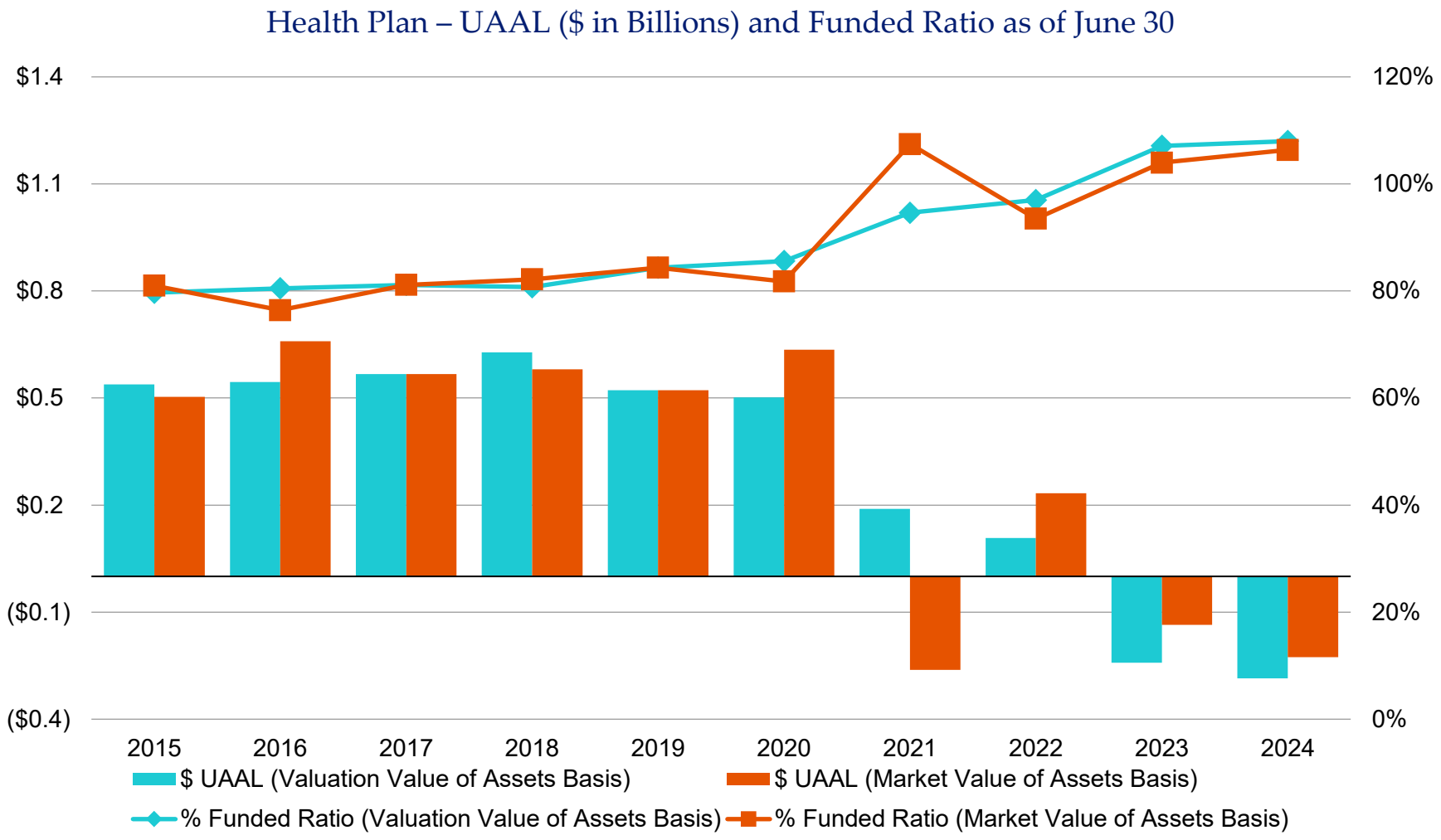

Health Plan – UAAL ($ in Billions) and Funded Ratio as of June 30
$1.4
$1.1
$0.8
$0.5
$0.2
($0.1)
($0.4)
120%
100%
80%
60%
40%
20%
0%
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
$ UAAL (Valuation Value of Assets Basis)
$ UAAL (Market Value of Assets Basis)
% Funded Ratio (Valuation Value of Assets Basis)
% Funded Ratio (Market Value of Assets Basis)

Chart 2a

Retirement Plan – Factors that Changed UAAL for Year Ended June 30

($ in Billions)

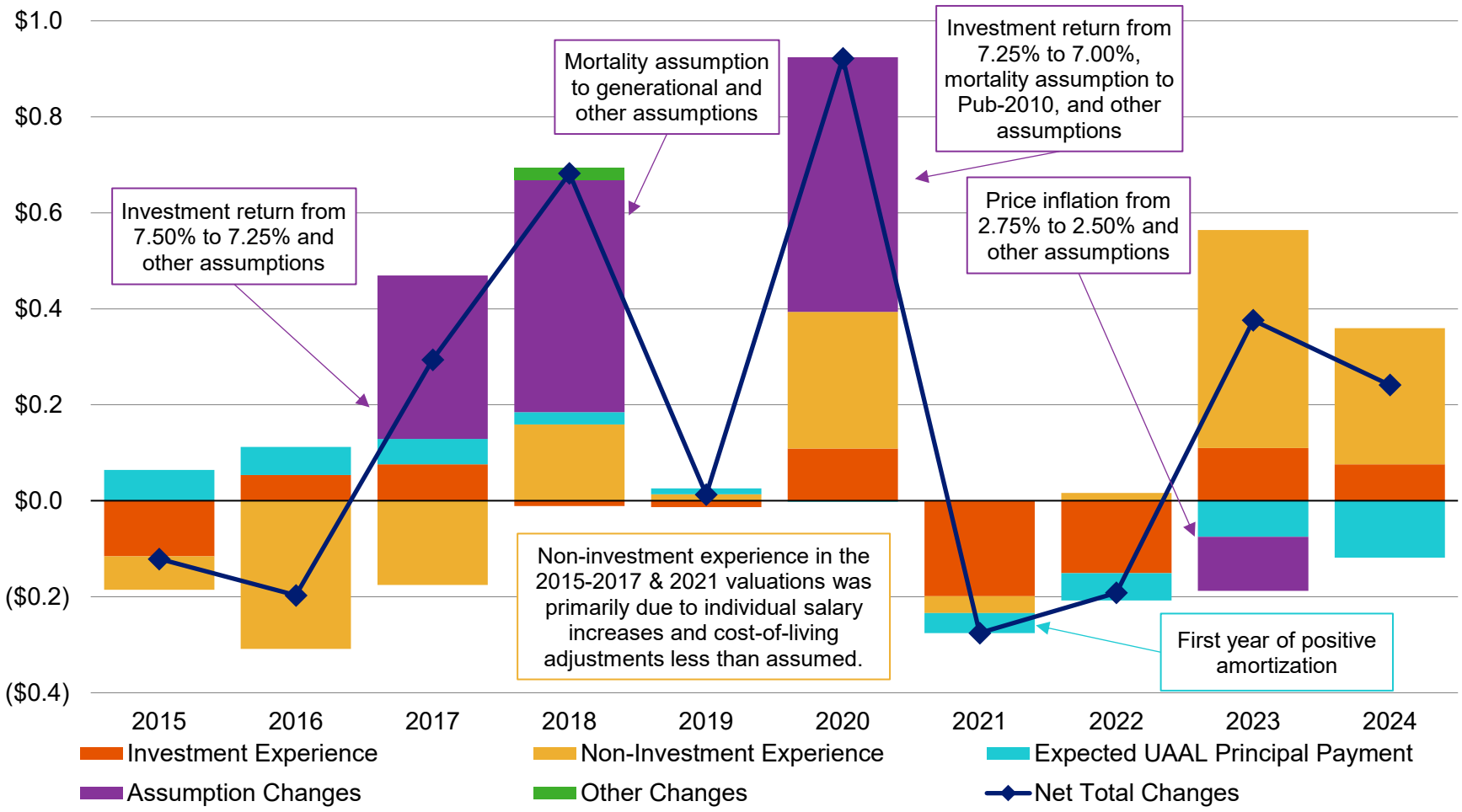


Chart 2b

Health Plan – Factors that Changed UAAL for Year Ended June 30

($ in Billions)

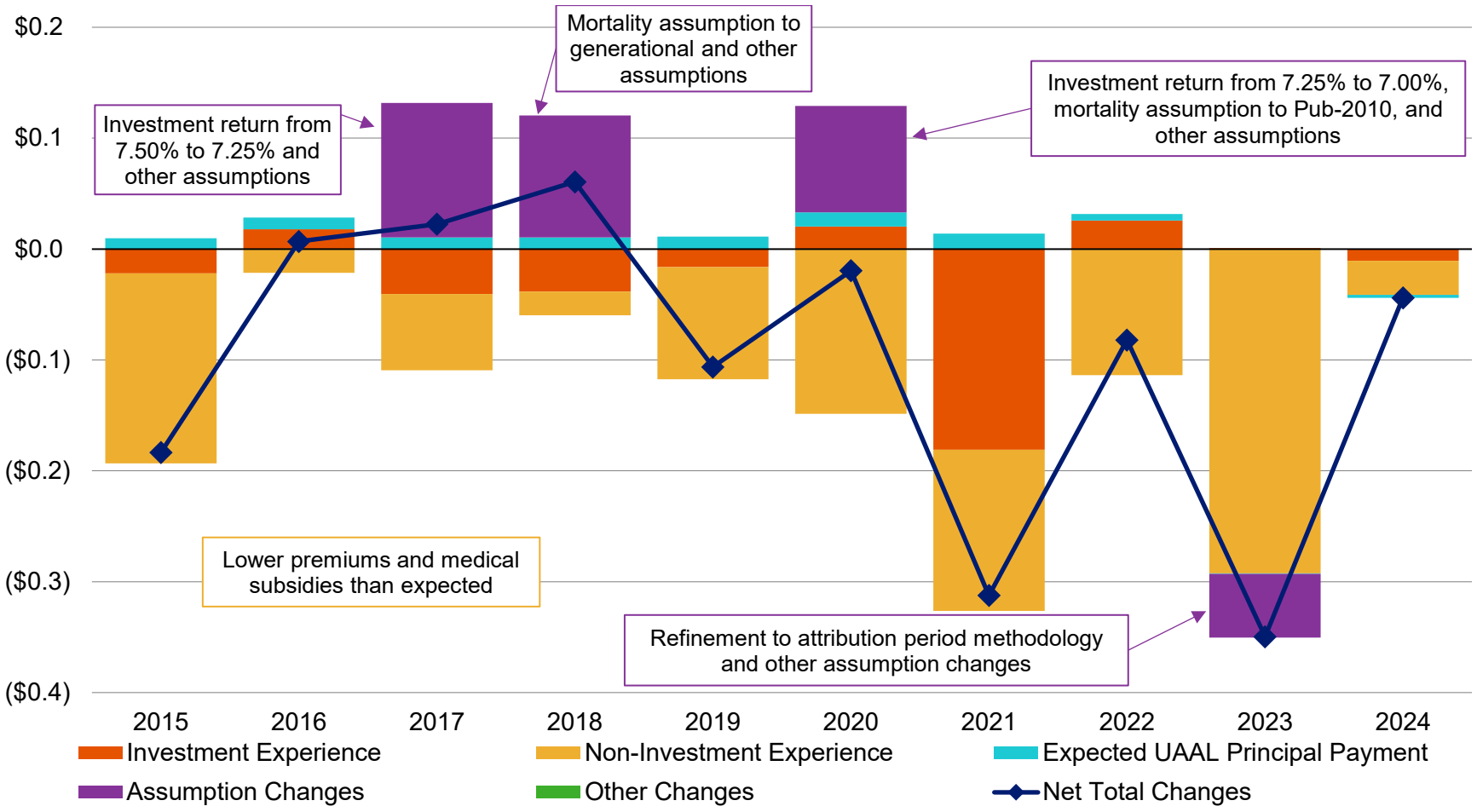
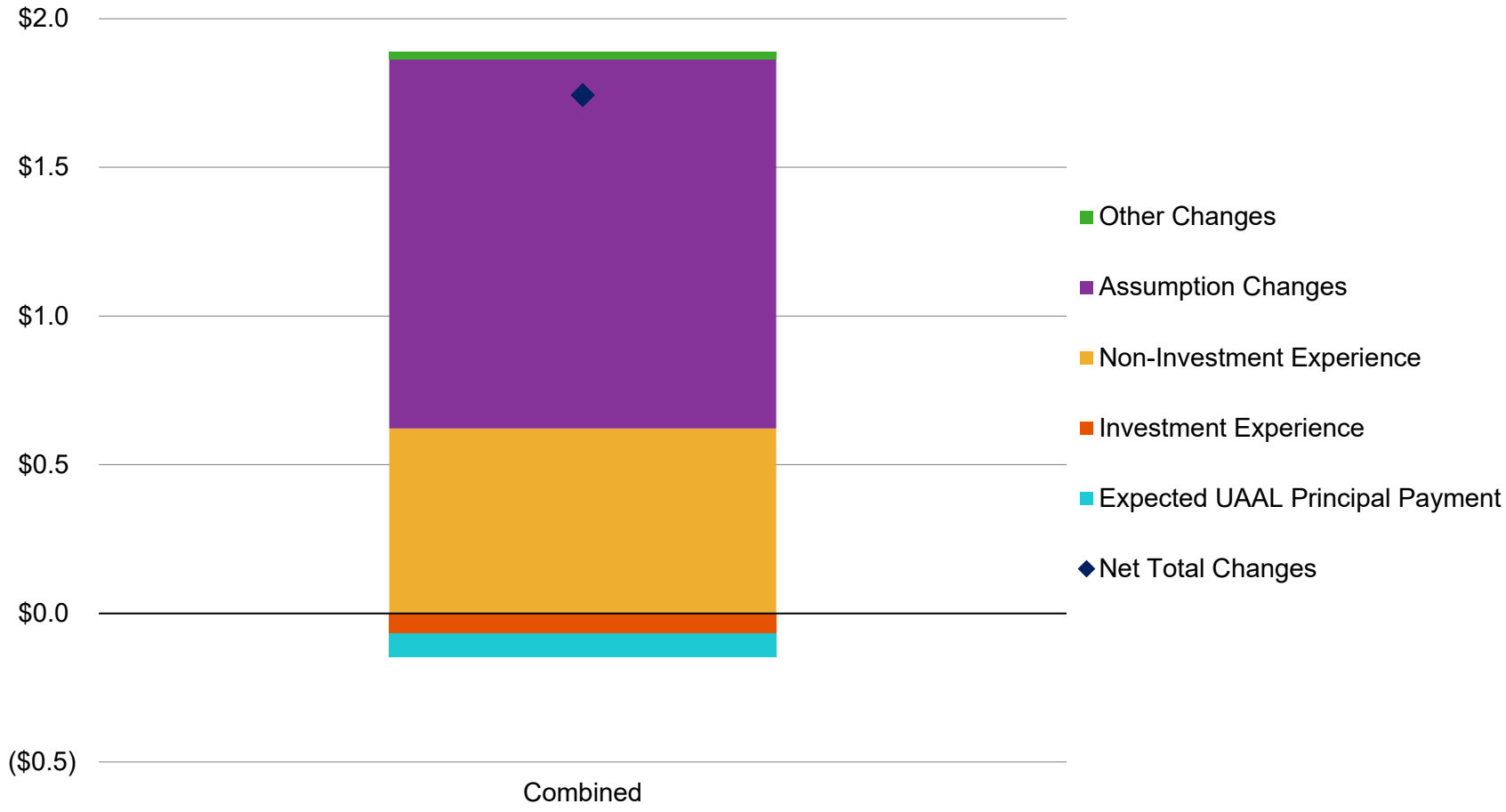


Chart 2c

Retirement Plan – Combined Factors that Changed UAAL in the June 30, 2015 to 2024 Valuations

($ in Billions)

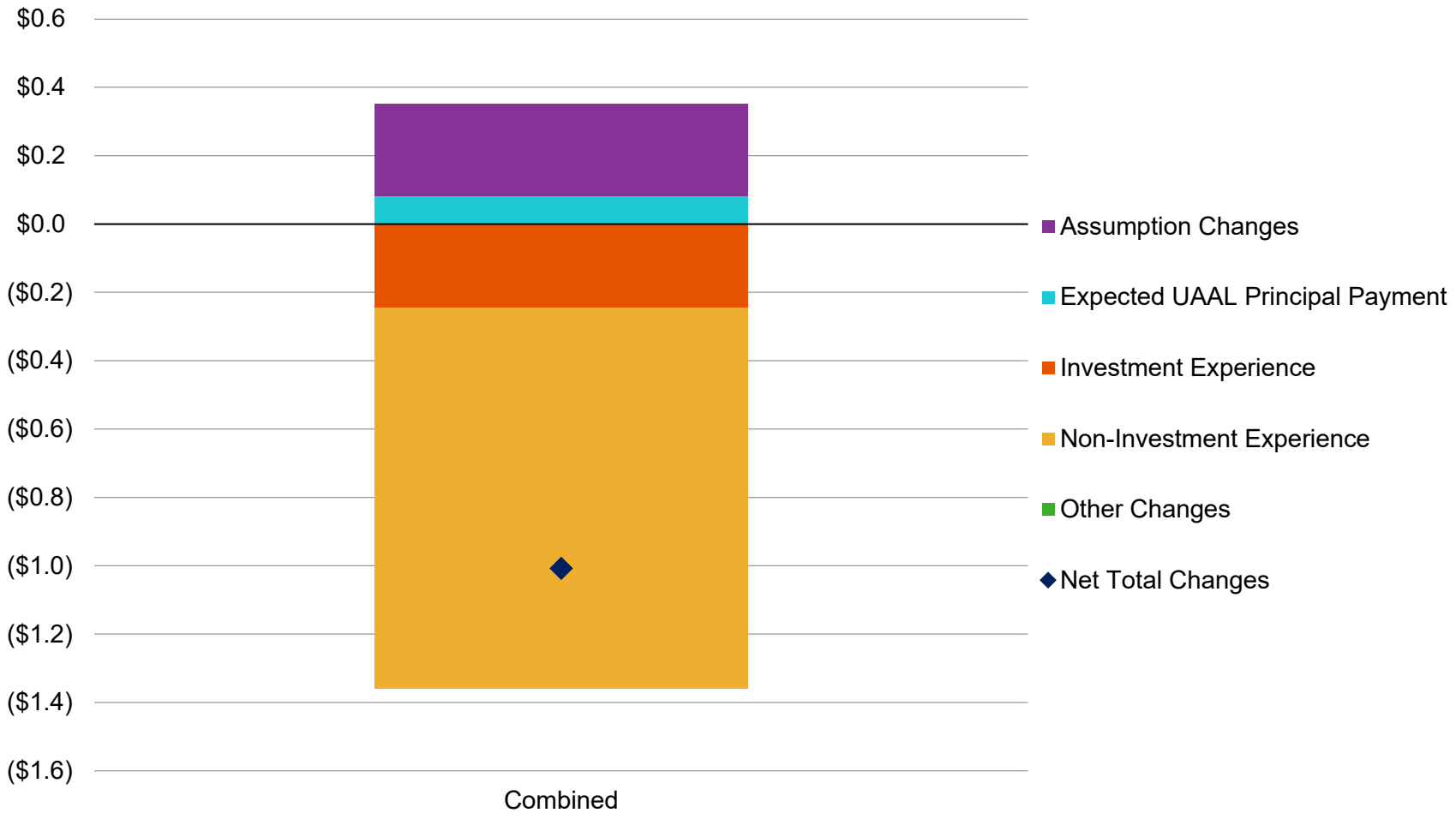


Note: This summation of UAAL changes by source does not account for the timing of when they occurred nor any resulting compounding effects. Also, the investment experience shown is investment returns after asset smoothing compared to the expected returns.

