



## Investment Committee

# Agenda Item 5a

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**September 16, 2024**

**Item Name:** Mid-Cycle Asset Liability Management Review: Long-Term Care

**Program:** Long-Term Care Program

**Item Type:** Action

### **Recommendation**

Approve the recommended portfolio for the Long-Term Care Fund as the Policy Portfolio, which includes the following elements:

1. Capital Market Assumptions
2. Policy Targets and Ranges
3. Benchmarks

### **Executive Summary**

This agenda item presents the results of the Asset Liability Management (ALM) Mid-Cycle Review for the Long-Term Care (LTC) Program, along with Program information and Actuarial considerations to provide context and aid in the evaluation of the analysis and recommendation.

This review is more extensive than the mid-cycle reviews presented in June for other Affiliate Funds in that it evaluates both assets and liabilities. The LTC liabilities are updated annually, which enables current liability information to be evaluated during the strategic asset allocation process of the mid-cycle review. Candidate Portfolios for the Long-Term Care Fund have been designed in partnership with an external manager, using similar methods used for the other Affiliate Funds and the Public Employees' Retirement Fund. The evaluation process and recommendation are in alignment with CalPERS' objectives of minimizing potential losses, maximizing projected returns, maintaining sufficient liquidity, and minimizing costs. This item includes information about asset allocation, projected risk, and projected return.

The Policy Portfolio recommendation is to make allocation changes that reduce projected risk, while maintaining a projected return that is supportive of the discount rate.

## **Strategic Plan**

This agenda item supports the CalPERS Strategic Plan goal to strengthen the long-term sustainability of the Long-Term Care Fund. Reviewing financial market conditions and investment strategies at the midpoint of the 4-year ALM cycle provides the opportunity to adjust the Policy Portfolio with the objective of strengthening the sustainability of the fund.

## **Investment Beliefs**

This agenda item supports the following CalPERS Investment Beliefs:

- Investment Belief 2: A long term investment horizon is a responsibility and an advantage;
- Investment Belief 6: Strategic asset allocation is the dominant determinant of portfolio risk and return; and
- Investment Belief 7: CalPERS will take risk only where we have a strong belief we will be rewarded for it

## **Background**

Governed by CalPERS Asset Liability Management Policy, the ALM process occurs every four years with a mid-point review and is the primary process by which investment portfolio allocations evolve.

The Mid-Cycle Review of Current and Candidate Portfolios and the selection of the Policy Portfolio provides an opportunity to make portfolio allocation adjustments in response to financial market conditions, which may have changed from the last full ALM review.

This agenda item is intended to provide comprehensive information to support the Investment Committee in selecting the Policy Portfolio for adoption.

## **Analysis**

Not applicable.

## **Budget and Fiscal Impacts**

Not Applicable.

## **Benefits and Risks**

The benefits of conducting an ALM Mid-Cycle Review and adopting allocation changes for the Policy Portfolios are:

1. Reviewing Current and Candidate Portfolios at the mid-point in the 4-year cycle provides an opportunity to review financial market conditions and determine if the portfolio allocation could be adjusted to improve the risk/return profile.
2. Selecting a Policy Portfolio that has been designed with updated market information may improve the portfolio return/risk profile.

The risks of conducting an ALM Mid-Cycle Review and adopting allocation changes for the Policy Portfolios are:

1. Reviewing Current and Candidate Portfolios and selecting a Policy Portfolio requires evaluating and balancing a variety of risks to different stakeholders.
2. Selecting a Policy Portfolio requires reliance on investment and actuarial assumptions, which are inherently uncertain.
3. Dramatic shifts or frequent allocation changes may undermine the long-term, strategic nature of the ALM's purpose.

### **Attachments**

Attachment 1 – Asset Liability Management Mid-Cycle Review: Long-Term Care Fund

Attachment 2 – Wilshire Opinion Letter

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James Sterling Gunn  
Managing Investment Director  
Trust Level Portfolio Management

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Capital Markets

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Stephen Gilmore  
Chief Investment Officer

# Asset Liability Management Mid-Cycle Review: Long-Term Care Fund

Don Moulds, Chief Health Director  
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Christine Reese, Investment Director

September 16, 2024

# Long-Term Care Program Background

- Program established in 1995.
- Approximately 80,000 policyholders.
- Average age is 78.
- Suspended open enrollment in 2020 due to plan premium volatility and uncertainty in the long-term care market.

# Challenges Facing the Long-Term Care Program

- Deviations in assumptions
  - Living longer, but with higher rates of disability
  - Policy retention
  - Increasing cost of care
- Aging policyholder population
- Investment market volatility

# Actuarial Considerations

# Topics

- Current estimated state of the program
- Probabilities of future premium increases
- Estimated future margin
- Funding risks for the future

## Estimated Updated Information as of June 30, 2024

- Estimated Margin: -27%
- Estimated Funded Ratio: 88%
- Based on a 4.75% discount rate

# Probability of Future Premium Increases

|                                | Probability of Need for Rate Increase <i>within 5 years</i> |
|--------------------------------|---|
| Without two 10% Rate Increases | 63%   |
| With two 10% Rate Increases    | 44%   |

# Estimated Future Margin

|                                | Estimated Margin in 5 Years |
|--------------------------------|-----------------------------|
| Without two 10% Rate Increases | -48%                        |
| With two 10% Rate Increases    | -10%                        |

# Funding Risks for the Future

- Since the last rate increase...
  - Lower than expected investment income
  - New information suggests that future program costs will be higher than previously expected
- Program demographic is aging: claims exceed premiums
  - Diminishing ability to address shortfalls
  - Conservative approach to future assumptions is the best way to protect against unmanageable rate increases in the future

# Strategic Asset Allocation

# ALM Mid-Cycle Review Objective

The objective of the ALM Mid-Cycle Review is to provide the Board with an opportunity to evaluate if the current financial landscape still aligns with decisions made during the Asset Liability Management (ALM) review that was previously conducted and to make adjustments to the strategic asset allocation.

In the last few years since the prior ALM, market conditions have improved, particularly for fixed income, which is a significant allocation for the Long-Term Care (LTC) Fund. The increase in projected returns and decrease in projected risk creates an opportunity to evaluate reducing risk in the LTC Fund, similar to the strategic asset allocation risk reductions approved for the Judges' Retirement System II Fund and the Legislators' Retirement System Fund in June 2024.

