

City of San José Police and Fire Department Retirement Plan

August 2026

Asset-Liability Study: Part I



City of San José Police and Fire Department Retirement Plan

Executive Summary

Meketa's asset-liability study evaluates the Plan's enterprise risks and helps the Board determine an asset allocation that balances risk tolerance with funded status and contribution expectations.

Year 2029

Full Funding Expected
(Median Simulation)

6.7%

10-Year Expected Return
(Current Policy)

0.5 Yrs

Asset Duration
(vs 13 yrs Liability Duration)

Key Findings



Investment risk dominates

Investment returns remain the primary driver of long-term outcomes and funded-status volatility.



Liability duration mismatch

The Plan's liabilities are longer duration than its assets, a gap that grows more important as funded status improves.



Contribution risk is tilting downside

As funded status improves, contribution requirements carry more downside risk than upside for stakeholders.

RECOMMENDATION

Balance investment risk against contribution volatility while evaluating greater liability-hedging exposure as funded status improves.



Asset-Liability Study Roadmap



Today's Topics

- ✓ **Introduction to Asset-Liability Studies** – purpose, process, and key concepts
- ✓ **Enterprise Risk Review** – sources of financial volatility
- ✓ **Begin Modeling Phase** – baseline projections and sample alternatives
- ✓ **Derisking Considerations** – shifting mindset and sample glide path

Introduction to Asset-Liability Studies



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What Is an Asset-Liability Study?

An asset-liability study evaluates whether the Plan's investment strategy is positioned to meet its projected benefit obligations across a range of economic and demographic scenarios.



Integrated modeling

Models the Plan's assets and liabilities together, rather than evaluating investment strategy in isolation



Multi-year projections

Projects funded status, contribution requirements, and cash flow needs over a multi-year horizon



Enterprise risk stress-testing

Stress-tests the portfolio against risks determined to be material via enterprise risk analysis



Strategy comparison

Compares alternative asset allocation strategies on a risk-adjusted basis

Goal: The study turns funding objectives into an actionable investment policy.



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How Does the Asset-Liability Study Benefit the Board?

The study gives the Board an objective, forward-looking framework for setting investment policy and satisfying its fiduciary obligations.



Independent analysis

Provides an independent, data-driven basis for asset allocation decisions



Risk/return clarity

Clarifies the risk/return trade-offs across candidate portfolios before a policy is adopted



Funding impact

Quantifies the funding and contribution implications of alternative strategies



Fiduciary documentation

Documents the Board's due diligence process for regulatory and audit purposes



Ongoing framework

Establishes a shared framework for revisiting policy as the Plan's circumstances change

The study gives the Board a defensible basis for its policy decisions.

Enterprise Risk Analysis



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What are the Key Risks to the Enterprise?

These six risks represent the primary drivers of funded status volatility and are the focus on this study.

01



Investment Risk
Variability in investment returns that affect the Plan's ability to meet long-term expectations

04



Workforce and Payroll Risk
Changes in active workforce levels and wages that drive contributions and benefit accruals

02



Inflation Risk
Rising prices that erode purchasing power and influence wage growth and liabilities

05



Contribution Risk
Variability in employer contributions tied to payroll trends and financial capacity

03



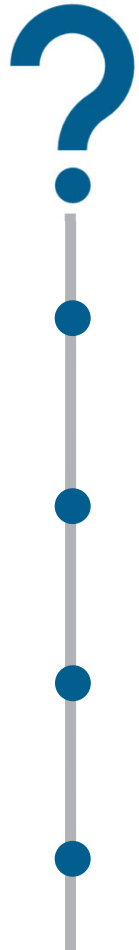
Liquidity Risk
The ability to raise cash when needed without selling assets at depressed values

06



Longevity Risk
Differences in asset and liability growth stemming from asset income and benefit payments

Understanding these enterprise risks helps frame which risks can be influenced through asset allocation, and which require other policy tools.



Likelihood

→ How likely is the risk to deviate from assumptions?



Impact

→ If the risk occurs, how significant would the effect be?



Quantifiability

→ Can the outcomes be reliably measured or modeled?



Influence of Asset Allocation

→ Can the risk be mitigated with a change to the asset allocation?

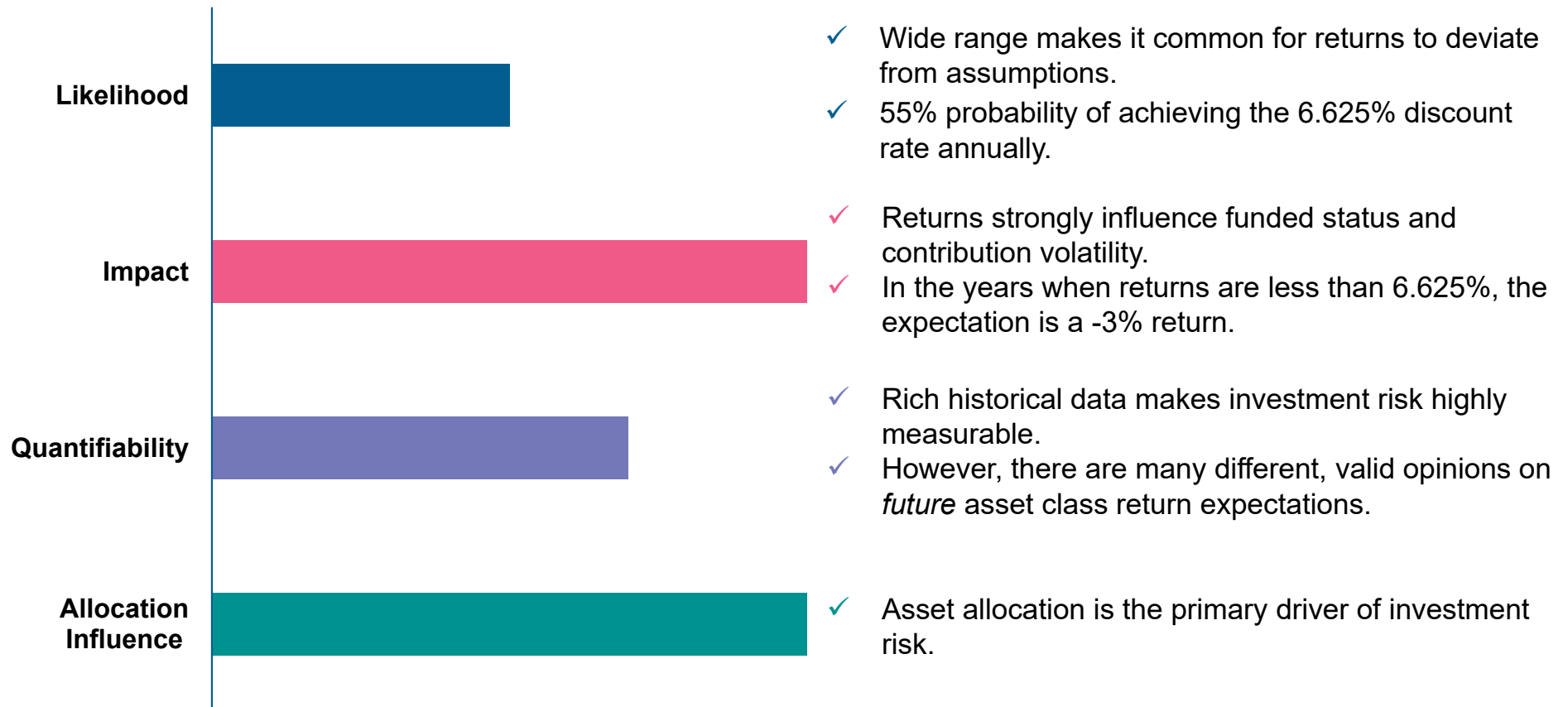
This framework helps determine which risks can be influenced through asset allocation and which lie outside investment policy control.