Chart 2d

Health Plan – Combined Factors that Changed UAAL in the June 30, 2015 to 2024 Valuations

($ in Billions)



Note: This summation of UAAL changes by source does not account for the timing of when they occurred nor any resulting compounding effects. Also, the investment experience shown is investment returns after asset smoothing compared to the expected returns.

Employer contribution rates

The total (normal cost plus UAAL payment) employer contribution rates[1] determined in the June 30, 2015 to June 30, 2024 valuations for the Retirement and Health Plans are provided in *Chart 3a* and *Chart 3b*, respectively. These charts show that the employer normal cost rates for the Retirement and Health Plans have stayed relatively flat since the June 30, 2015 valuation. For the Retirement Plan, the UAAL rate generally increased between the June 30, 2015 and the June 30, 2024 valuations primarily due to changes in actuarial assumptions. While there have also been increases in the normal cost rates due to the changes in actuarial assumptions, those increases were offset to some degree by the plan changes – with the introduction of Tier 3 – as new members have been enrolled in the lower cost benefit tier since February 21, 2016. Furthermore, beginning with the June 30, 2012 valuation, an additional employee contribution (either 2% or 4%, becoming 4% for all affected employees effective January 1, 2013) was implemented by the City for certain bargaining groups and for all non-represented employees.[2] For the Health Plan, the UAAL rate generally decreased between the June 30, 2015 and the June 30, 2024 valuations and has been negative since June 30, 2023 as that Plan has become fully funded starting with that valuation. The primary sources of the decrease include health related assumption changes and other actuarial experience (primarily favorable premium and subsidy changes).

The factors that caused the changes in the total employer contribution rates for the Retirement and Health Plans are provided in *Chart 4a and Chart 4b*, respectively.

For the Retirement Plan, *Chart 4a* shows that the changes in the expected investment return, mortality tables and other assumptions have had the most impact on increasing the UAAL contribution rates for the City. Favorable investment experience has partially offset the contribution rate increases during 2015 to 2024.

For the Health Plan, *Chart 4b* shows that the non-investment experience (primarily medical premiums and subsidies lower than projected, but which also includes the impact of the annual review and adjustment of the medical trend assumptions) has had the most impact on decreasing the employer contribution rates for the Plan, offset somewhat by changes in the expected investment return, mortality tables and other actuarial assumptions. There is also a rate reduction in each of the June 30, 2023 and 2024 valuations due to the amortization of the surplus over 30 years.

[1] There are separate contribution rates determined in the valuation for each tier. The aggregate contribution rates shown herein have been calculated based on an average of those rates weighted by the payrolls of the active members reported in those valuations.

[2] As of the June 30, 2012 valuation, roughly 95% of active members were required to pay an additional member contribution rate. By the June 30, 2020 valuation, all active members were paying an additional member contribution rate (which was increased to 4.5% for less than 1% of active members).

Employer Contribution Rate Impact from Assumption Changes

Retirement and Health Plans Combined

Valuation Date	Total Aggregate Employer Contribution Rate Change
June 30, 2017	2.0% of payroll
June 30, 2019	2.1% of payroll
June 30, 2020	3.9% of payroll
June 30, 2023	0.7% of payroll
Net Change	**8.7% of payroll**

Chart 3a

Retirement Plan – Employer Contribution Rates Calculated as of June 30

(% of Payroll – Contributions Received on July 15)

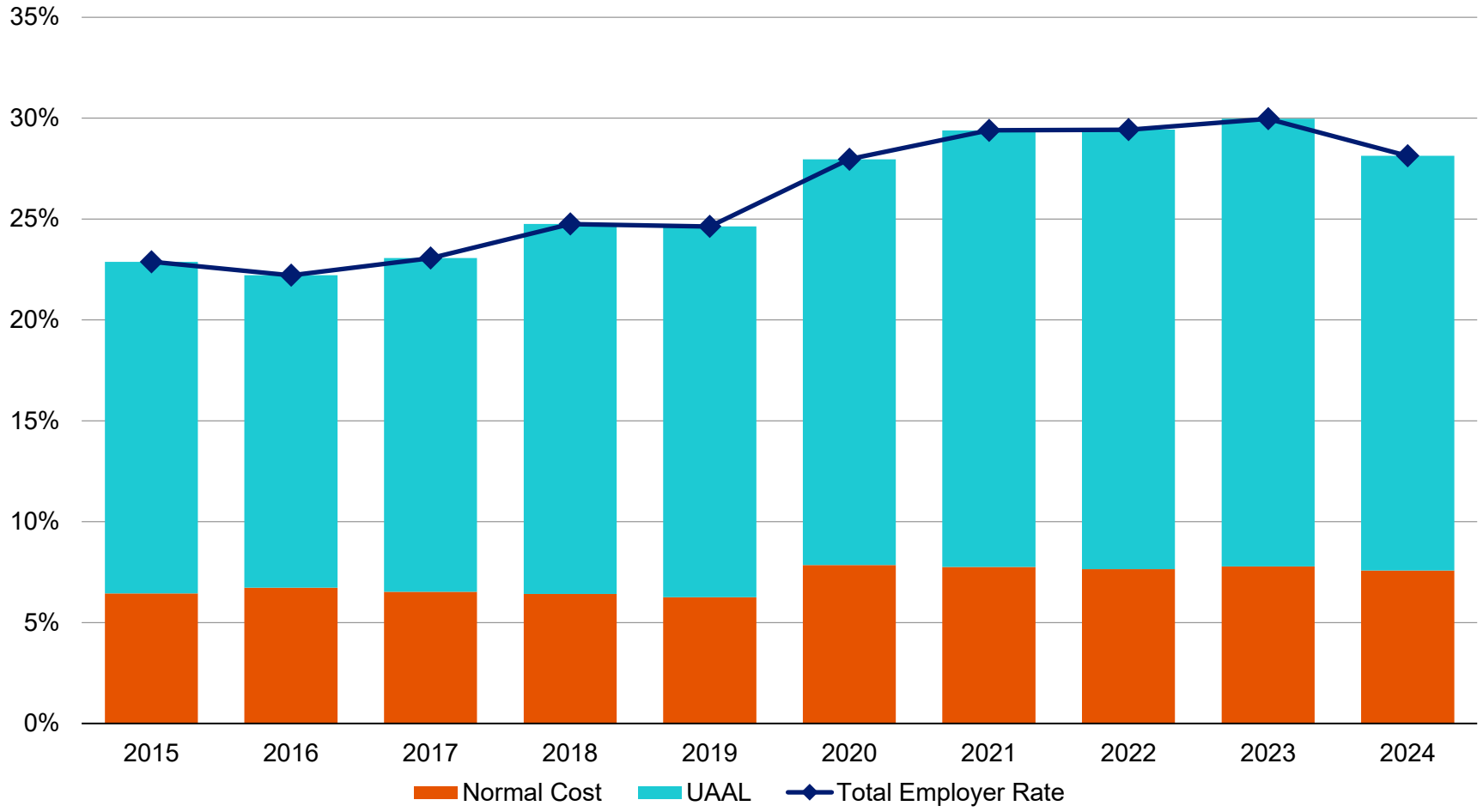


Chart 3b

Health Plan – Employer Contribution Rates Calculated as of June 30

(% of Payroll – Contributions Received on July 15)

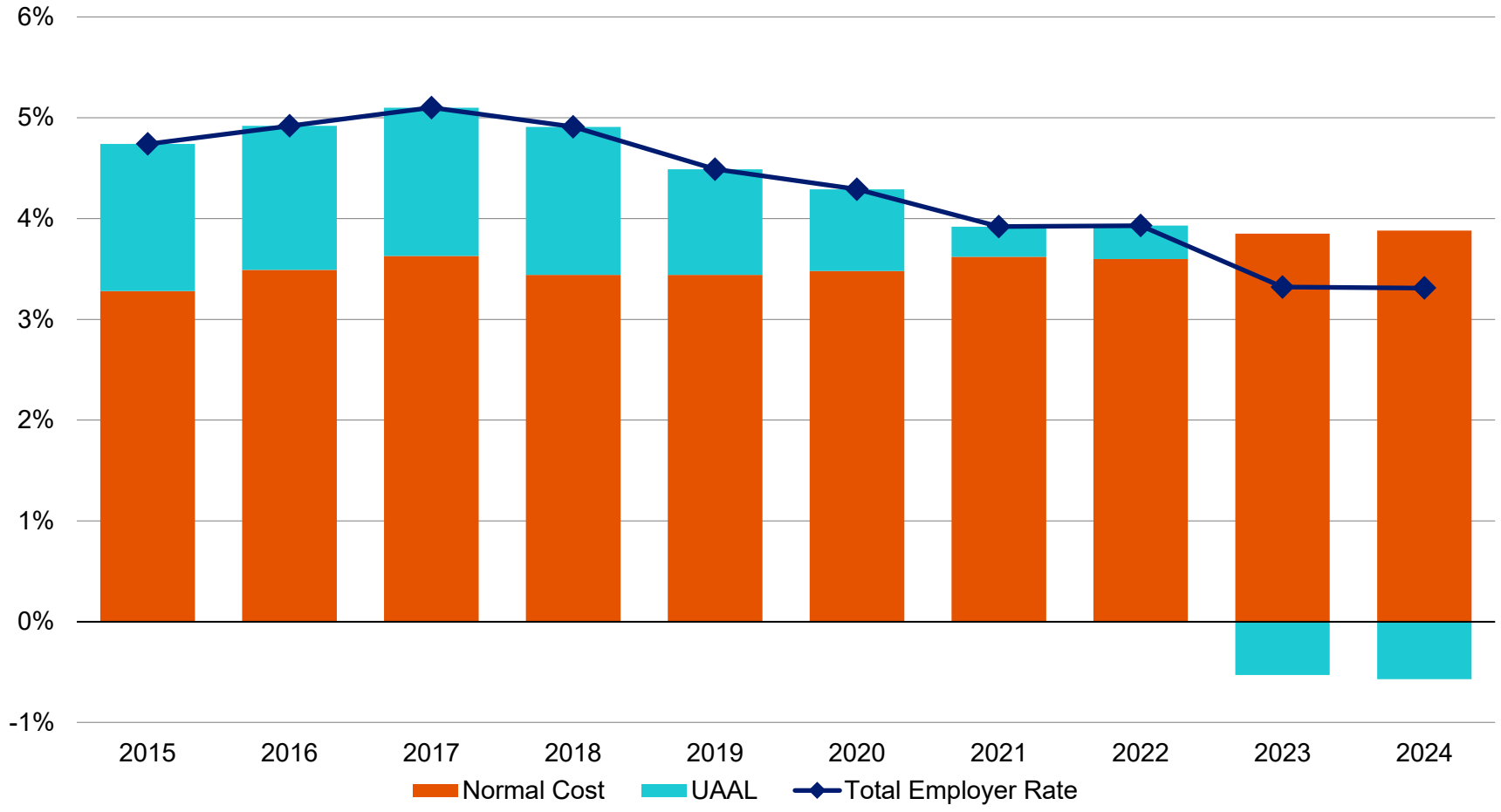


Chart 4a

Retirement Plan – Factors that Affected Employer Contribution Rates Calculated as of June 30

(% of Payroll – Contributions Received on July 15)

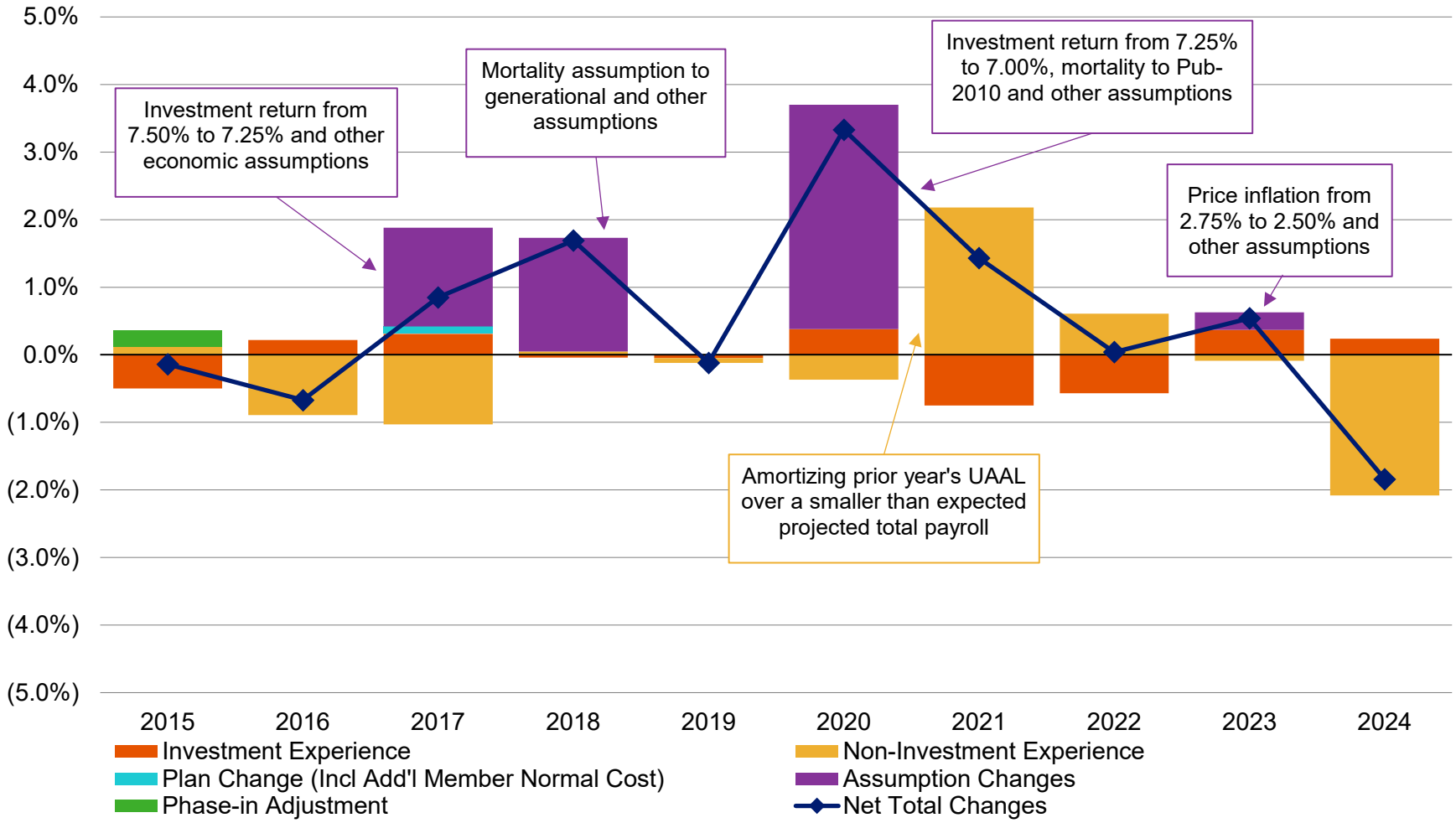
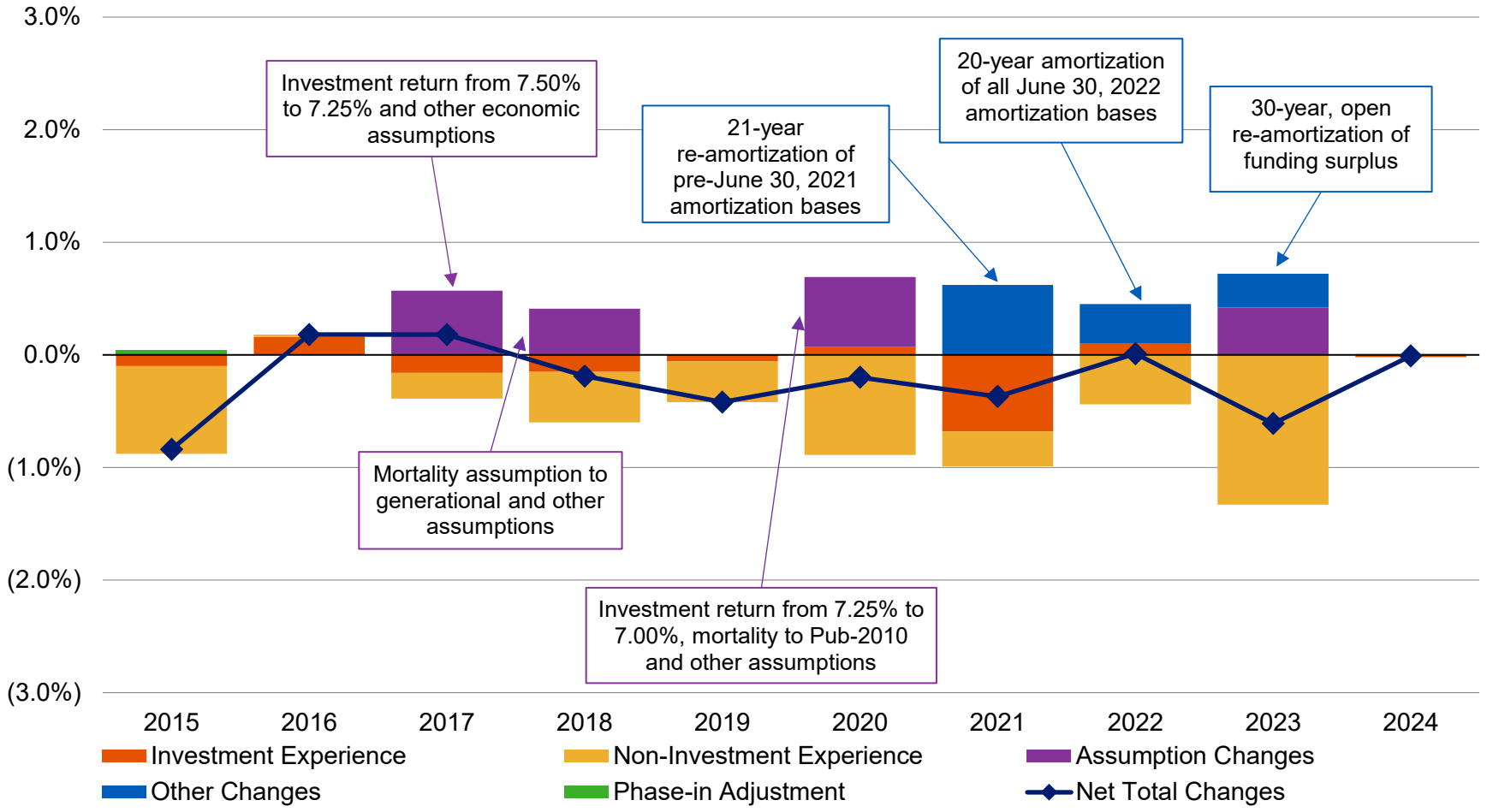