To fully understand the impact of strategic asset allocation changes to the LTC Fund, this review considers both liabilities and assets, similar to the process for the full ALM review. Proposed rate increases of 10% in 2025 and 10% in 2026 have been incorporated in the analysis.

The following principles were followed for this review:

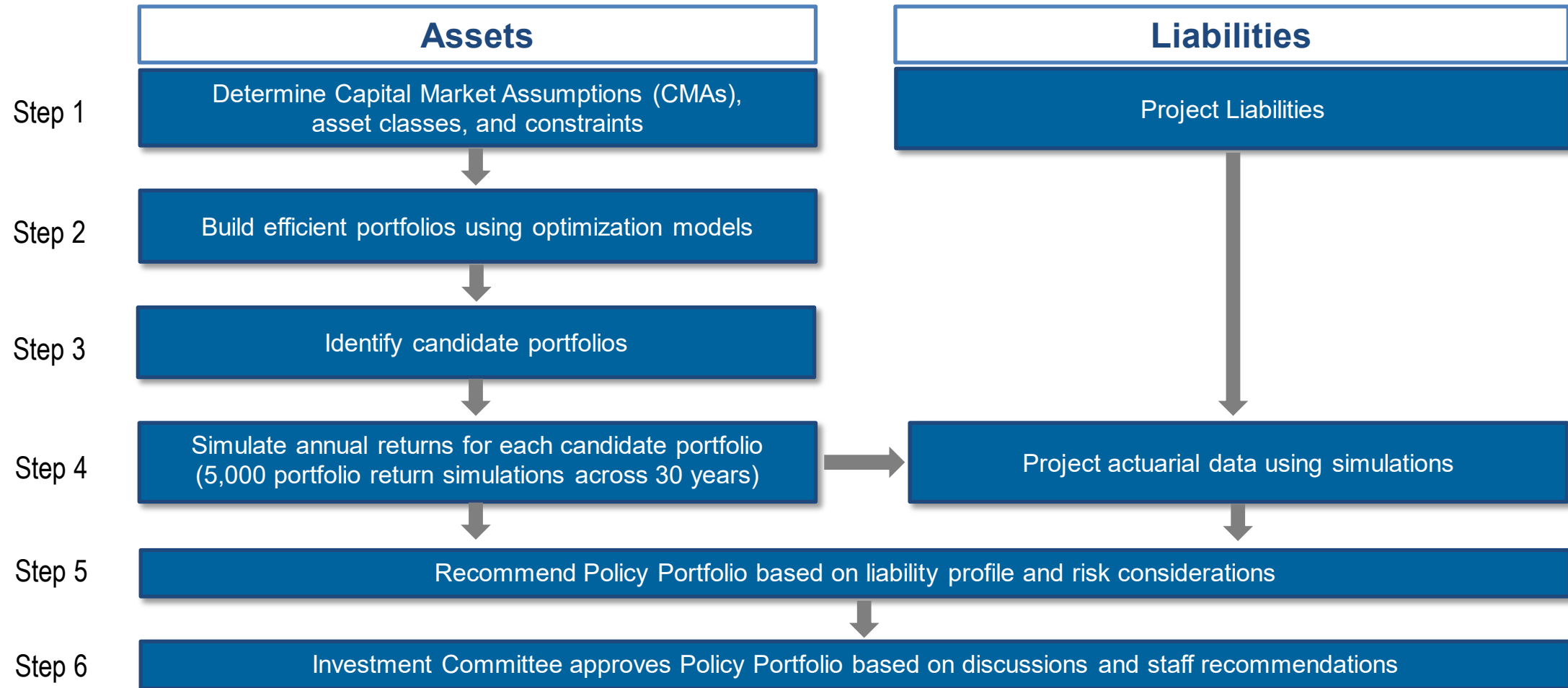
- CalPERS' objectives of minimizing potential losses, maximizing projected returns, maintaining sufficient liquidity, and minimizing costs have been integral in the review and recommendations.
- The Capital Market Assumptions for the Long-Term Care Fund are sourced from our external investment manager<sup>1</sup> and compared to our internal CMA survey for reasonability.
- The processes that the external manager utilizes for portfolio construction, asset class assessment, constraints, and portfolio testing are similar to the processes that are used for the PERF & Affiliate Funds.

# Investment Objective

The attributes of a plan influence the investment objective and strategic asset allocation. The Long-Term Care plan attributes align with the conservative investment objectives of providing a return that is supportive of the discount rate, while reducing risk to protect against large losses.