01



Investment Risk

- Variability of investment returns that affect the Plan's ability to meet long-term assumptions
- Sample: 1 in 7 years has a return less than -5% or greater than 19%*



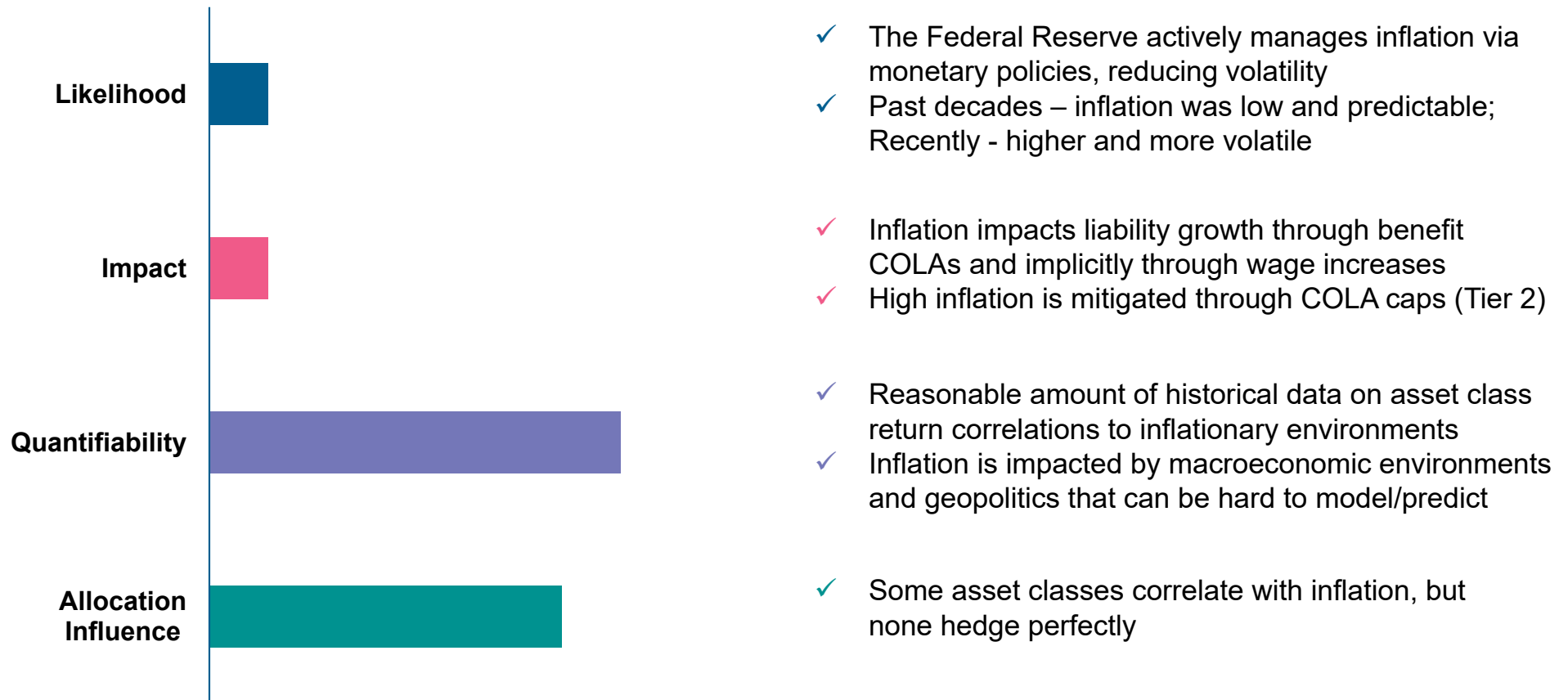
* Based on Meketa's 2026 10-year capital market assumptions, non-normal asset class distributions.

02



Inflation Risk

- Rising prices that erode purchasing power and influence wage growth and liabilities
- Sample: 1 in 7 years has inflation less than -0.7% or greater than 5.5%*



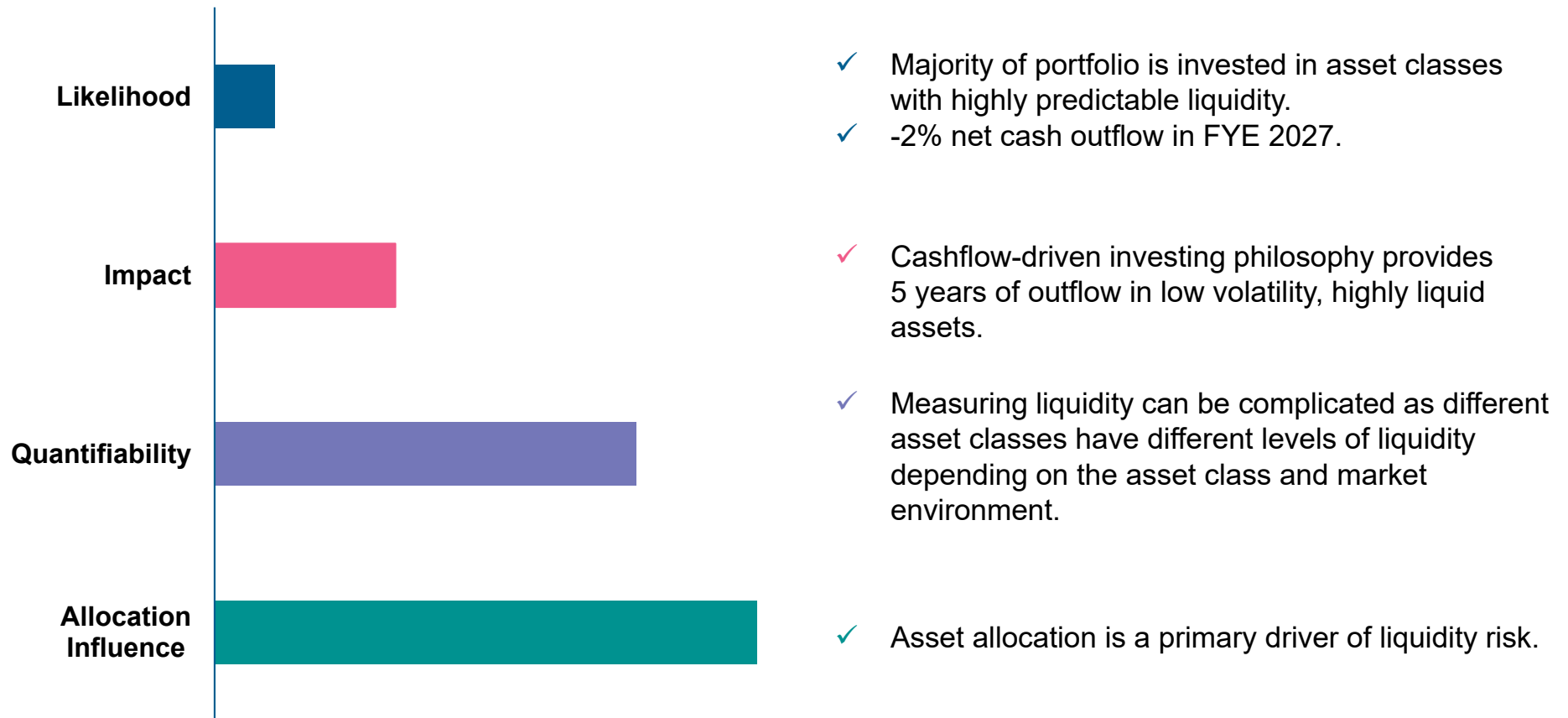
* Based on Meketa's 2026 10-year capital market assumptions, non-normal asset class distributions.

03



Liquidity Risk

- The ability to raise cash when needed without selling assets at depressed values
- Sample: 65% of the assets are invested in securities that can be liquidated in days