Chart 4b

Health Plan – Factors that Affected Employer Contribution Rates Calculated as of June 30

(% of Payroll – Contributions Received on July 15)



Assessment of primary risk factors going forward

As discussed under the evaluation of historical trends section, the funded ratios and employer contribution rates have changed mainly due to changes in actuarial assumptions, investment experience, and non-investment experience in the last ten valuations.

In general, we anticipate the following risk factors to have an ongoing influence on those metrics in our future valuations:

- **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 LACERS is investment risk, as defined 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, those changes 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 change in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by longevity and other demographic assumption risks, which affect liabilities but have no impact on asset levels. These risks are also discussed below.

  It may be informative to use the asset volatility and liability volatility ratios and associated contribution rate impacts provided in the following plan maturity measures section when discussing with the City the effect of unfavorable or favorable actuarial experience on the assets and the liabilities of LACERS.

- **Investment risk** – the potential that future market returns will be different from the current expected 7.00% annual return assumption.

  The investment return assumption is a long-term, deterministic assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. We have included deterministic scenario tests later in this section so that LACERS can better understand the risk associated with earning either more or less than the assumed rate.

  The Board has a policy of reviewing the investment return and the other actuarial assumptions generally every three years, with the next triennial experience study (recommending assumptions for the June 30, 2026 actuarial valuations) scheduled to be performed in 2026.

- **Longevity and other demographic risks** – the potential that mortality or other demographic experience will be different than expected.

  For the Retirement Plan, the move to using generational amount-weighted mortality tables that reflect data from public sector retirement plans was made in the 2019 mortality experience study for use in the June 30, 2019 valuations. (For the Health Plan, we are using generational, headcount-weighted mortality tables.) As can be observed from *Chart 2a, Chart 2b, Chart 4a,* and *Chart*

4b, for the Retirement and Health Plans combined there has been favorable impact on the UAAL and employer contribution rates due to non-investment related experience relative to the assumptions used in the last 10 valuations. Future mortality risks should be further mitigated by the updated tables.

- **Contribution risk** – the potential that actual future contributions will be different from expected future contributions.

  ASOP 51 does not require the actuary to evaluate the ability or willingness of the plan sponsor or other contributing entity to make contributions to the plan when due. However, it does require the actuary to consider the potential for actual contributions deviating from expected in the future. The City has a well-established practice of making the ADC determined in the annual actuarial valuations, based on the Board of Administration's Actuarial Funding Policy. As a result, in practice LACERS has essentially no contribution risk.

  Furthermore, when ADCs determined in accordance with the LACERS Actuarial Funding Policy are made in the future by the City (and contributions required by the Administrative Code are made by the employees), it is anticipated that the System would have enough assets to provide all future benefits promised to the current members enrolled in the System, if all of the actuarial assumptions used in the valuation are met.

ASOP 51 also lists interest rate risk as an example of a potential risk to consider. However, the valuations of the Plans' liabilities are not linked directly to market interest rates, so the resulting interest rate risk exposure is minimal.

Scenario tests

Since the funded ratio, UAAL and the employer contribution rates have fluctuated as a result of deviations in investment experience in the last 10 valuations, in this section we have examined this risk for LACERS using projections under a deterministic and stochastic approach.

Deterministic projections

To measure such risk, we have included scenario tests to study the change in the UAAL and employer contribution rates if LACERS were to earn a market return higher or lower than the assumed rate of 7.00% in the fiscal year following the June 30, 2024 valuations. In *Chart 5, Chart 6* and *Chart 7*, we show the total aggregate employer contribution rates, funded ratios, and UAAL, respectively, for the Plans (i.e., Retirement and Health Plans combined), assuming the System's portfolio market return in 2024/2025 will be as follows:

Section 2: Key Plan Risks

- Scenario 1: 0.00% market return for 2024/2025
- Scenario 2: 7.00% market return for 2024/2025 (baseline)
- Scenario 3: 14.00% market return for 2024/2025

All other assumptions used in the projections can be found in *Appendix A*, including the assumption that the System will earn the assumed 7.00% market return per year beginning July 1, 2025 under all three scenarios.

Detailed employer contribution rates, funded ratios and UAAL have been developed for the City for each of the Retirement and Health Plans and in total under each of the three Scenarios. Those results are shown over a twenty-three-year period[1] and can be found in *Appendix B* of this report. This information is similar to what we understand has been provided to the City in the past to assist the City in their budgeting process.

The following table summarizes the projected total aggregate employer contribution rate changes for the Plans, relative to the total aggregate employer contribution rate of 31.44% in the June 30, 2024 valuations, in the next valuations (i.e., June 30, 2025) as well as in the June 30, 2031 valuations when all of the investment gains and losses are fully recognized in the (smoothed) actuarial value of assets. These results assume no further assumption changes, method changes or experience that differs significantly from the assumptions.

Total Aggregate Employer Contribution Rate Change

Valuation Date	0.00% Return for 2024/2025	7.00% Return for 2024/2025	14.00% Return for 2024/2025
June 30, 2025[2]	+1.1% of payroll	+0.4% of payroll	-0.2% of payroll
June 30, 2031[1]	+8.5% of payroll	+2.7% of payroll	-2.9% of payroll

Under the unfavorable (0.00%), baseline (7.00%), and favorable (14.00%) hypothetical market return scenarios for 2024/2025, the Plans would be expected to reach full funding in in 2042, 2041, and 2039, respectively.[3] The total aggregate employer contribution

[1] Generally speaking, under LACERS' seven-year asset smoothing period and 15-year amortization policy for gains/losses, it would take 23 years before any investment gains/losses are fully amortized in the valuations.

[2] The contribution rate changes shown for valuation date June 30, 2025 for the employer include the sunsetting of the 1% ERIP Cost Obligation for the Tier 1 and Tier 1 Enhanced members.

[3] The Plans are projected to reach full funding by 2042 when measured using the combined assets and liabilities of the Retirement and Health Plans. When measured separately, the Retirement Plan is projected to reach full funding in the June 30, 2042, June 30, 2042, and June 30, 2041 valuations under the unfavorable, baseline, and favorable scenarios, respectively, while the Health Plan has already reached full funding as of June 30, 2024.

rate would be expected to range from 8.1% to 8.4% of payroll at the end of the 23-year projection period under the three scenarios modeled. That employer contribution rate reflects the employer normal cost, offset by the amortization of any surplus pursuant to the Board's Actuarial Funding Policy when the Plans become fully funded. This shows that the Board's funding policy is very effective in achieving the general policy goal of achieving the long-term full funding of the costs of the benefits paid by LACERS.

While we have not assigned a probability on the 2024/2025 market return coming in at these rates, the Board and other stakeholders monitoring LACERS can use these results to interpolate in order to estimate the funded status and employer contribution rates for the June 30, 2025 and next several valuations as the actual investment experience for the 2024/2025 year becomes available. Additionally, comparable experience in upcoming future years is likely to have a similar impact on the System absent any significant plan or assumption changes.

Surplus management considerations

Under the deterministic projections discussed in the previous subsection and as shown in Appendix B, the Retirement Plan is expected to become 100% funded in slightly over 15 years under both the baseline and favorable return scenarios, which would put the Retirement Plan "in surplus." It is important to keep in mind that in an actuarial funding context, surplus differs from the common dictionary definition of "an amount left over after all requirements are met" and instead means that a plan is at or ahead of its funding schedule at a specific measured point in time. In other words, surplus indicates that current assets are sufficient to currently cover all costs associated with members' past service.

The Government Finance Officers Association (GFOA) recommends that every public plan's funding policy include a specific section on surplus, described as a "surplus management policy."[1] This surplus management policy would be "a proactive policy that helps guide the system in the prudent management of potential surplus, including considerations for items such as contribution levels, risk reduction opportunities, stabilization reserves and benefit levels." LACERS' funding policy does anticipate the possibility of surplus and requires any surplus to be amortized over a rolling 30-year period, which is considered an industry model practice.[2] In addition to the amortization of surplus, the following considerations are recommended by the GFOA:

[1] See GFOA's Best Practice on "Core Elements of a Funding Policy for Governmental Pension and OPEB Plans"
[2] See the Conference of Consulting Actuaries' white paper on "Actuarial Funding Policies and Practices for Public Pension Plans."

Section 2: Key Plan Risks

- Consider current actuarial assumptions and the level of risk inherent in those assumptions.
- Evaluate possible risk reduction strategies, including the risk-reward tradeoff in the current asset portfolio, along with the plan's current funding policies.
- Consider how to mitigate contribution rate volatility in surplus, including buffers above 100% funded before amortizing surplus as a credit, and mechanisms such as smoothing in contribution rate reductions related to surplus.
- Work with the employer to ensure an understanding of what surplus is (and is not) and establish clear guard rails around acceptable conditions for possible benefit enhancements, especially permanent ones.

Generally, Segal agrees that reaching 100% funded is an ideal opportunity to consider contribution volatility mitigation and other risk mitigation strategies and is available to work with the Board on any surplus management considerations that may be desired. And while the Health Plan is already in surplus, there could be additional considerations for how to stabilize and maintain that position through similar surplus management considerations.

We understand according to our reading of the Financial Policies for the City of Los Angeles that "during those fiscal years when LACERS is over-funded (greater than 100% funded) and therefore the total annual required contribution, as adopted by the Board, is less than the amount required to fund the normal cost of retirement and health benefits for employees, the City will limit the extent to which it will recognize these savings (negative unfunded actuarial accrued liability) in the budget. Specifically, the amount budgeted for retirement and health contributions will be no less than the amount derived by reducing the normal cost contribution rate to 90 percent. An adopted contribution rate that would allow the City to contribute an amount less than 90 percent of the normal cost shall trigger this provision that prohibits the City from using these savings to fund the City's ongoing service and program costs. Any savings or reduction in funding calculated due to the incremental contribution rate below the 90 percent threshold will only be budgeted to pay down unfunded pension or healthcare costs for retirees or, in the event that all such costs are fully funded, as an appropriation to the Budget Stabilization Fund.

This policy would only be triggered when the system has a total negative unfunded actuarial accrued liability (UAAL) that would cause the actual contribution rate to be below the 90 percent threshold of the normal cost amount. When the total UAAL is positive, the City will continue to fully fund both the normal cost and UAAL as required by the City Charter."

As favorable investment and/or other actuarial experience might cause the Retirement Plan to become fully funded sooner, the Board could begin to have discussions in the next few years on how to preserve its 100% funded status once it becomes fully funded. Such discussion might also include discussion on how some non-level UAAL contribution rates that we expect in the next five to ten years (due to the pattern of recognition of the various layers of UAAL payments) could be addressed.

Chart 5

Retirement and Health Plans (Total Plan)

Projected Employer Contribution Rates Under Hypothetical Market Return Scenarios for 2024/2025

(% of Payroll – Contributions Received on July 15)

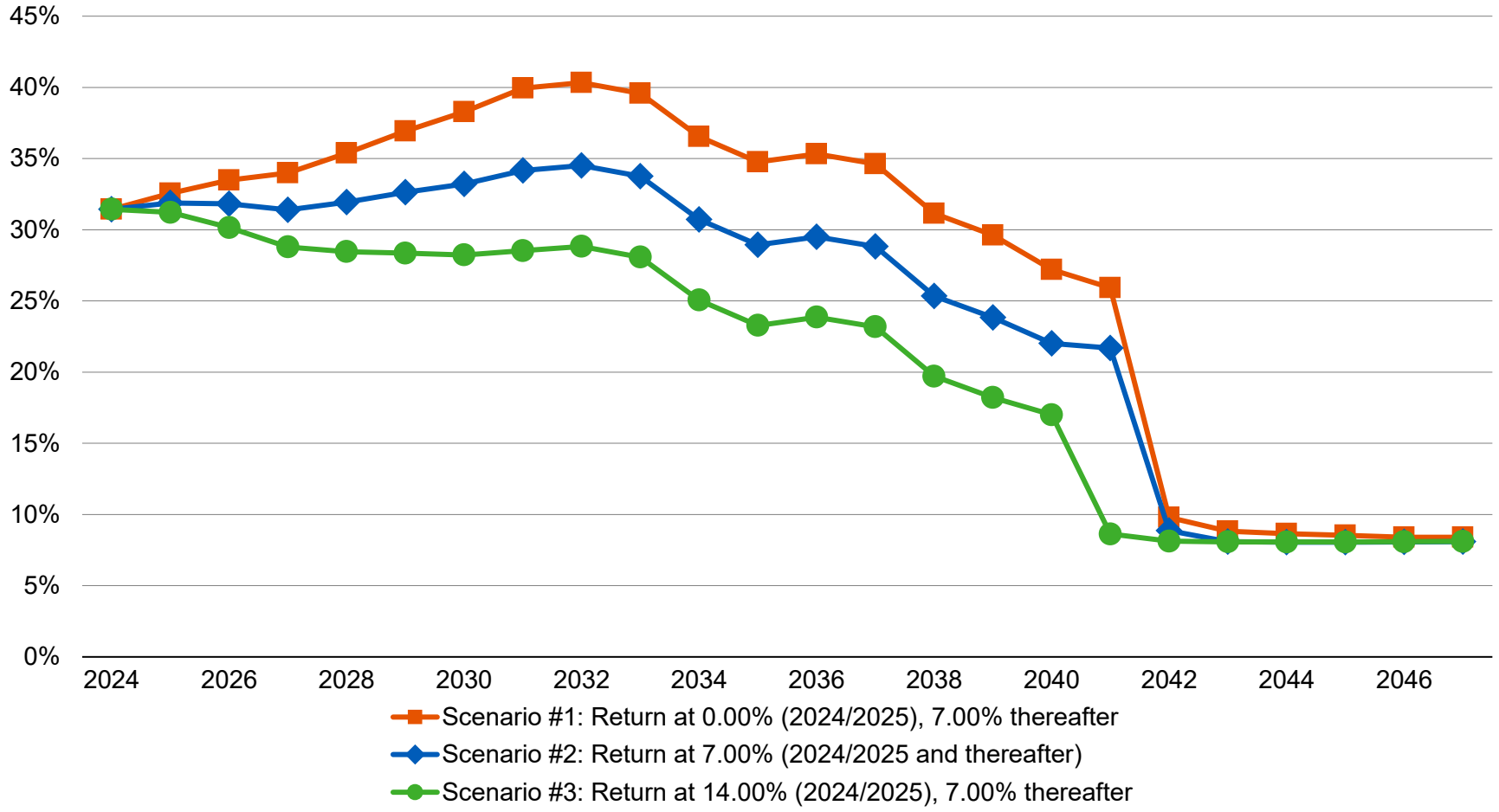


Chart 6

Retirement and Health Plans (Total Plan)