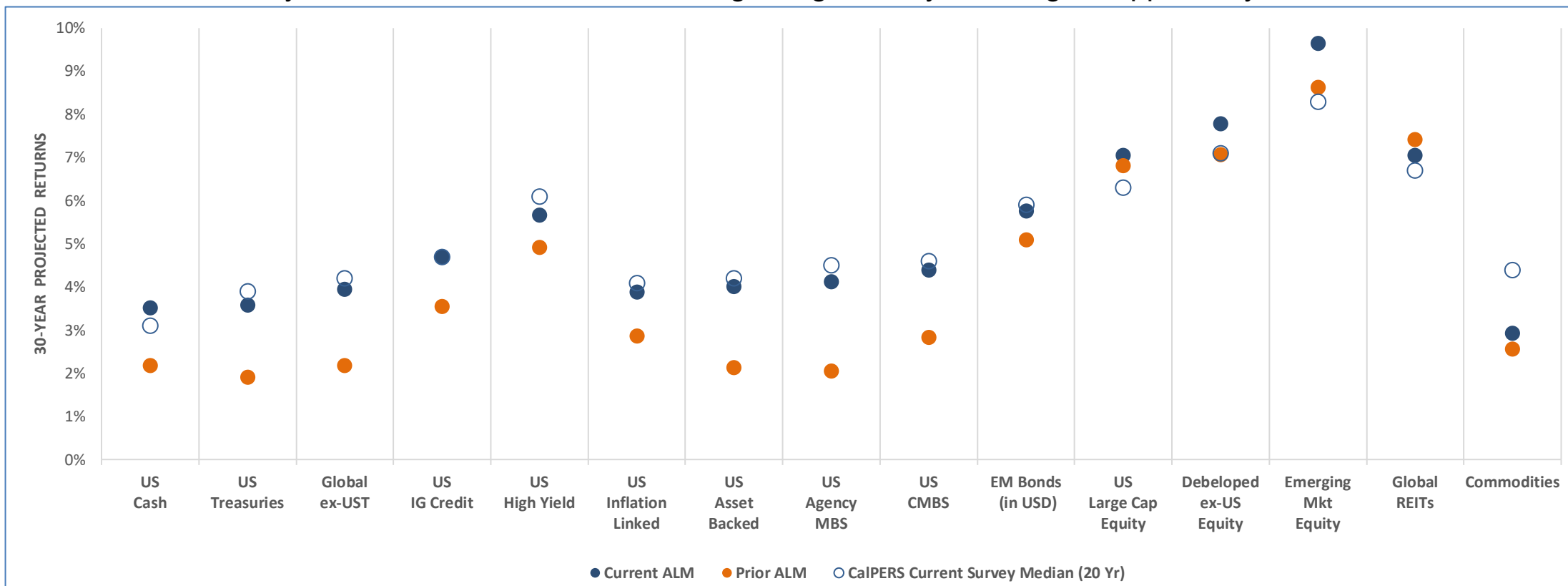
| Plan Attribute         | Description  | Current Position   | Investment Objective  |
|------------------------|--|--|---|
| Discount Rate          | A lower discount rate aligns with lower investment risk.   | Discount rate is 4.75%.  | <b>Lower risk strategy that provides a return supportive of the discount rate</b> |
| Liability Time Horizon | Higher near-term liabilities reduce ability to recover from investment losses  | Liability time horizon has shortened as participant pool ages. Average age is 78.  | <b>Lower risk strategy to protect against large losses</b>                        |
| Cash Flows             | Claims exceeding premiums reduces ability to recover from investment losses.   | Claims paid are larger than premiums collected. Recent annual net outflow from the investment fund to pay claims is approximately \$120M.  | <b>Lower risk strategy to protect against large losses</b>                        |
| Funding Sources        | Concentrated funding sources increase reliance on investment returns and reduce ability to recover from investment losses. | Contributions consist entirely of participant premiums, which are declining over time; no sponsor contributions or reinsurance. Funding becomes more reliant on investments over time. | <b>Lower risk strategy to protect against large losses</b>                        |

# Portfolio Construction & Evaluation Process



# CMAs: Projected Returns

Projected returns have risen for fixed income, modestly for equities, and have not substantially changed for REITs and commodities. Volatility, a measure of risk, has not changed significantly, creating an opportunity to reduce risk.



CalPERS' external manager provided the CMAs for this review and is a participant in CalPERS' CMA survey. The managers' CMAs are as of Q1 2024 and have been compared to the survey for reasonability. CMA data for projected returns, projected volatility, and asset class correlations can be found in the Appendix.

# Asset Classes and Constraints

The same asset classes from the prior ALM were used in the portfolio optimization process.

Constraints support the construction of a balanced and diversified portfolio by reducing the risks associated with excessive concentration in a single asset class. The following adjustments were made to the constraints:

1. Global Equity and Fixed Income constraints were lifted, as they were not triggered in the portfolio optimization and are therefore not necessary.
2. Commodities minimum of 3% was lifted in favor of setting an 8% minimum on combined inflation assets (Commodities/TIPS/REITs).

| Asset Class   | Prior ALM |      | Current ALM |      |
|---------------|-----------|------|-------------|------|
|               | Min       | Max  | Min         | Max  |
| Global Equity | 0%        | 30%  | 0%          | 100% |
| Global REITs  | 3%        | 100% | 3%          | 100% |
| Fixed Income  | 60%       | 100% | 0%          | 100% |
| Commodities   | 3%        | 100% | 0%          | 100% |

Shading indicates constraints that have changed from the prior ALM.

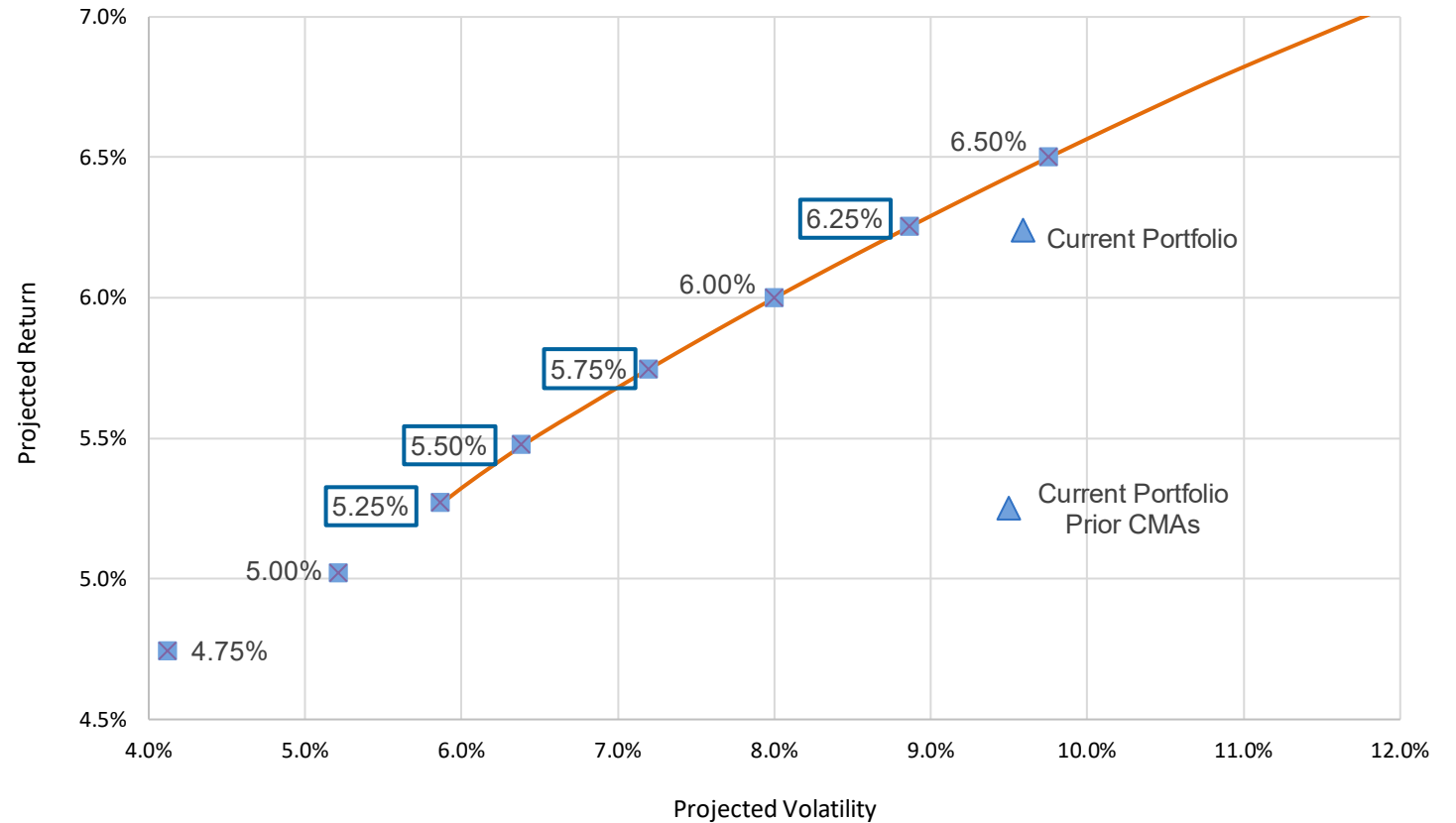
# Portfolio Optimization and Efficient Frontier