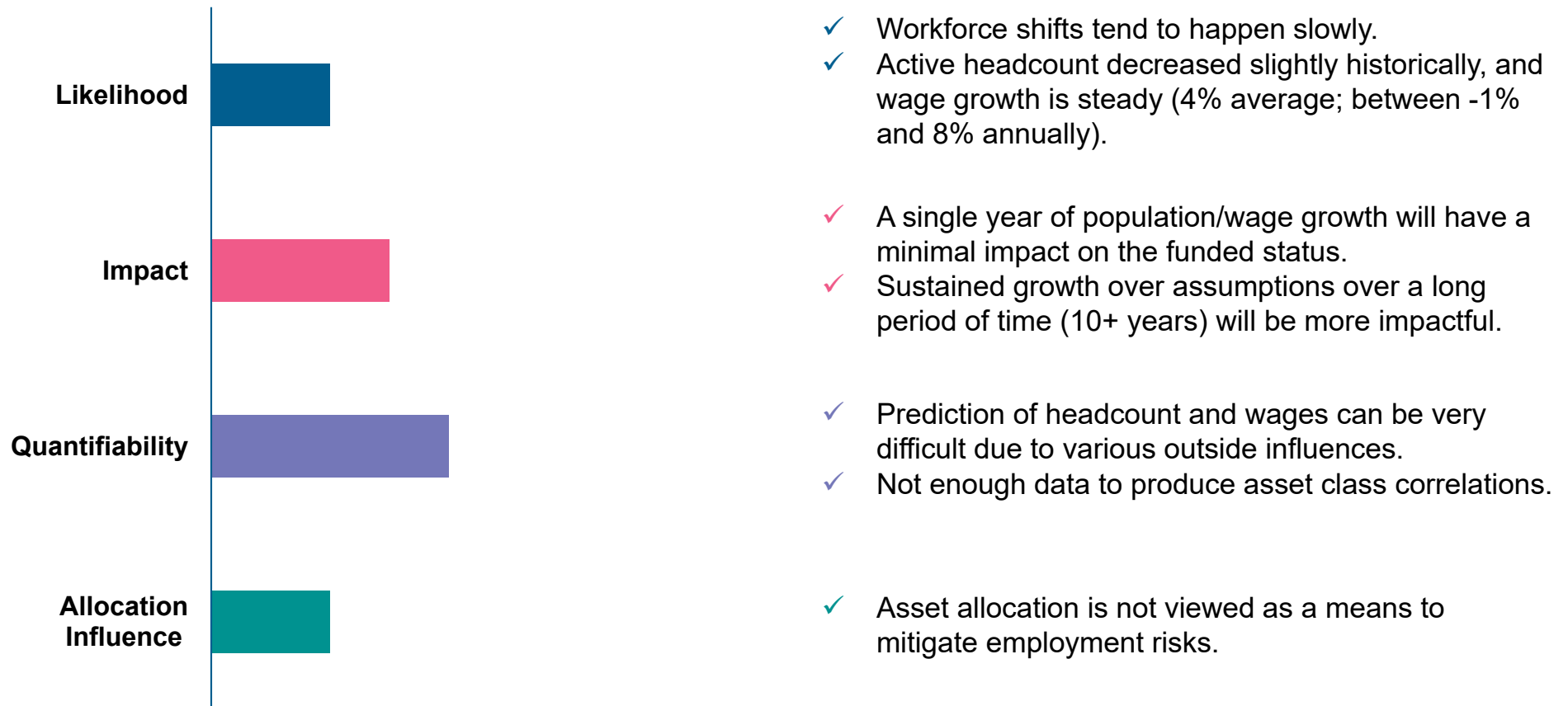


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Workforce and Payroll Risk

- Changes in active workforce levels and wages that drive contributions and benefit accruals
- Sample: Historically, active population changes between -6% and 6%



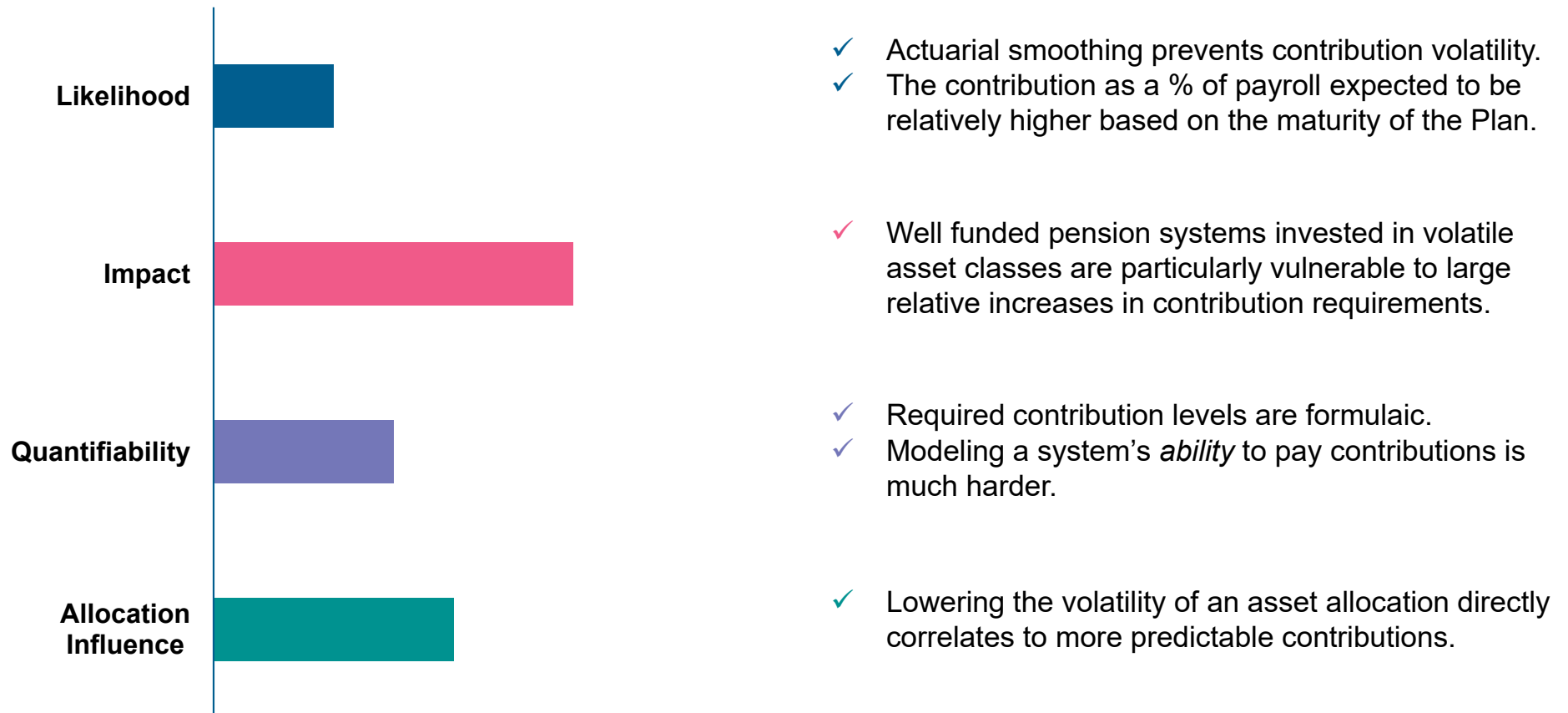
* Source: City of San José Police and Fire Department Retirement Plan actuarial valuation reports from 2011 to 2025.

05



Contribution Risk

- Variability in employer contributions tied to payroll trends and financial capacity
- Sample: The employer contribution expected to be 50-70% of payroll for next few years

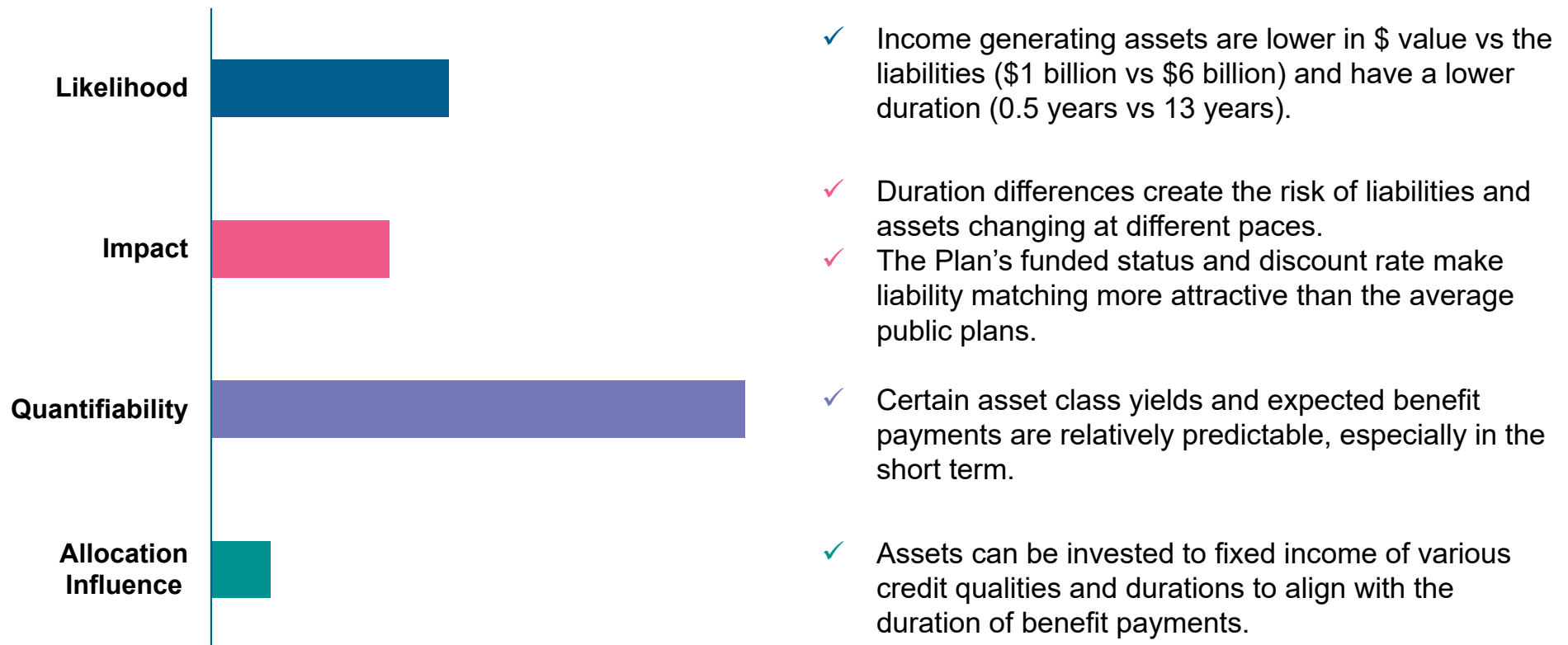


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Longevity Risk

- Differences in asset and liability growth stemming from asset income and benefit payments
- Sample: The assets currently hedge 4% of the liability interest rate risk*