Projected Funded Ratios Under Hypothetical Market Return Scenarios for 2024/2025

(Valuation Value of Assets Basis)

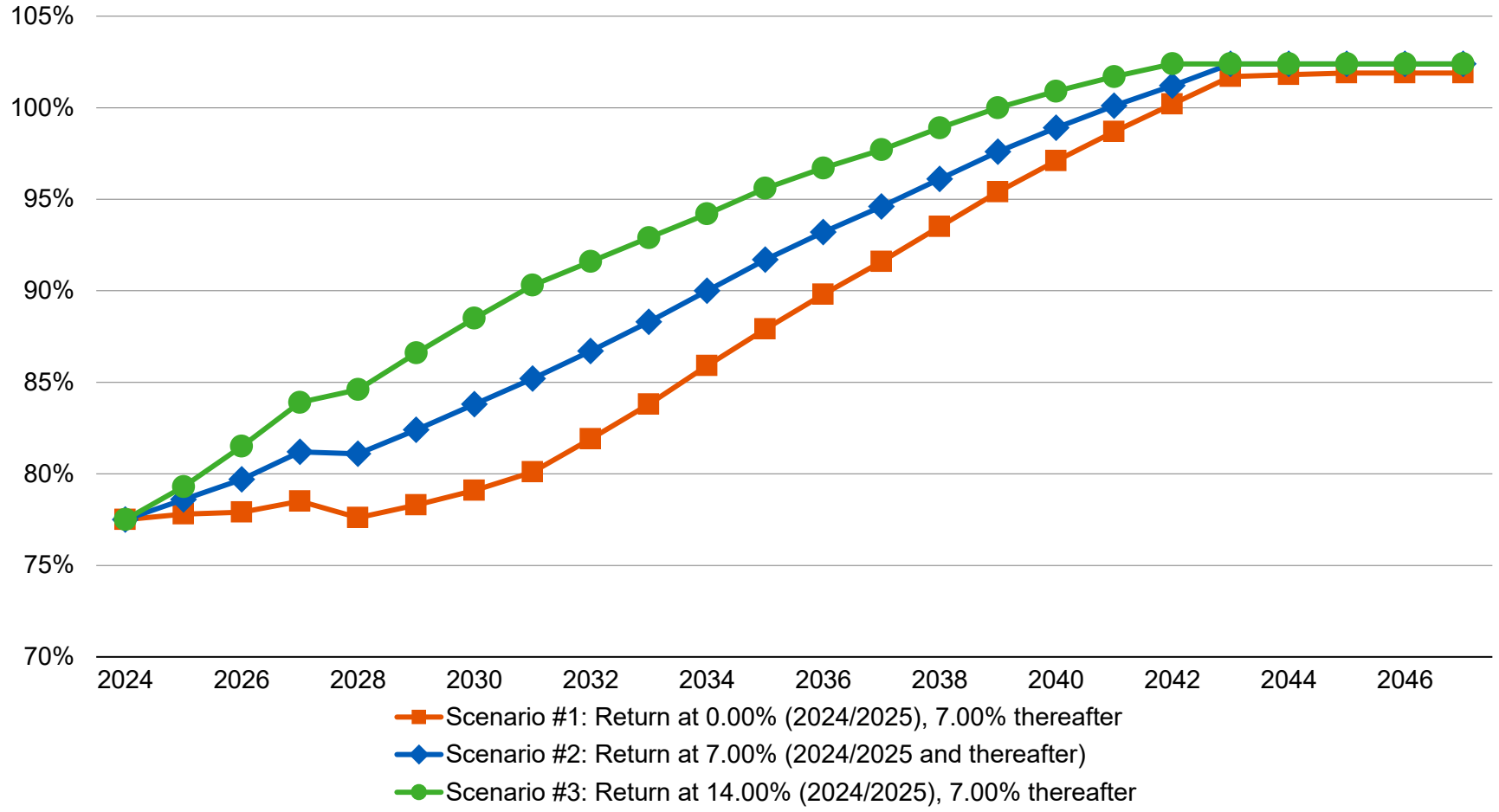
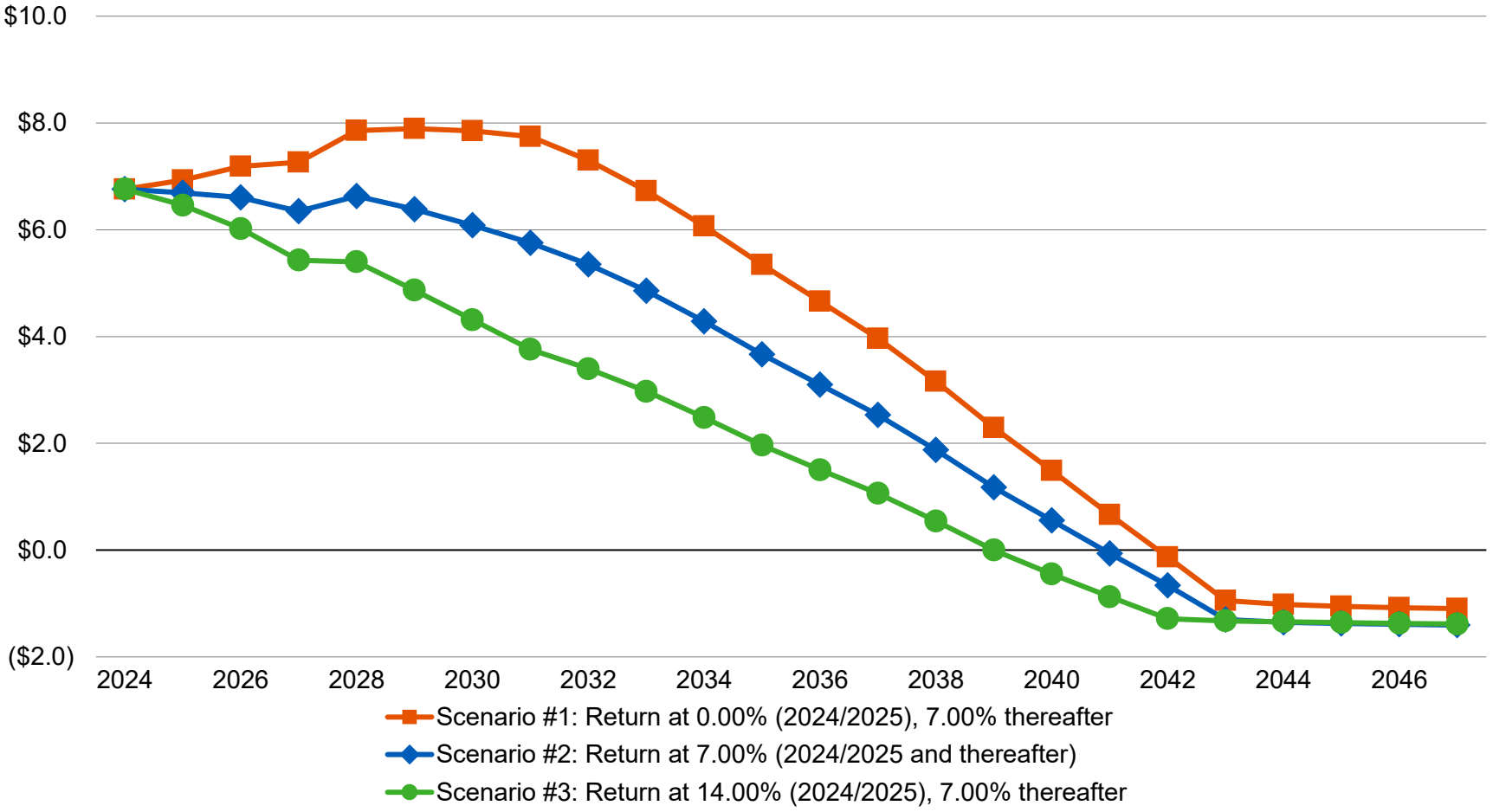


Chart 7

Retirement and Health Plans (Total Plan)

Projected UAAL Under Hypothetical Market Return Scenarios for 2024/2025

(Valuation Value of Assets Basis – $ in Billions)



Section 2: Key Plan Risks

Stochastic projection

Based on our discussions with LACERS, we have also been directed to supplement the deterministic scenario tests by another analysis that shows the range of possible changes in funded status and contribution rates under a statistical distribution of potential market returns for 20 years following the June 30, 2024 valuation. We have accomplished the stochastic modeling of future market returns by using the expected return, standard deviation and other information about LACERS' asset portfolio[1] as provided in *Appendix A* of this report, assuming no future assumption or method changes to the plan.

In *Chart 8*, we summarize the cumulative compounded rate of return of LACERS' investment portfolio over the next 20 years based on performing 10,000 trial outcomes of future market returns. The projected funded ratios for those trials are provided in *Chart 9*. The UAAL and the resultant employer contribution rates are provided in *Chart 10 and Chart 11*, respectively. The results in *Charts 9 – 11* are for the Retirement and Health Plans combined.

At the end of 20 years, there is a 50% chance[2] that the annual return of LACERS' investment portfolio would average between 5.8% and 9.9%, the funded ratio would be between 91% and 155% and the corresponding UAAL would be between $5.0 billion and a surplus (or a negative UAAL) of $30.3 billion.[3]

On an Actuarial (smoothed) Value of Assets basis, the funded ratio for the Retirement and Health Plans combined is about 77.5% as of the June 30, 2024 valuation compared to 77.1% as of the June 30, 2023 valuation. There is a 43% chance LACERS would be fully funded at the end of 10 years and a 65% chance LACERS would be fully funded at the end of 20 years. The probabilities that the funded ratio would fall below 50%, 60% or 70% at any point in the next 20 years as projected in the current analysis as of June 30, 2024 and the prior analysis as of June 30, 2023 are as follows:

Probability of Various Funded Ratios

	Below 50%	Below 60%	Below 70%
Current (6/30/2024) Analysis Probability	2%	10%	28%
Prior (6/30/2023) Analysis Probability	2%	11%	30%

[1] For the stochastic modeling, we have used the asset allocation which we applied in developing the 7.00% expected investment return assumption we recommended to the Board for the June 30, 2023 valuation, together with updated expected return, standard deviation, and other information as outlined in Appendix A. This modeling assumes no further assumption changes, method changes or non-investment experience that differs significantly from assumptions. For a detailed discussion regarding the target asset allocation used in the stochastic projections, see Appendix A, page 45.

[2] This is based on the 25th to the 75th percentile results.

[3] Based only on policies that are in place as of today.

Section 2: Key Plan Risks

The total employer contribution rate is about 31% of payroll based on the June 30, 2024 valuation, as compared to about 33% in the June 30, 2023 valuation. Stochastic modeling can help assess the range and relative likelihood of potential future contribution rates. At the end of 10 years (i.e., the June 30, 2034 valuation), there is a 50% chance that the employer contribution rates would be between 0% and 44% of payroll (with a median rate of 24% of payroll). At the end of 20 years (i.e., the June 30, 2044 valuation), there is a 50% chance that the employer contribution rates would be between 0% and 26% of payroll (with a median rate of 0% of payroll). The probabilities that the total employer contribution rate would increase at least by 5%, 10% or 15% of payroll at any point in the next 20 years as projected in the current analysis as of June 30, 2024 and the prior analysis as of June 30, 2023 are as follows:

Probability of Total Employer Rate Increases

	5% of Payroll (to 36% of Payroll)	10% of Payroll (to 41% of Payroll)	15% of Payroll (to 46% of Payroll)
Current (6/30/2024) Analysis Probability	54%	45%	37%
Prior (6/30/2023) Analysis Probability	51%	43%	35%

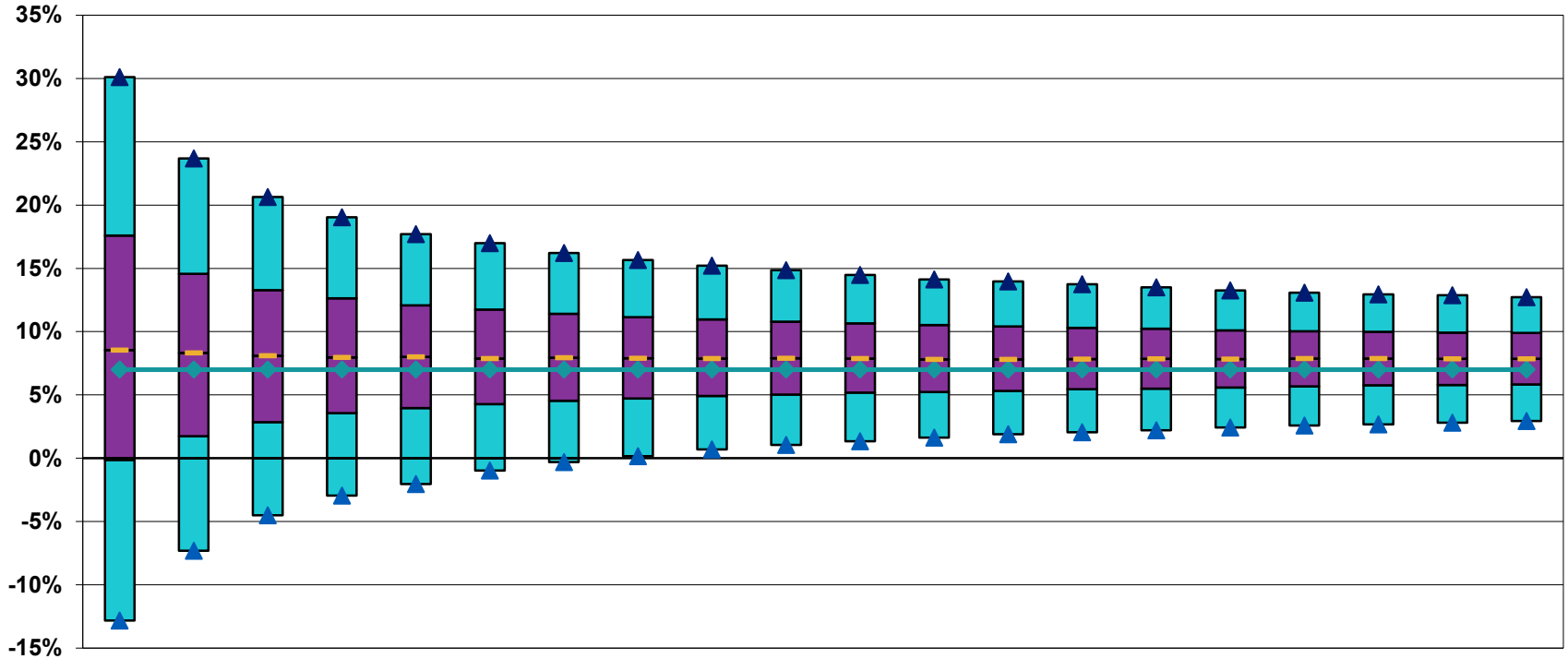
Finally, stochastic modeling can help assess the potential impact of investment experience on contribution volatility in any given year. The probabilities that the total employer contribution rate would spike by 2%, 4% or 6% of payroll in any single year during the next 20 years as projected in the current analysis as of June 30, 2024 and the prior analysis as of June 30, 2023 are as follows:

Probability of Total Employer Rate Spike in a Single Year

	2% of Payroll	4% of Payroll	6% of Payroll
Current (6/30/2024) Analysis Probability	22%	10%	4%
Prior (6/30/2023) Analysis Probability	21%	10%	4%