Using the CMAs, asset classes, and constraints, eight optimized portfolios<sup>1</sup> with projected returns ranging from 4.75% to 6.50% were created as options for the selection of Candidate Portfolios.

The following 4 Candidate Portfolios were selected for further consideration:

| Candidate | Rationale                                   |
|-----------|---|
| A – 5.25% | Same return as prior ALM target return      |
| B – 5.50% | Slightly higher risk/return vs. Candidate A |
| C – 5.75% | Slightly higher risk/return vs. Candidate B |
| D – 6.25% | Same return as current portfolio            |

Portfolios at the low and high ends of the risk/return spectrum were not selected as Candidates either due to projected returns being too low or risk being higher than the current portfolio.



<sup>1</sup> The 4.75% & 5.0% portfolios are not on the efficient frontier line due to slight modeling changes needed to produce these options. For the 5.25% and 5.50% portfolios, returns are rounded by 2 basis points or less for illustrative purposes.

# Portfolio Review and Recommendation

## Recommendation: Candidate B

**Projected Return : 5.48%**

**Drawdown Risk: 11.2%**

**Volatility: 6.4%**

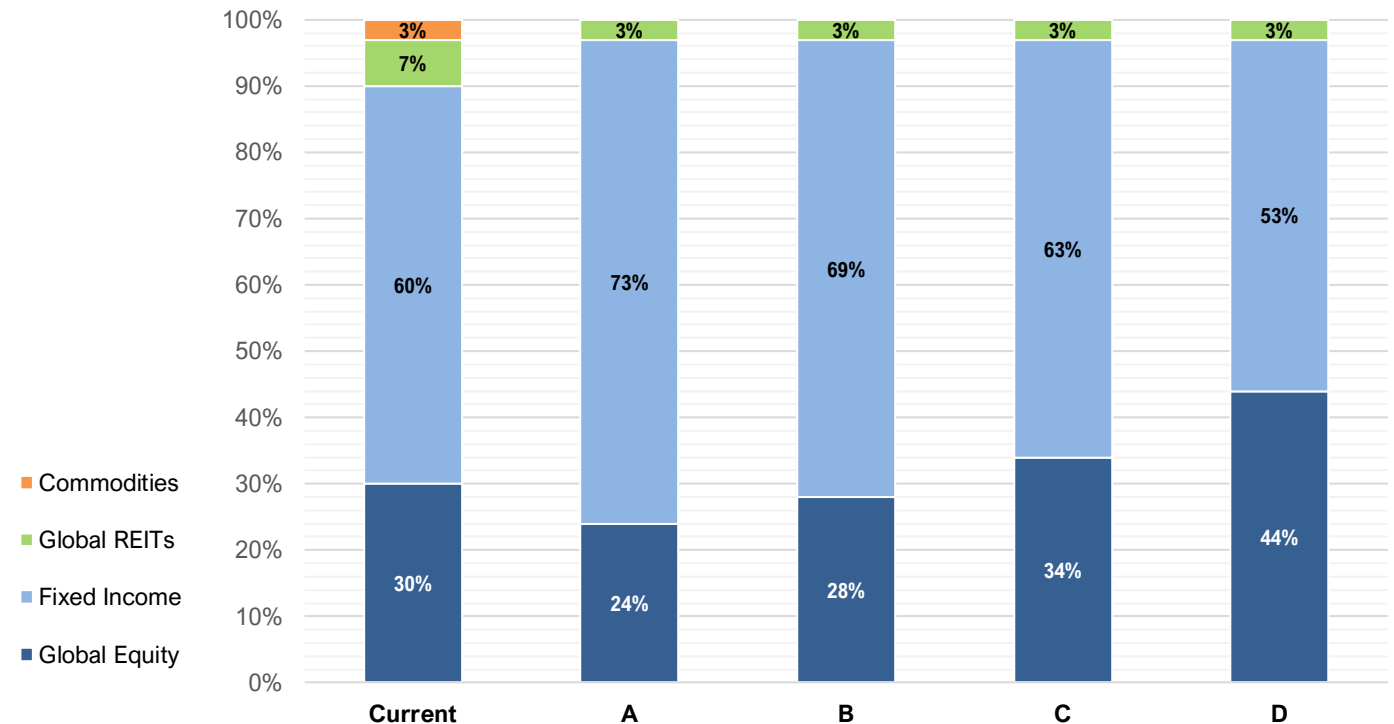
## Rationale for Recommendation

The LTC Plan attributes align with a conservative strategic asset allocation that provides a return that is supportive of the discount rate, while reducing risk to protect against large losses.

Candidate B is the recommended Policy Portfolio, as it has the following attributes:

- The projected return is supportive of the discount rate and provides a modest buffer vs. Candidate A.
- The projected risk is low. Candidates C & D increase projected risk by 13% to 46%, whereas return is increased by 5% and 14%, respectively.
- The equity allocation is lower than the current portfolio. Candidates C & D increase the equity allocation, which increases risk.