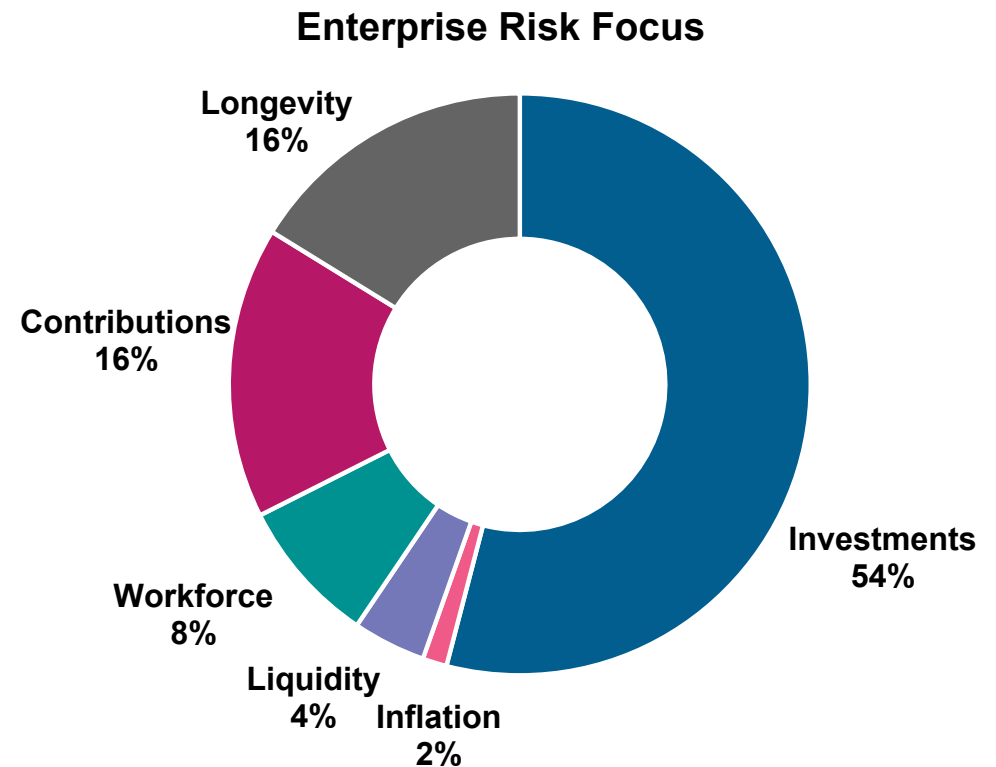
* Assuming the liability discount rate changes in a similar way as an asset with a similar duration, such as long duration government bonds. For this purpose, liability duration assumed to be 13 years. A hedge of 100% means the assets and liabilities are expected to move the same in volatile markets. A correlation of 0% assumes no harmony.



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Summary of the Key Risks

1. **Investment risk dominates:** Investment returns are the primary driver of the long-term outcomes and funded status volatility.
2. **Longevity and liabilities:** The Plan's liabilities are significantly larger and longer duration than the asset base, creating a mismatch that may become increasingly important as funded status improves.
3. **Contributions:** Contribution requirements are highly visible to stakeholders and increasingly will have more downside risk than upside as funded status improves.



Recommendation:

- The asset-liability study should primarily focus on balancing investment risk against contribution volatility while also evaluating whether greater liability-hedging exposure is warranted.
- Inflation, liquidity, and workforce risks remain important background considerations, but investment and liability-related risks are expected to have the greatest influence on long-term policy decisions.

Asset-Liability Study – Part I



How Does Meketa Optimize the Asset Allocation?

Today's Meeting

1 – Plot the Baseline

Plot the current policy allocation and the plan's liability structure to establish a baseline funded status and contribution expectations.

2 – Create Constraints

Constrain each asset class to a minimum and maximum allocation to avoid impractical recommendations.

3 – Compare Alternatives

Plot alternative allocations and compare the results of the Board's preferred risk measures.

4 – Produce Samples

Provide sample allocations that reflect the Board's growth and volatility-tolerance feedback.

5 – Final Recommendation

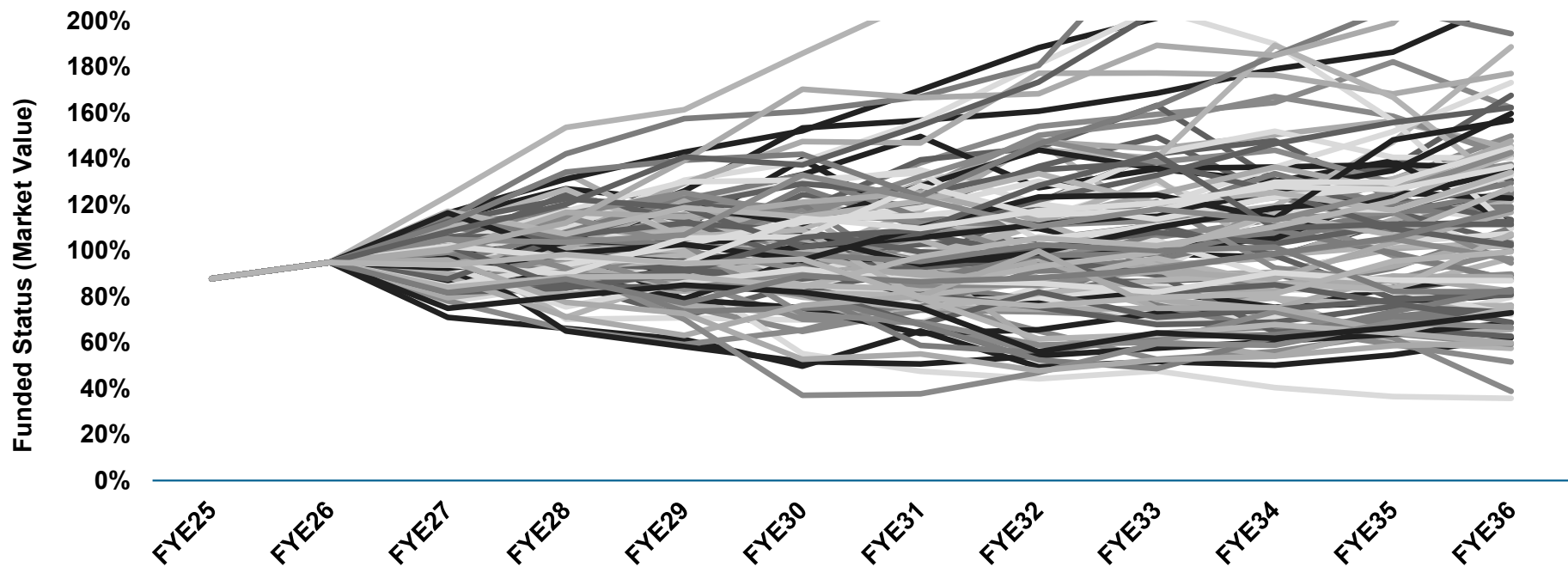
Present recommended allocation(s) for Board review and adoption into the Investment Policy Statement.