Chart 8

Projected Cumulative Investment Return for Plan Years Ending June 30

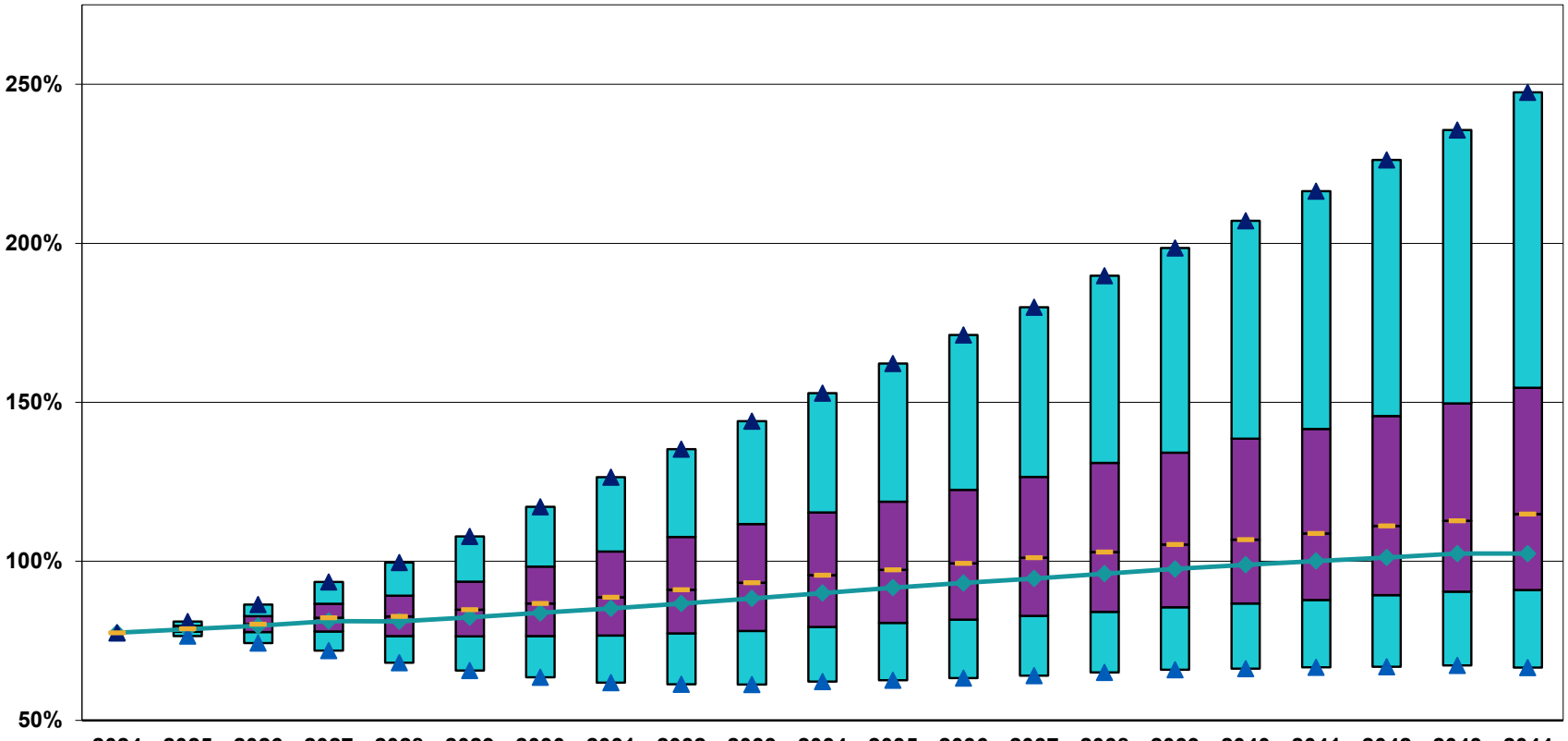


	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
▲ 95th	30.1%	23.7%	20.6%	19.0%	17.7%	17.0%	16.2%	15.7%	15.2%	14.9%	14.5%	14.1%	14.0%	13.8%	13.5%	13.3%	13.1%	13.0%	12.9%	12.7%
— 75th	17.6%	14.6%	13.3%	12.6%	12.1%	11.7%	11.4%	11.1%	11.0%	10.8%	10.7%	10.5%	10.4%	10.3%	10.2%	10.1%	10.0%	10.0%	9.9%	9.9%
50th	8.5%	8.3%	8.1%	8.0%	8.0%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.8%	7.8%	7.8%	7.9%	7.8%	7.9%	7.9%	7.9%	7.9%
— 25th	-0.1%	1.7%	2.8%	3.6%	4.0%	4.3%	4.6%	4.7%	4.9%	5.0%	5.2%	5.2%	5.3%	5.5%	5.5%	5.6%	5.7%	5.8%	5.8%	5.8%
▲ 5th	-12.8%	-7.3%	-4.5%	-2.9%	-2.0%	-1.0%	-0.3%	0.2%	0.7%	1.0%	1.3%	1.6%	1.9%	2.0%	2.2%	2.4%	2.6%	2.7%	2.8%	2.9%
◆	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%

◆ Current investment return assumption

Chart 9

Projected Funded Ratios
(Valuation Value of Assets Basis)

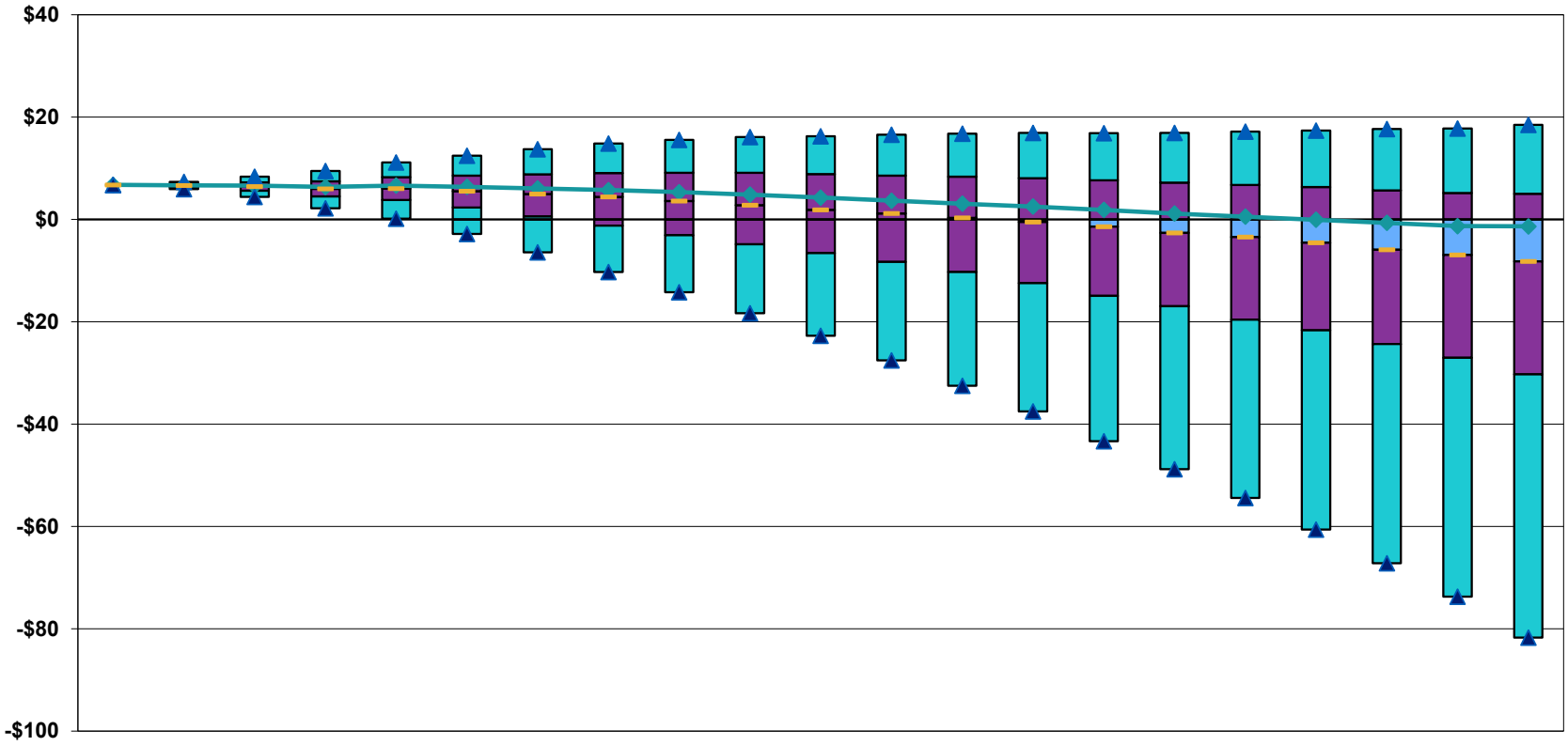


	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
▲ 95th	77.5%	81.1%	86.4%	93.5%	99.6%	107.8%	117.1%	126.4%	135.3%	144.1%	152.9%	162.2%	171.2%	179.9%	189.8%	198.5%	207.1%	216.4%	226.2%	235.6%	247.5%
— 75th	77.5%	79.7%	82.7%	86.6%	89.2%	93.6%	98.4%	103.1%	107.6%	111.7%	115.3%	118.8%	122.5%	126.6%	130.9%	134.2%	138.5%	141.6%	145.7%	149.7%	154.6%
— 50th	77.5%	78.8%	80.2%	82.2%	82.7%	84.8%	86.7%	88.6%	91.0%	93.3%	95.6%	97.3%	99.3%	101.1%	102.9%	105.3%	106.8%	108.8%	111.1%	112.7%	114.8%
— 25th	77.5%	77.8%	77.7%	77.9%	76.5%	76.4%	76.5%	76.6%	77.3%	78.1%	79.3%	80.6%	81.7%	82.8%	84.1%	85.5%	86.7%	87.9%	89.3%	90.5%	91.0%
▲ 5th	77.5%	76.5%	74.3%	71.9%	68.1%	65.7%	63.5%	61.8%	61.3%	61.2%	62.1%	62.6%	63.2%	64.0%	65.1%	65.9%	66.2%	66.6%	66.8%	67.3%	66.6%
◆	77.5%	78.6%	79.7%	81.2%	81.1%	82.4%	83.8%	85.2%	86.7%	88.3%	90.0%	91.7%	93.2%	94.6%	96.1%	97.6%	98.9%	100.1%	101.2%	102.4%	102.4%

◆ Baseline deterministic projection

Chart 10

Projected UAAL
(Valuation Value of Assets Basis – $ in Billions)

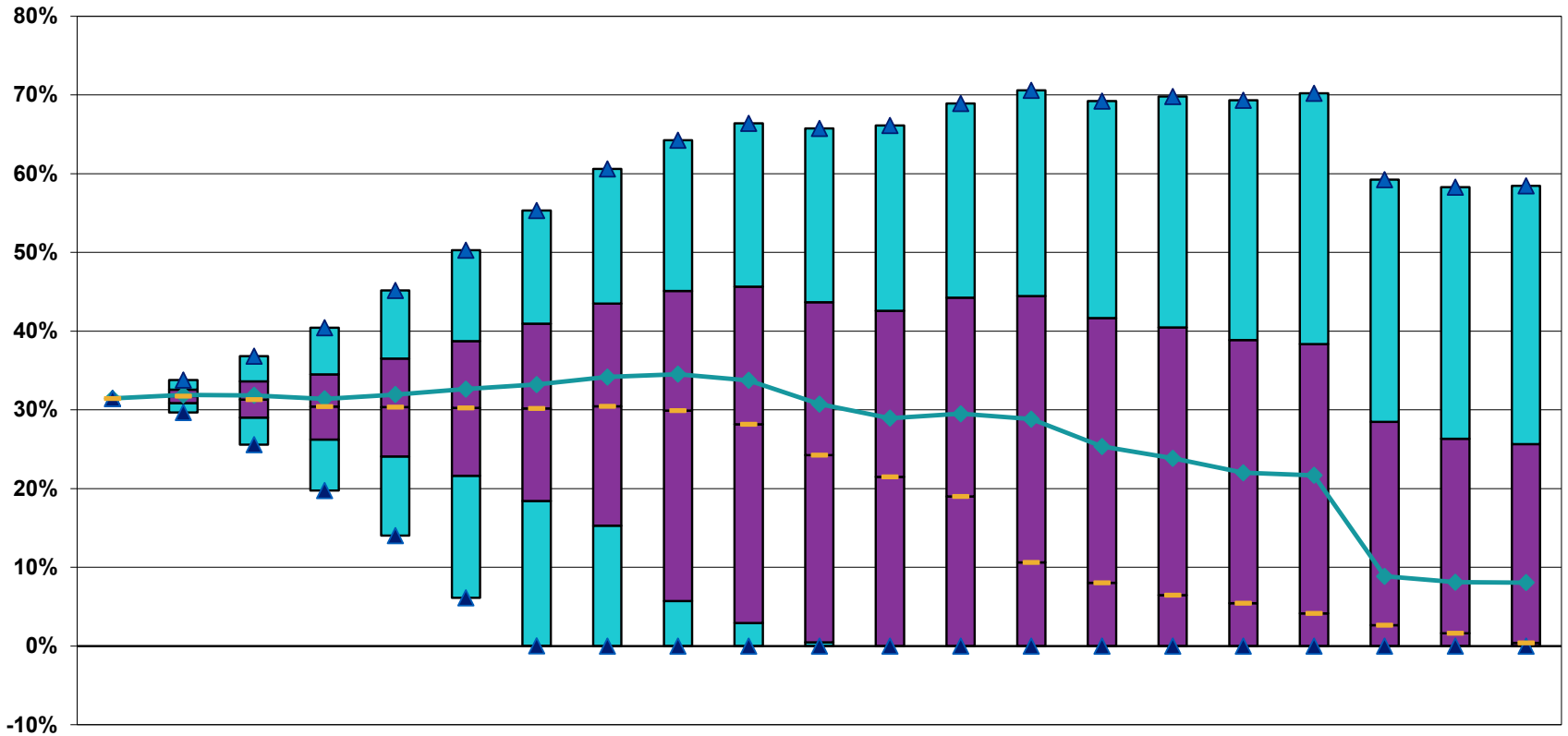


	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
▲ 95th	6.8	5.9	4.4	2.2	0.2	-2.8	-6.4	-10.3	-14.2	-18.3	-22.7	-27.5	-32.5	-37.5	-43.3	-48.8	-54.4	-60.6	-67.2	-73.7	-81.7
— 75th	6.8	6.3	5.6	4.5	3.8	2.3	0.6	-1.2	-3.1	-4.9	-6.6	-8.3	-10.2	-12.5	-14.9	-16.9	-19.6	-21.7	-24.3	-27.0	-30.3
— 50th	6.8	6.6	6.4	6.0	6.1	5.5	5.0	4.4	3.6	2.8	1.9	1.2	0.3	-0.5	-1.4	-2.6	-3.5	-4.6	-5.9	-6.9	-8.2
— 25th	6.8	6.9	7.2	7.5	8.2	8.6	8.8	9.1	9.1	9.1	8.9	8.6	8.4	8.1	7.7	7.2	6.7	6.3	5.7	5.2	5.0
▲ 5th	6.8	7.4	8.4	9.5	11.2	12.5	13.7	14.9	15.6	16.1	16.3	16.6	16.8	16.9	16.9	16.9	17.2	17.4	17.7	17.8	18.5
◆	6.8	6.7	6.6	6.3	6.6	6.4	6.1	5.8	5.4	4.9	4.3	3.7	3.1	2.5	1.9	1.2	0.6	-0.1	-0.7	-1.3	-1.4

◆ Baseline deterministic projection

Chart 11

Projected Employer Contribution Rates
(% of Payroll)



	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
▲ 95th	31.4%	29.7%	25.6%	19.7%	14.0%	6.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
— 75th	31.4%	30.9%	29.0%	26.2%	24.1%	21.6%	18.4%	15.3%	5.7%	2.9%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
— 50th	31.4%	31.7%	31.3%	30.4%	30.3%	30.2%	30.2%	30.5%	29.9%	28.2%	24.3%	21.5%	19.0%	10.6%	8.0%	6.5%	5.4%	4.1%	2.6%	1.6%	0.4%
— 25th	31.4%	32.6%	33.6%	34.5%	36.5%	38.7%	40.9%	43.5%	45.1%	45.6%	43.7%	42.6%	44.3%	44.5%	41.7%	40.5%	38.9%	38.4%	28.5%	26.3%	25.6%
▲ 5th	31.4%	33.8%	36.8%	40.4%	45.2%	50.3%	55.3%	60.6%	64.3%	66.4%	65.7%	66.1%	68.9%	70.6%	69.2%	69.8%	69.3%	70.2%	59.2%	58.3%	58.5%
◆	31.4%	31.9%	31.8%	31.4%	31.9%	32.6%	33.2%	34.2%	34.5%	33.8%	30.7%	28.9%	29.5%	28.8%	25.4%	23.8%	22.0%	21.7%	8.9%	8.1%	8.1%

◆ Baseline deterministic projection

Plan maturity measures that affect primary risks

The annual actuarial valuations consider the number and demographic characteristics of covered members, including active members and non-active members (inactive members, retirees and beneficiaries). Over the past 10 valuations from June 30, 2015 to June 30, 2024, LACERS has become more mature as indicated by the continued increase in the ratio of non-active to active members covered by the Retirement and Health Plans as shown in *Chart 12a* and *Chart 12b*, respectively. These charts also show the ratio of members in pay status (retirees and beneficiaries) to active members. This ratio excludes the inactive members who have relatively smaller liabilities. The increase in the ratios is significant because any increase in UAAL due to unfavorable future investment and non-investment experience for a plan with a relatively larger group of non-active members would have to be amortized and funded using the payroll of a relatively smaller group of active members.

Another indicator of a more mature plan is relatively large amounts of assets and/or liabilities compared to active member payroll, which leads to increasing volatility in the level of required contributions. The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of contribution sensitivity to changes in the current level of assets and is detailed for the Retirement and Health Plans in *Chart 13a* and *Chart 13b*, respectively. The Liability Volatility Ratio (LVR), which is equal to the actuarial accrued liability divided by payroll, provides an indication of the contribution sensitivity to changes in the current level of liability and is also detailed for the Retirement and Health Plans in *Chart 13a* and *Chart 13b*, respectively. Over time, the AVR should approach the LVR because when a plan is fully funded the assets will equal the liabilities. As such, the LVR also indicates the long-term contribution sensitivity to the asset volatility, as the plan approaches full funding.

In particular, the Retirement Plan's AVR was 7.0 as of June 30, 2024. This means that a 1% asset gain or loss in 2024/2025 (relative to the assumed investment return) would amount to 7.0% of one year's payroll. Similarly, the Retirement Plan's LVR was 9.7 as of June 30, 2024, so a 1% liability gain or loss in 2024/2025 would amount to 9.7% of one year's payroll. Based on LACERS' policy to amortize actuarial experience over a period of 15 years when the Plan has an unfunded liability, for the Retirement Plan there would be a 0.6% of payroll decrease or increase in the required contribution rate for each 1% asset gain or loss, respectively, and a 0.8% of payroll decrease or increase in the required contribution rate for each 1% liability gain or loss, respectively.