Current & Candidate Portfolios

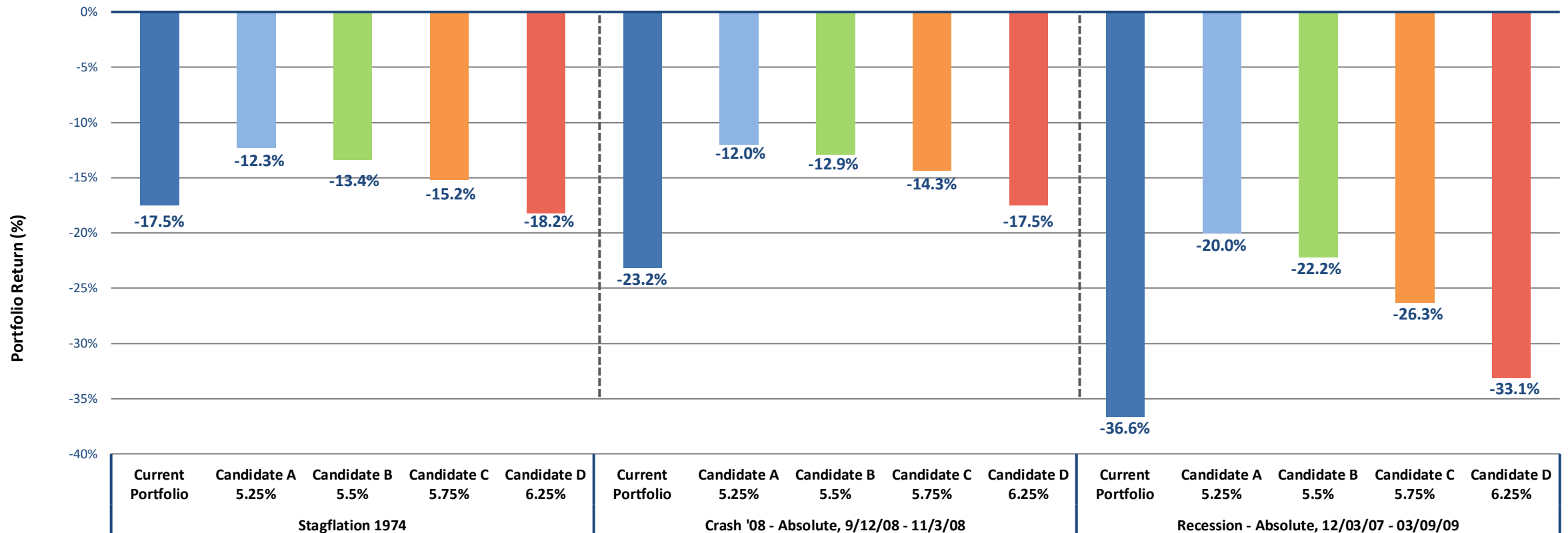


| 30-year Projections       | Prior ALM Values | Current Portfolio | Candidate A | Candidate B | Candidate C | Candidate D |
|---------------------------|------------------|-------------------|-------------|-------------|-------------|-------------|
| <b>Return<sup>1</sup></b> | 5.25%            | 6.24%             | 5.27%       | 5.48%       | 5.75%       | 6.25%       |
| <b>Drawdown</b>           | n/a              | 19.1%             | 10.2%       | 11.2%       | 12.8%       | 16.4%       |
| <b>Volatility</b>         | 9.5%             | 9.6%              | 5.9%        | 6.4%        | 7.2%        | 8.9%        |

<sup>1</sup> Returns are geometric and gross.

# Portfolio Stress/Scenario Tests

Candidate Portfolios A and B fare better in the stress tests, ranging from 12% - 22% loss. Candidates C and D lose between 14% - 33%, highlighting the possible downside risk of higher risk/return portfolios.



# Portfolio Depletion Probability Analysis

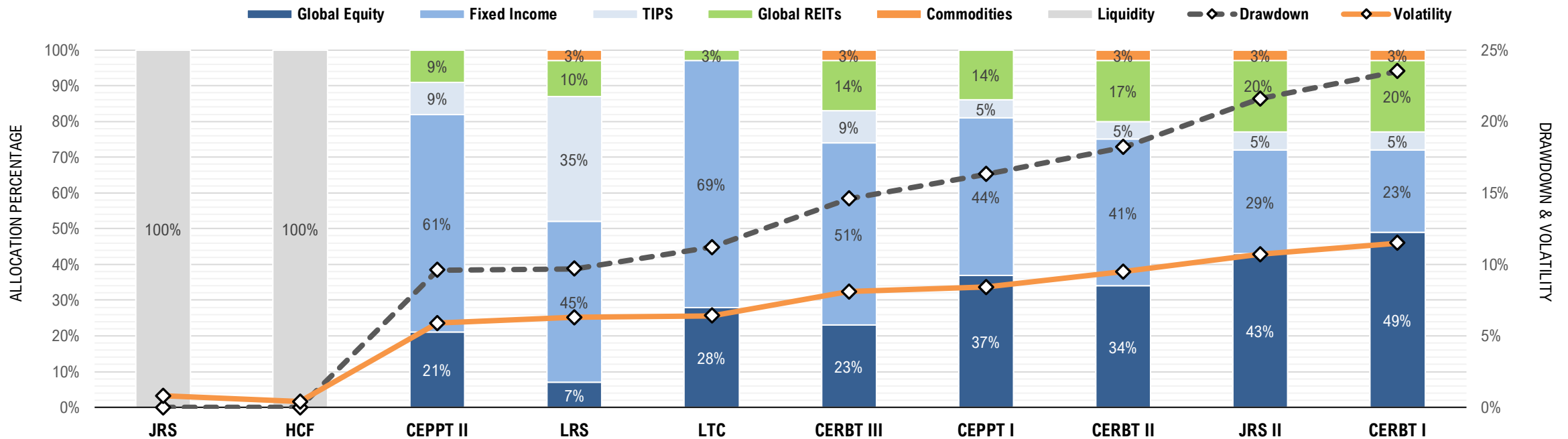
Each portfolio was evaluated using 5,000 possible investment return paths over a 30-year time horizon. All candidate portfolios have between a 26%-31% chance of depletion starting in 14/15 years. The higher risk/return portfolios, while they have lower chance of depletion, the remaining liabilities are higher due to depletion starting sooner. This analysis assumes two 10% rate increases are implemented, with no further adjustments to the program or premiums.