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Stochastic Forecast of the Current Policy Allocation

Individual Simulations



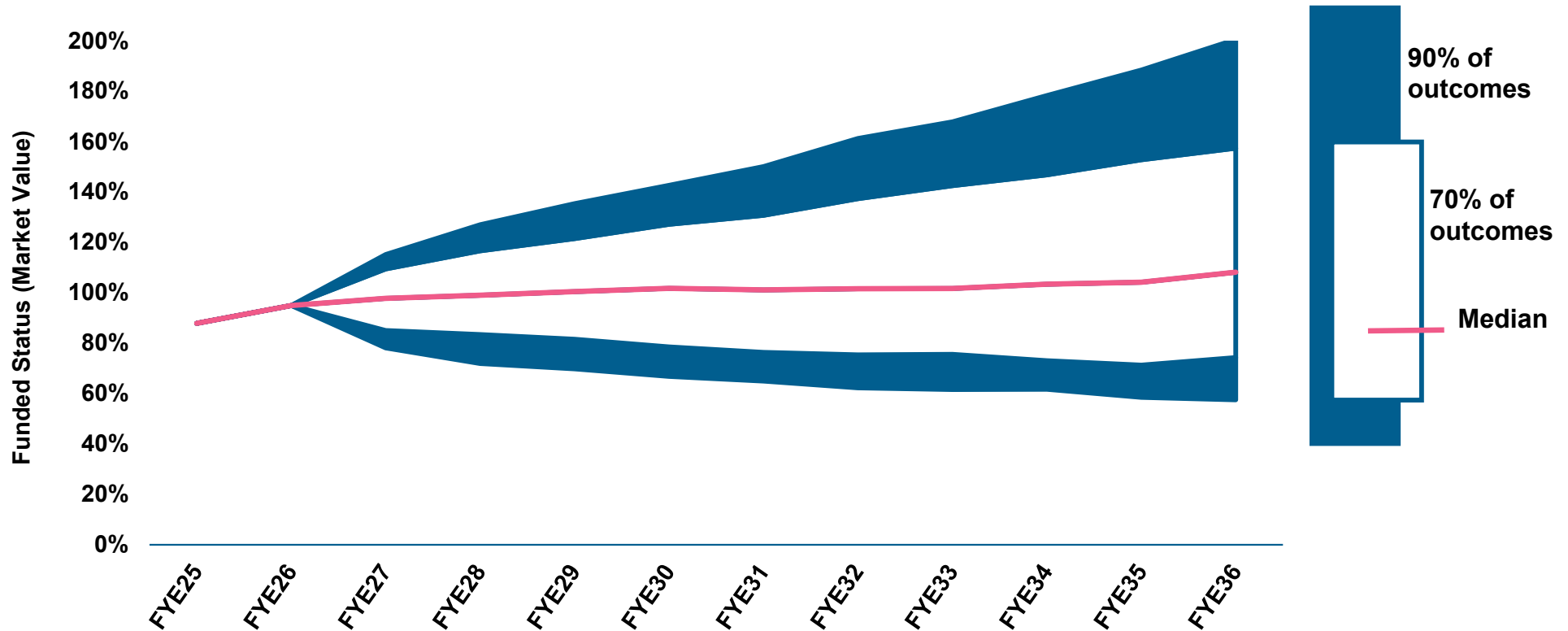
- Funded status (assets divided by liabilities) is simulated in a variety of market environments.
- Analysis reflects the current:
 - Asset allocation
 - Projected benefit payments
 - Funding policy (statutory)
 - Plan provisions
 - Actuarial assumptions
 - Meketa 2026 Capital Market Assumptions



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Stochastic Forecast of the Current Policy Allocation (continued)

Percentile Grouped Simulations



- Simulations are summarized into percentiles, providing a quantitative analysis of the funded status, given the current asset allocation.
- As an example, the median (50th Percentile) funded status at FYE 2036 is 108% → there is a 50% probability the funded status will be greater than 108% and 50% probability it will be less than 108%.

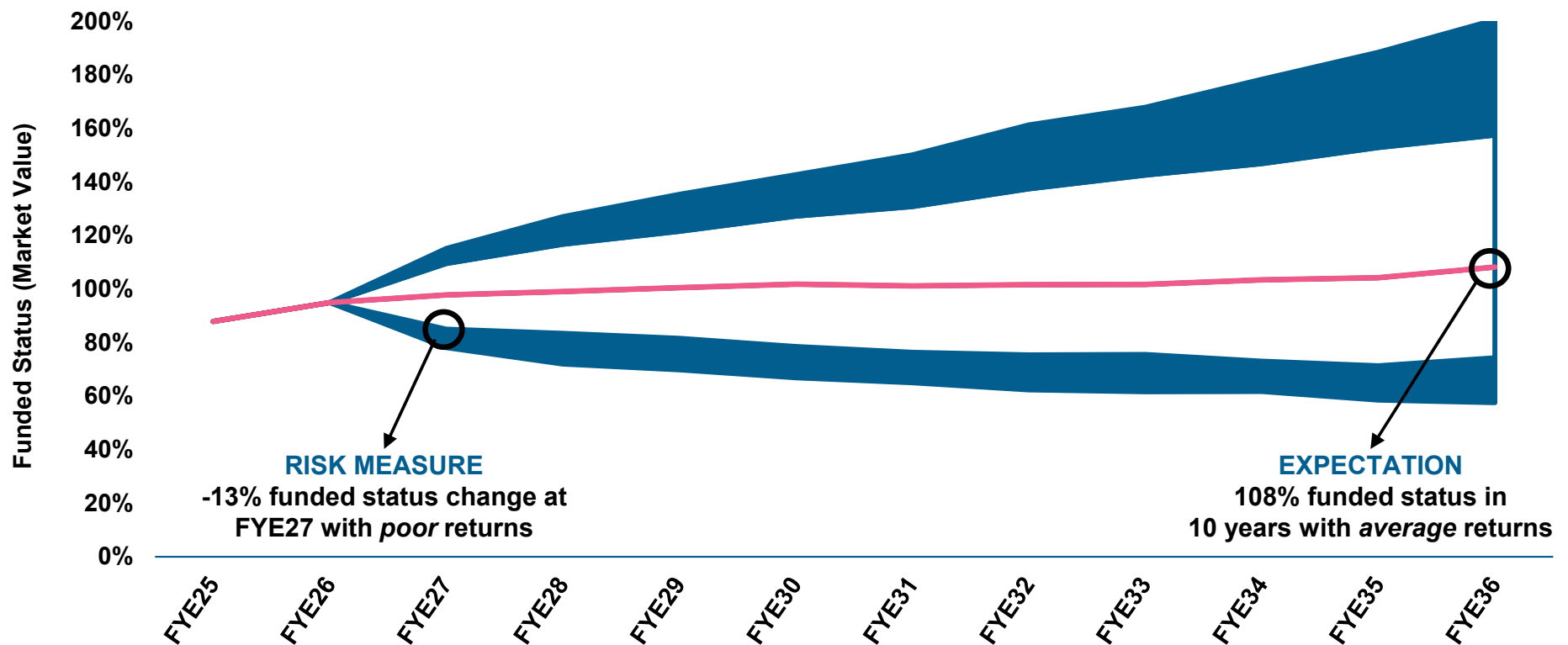


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Record Key Observations

→ Key observations are determined during objective setting discussion and analyzed in a “Expectation/Risk Measure” framework.

- **Expectation** – Outcome where all the underlying assumptions prove to be accurate over the long-term (Example: 50th percentile over a 10-year time horizon).
- **Risk Measure** – Outcome with a lower probability (Ex: 85th percentile) and detrimental impact, especially when that outcome occurs in the short-term (Ex: 1-year time horizon).