It is also informative to note that the AVR and LVR for the Retirement Plan are significantly higher than for the Health Plan. This means that both investment volatility and assumption changes will have a greater impact on the contribution rates of the Retirement Plan than on the contribution rates of the Health Plan. This is illustrated in the following table:

Section 2: Key Plan Risks

Plan	AVR	10% Investment Loss Compares to	LVR	10% Liability Change Compares to
Retirement Plan	7.0	70% of payroll	9.7	97% of payroll
Health Plan	1.4	14% of payroll	1.3	13% of payroll
Combined	**8.4**	**84% of payroll**	**11.0**	**110% of payroll**

Chart 12a

Retirement Plan – Ratio of Retirees and Beneficiaries (Pay Status) to Active Members & Ratio of Inactive, Retirees and Beneficiaries (Non-Active) to Active Members as of June 30

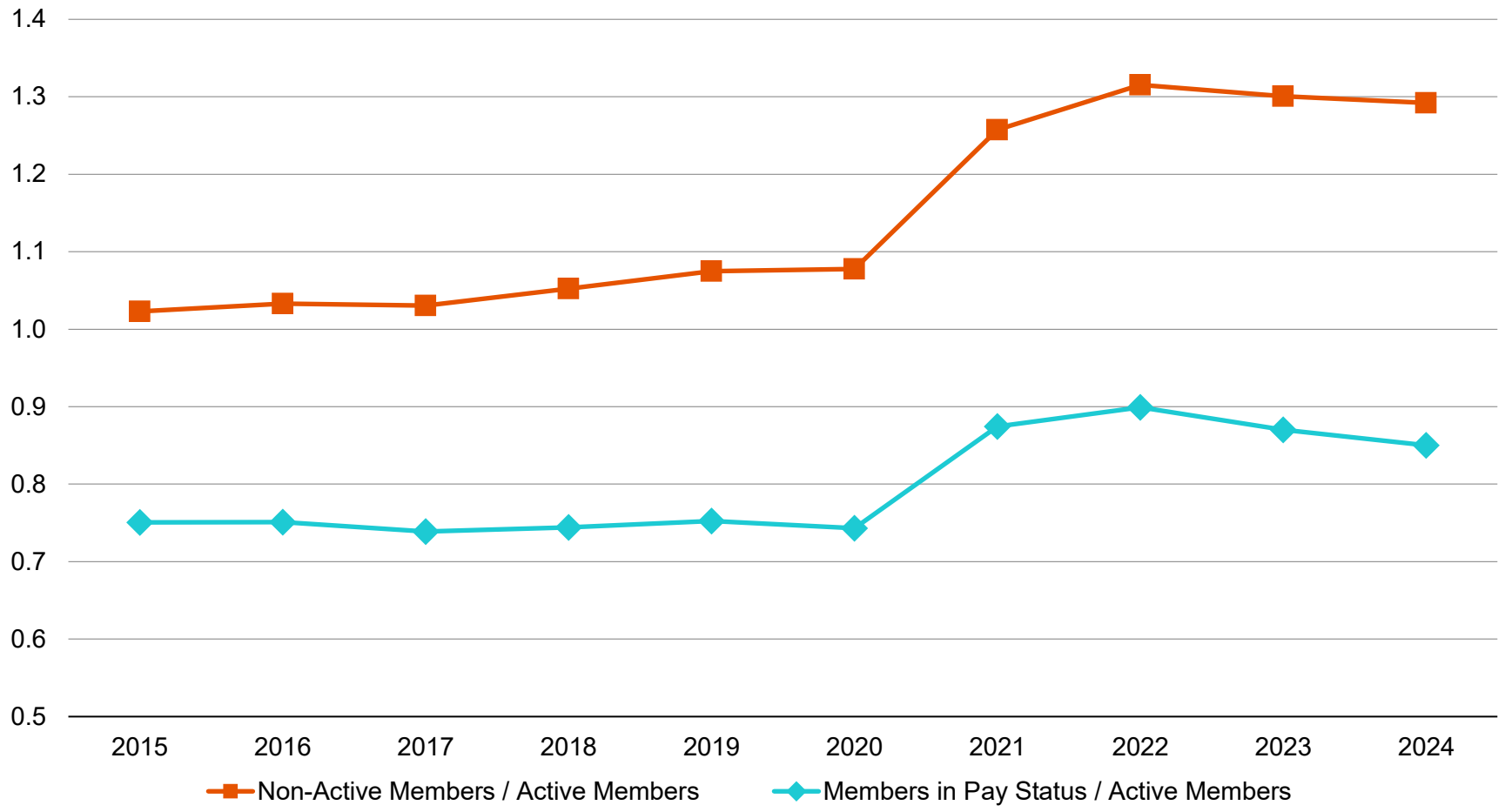


Chart 12b

Health Plan – Ratio of Retirees and Beneficiaries (Pay Status) to Active Members & Ratio of Inactive, Retirees and Beneficiaries (Non-Active) to Active Members as of June 30

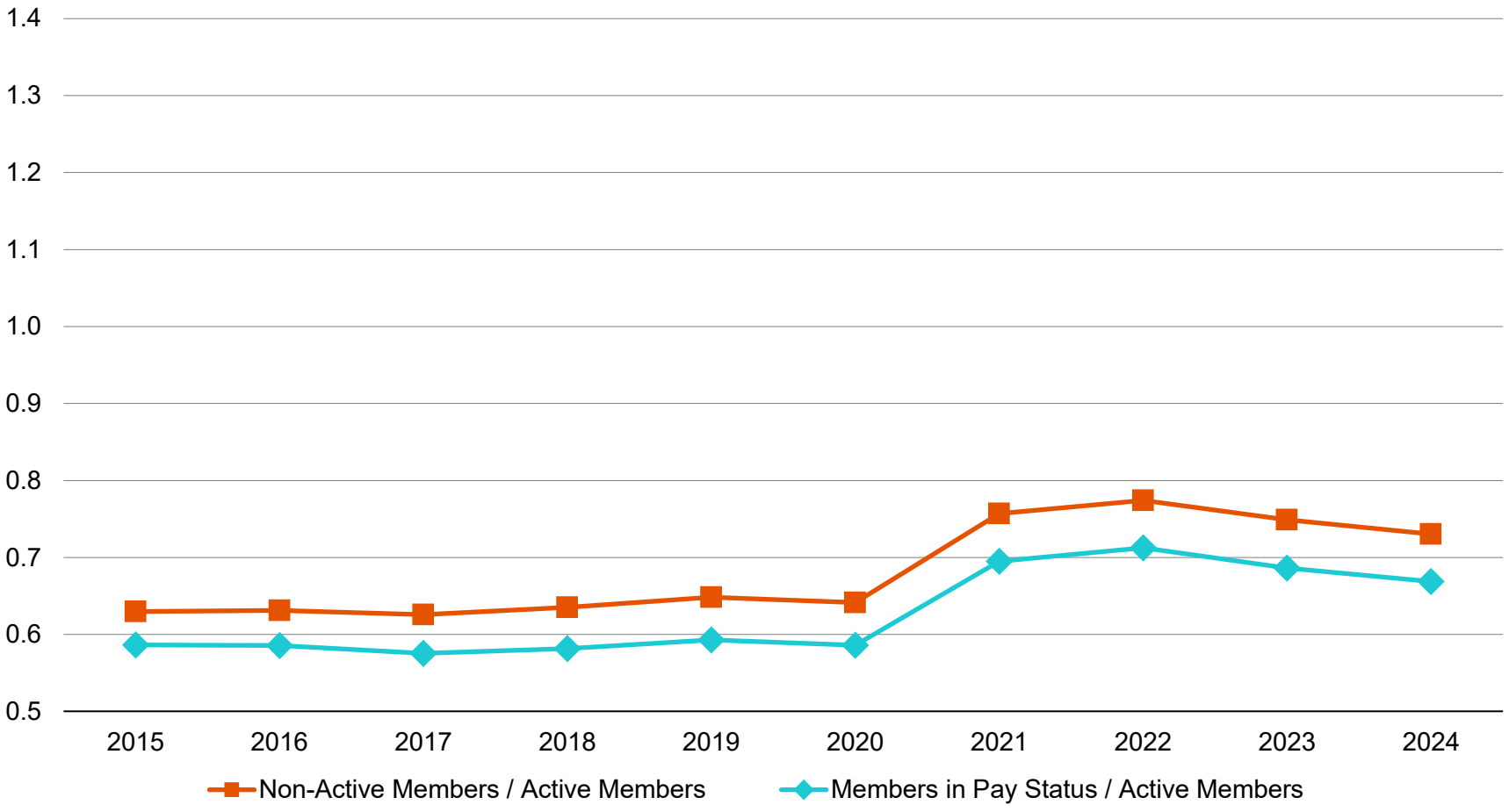


Chart 13a

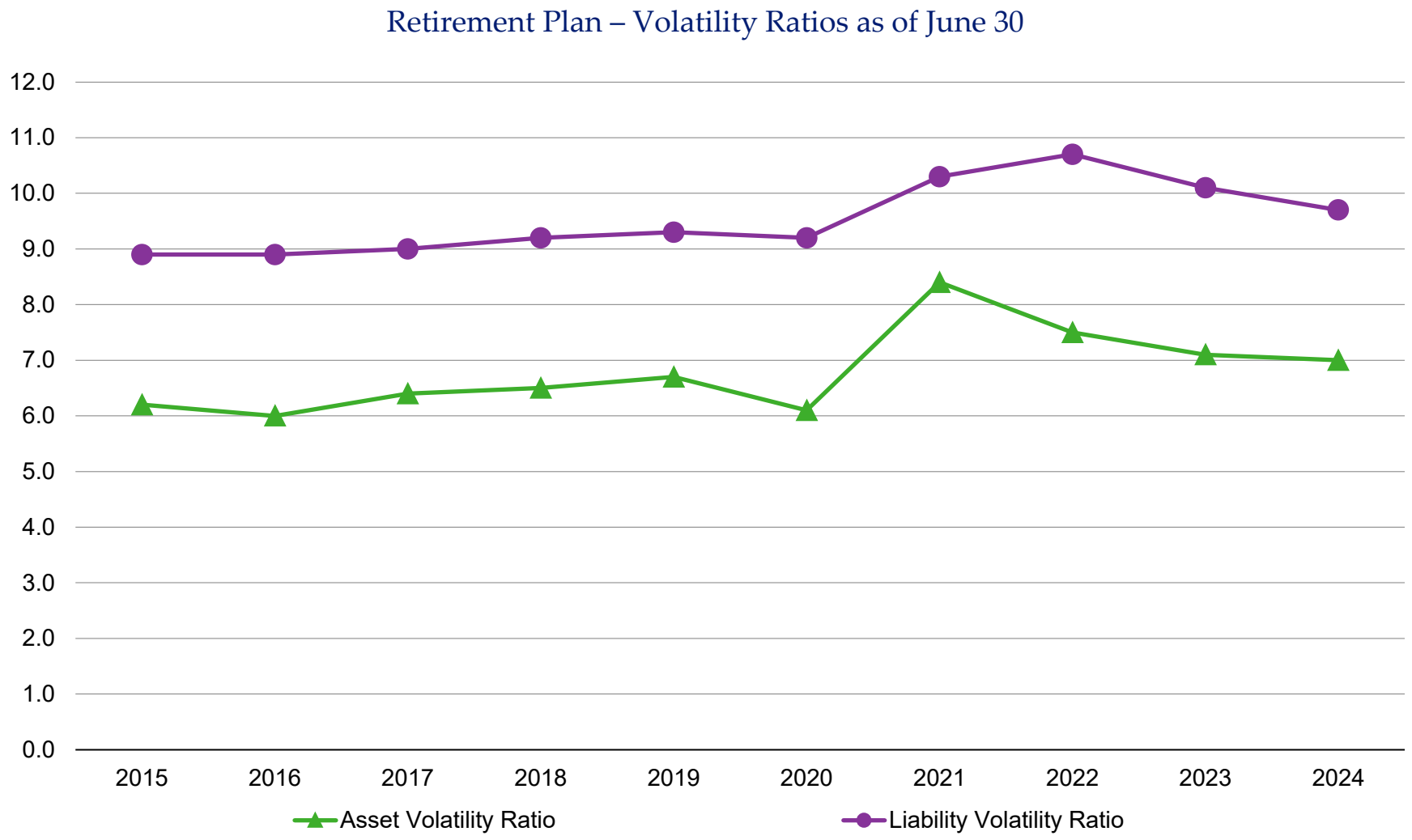
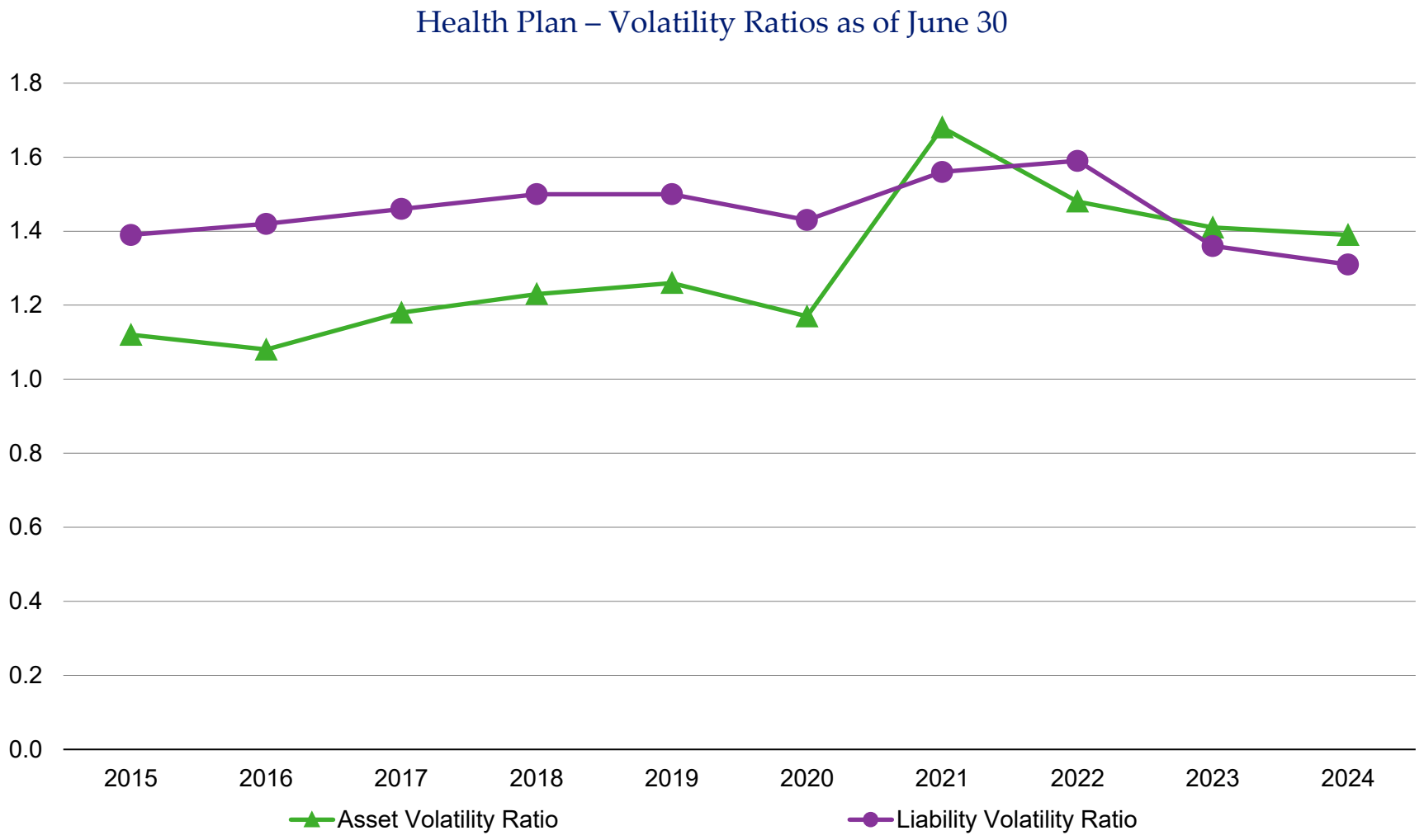

Retirement Plan – Volatility Ratios as of June 30
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Asset Volatility Ratio
Liability Volatility Ratio

Chart 13b


Health Plan – Volatility Ratios as of June 30
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Asset Volatility Ratio
Liability Volatility Ratio

Appendix A: Actuarial Assumptions & Methods

Unless otherwise noted, the results included in this report have been prepared based on the assumptions and methods used in preparing the June 30, 2024 actuarial valuations.

Deterministic projection

In addition, we have prepared the deterministic projection using the following assumptions and methods applied in the June 30, 2024 actuarial valuations:

- Non-economic assumptions will remain unchanged.
- Retirement benefit formulas will remain unchanged.
- Los Angeles Charter and Administrative Code will remain unchanged.
- UAAL amortization method will remain unchanged (i.e., 15-year layers for actuarial gains/losses, 20-year layers for assumption or method changes, 15-year layers for plan amendments, 30-year layers for actuarial surplus, and level percent of pay).
- Economic assumptions will remain unchanged, including the annual 7.00% investment earnings and 3.00% active payroll growth assumptions.
- Deferred investment gains and losses will be recognized over a seven-year period.
- In estimating the benefit payments for the open group, we have assumed that the annual payments will increase by 4.75% for the Retirement Plan and 5.25% for the Health Plan. The assumption for the Retirement Plan was developed by analyzing the increase in the actual benefit payments over the five years ending June 30, 2024, excluding the two-year period from July 1, 2020 to June 30, 2022 to try to remove the effects of the 2020 City Separation Incentive Program, combined with the increase in the projected benefit payments based on the actuarial assumptions described herein for the five years after July 1, 2024. The assumption for the Health Plan was based on a review of actual benefit costs for the ten years preceding June 30, 2024 and projected benefit costs for the ten years after June 30, 2024.
- All other actuarial assumptions used in the June 30, 2024 actuarial valuations will be realized.