| Portfolio           | Probability of Fund Depletion (without future course correction) | First Year Occurrence of Possible Depletion | Average Present Value of Liabilities at Depletion |
|---------------------|--|---|---|
| Current Portfolio   | 31%  | 12  | 1,170M  |
| Candidate A - 5.25% | 31%  | 15  | 900M  |
| Candidate B - 5.50% | 29%  | 15  | 925M  |
| Candidate C - 5.75% | 28%  | 15  | 964M  |
| Candidate D - 6.25% | 26%  | 14  | 1,057M  |

# Affiliate Fund Strategic Asset Allocation Risk Comparison

The chart below displays the Affiliate Funds' strategic asset allocations that were approved in June 2024, with the addition of the LTC recommended Candidate B. The level of projected risk<sup>1</sup> for the LTC is consistent with other Affiliate Funds that have conservative investment strategies.

Portfolio Strategic Asset Allocation Comparison



<sup>1</sup> Drawdown and volatility are used as a general comparison to evaluate level of risk across the trusts. As CMAs for the trusts have been obtained from different time periods and sources, this data should be viewed as illustrative, rather than as an exact comparison.

# Recommendation and Next Steps

## Recommendation:

Approve Candidate B as the Policy Portfolio, which includes the following elements:

1. The Capital Market Assumptions provided by the external manager (pages 23 & 24)
2. The Policy Targets and Ranges for the recommended portfolio Candidate B (page 25)
3. The Benchmarks, as recommended by the external manager and confirmed by Wilshire (page 26)

## Next Steps:

- Presentation of proposed rate increases in Pension & Health Benefits Committee on September 17, 2024
- Update Investment Policies to reflect approved allocations and associated benchmark changes
- Work with the investment manager to implement allocation and associated benchmark changes

# Appendix

| Topic   | Pages |
|---|-------|
| CMAs: Projected Returns, Volatility, and Correlations | 23-24 |
| Strategic Asset Allocation Targets and Ranges         | 25    |
| Custom Benchmark Composition                          | 26    |
| Changes from Prior ALM                                | 27    |

# CMAs: Projected Returns and Volatility – Q1 2024

| Asset Class/Segment                    | Benchmark Index   | 30-Year Projected Return | 30-Year Projected Volatility |
|--|---|--------------------------|------------------------------|
| US Cash                                | Bloomberg T-bill 1-3 Month Index                        | 3.5%                     | 0.8%                         |
| US Treasuries                          | Bloomberg Government Index                              | 3.6%                     | 5.2%                         |
| Global ex-US Treasuries                | Bloomberg Global Aggregate Treasury Index ex-US Hedged  | 3.9%                     | 3.4%                         |
| US Investment Grade Credit             | Bloomberg US Credit Index                               | 4.7%                     | 6.2%                         |
| US High Yield                          | Bloomberg US Corp High Yield 2% Issuer Capped Index     | 5.7%                     | 7.4%                         |
| US Inflation Linked Government Bonds   | Bloomberg US Treasury Inflation Index                   | 3.9%                     | 5.7%                         |
| US Asset Backed Securities             | Bloomberg ABS Index                                     | 4.0%                     | 3.3%                         |
| US Agency Mortgage-Backed Securities   | Bloomberg MBS Index                                     | 4.1%                     | 6.0%                         |
| US Commercial MBS                      | Bloomberg CMBS, Eligible for US Aggregate Index         | 4.4%                     | 5.8%                         |
| EM Bonds (USD denominated)             | JP Morgan EMBI Global Diversified Index                 | 5.8%                     | 9.7%                         |
| US Large Cap Equity                    | MSCI Developed – US Total Return Index Gross            | 7.0%                     | 17.8%                        |
| Developed Ex-US Equity                 | MSCI World ex-US Hedged Index Net                       | 7.8%                     | 14.1%                        |
| Emerging Market Equity                 | MSCI Emerging Market Index Net                          | 9.6%                     | 20.4%                        |
| Global REITs (Real Estate Inv. Trusts) | FTSE EPRA/NAREIT Developed 100% Hedged to USD Net Index | 7.0%                     | 20.6%                        |
| Commodities                            | Bloomberg Commodity Index Total Return                  | 2.9%                     | 16.7%                        |