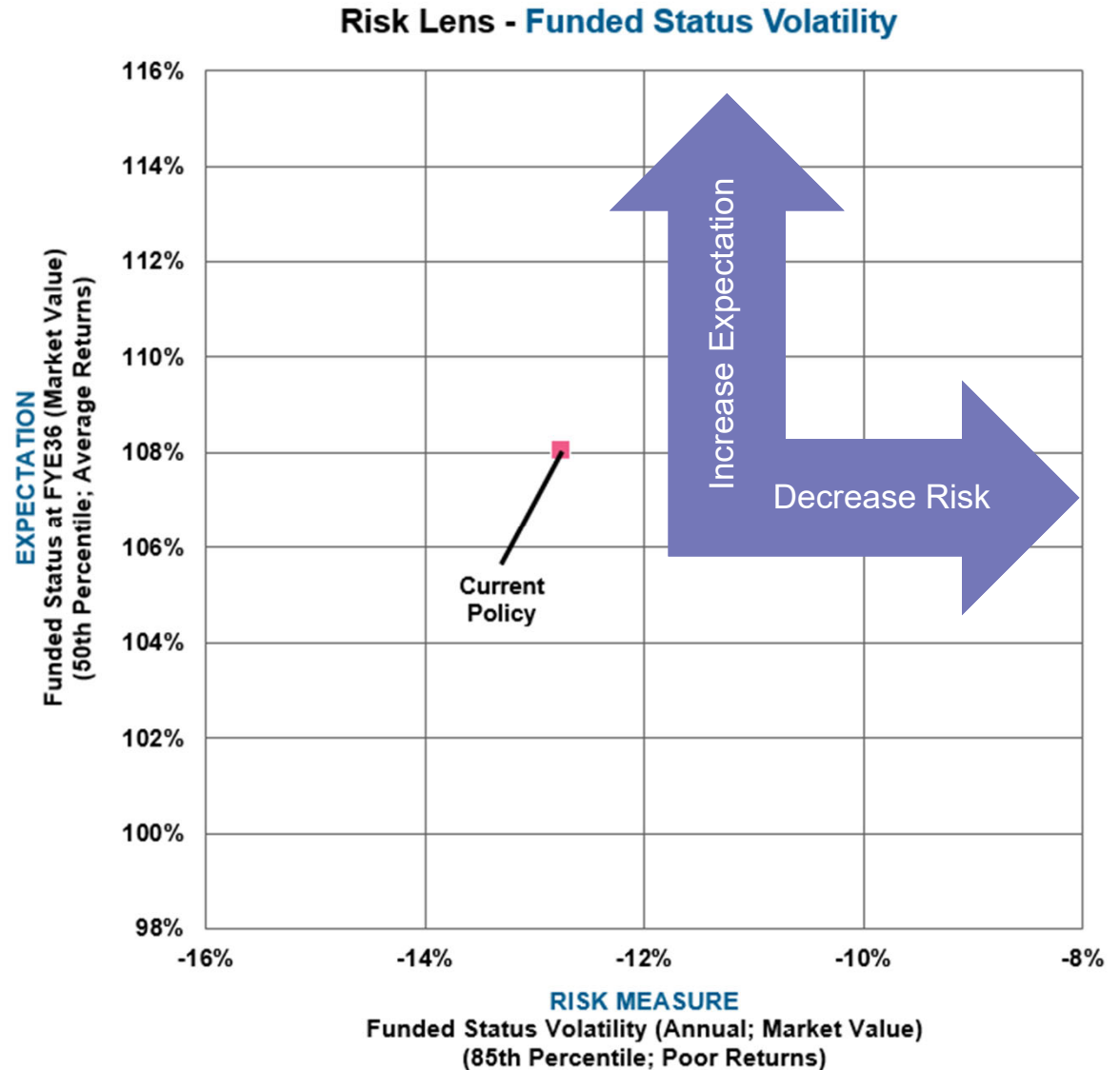


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Optimization Step 1: Plot the Baseline (i.e., Current Policy)

Notes

- The goal of Optimization is to align the projected health of the system to match the objectives and risk tolerance of the Board.
- Est. market value funded status as of 6/30/2026 = 95%





Why we set asset class constraints?

- **Liquidity reality** – caps on privates keep the fund investable and able to pay benefits; floors on cash and liquid bonds preserve solvency.
- **Implementation reality** – minimums reflect the smallest position worth governing; maximums reflect manager capacity and deployment speed.
- **Diversification discipline** – bands across equity sub-classes prevent loading up on whichever sleeve has the best recent inputs.

What do we accomplish?

- **A menu, not a corner solution** – the optimizer generates a spectrum of candidate portfolios, each one investable and diversified.
- **Board decision-ready** – trustees choose among real, implementable policies that differ in expected return and risk – not theoretical optimal allocations (i.e., portfolios that are not practical or implementable).

* Actual constraints used in this study are provided in the appendix.

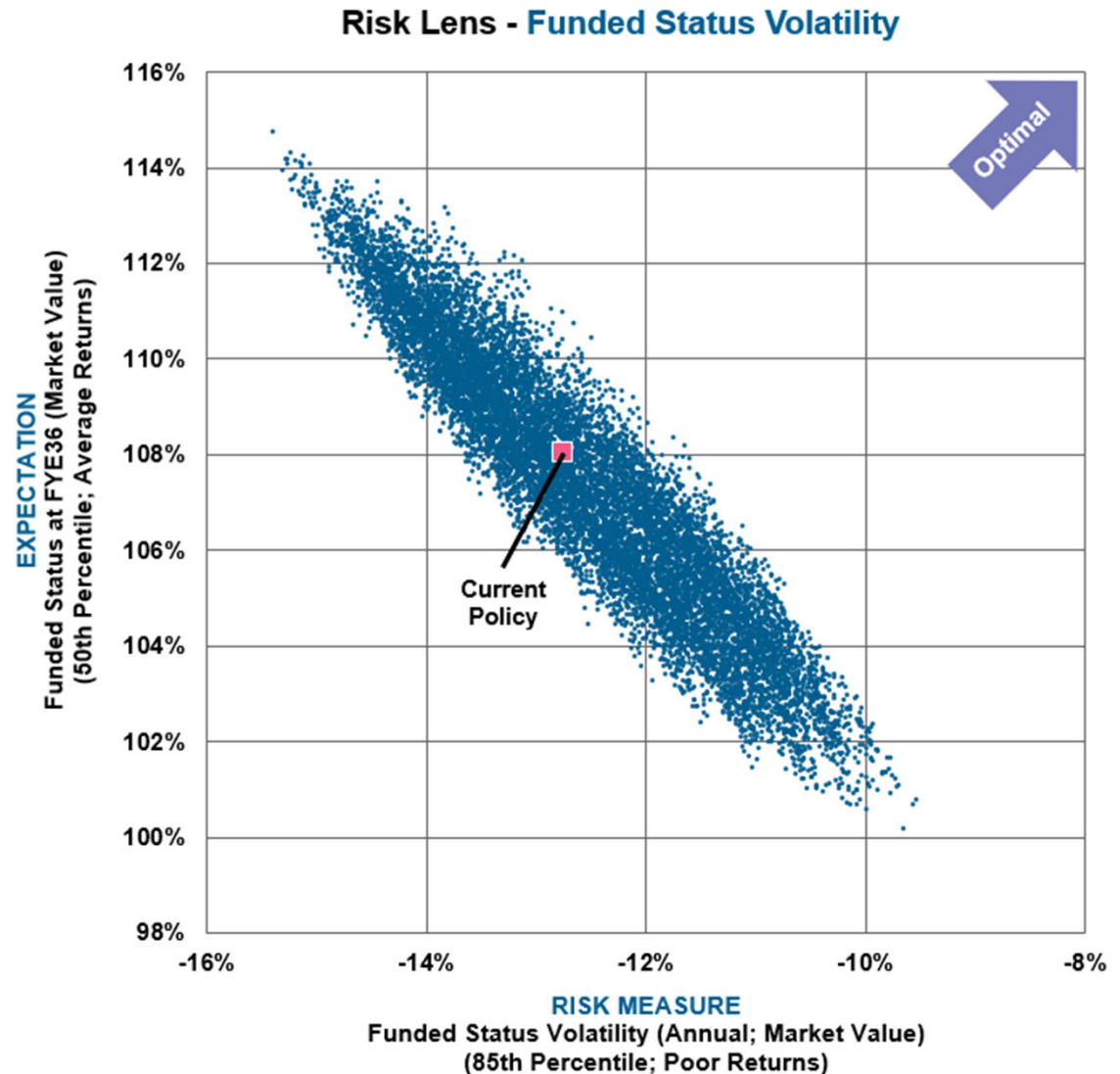


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Optimization Step 3: Compare Current Policy to Alternative Asset Allocations

Notes

- The constraints are used to create thousands of combinations of asset allocations.
- The Current Policy is compared to these alternative asset allocations to determine if an alternative provides more optimal outcomes.
- Each **blue** dot represents a unique asset allocation within the asset class constraints shown on the prior slide.