Stochastic projection

Besides the assumptions and methods discussed above for the deterministic projection, the following additional assumptions or parameters are used in projecting LACERS' investment portfolio over the next 20 years based on performing 10,000 trial outcomes of future market returns.

Target asset allocation

The target asset allocation is based on that provided by LACERS at the last triennial experience study and used by Segal to set the investment return assumption of 7.00%. That target asset allocation is as follows:

Appendix A: Actuarial Assumptions & Methods

Target Asset Allocation

Asset Class	Target Allocation
Large Cap U.S. Equity	15.00%
Small/Mid Cap U.S. Equity	6.00%
Developed International Large Cap Equity	15.00%
Developed International Small Cap Equity	3.00%
Emerging Markets Equity	6.67%
Core Bonds	11.25%
High Yield Bonds	1.50%
Bank Loans	1.50%
TIPS	3.60%
Emerging Market External Debt	2.00%
Emerging Market Local Currency Debt	2.00%
Real Estate – Core	4.20%
Cash & Equivalents	1.00%
Private Equity	16.00%
Private Credit (Private Debt)	5.75%
Emerging Market Small-Cap Equity	1.33%
REIT	1.40%
Real Estate – Non-Core	2.80%
Total	**100.00%**

Simulation of future returns

In preparing the 10,000 trial outcomes of future market returns, we performed simulations using assumptions regarding the 20-year arithmetic returns, standard deviations and correlation matrix that were found in the 2024 survey prepared by Horizon Actuarial Services.[1] We used the assumptions that were closest to the asset classes found in LACERS' investment portfolio.

[1] That survey included responses from 41 investment advisors, including LACERS' investment advisor at NEPC.

Appendix A: Actuarial Assumptions & Methods

A summary of the 20-year arithmetic returns,[1] standard deviations and correlation matrix for each of the different asset classes used in the modeling is as follows:

20-Year Arithmetic Return and Standard Deviation

Asset Class	20-Year Arithmetic Return	Standard Deviation
US Equity – Large Cap	8.25%	16.52%
US Equity – Small/Mid Cap	9.50%	20.57%
Non-US Equity – Developed	9.08%	18.06%
Non-US Equity – Emerging	11.00%	23.61%
US Corporate Bonds – Core	5.04%	5.90%
US Corporate Bonds – High Yield	6.86%	9.94%
Non-US Debt – Emerging	6.89%	10.76%
US Treasuries (Cash Equivalents)	3.44%	1.10%
TIPS (Inflation-Protected)	4.48%	6.10%
Real Estate	7.38%	16.61%
Private Equity	12.33%	22.57%
Private Debt	9.09%	12.00%

[1] Note that only 26 investment advisors provided long-term (e.g. 20-year) capital market assumptions in the survey. These returns are gross of inflation and before any adjustment for administrative and investment expenses. The annual inflation assumption based on the Horizon Survey was 2.44%. The annual adjustment for administrative expenses was 0.16%.

Appendix A: Actuarial Assumptions & Methods

Correlation Matrix

Asset Class	1	2	3	4	5	6	7	8	9	10	11	12
1. US Equity – Large Cap	1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. US Equity – Small/Mid Cap	0.90	1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3. Non-US Equity – Developed	0.81	0.76	1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Non-US Equity – Emerging	0.70	0.67	0.79	1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5. US Corporate Bonds – Core	0.28	0.23	0.26	0.24	1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6. US Corporate Bonds – High Yield	0.68	0.67	0.64	0.62	0.49	1.00	N/A	N/A	N/A	N/A	N/A	N/A
7. Non-US Debt – Emerging	0.53	0.50	0.57	0.63	0.58	0.66	1.00	N/A	N/A	N/A	N/A	N/A
8. US Treasuries (Cash Equivalents)	(0.03)	(0.06)	(0.02)	(0.02)	0.14	(0.03)	0.06	1.00	N/A	N/A	N/A	N/A
9. TIPS (Inflation-Protected)	0.17	0.13	0.17	0.19	0.66	0.33	0.43	0.13	1.00	N/A	N/A	N/A
10. Real Estate	0.57	0.57	0.50	0.45	0.27	0.49	0.40	(0.03)	0.21	1.00	N/A	N/A
11. Private Equity	0.75	0.96	0.66	0.61	0.18	0.55	0.43	(0.07)	0.11	0.48	1.00	N/A
12. Private Debt	0.55	0.55	0.52	0.50	0.17	0.66	0.41	(0.08)	0.09	0.37	0.58	1.00

Other considerations

This risk report has been prepared for the exclusive use and benefit of LACERS, based upon information provided by LACERS and LACERS' other service providers or otherwise made available to Segal at the time this document was created. The results presented in this report are intended to provide insight into key plan risks that can inform financial preparation and future decision making. However, Segal makes no representation or warranty as to the accuracy of any forward-looking statements and does not guarantee any particular outcome or result. 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.

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, comprising

Appendix A: Actuarial Assumptions & Methods

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.

Except as may be required by law, this document should not be shared, copied or quoted, in whole or in part, without the consent of Segal. This document does not constitute legal, tax or investment advice or create or imply a fiduciary relationship. LACERS is encouraged to discuss any issues raised with LACERS' legal, tax and other advisors before taking, or refraining from taking, any action.

Appendix B: Detailed Scenario Test

The following pages contain twenty-three-year illustrations of City contributions, funded ratios and unfunded actuarial accrued liabilities for each of the Retirement and Health Plans, as well as for the two plans combined.

In addition to the assumptions outlined in *Appendix A* of this report, we have used the following market return assumptions to model three hypothetical market return scenarios:

- Scenario 1: Assumed market return of 0.00% for fiscal year 2024/2025, 7.00% market return per year thereafter
- Scenario 2: Assumed market return of 7.00% for fiscal year 2024/2025, 7.00% market return per year thereafter
- Scenario 3: Assumed market return of 14.00% for fiscal year 2024/2025, 7.00% market return per year thereafter

While we have not assigned a probability on the 2024/2025 market return coming in at these rates, the City can use these results to interpolate in order to estimate the funded status and employer contribution rates for the June 30, 2025 and next several valuations as the actual investment experience for the 2024/2025 year becomes available. Additionally, comparable experience in upcoming future years is likely to have a similar impact on the System absent any significant plan or assumption changes.

Scenario 1: Assumed market return of 0.00% for 2024/25, 7.00% thereafter

Twenty-Three-Year Illustration of UAAL, Funded Ratio and City Contributions

(Contributions Received on July 15 – $ in Thousands)

Retirement Plan Only

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$6,805,716	73.1%	2025	$2,730,282	7.78%	22.19%	29.97%	$818,266	N/A
2024	7,046,942	73.4%	2026	2,812,191	7.58%	20.55%	28.13%	791,069	$(27,197)
2025	7,163,033	74.0%	2027	2,896,556	7.90%[1]	21.23%	29.13%	843,767	52,698
2026	7,358,336	74.2%	2028	2,983,453	7.70%	22.21%	29.91%	892,351	48,584
2027	7,400,720	75.0%	2029	3,072,957	7.50%	22.83%	30.33%	932,028	39,677
2028	7,861,853	74.3%	2030	3,165,145	7.31%	24.18%	31.49%	996,704	64,676
2029	7,852,051	75.2%	2031	3,260,100	7.13%	25.76%	32.89%	1,072,247	75,543
2030	7,769,379	76.3%	2032	3,357,903	6.95%	27.18%	34.13%	1,146,052	73,805
2031	7,621,412	77.5%	2033	3,458,640	6.78%	28.88%	35.66%	1,233,351	87,299
2032	7,176,549	79.4%	2034	3,562,399	6.63%	29.40%	36.03%	1,283,532	50,181
2033	6,608,652	81.6%	2035	3,669,271	6.47%	28.78%	35.25%	1,293,418	9,886
2034	5,949,074	83.9%	2036	3,779,349	6.33%	25.88%	32.21%	1,217,328	(76,090)
2035	5,234,394	86.3%	2037	3,892,730	6.20%	24.21%	30.41%	1,183,779	(33,549)
2036	4,553,026	88.4%	2038	4,009,511	6.09%	24.86%	30.95%	1,240,944	57,165
2037	3,862,505	90.4%	2039	4,129,797	5.98%	24.26%	30.24%	1,248,851	7,907
2038	3,065,484	92.6%	2040	4,253,691	5.88%	20.86%	26.74%	1,137,437	(111,414)
2039	2,208,048	94.8%	2041	4,381,301	5.79%	19.41%	25.20%	1,104,088	(33,349)
2040	1,412,724	96.7%	2042	4,512,741	5.71%	17.06%	22.77%	1,027,551	(76,537)
2041	601,206	98.6%	2043	4,648,123	5.63%	15.86%	21.49%	998,882	(28,669)
2042	(181,439)	100.4%	2044	4,787,566	5.56%	-0.20%	5.36%	256,614	(742,268)
2043	(982,935)	102.2%	2045	4,931,193	5.51%	-1.13%	4.38%	215,986	(40,628)
2044	(1,043,032)	102.3%	2046	5,079,129	5.47%	-1.16%	4.31%	218,910	2,924
2045	(1,058,003)	102.3%	2047	5,231,503	5.43%	-1.14%	4.29%	224,431	5,521
2046	(1,070,650)	102.3%	2048	5,388,448	5.40%	-1.12%	4.28%	230,626	6,195
2047	(1,082,900)	102.3%	2049	5,550,102	5.37%	-1.10%	4.27%	236,989	6,363

[1] The increase in the employer Normal Cost rate projected for FY 2027 reflects the sunsetting of the 1% ERIP Cost Obligation by June 30, 2026 for the Tier 1 and Tier 1 Enhanced members.

Appendix B: Detailed Scenario Test

Health Plan Only

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$(241,890)	107.1%	2025	$2,730,282	3.85%	-0.53%	3.32%	$90,645	N/A
2024	(285,811)	108.0%	2026	2,812,191	3.88%	-0.57%	3.31%	93,084	$2,439
2025	(235,670)	106.3%	2027	2,896,556	3.88%	-0.45%	3.43%	99,352	6,268
2026	(172,871)	104.4%	2028	2,983,453	3.90%	-0.33%	3.57%	106,509	7,157
2027	(134,206)	103.2%	2029	3,072,957	3.90%	-0.24%	3.66%	112,470	5,961
2028	(3,943)	100.1%	2030	3,165,145	3.91%	-0.01%	3.90%	123,441	10,971
2029	41,417	99.1%	2031	3,260,100	3.92%	0.11%	4.03%	131,382	7,941
2030	81,550	98.3%	2032	3,357,903	3.93%	0.22%	4.15%	139,353	7,971
2031	124,479	97.6%	2033	3,458,640	3.95%	0.33%	4.28%	148,030	8,677
2032	125,739	97.7%	2034	3,562,399	3.96%	0.34%	4.30%	153,183	5,153
2033	122,580	97.8%	2035	3,669,271	3.97%	0.35%	4.32%	158,513	5,330
2034	118,631	98.0%	2036	3,779,349	3.98%	0.36%	4.34%	164,024	5,511
2035	113,841	98.2%	2037	3,892,730	4.00%	0.35%	4.35%	169,334	5,310
2036	107,996	98.3%	2038	4,009,511	4.01%	0.36%	4.37%	175,216	5,882
2037	101,494	98.5%	2039	4,129,797	4.02%	0.36%	4.38%	180,885	5,669
2038	93,895	98.7%	2040	4,253,691	4.05%	0.35%	4.40%	187,162	6,277
2039	85,477	98.9%	2041	4,381,301	4.06%	0.35%	4.41%	193,215	6,053
2040	75,774	99.0%	2042	4,512,741	4.07%	0.36%	4.43%	199,914	6,699
2041	64,996	99.2%	2043	4,648,123	4.07%	0.36%	4.43%	205,912	5,998
2042	52,253	99.4%	2044	4,787,566	4.08%	0.36%	4.44%	212,568	6,656
2043	38,450	99.6%	2045	4,931,193	4.08%	0.37%	4.45%	219,438	6,870
2044	22,961	99.8%	2046	5,079,129	4.10%	0.24%	4.34%	220,434	996
2045	5,798	99.9%	2047	5,231,503	4.11%	0.13%	4.24%	221,816	1,382
2046	(6,326)	100.1%	2048	5,388,448	4.13%	-0.01%	4.12%	222,004	188
2047	(13,020)	100.1%	2049	5,550,102	4.15%	-0.02%	4.13%	229,219	7,215

Appendix B: Detailed Scenario Test

Retirement and Health Plans Combined

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$6,563,826	77.1%	2025	$2,730,282	11.63%	21.66%	33.29%	$908,911	N/A
2024	6,761,131	77.5%	2026	2,812,191	11.46%	19.98%	31.44%	884,153	$(24,758)
2025	6,927,363	77.8%	2027	2,896,556	11.78%	20.78%	32.56%	943,119	58,966
2026	7,185,464	77.9%	2028	2,983,453	11.60%	21.88%	33.48%	998,860	55,741
2027	7,266,514	78.5%	2029	3,072,957	11.40%	22.59%	33.99%	1,044,498	45,638
2028	7,857,910	77.6%	2030	3,165,145	11.22%	24.17%	35.39%	1,120,145	75,647
2029	7,893,468	78.3%	2031	3,260,100	11.05%	25.87%	36.92%	1,203,629	83,484
2030	7,850,929	79.1%	2032	3,357,903	10.88%	27.40%	38.28%	1,285,405	81,776
2031	7,745,891	80.1%	2033	3,458,640	10.73%	29.21%	39.94%	1,381,381	95,976
2032	7,302,288	81.9%	2034	3,562,399	10.59%	29.74%	40.33%	1,436,715	55,334
2033	6,731,232	83.8%	2035	3,669,271	10.44%	29.13%	39.57%	1,451,931	15,216
2034	6,067,705	85.9%	2036	3,779,349	10.31%	26.24%	36.55%	1,381,352	(70,579)
2035	5,348,235	87.9%	2037	3,892,730	10.20%	24.56%	34.76%	1,353,113	(28,239)
2036	4,661,022	89.8%	2038	4,009,511	10.10%	25.22%	35.32%	1,416,160	63,047
2037	3,963,999	91.6%	2039	4,129,797	10.00%	24.62%	34.62%	1,429,736	13,576
2038	3,159,380	93.5%	2040	4,253,691	9.93%	21.21%	31.14%	1,324,599	(105,137)
2039	2,293,524	95.4%	2041	4,381,301	9.85%	19.76%	29.61%	1,297,303	(27,296)
2040	1,488,497	97.1%	2042	4,512,741	9.78%	17.42%	27.20%	1,227,465	(69,838)
2041	666,202	98.7%	2043	4,648,123	9.70%	16.22%	25.92%	1,204,794	(22,671)
2042	(129,186)	100.2%	2044	4,787,566	9.64%	0.16%	9.80%	469,182	(735,612)
2043	(944,485)	101.7%	2045	4,931,193	9.59%	-0.76%	8.83%	435,424	(33,758)
2044	(1,020,071)	101.8%	2046	5,079,129	9.57%	-0.92%	8.65%	439,344	3,920
2045	(1,052,205)	101.9%	2047	5,231,503	9.54%	-1.01%	8.53%	446,247	6,903
2046	(1,076,977)	101.9%	2048	5,388,448	9.53%	-1.13%	8.40%	452,630	6,383
2047	(1,095,921)	101.9%	2049	5,550,102	9.52%	-1.12%	8.40%	466,208	13,578

Note: Results may not total exactly due to rounding.

Scenario 2: Assumed market return of 7.00% for 2024/25, 7.00% thereafter

Twenty-Three-Year Illustration of UAAL, Funded Ratio and City Contributions

(Contributions Received on July 15 – $ in Thousands)

Retirement Plan Only

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$6,805,716	73.1%	2025	$2,730,282	7.78%	22.19%	29.97%	$818,266	N/A
2024	7,046,942	73.4%	2026	2,812,191	7.58%	20.55%	28.13%	791,069	$(27,197)
2025	6,967,187	74.7%	2027	2,896,556	7.90%[1]	20.63%	28.53%	826,388	35,319
2026	6,870,680	75.9%	2028	2,983,453	7.70%	20.74%	28.44%	848,494	22,106
2027	6,633,133	77.6%	2029	3,072,957	7.50%	20.51%	28.01%	860,735	12,241
2028	6,836,779	77.7%	2030	3,165,145	7.31%	21.08%	28.39%	898,585	37,850
2029	6,594,531	79.2%	2031	3,260,100	7.13%	21.95%	29.08%	948,037	49,452
2030	6,305,218	80.7%	2032	3,357,903	6.95%	22.70%	29.65%	995,618	47,581
2031	5,977,761	82.3%	2033	3,458,640	6.78%	23.81%	30.59%	1,057,998	62,380
2032	5,578,088	84.0%	2034	3,562,399	6.63%	24.29%	30.92%	1,101,494	43,496
2033	5,085,186	85.9%	2035	3,669,271	6.47%	23.66%	30.13%	1,105,551	4,057
2034	4,513,366	87.8%	2036	3,779,349	6.33%	20.76%	27.09%	1,023,826	(81,725)
2035	3,898,418	89.8%	2037	3,892,730	6.20%	19.08%	25.28%	984,082	(39,744)
2036	3,330,176	91.5%	2038	4,009,511	6.09%	19.73%	25.82%	1,035,256	51,174
2037	2,766,898	93.1%	2039	4,129,797	5.98%	19.14%	25.12%	1,037,405	2,149
2038	2,112,413	94.9%	2040	4,253,691	5.88%	15.74%	21.62%	919,648	(117,757)
2039	1,413,624	96.6%	2041	4,381,301	5.79%	14.30%	20.09%	880,203	(39,445)
2040	794,814	98.2%	2042	4,512,741	5.71%	12.53%	18.24%	823,124	(57,079)
2041	179,131	99.6%	2043	4,648,123	5.63%	12.27%	17.90%	832,014	8,890
2042	(415,288)	100.9%	2044	4,787,566	5.56%	-0.49%	5.07%	242,730	(589,284)
2043	(1,055,103)	102.3%	2045	4,931,193	5.51%	-1.21%	4.30%	212,041	(30,689)
2044	(1,105,908)	102.4%	2046	5,079,129	5.47%	-1.23%	4.24%	215,355	3,314
2045	(1,121,059)	102.4%	2047	5,231,503	5.43%	-1.21%	4.22%	220,769	5,414
2046	(1,134,316)	102.4%	2048	5,388,448	5.40%	-1.19%	4.21%	226,854	6,085
2047	(1,147,104)	102.4%	2049	5,550,102	5.37%	-1.17%	4.20%	233,104	6,250

[1] The increase in the employer Normal Cost rate projected for FY 2027 reflects the sunsetting of the 1% ERIP Cost Obligation by June 30, 2026 for the Tier 1 and Tier 1 Enhanced members.