# CMAAs: Asset Class Correlations – Q1 2024

|                         | US Cash | US Treasuries | Global ex-US Treasuries | US IG Credit | US High Yield | US TIPS | US ABS | US MBS | US CMBS | EMD (\$-denom.) | US Equity | Developed ex-US Equity | Emerging Equity | Global REITs | Commodities |
|-------------------------|---------|---------------|-------------------------|--------------|---------------|---------|--------|--------|---------|-----------------|-----------|------------------------|-----------------|--------------|-------------|
| US Cash                 | 1.00    | 0.16          | 0.24                    | 0.12         | 0.11          | 0.15    | 0.25   | 0.14   | 0.14    | 0.08            | 0.04      | 0.06                   | 0.04            | 0.04         | 0.05        |
| US Treasuries           | 0.16    | 1.00          | 0.72                    | 0.72         | -0.02         | 0.69    | 0.55   | 0.90   | 0.57    | 0.35            | -0.18     | -0.24                  | -0.12           | -0.04        | -0.14       |
| Global ex-US Treasuries | 0.24    | 0.72          | 1.00                    | 0.62         | 0.14          | 0.53    | 0.38   | 0.67   | 0.44    | 0.38            | -0.01     | -0.05                  | 0.01            | 0.16         | -0.15       |
| US IG Credit            | 0.12    | 0.72          | 0.62                    | 1.00         | 0.54          | 0.75    | 0.66   | 0.77   | 0.68    | 0.69            | 0.28      | 0.23                   | 0.35            | 0.42         | 0.14        |
| US High Yield           | 0.11    | -0.02         | 0.14                    | 0.54         | 1.00          | 0.40    | 0.31   | 0.15   | 0.48    | 0.57            | 0.63      | 0.58                   | 0.62            | 0.69         | 0.37        |
| US TIPS                 | 0.15    | 0.69          | 0.53                    | 0.75         | 0.40          | 1.00    | 0.64   | 0.72   | 0.64    | 0.56            | 0.20      | 0.11                   | 0.28            | 0.34         | 0.26        |
| US ABS                  | 0.25    | 0.55          | 0.38                    | 0.66         | 0.31          | 0.64    | 1.00   | 0.59   | 0.56    | 0.45            | 0.04      | 0.00                   | 0.15            | 0.15         | 0.15        |
| US MBS                  | 0.14    | 0.90          | 0.67                    | 0.77         | 0.15          | 0.72    | 0.59   | 1.00   | 0.58    | 0.47            | -0.05     | -0.10                  | 0.01            | 0.11         | -0.06       |
| US CMBS                 | 0.14    | 0.57          | 0.44                    | 0.68         | 0.48          | 0.64    | 0.56   | 0.58   | 1.00    | 0.43            | 0.13      | 0.04                   | 0.19            | 0.26         | 0.05        |
| EMD (\$-denom.)         | 0.08    | 0.35          | 0.38                    | 0.69         | 0.57          | 0.56    | 0.45   | 0.47   | 0.43    | 1.00            | 0.46      | 0.42                   | 0.52            | 0.55         | 0.32        |
| US Equity               | 0.04    | -0.18         | -0.01                   | 0.28         | 0.63          | 0.20    | 0.04   | -0.05  | 0.13    | 0.46            | 1.00      | 0.83                   | 0.75            | 0.77         | 0.34        |
| Developed ex-US Equity  | 0.06    | -0.24         | -0.05                   | 0.23         | 0.58          | 0.11    | 0.00   | -0.10  | 0.04    | 0.42            | 0.83      | 1.00                   | 0.76            | 0.70         | 0.34        |
| Emerging Equity         | 0.04    | -0.12         | 0.01                    | 0.35         | 0.62          | 0.28    | 0.15   | 0.01   | 0.19    | 0.52            | 0.75      | 0.76                   | 1.00            | 0.68         | 0.46        |
| Global REITs            | 0.04    | -0.04         | 0.16                    | 0.42         | 0.69          | 0.34    | 0.15   | 0.11   | 0.26    | 0.55            | 0.77      | 0.70                   | 0.68            | 1.00         | 0.40        |
| Commodities             | 0.05    | -0.14         | -0.15                   | 0.14         | 0.37          | 0.26    | 0.15   | -0.06  | 0.05    | 0.32            | 0.34      | 0.34                   | 0.46            | 0.40         | 1.00        |

# Strategic Asset Allocation Targets & Ranges

| Asset Class   | Current Policy Target | Current Policy Range | Proposed Policy Target | Proposed Policy Range <sup>1</sup> |
|---------------|-----------------------|----------------------|------------------------|------------------------------------|
| Global Equity | 30%                   | +/- 7%               | 28%                    | +/- 7%                             |
| Fixed Income  | 60%                   | +/- 7%               | 69%                    | +/- 7%                             |
| Global REITs  | 7%                    | +/- 3%               | 3%                     | +/- 2%                             |
| Commodities   | 3%                    | +/- 2%               | 0%                     | n/a                                |
| Liquidity     | 0%                    | + 2%                 | 0%                     | + 2%                               |

\*Shading indicates targets and ranges that have changed from the prior ALM.

- Policy ranges are intended to allow for market drift between quarterly rebalances and to mitigate the need to rebalance the portfolio mid-quarter and away from the benchmark.
- The +2% liquidity range allows for operational cash flows.

# Custom Benchmark Composition

| Asset Classes/Components                      | Benchmark  | Candidate A | Candidate B<br>Recommendation | Candidate C | Candidate D |
|---|--|-------------|-------------------------------|-------------|-------------|
| <b>Total Portfolio</b>                        | <b>Custom Weighted Benchmark Based on Asset Class Weights</b>  |             |                               |             |             |
| <b>Fixed Income</b>                           | <b>Custom Weighted Benchmark Based on Target Weights</b>       | <b>73%</b>  | <b>69%</b>                    | <b>63%</b>  | <b>53%</b>  |
| US Cash                                       | Bloomberg T-bill 1-3 Month Index                               | 0%          | 0%                            | 0%          | 0%          |
| US Treasuries                                 | Bloomberg Government Index                                     | 23.7%       | 22.2%                         | 19.8%       | 11.9%       |
| Global ex-US Treasuries                       | Bloomberg Global Aggregate Treasury Index ex-US Hedged         | 11.8%       | 11.1%                         | 9.9%        | 6.0%        |
| US Investment Grade Credit                    | Bloomberg US Credit Index                                      | 10.0%       | 10.1%                         | 10.0%       | 10.1%       |
| US High Yield                                 | Bloomberg US Corp High Yield 2% Issuer Capped Index            | 10.4%       | 8.9%                          | 8.1%        | 7.2%        |
| US Inflation Linked Government Bonds          | Bloomberg US Treasury Inflation Index                          | 5.0%        | 5.0%                          | 5.0%        | 5.0%        |
| US Asset Backed Securities                    | Bloomberg ABS Index  | 3.0%        | 3%                            | 2.4%        | 2.8%        |
| US Agency Mortgage-Backed Securities          | Bloomberg MBS Index  | 3.4%        | 3.4%                          | 2.2%        | 1.5%        |
| US Commercial MBS                             | Bloomberg CMBS, Eligible for US Aggregate Index                | 2.5%        | 2.5%                          | 2.5%        | 4.0%        |
| EM Bonds (USD denominated)                    | JP Morgan EMBI Global Diversified Index                        | 3.2%        | 2.8%                          | 3.1%        | 4.5%        |
| <b>Global Equity</b>                          | <b>Custom Weighted Benchmark Based on Target Weights</b>       | <b>24%</b>  | <b>28%</b>                    | <b>34%</b>  | <b>44%</b>  |
| US Large Cap Equity                           | MSCI Developed – US Total Return Index Gross                   | 12.0%       | 14.0%                         | 17.0%       | 22.0%       |
| Developed Ex-US Equity                        | MSCI World ex-US Hedged Index Net                              | 9.0%        | 8.0%                          | 10.0%       | 10.0%       |
| Emerging Market Equity                        | MSCI Emerging Market Index Net                                 | 3.0%        | 6.0%                          | 7.0%        | 12.0%       |
| <b>Global REITs (Real Estate Inv. Trusts)</b> | <b>FTSE EPRA/NAREIT Developed 100% Hedged to USD Net Index</b> | <b>3%</b>   | <b>3%</b>                     | <b>3%</b>   | <b>3%</b>   |