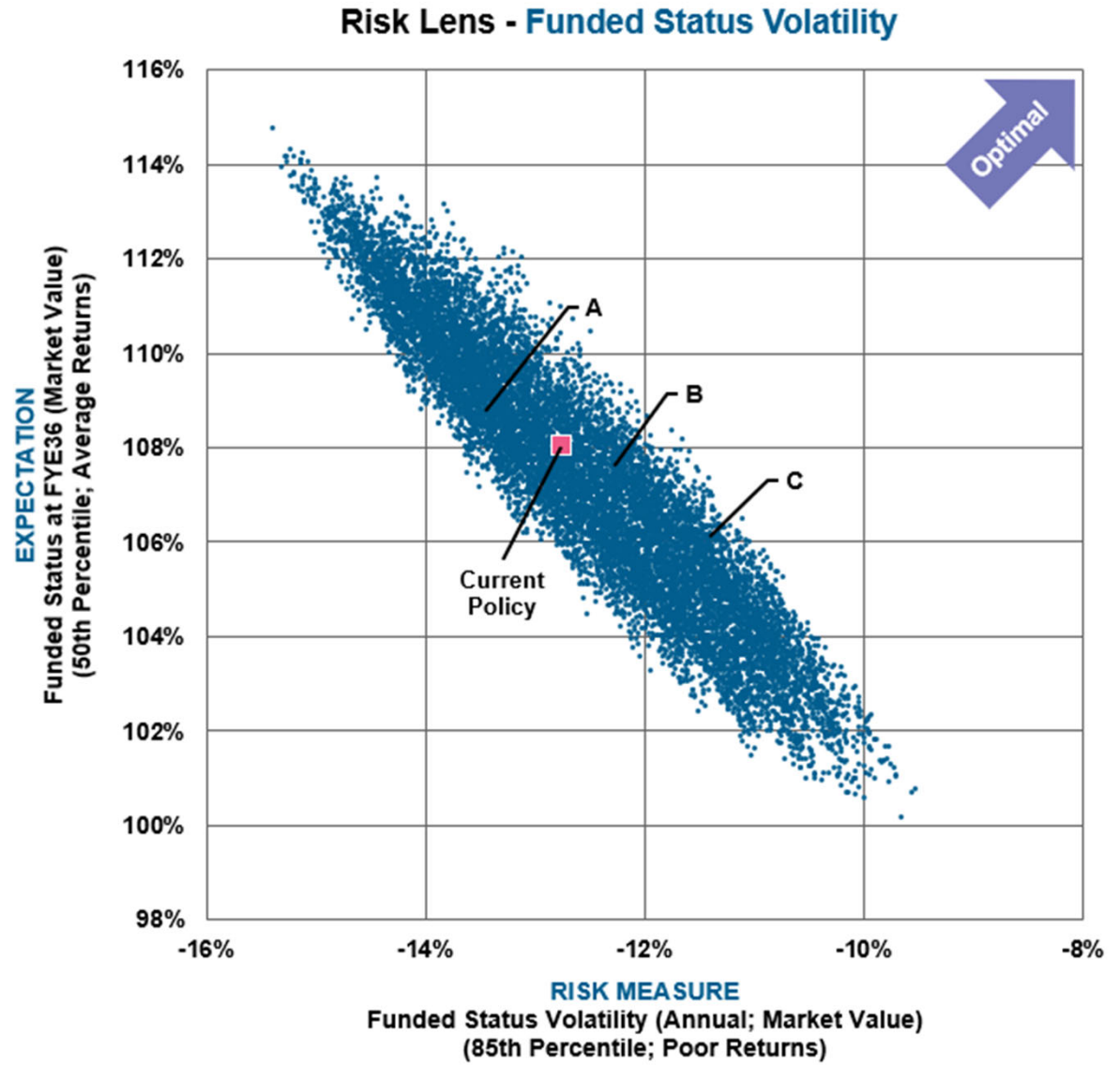


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Optimization Step 4a: Produce Samples – Funded Status

Notes

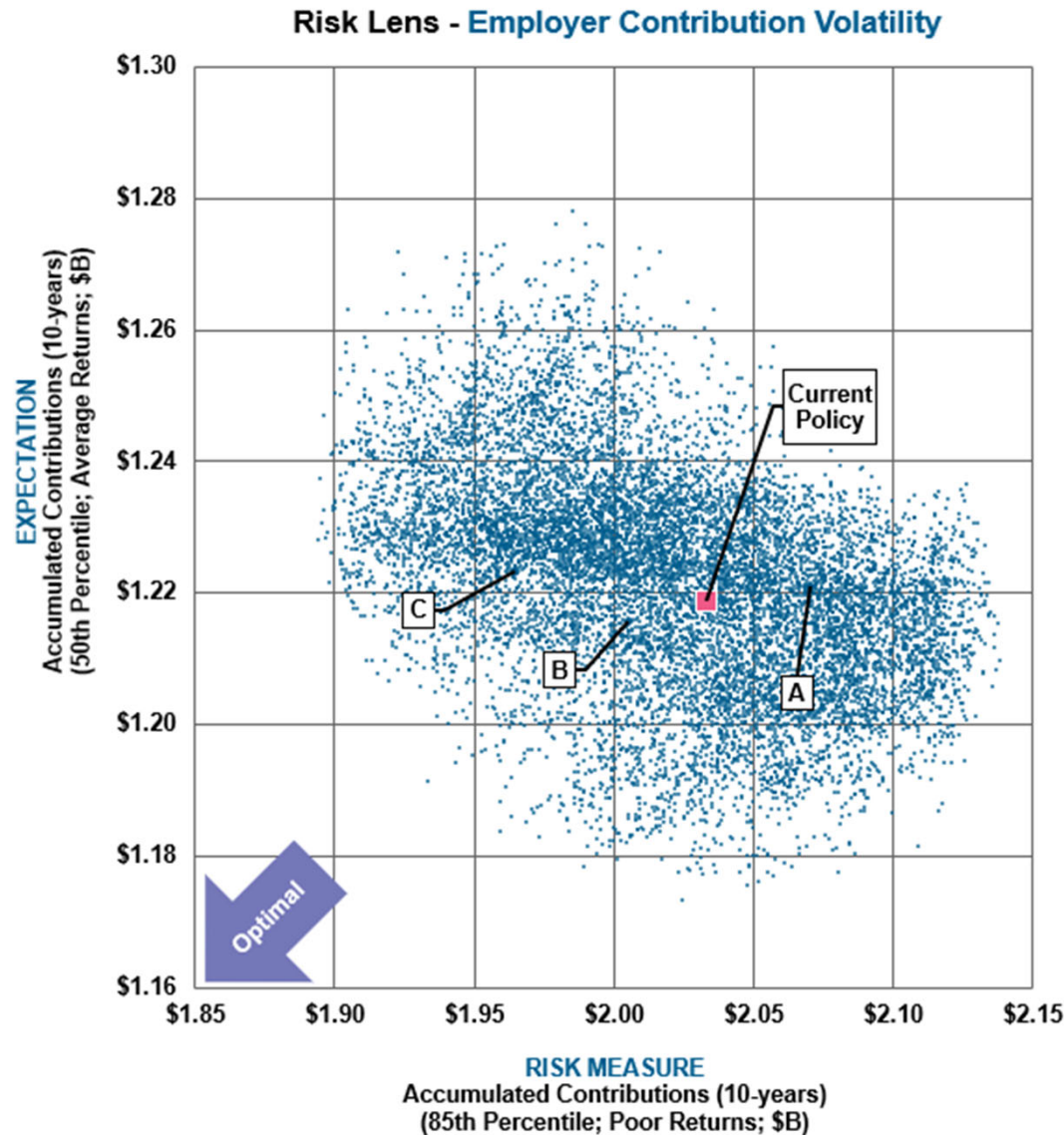
- Samples are selected spanning the spectrum of expectation/risk measure.
- Sample A is an example of a higher funded status expectation relative to Policy.
- Sample C is the opposite – lower funded status volatility.
- No outcome is “better” than another given each have beneficial quantitative outcomes.





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Optimization Step 4b: Produce Samples – Accumulated Contributions



Notes

- This chart shows a comparison of required employer contributions accumulated over 10 years with *average* returns (Expectation; y-axis) vs the Risk Measure of accumulated contributions in 10 years with *poor* returns.
- For this risk measure, “optimal” is to reduce the required contributions under the average and poor return markets.



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Current and Sample Portfolios

- Samples are selected for purposes of creating dialogue around quantitative preferences.
- These samples should not be interpreted as recommendations.

	Current Policy	Sample A	Sample B	Sample C
1. Expected Return (10 Years)	6.7%	6.8%	6.7%	6.5%
2. Expected Return (20 Years)	8.0%	8.1%	8.0%	7.7%
3. Standard Deviation	13.1%	13.7%	12.6%	11.67%
4. Sharpe Ratio	0.37	0.36	0.38	0.40
5. Expectation - Funded Status (FYE36)	108%	109%	108%	106%
6. Risk - Funded Status Volatility	-13%	-13%	-12%	-11%
7. Expectation - Accum. Contributions (2027-2036; \$B)	\$1.22	\$1.22	\$1.22	\$1.22
8. Risk - Accum. Contributions (2027-2036; \$B)	\$2.03	\$2.07	\$2.01	\$1.96
9. Est. FY 2027 Income (\$M)*	54	42	55	69
10. Liability Hedge Ratio**	4%	2%	4%	4%

* Income calculated using index yields as of 12/31/2025 for the following asset classes – cash equivalents, TIPS and investment grade bonds (intermediate and long). For comparative purposes, the estimated FY 2027 benefit payments are \$338M; source: June 30, 2025 actuarial valuation results.

** Liability hedge ratio assumes the liability duration of 13 years. Because the liability is not anticipated to automatically fluctuate with interest rate movements, this statistic is conceptual in nature. The higher the hedge ratio, the more optionality the Board is anticipated to have with regards to setting the liability discount rate.