Appendix B: Detailed Scenario Test

Health Plan Only

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$(241,890)	107.1%	2025	$2,730,282	3.85%	-0.53%	3.32%	$90,645	N/A
2024	(285,811)	108.0%	2026	2,812,191	3.88%	-0.57%	3.31%	93,084	$2,439
2025	(273,719)	107.3%	2027	2,896,556	3.88%	-0.53%	3.35%	97,035	3,951
2026	(267,614)	106.8%	2028	2,983,453	3.90%	-0.51%	3.39%	101,139	4,104
2027	(284,467)	106.8%	2029	3,072,957	3.90%	-0.52%	3.38%	103,866	2,727
2028	(207,679)	104.7%	2030	3,165,145	3.91%	-0.37%	3.54%	112,046	8,180
2029	(213,414)	104.6%	2031	3,260,100	3.92%	-0.37%	3.55%	115,734	3,688
2030	(222,302)	104.6%	2032	3,357,903	3.93%	-0.37%	3.56%	119,541	3,807
2031	(224,612)	104.4%	2033	3,458,640	3.95%	-0.37%	3.58%	123,819	4,278
2032	(226,590)	104.2%	2034	3,562,399	3.96%	-0.36%	3.60%	128,246	4,427
2033	(228,507)	104.1%	2035	3,669,271	3.97%	-0.35%	3.62%	132,828	4,582
2034	(230,349)	103.9%	2036	3,779,349	3.98%	-0.34%	3.64%	137,568	4,740
2035	(232,086)	103.7%	2037	3,892,730	4.00%	-0.34%	3.66%	142,474	4,906
2036	(233,838)	103.6%	2038	4,009,511	4.01%	-0.33%	3.68%	147,550	5,076
2037	(235,529)	103.5%	2039	4,129,797	4.02%	-0.32%	3.70%	152,802	5,252
2038	(237,117)	103.3%	2040	4,253,691	4.05%	-0.32%	3.73%	158,663	5,861
2039	(238,658)	103.2%	2041	4,381,301	4.06%	-0.31%	3.75%	164,299	5,636
2040	(240,555)	103.1%	2042	4,512,741	4.07%	-0.30%	3.77%	170,130	5,831
2041	(242,535)	103.0%	2043	4,648,123	4.07%	-0.29%	3.78%	175,699	5,569
2042	(244,936)	102.9%	2044	4,787,566	4.08%	-0.29%	3.79%	181,449	5,750
2043	(247,215)	102.8%	2045	4,931,193	4.08%	-0.28%	3.80%	187,385	5,936
2044	(249,403)	102.7%	2046	5,079,129	4.10%	-0.28%	3.82%	194,023	6,638
2045	(251,335)	102.6%	2047	5,231,503	4.11%	-0.27%	3.84%	200,890	6,867
2046	(253,198)	102.5%	2048	5,388,448	4.13%	-0.27%	3.86%	207,994	7,104
2047	(254,782)	102.4%	2049	5,550,102	4.15%	-0.26%	3.89%	215,899	7,905

Appendix B: Detailed Scenario Test

Retirement and Health Plans Combined

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$6,563,826	77.1%	2025	$2,730,282	11.63%	21.66%	33.29%	$908,911	N/A
2024	6,761,131	77.5%	2026	2,812,191	11.46%	19.98%	31.44%	884,153	$(24,758)
2025	6,693,468	78.6%	2027	2,896,556	11.78%	20.10%	31.88%	923,423	39,270
2026	6,603,066	79.7%	2028	2,983,453	11.60%	20.23%	31.83%	949,633	26,210
2027	6,348,665	81.2%	2029	3,072,957	11.40%	19.99%	31.39%	964,601	14,968
2028	6,629,099	81.1%	2030	3,165,145	11.22%	20.71%	31.93%	1,010,631	46,030
2029	6,381,118	82.4%	2031	3,260,100	11.05%	21.58%	32.63%	1,063,771	53,140
2030	6,082,916	83.8%	2032	3,357,903	10.88%	22.33%	33.21%	1,115,159	51,388
2031	5,753,149	85.2%	2033	3,458,640	10.73%	23.44%	34.17%	1,181,817	66,658
2032	5,351,498	86.7%	2034	3,562,399	10.59%	23.93%	34.52%	1,229,740	47,923
2033	4,856,679	88.3%	2035	3,669,271	10.44%	23.31%	33.75%	1,238,379	8,639
2034	4,283,016	90.0%	2036	3,779,349	10.31%	20.42%	30.73%	1,161,394	(76,985)
2035	3,666,332	91.7%	2037	3,892,730	10.20%	18.74%	28.94%	1,126,556	(34,838)
2036	3,096,338	93.2%	2038	4,009,511	10.10%	19.40%	29.50%	1,182,806	56,250
2037	2,531,369	94.6%	2039	4,129,797	10.00%	18.82%	28.82%	1,190,207	7,401
2038	1,875,296	96.1%	2040	4,253,691	9.93%	15.42%	25.35%	1,078,311	(111,896)
2039	1,174,967	97.6%	2041	4,381,301	9.85%	13.99%	23.84%	1,044,502	(33,809)
2040	554,259	98.9%	2042	4,512,741	9.78%	12.23%	22.01%	993,254	(51,248)
2041	(63,404)	100.1%	2043	4,648,123	9.70%	11.98%	21.68%	1,007,713	14,459
2042	(660,224)	101.2%	2044	4,787,566	9.64%	-0.78%	8.86%	424,179	(583,534)
2043	(1,302,318)	102.4%	2045	4,931,193	9.59%	-1.49%	8.10%	399,426	(24,753)
2044	(1,355,311)	102.4%	2046	5,079,129	9.57%	-1.51%	8.06%	409,378	9,952
2045	(1,372,394)	102.4%	2047	5,231,503	9.54%	-1.48%	8.06%	421,659	12,281
2046	(1,387,514)	102.4%	2048	5,388,448	9.53%	-1.46%	8.07%	434,848	13,189
2047	(1,401,887)	102.4%	2049	5,550,102	9.52%	-1.43%	8.09%	449,003	14,155

Note: Results may not total exactly due to rounding.

Scenario 3: Assumed market return of 14.00% for 2024/25, 7.00% thereafter

Twenty-Three-Year Illustration of UAAL, Funded Ratio and City Contributions

(Contributions Received on July 15 – $ in Thousands)

Retirement Plan Only

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$6,805,716	73.1%	2025	$2,730,282	7.78%	22.19%	29.97%	$818,266	N/A
2024	7,046,942	73.4%	2026	2,812,191	7.58%	20.55%	28.13%	791,069	$(27,197)
2025	6,771,341	75.4%	2027	2,896,556	7.90%[1]	20.04%	27.94%	809,298	18,229
2026	6,383,024	77.6%	2028	2,983,453	7.70%	19.25%	26.95%	804,041	(5,257)
2027	5,865,235	80.2%	2029	3,072,957	7.50%	18.19%	25.69%	789,443	(14,598)
2028	5,811,692	81.0%	2030	3,165,145	7.31%	17.98%	25.29%	800,465	11,022
2029	5,336,670	83.2%	2031	3,260,100	7.13%	18.13%	25.26%	823,501	23,036
2030	4,840,691	85.2%	2032	3,357,903	6.95%	18.24%	25.19%	845,856	22,355
2031	4,334,067	87.2%	2033	3,458,640	6.78%	18.75%	25.53%	882,991	37,135
2032	3,979,222	88.6%	2034	3,562,399	6.63%	19.17%	25.80%	919,099	36,108
2033	3,561,287	90.1%	2035	3,669,271	6.47%	18.54%	25.01%	917,685	(1,414)
2034	3,077,194	91.7%	2036	3,779,349	6.33%	15.63%	21.96%	829,945	(87,740)
2035	2,562,339	93.3%	2037	3,892,730	6.20%	13.95%	20.15%	784,385	(45,560)
2036	2,107,214	94.6%	2038	4,009,511	6.09%	14.61%	20.70%	829,969	45,584
2037	1,671,172	95.8%	2039	4,129,797	5.98%	14.01%	19.99%	825,546	(4,423)
2038	1,159,214	97.2%	2040	4,253,691	5.88%	10.61%	16.49%	701,434	(124,112)
2039	619,507	98.5%	2041	4,381,301	5.79%	9.17%	14.96%	655,443	(45,991)
2040	177,688	99.6%	2042	4,512,741	5.71%	8.01%	13.72%	619,148	(36,295)
2041	(241,638)	100.6%	2043	4,648,123	5.63%	-0.30%	5.33%	247,745	(371,403)
2042	(647,740)	101.5%	2044	4,787,566	5.56%	-0.76%	4.80%	229,803	(17,942)
2043	(680,648)	101.5%	2045	4,931,193	5.51%	-0.78%	4.73%	233,245	3,442
2044	(691,409)	101.5%	2046	5,079,129	5.47%	-0.77%	4.70%	238,719	5,474
2045	(700,234)	101.5%	2047	5,231,503	5.43%	-0.76%	4.67%	244,311	5,592
2046	(709,033)	101.5%	2048	5,388,448	5.40%	-0.74%	4.66%	251,102	6,791
2047	(717,241)	101.5%	2049	5,550,102	5.37%	-0.73%	4.64%	257,525	6,423

[1] The increase in the employer Normal Cost rate projected for FY 2027 reflects the sunsetting of the 1% ERIP Cost Obligation by June 30, 2026 for the Tier 1 and Tier 1 Enhanced members.

Appendix B: Detailed Scenario Test

Health Plan Only

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$(241,890)	107.1%	2025	$2,730,282	3.85%	-0.53%	3.32%	$90,645	N/A
2024	(285,811)	108.0%	2026	2,812,191	3.88%	-0.57%	3.31%	93,084	$2,439
2025	(311,768)	108.3%	2027	2,896,556	3.88%	-0.60%	3.28%	95,007	1,923
2026	(362,356)	109.1%	2028	2,983,453	3.90%	-0.69%	3.21%	95,769	762
2027	(435,038)	110.4%	2029	3,072,957	3.90%	-0.80%	3.10%	95,262	(507)
2028	(411,747)	109.4%	2030	3,165,145	3.91%	-0.74%	3.17%	100,335	5,073
2029	(468,599)	110.1%	2031	3,260,100	3.92%	-0.82%	3.10%	101,063	728
2030	(526,196)	110.8%	2032	3,357,903	3.93%	-0.89%	3.04%	102,080	1,017
2031	(574,794)	111.2%	2033	3,458,640	3.95%	-0.95%	3.00%	103,759	1,679
2032	(582,601)	110.9%	2034	3,562,399	3.96%	-0.93%	3.03%	107,941	4,182
2033	(587,975)	110.4%	2035	3,669,271	3.97%	-0.90%	3.07%	112,647	4,706
2034	(593,252)	110.0%	2036	3,779,349	3.98%	-0.88%	3.10%	117,160	4,513
2035	(598,798)	109.7%	2037	3,892,730	4.00%	-0.87%	3.13%	121,842	4,682
2036	(604,383)	109.3%	2038	4,009,511	4.01%	-0.85%	3.16%	126,701	4,859
2037	(609,936)	109.0%	2039	4,129,797	4.02%	-0.83%	3.19%	131,741	5,040
2038	(615,424)	108.6%	2040	4,253,691	4.05%	-0.83%	3.22%	136,969	5,228
2039	(620,910)	108.3%	2041	4,381,301	4.06%	-0.81%	3.25%	142,392	5,423
2040	(626,353)	108.0%	2042	4,512,741	4.07%	-0.79%	3.28%	148,018	5,626
2041	(631,899)	107.8%	2043	4,648,123	4.07%	-0.77%	3.30%	153,388	5,370
2042	(637,895)	107.5%	2044	4,787,566	4.08%	-0.75%	3.33%	159,426	6,038
2043	(643,809)	107.2%	2045	4,931,193	4.08%	-0.73%	3.35%	165,195	5,769
2044	(650,194)	107.0%	2046	5,079,129	4.10%	-0.73%	3.37%	171,167	5,972
2045	(656,437)	106.8%	2047	5,231,503	4.11%	-0.71%	3.40%	177,871	6,704
2046	(662,202)	106.6%	2048	5,388,448	4.13%	-0.70%	3.43%	184,824	6,953
2047	(667,786)	106.4%	2049	5,550,102	4.15%	-0.68%	3.47%	192,589	7,765

Appendix B: Detailed Scenario Test

Retirement and Health Plans Combined

Valuation Year	UAAL	Funded Ratio	Fiscal Year End	Fiscal Year Pay	Normal Cost	UAAL Payment	Total Rate	Contribution Amount	Incremental Increase
2023	$6,563,826	77.1%	2025	$2,730,282	11.63%	21.66%	33.29%	$908,911	N/A
2024	6,761,131	77.5%	2026	2,812,191	11.46%	19.98%	31.44%	884,153	$(24,758)
2025	6,459,573	79.3%	2027	2,896,556	11.78%	19.44%	31.22%	904,305	20,152
2026	6,020,668	81.5%	2028	2,983,453	11.60%	18.56%	30.16%	899,810	(4,495)
2027	5,430,197	83.9%	2029	3,072,957	11.40%	17.39%	28.79%	884,705	(15,105)
2028	5,399,945	84.6%	2030	3,165,145	11.22%	17.24%	28.46%	900,800	16,095
2029	4,868,070	86.6%	2031	3,260,100	11.05%	17.31%	28.36%	924,564	23,764
2030	4,314,495	88.5%	2032	3,357,903	10.88%	17.35%	28.23%	947,936	23,372
2031	3,759,273	90.3%	2033	3,458,640	10.73%	17.80%	28.53%	986,750	38,814
2032	3,396,621	91.6%	2034	3,562,399	10.59%	18.24%	28.83%	1,027,040	40,290
2033	2,973,313	92.9%	2035	3,669,271	10.44%	17.64%	28.08%	1,030,332	3,292
2034	2,483,941	94.2%	2036	3,779,349	10.31%	14.75%	25.06%	947,105	(83,227)
2035	1,963,541	95.6%	2037	3,892,730	10.20%	13.08%	23.28%	906,227	(40,878)
2036	1,502,831	96.7%	2038	4,009,511	10.10%	13.76%	23.86%	956,670	50,443
2037	1,061,236	97.7%	2039	4,129,797	10.00%	13.18%	23.18%	957,287	617
2038	543,790	98.9%	2040	4,253,691	9.93%	9.78%	19.71%	838,403	(118,884)
2039	(1,404)	100.0%	2041	4,381,301	9.85%	8.36%	18.21%	797,835	(40,568)
2040	(448,665)	100.9%	2042	4,512,741	9.78%	7.22%	17.00%	767,166	(30,669)
2041	(873,537)	101.7%	2043	4,648,123	9.70%	-1.07%	8.63%	401,133	(366,033)
2042	(1,285,635)	102.4%	2044	4,787,566	9.64%	-1.51%	8.13%	389,229	(11,904)
2043	(1,324,456)	102.4%	2045	4,931,193	9.59%	-1.51%	8.08%	398,440	9,211
2044	(1,341,603)	102.4%	2046	5,079,129	9.57%	-1.50%	8.07%	409,886	11,446
2045	(1,356,671)	102.4%	2047	5,231,503	9.54%	-1.47%	8.07%	422,182	12,296
2046	(1,371,235)	102.4%	2048	5,388,448	9.53%	-1.44%	8.09%	435,926	13,744
2047	(1,385,027)	102.4%	2049	5,550,102	9.52%	-1.41%	8.11%	450,114	14,188

Note: Results may not total exactly due to rounding.

Appendix C: Definition of Pension Terms

The following list defines certain technical terms as they relate to LACERS for the convenience of the reader:

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	Single-sum present value of the lifetime benefits expected to be paid to the 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 value of assets	The value of the Plan's assets that is equal to the market value of assets less unrecognized returns. 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 seven-year period per LACERS' funding policy.
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.
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.
Generational mortality	A generational mortality table provides dynamic projections of mortality experience for each cohort of current and future retirees. For example, the mortality rate for someone who is 65 next year will be slightly less than for someone who is 65 this year. In general, using generational mortality anticipates increases in the cost of the Plan over time as participants' life expectancies are projected to increase. This is in contrast to updating a static mortality assumption with each experience study as we had proposed in experience studies prior to 2019.
Normal cost	The amount of contributions required to fund the portion of the level cost of the member's projected retirement benefit that is allocated to the current year of service.
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 value of assets	The portion of the total actuarial value of assets allocated to either the Retirement or Health Plans.

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