# Changes from Prior ALM

## Asset Class Changes

| Asset Class or Sub-Asset Class                          | Change                    | Rationale   |
|---|---------------------------|---|
| Commodities   | No Minimum Constraint Set | Portfolio construction process results in no allocation. No minimum constraint set (previously 3%), as 1) CMAs as provided by the manager are lower return/higher risk, 2) have an 8% allocation to other inflation related assets, and 3) higher cost asset class (22 basis points compared to 8 basis points for Fixed Income). |
| Fixed Income<br>U.S. Investment Grade Credit – Long BBB | Removed Sub-Asset Class   | Higher risk sub-asset class not needed, given current CMAs. Higher projected returns are achievable with less risky fixed income assets.  |
| Fixed Income<br>U.S. CMBS Sub                           | Removed Sub-Asset Class   | Higher risk sub-asset class not needed, given current CMAs. Higher projected returns are achievable with less risky fixed income assets.  |

## Benchmark Changes

| Fixed Income Sub-Asset Class                 | Current                                     | Proposed  | Rationale  |
|--|---|---|--|
| U.S. Treasuries                              | Bloomberg Long Government Index             | Bloomberg Government Index                        | Moving from the long maturity benchmark to a broad benchmark is intended to reduce interest rate risk. |
| U.S. Investment Grade Credit                 | Bloomberg US Long Credit Index              | Bloomberg US Credit Index                         |  |
| U.S. Treasury Inflation Protected Securities | Bloomberg US Treasury Inflation 15Yr+ Index | Bloomberg US Treasury Inflation-Linked Bond Index |  |

August 27, 2024

Mr. David Miller  
Chair of the Investment Committee  
California Public Employees' Retirement System  
400 P Street  
Sacramento, CA 95814

Re: Agenda Item 5a: Mid-Cycle Asset Liability Management Review: Long Term Care

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Dear Mr. Miller,

You requested Wilshire's opinion regarding the Long-Term Care (LTC) mid-cycle asset allocation (AA) recommendation. Unique to other Affiliate funds, whose mid-cycle asset allocation reviews were recently approved during the June 2024 Investment Committee (IC) meeting, much of the LTC analysis and underlying portfolio identification process was outsourced to an external investment management provider. The provider was retained as part of an extensive RFP process conducted in 2020. Consistent with this structure, Wilshire's review is limited to the output from the manager's process. However, we understand that Staff worked closely with the external provider throughout the project, and we generally recognize the manager's underlying quantitative techniques, forecasting process and optimization approach to be robust and consistent with those deployed by Staff in conducting AA analysis for other funds.

#### *Capital Market Assumptions (CMAs) & Constraints*

As can be seen on slide 14 of Staff's presentation, the manager's proprietary CMAs are broadly consistent with those collected via CalPERS' CMA survey process and used in other fund reviews. As such, and as was the case when using CalPERS' assumptions for other Affiliate fund reviews, the CMAs used in the mid-cycle review are materially different from those utilized in the prior LTC AA review. As you will recall, this change in the capital market environment contributed to the IC approving some notable reductions in risk profile for several other Affiliate funds; specifically, the Health Care Fund (HCF), the Legislators' Retirement System Fund (LRS), and the Judges' Retirement System II Fund (JRSII). As we discuss below, Staff's recommended portfolio reflects a similar directional reduction in risk versus the current allocation mix.

In addition to noting the reasonableness of the embedded CMA inputs, Wilshire is also generally comfortable with the underlying asset class benchmarks and constraints. Several constraints, such as for Global Equity and Fixed Income, were removed as they were no longer needed to maintain minimum levels of desired diversification against the current CMA environment. Other constraints, such as for Commodities, were replaced and broadened to drive minimum holdings across a group of strategic asset classes (i.e., the specific 3% minimum constraint on Commodities was replaced by an 8% minimum to the combination of Commodities, TIPS and REITS).

### *Candidate Portfolios*

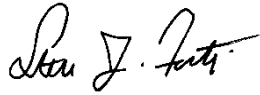
To further highlight the profound change in the underlying capital market environment, we note that the current portfolio's projected return today (6.24%) is ~1% higher than its 5.25% projected return when using the prior full-cycle review's CMAs (slide 16 of Staff's presentation highlights this dispersion within an efficient frontier graph). Staff's recommendation attempts to capitalize on this improved outlook by shifting the LTC Fund's AA mix to a lower risk portfolio. To that end, Candidate B is recommended with 5.48% projected return, 11.2% projected drawdown risk and 6.4% projected volatility risk. Wilshire is comfortable with this recommendation and notes several of Candidate B's attractive attributes:

- Return/Risk: The portfolio is projected to return ~0.25% more than was targeted during the prior, full-cycle process with ~40% less drawdown risk (11.2% vs. 19.1%) and a third less volatility (6.4% vs. 9.6%).
- Depletion Risk: the recommended portfolio slightly lowers the Probability of Fund Depletion from 31% to 29%, pushes out the First Year Occurrence of Possible Depletion down from 12 to 15 years, and reduces the Average Present Value of Liabilities of Depletion from \$1,170M to \$925M.

Staff has provided other candidate portfolios. Candidates A & C at 5.25% and 5.75% target returns, which are adjacent to Candidate B's 5.50% return target, and Candidate D, whose 6.25% return target is similar to the current portfolio's projected return. While Wilshire agrees that Staff's recommendation strikes an appropriate balance between downside risk protection and expected return, we note that Candidates A & C offer slightly different risk characteristics should the IC's risk preferences differ from those embedded in Staff's recommendation. Finally, IC approval of the LTC Fund's allocation mix includes approval of an accompanying custom benchmark as recommended by the external manager. Wilshire supports these underlying benchmark recommendations.

We look forward to further discussing these recommendations with you in September; however, please do not hesitate to contact us should you require anything further or have any questions.

Best regards,

A handwritten signature in black ink, appearing to read "Steven J. Foresti". The signature is fluid and cursive, with a prominent initial "S" and "F".

Steven J. Foresti  
Senior Advisor, Investments  
Wilshire Advisors