Shifting the Investing Mindset



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Derisking: A Shift in Mindset



Asset Growth Mindset



Income Generation Mindset

Exceed the assumed rate of return

Goal

Maintain funded status

Asset appreciation drives returns

Success

Focus on income level and duration

Can benefit or hurt funded status,
leading to contribution volatility

Asset Volatility

Offset by equal liability volatility with
a mark-to-market discount rate

Cash

Low Volatility Asset

Long-duration bonds



*Bottom line: As funded status improves the task changes from **creating market value** to maximizing the probability of **capital returning** at the precise times the capital is needed.*



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Sample Glide Path: Allocations and Evaluation Statistics

As *market value* funded status improves, the policy de-risks—shifting from Return-Seeking toward Hedging assets, which lowers both expected return and funded-status volatility.

Asset Allocation by Glide Path Step

Asset Group	Step 1 (Current Policy)	Step 2 (100% Funded)	Step 3 (110% Funded)	Step 4 (120% Funded)
Return Seeking (Liquid)	49%	35% (-14%)	25% (-10%)	15% (-10%)
Return Seeking (Illiquid)	32%	30% (-2%)	25% (-5%)	20% (-5%)
Hedging	19%	35% (+16%)	50% (+15%)	65% (+15%)
Total	100%	100%	100%	100%

Evaluation Statistics

Metric	Step 1 (Current Policy)	Step 2 (100% Funded)	Step 3 (110% Funded)	Step 4 (120% Funded)
Expected Return (10 Years)	6.7%	6.8%	6.5%	6.1%
Expected Return (20 Years)	8.0%	8.0%	7.6%	7.1%
Standard Deviation	13.1%	12.2%	10.9%	9.9%
Funded Status Volatility*	13%	10%	8%	6%

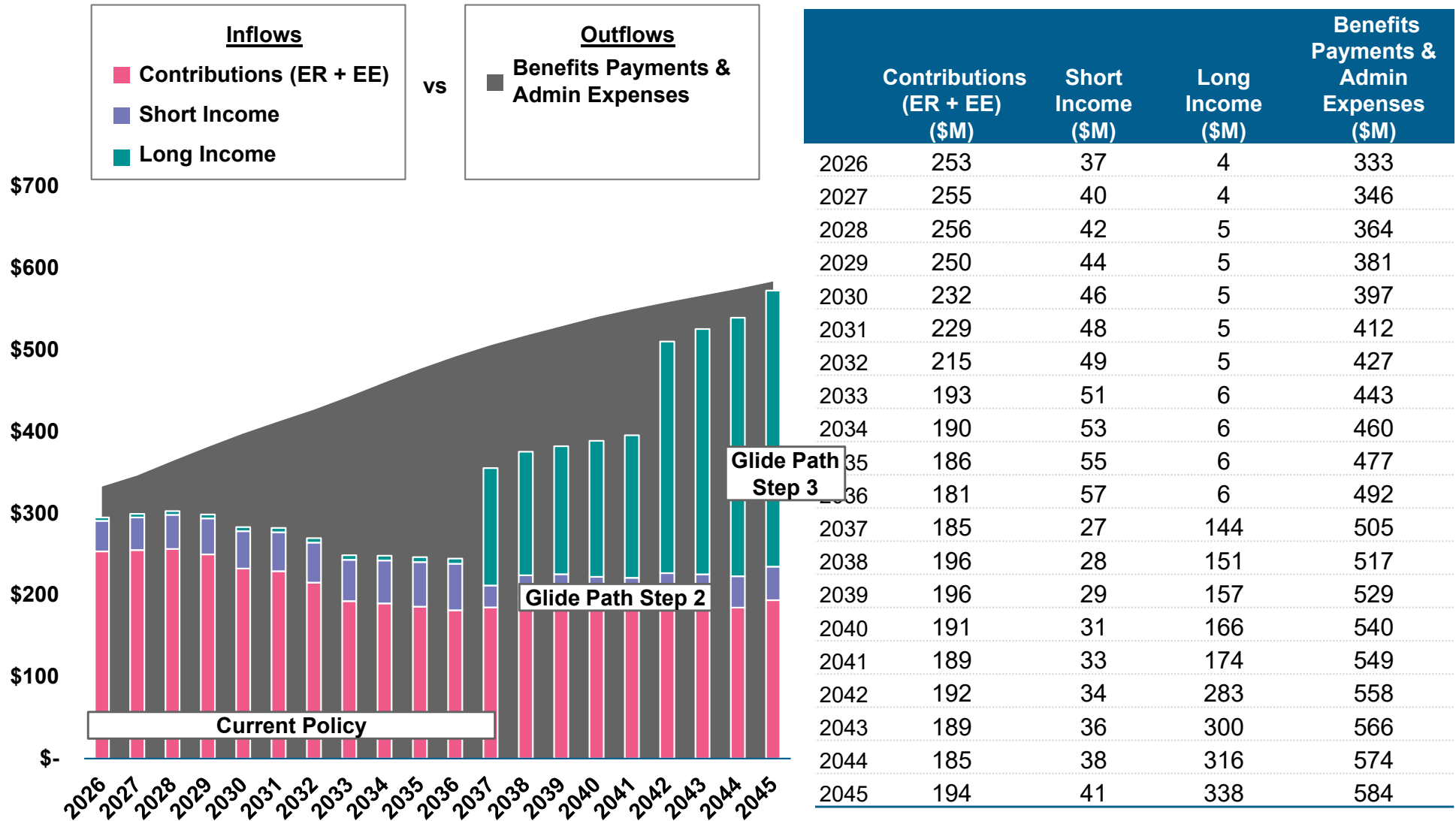
Expected returns and standard deviation reflect Meketa capital markets assumptions. Allocations are illustrative policy targets for each market value funded-status step.

* The funded status volatility is the difference between the median FYE2027 funded status minus the 85th percentile FYE2027 funded status.



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Liquidity Projection - Cash Outflow and Inflow Comparison



Income expectations based on yields as of 12/31/2025. The short duration income generating investments are expected to have the greatest income level fluctuation over time.

Next Steps



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Next Steps



Committee Review

Present detailed allocation samples to the Investment Committee for feedback.

August 2026



Board Vote

Finalize the preferred strategy and bring recommendations to the Board for a vote.

September 2026



Implementation

Plan the portfolio transition and implementation timeline with the Board.

Q4 2026 & beyond



De-risking Review

Continue exploring de-risking options with Cheiron as funded status improves.

Ongoing

Appendix – Assumptions, Methods, Disclaimers



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Assumptions and Methods

- Capital Market Assumptions: Meketa 2026 Capital Market Expectations – 10 and 20-year assumptions.
- Assets: Market value of assets of \$6.2 billion as of June 30, 2026.
- Asset Rebalancing: Annual.
- Liabilities and normal cost: The normal cost and expected benefit payments used in this study were provided by Cheiron as of June 30, 2025.
- Funding policy: As detailed in the actuarial valuation report as of June 30, 2025, issued by Cheiron.
- Plan Provisions and Additional Assumptions: Additional details regarding provisions and assumptions are documented in the June 30, 2025, actuarial valuation report issued by Cheiron.



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Additional Detail on Sample Policies

	Current Policy (%)	Sample A (%)	Sample B (%)	Sample C (%)
Cash Equivalents	11	11	11	15
Investment Grade Bonds	5	3	6	7
Long Duration Bonds	2	1	2	1
High Yield Bonds	2	2	4	4
Private Debt	5	5	5	5
Emerging Market Bonds Aggregate	2	2	4	4
Global Equity	42	46	38	31
Buyouts	10	10	10	10
Venture Capital	5	5	5	5
Core Private Real Estate	5	5	6	6
Value-Added Real Estate	2	2	2	2
Opportunistic Real Estate	2	2	2	2
Natural Resources (Private)	3	3	2	2
Infrastructure (Core Private)	1	1	2	2
Hedge Funds	3	3	3	3
TIPS	2	0	0	0

Allocations may not add to 100% due to rounding.



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Asset Class Constraints

→ The constraints below were developed to provide a spectrum of expectation and risk measure outcomes.

Asset Class	Current Policy (%)	Min (%)	Max (%)
Cash Equivalents	11	2.0	24.0
Investment Grade Bonds	5	2.6	8.9
Long Duration Bonds	2	0.0	1.0
High Yield Bonds	2	1.2	5.3
Private Debt	5	5.0	7.0
Emerging Market Bonds Aggregate	2	1.2	5.3
Global Equity	42	19.4	52.0
Buyouts	10	9.0	11.7
Venture Capital	5	4.0	5.3
Core Private Real Estate	5	3.5	6.5
Value-Added Real Estate	2	1.4	2.6
Opportunistic Real Estate	2	1.4	2.6
Natural Resources (Private)	3	2.1	3.9
Infrastructure (Core Private)	1	0.7	2.3
Hedge Funds	3	0.0	6.0
TIPS	2	0.0	2.0



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