



Investment Committee

Agenda Item 5a

June 13, 2022

Item Name: Asset Liability Management: Affiliate Funds - Supplemental Income Plans

Program: Trust Level Portfolio Management and Implementation

Item Type: Action

Recommendation

Adopt the recommended strategic asset allocation for the Supplemental Income Plans' (SIP) Target Date Fund Glide Path.

Executive Summary

This agenda item presents an evaluation and recommendation to update the SIP Target Date Fund Glide Path asset allocation, based on participant demographic data and capital market assumptions. The SIP includes the Public Employees' Deferred Compensation Fund and the Supplemental Contributions Program Fund. The glide path has been evaluated in collaboration with CalPERS Investment, Actuarial, and Financial Office teams and in partnership with RVK, an investment consultant with expertise in defined contribution glide path analysis and design. The review objectives are to minimize retirement income shortfall, maximize income replacement in retirement, and minimize costs. The conclusions below guided the glide path construction:

- The current glide path closely matches the intended objectives.
- Most participant outcomes are incrementally improved with the updated glide path.
- No asset class or benchmark changes are required at this time.

Strategic Plan

This agenda item supports the CalPERS Strategic Plan goal to strengthen the long-term sustainability of the Affiliate Funds. The periodic review of the glide path asset allocation is intended to improve the retirement outcomes for SIP plan participants.

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;
- Investment Belief 7: CalPERS will take risk only where we have a strong belief we will be rewarded for it; and
- Investment Belief 8: Costs matter and need to be effectively managed.

Background

Governed by CalPERS Asset Liability Management (ALM) Policy, the ALM process is a collaborative effort between the Actuarial Office (ACTO), the Financial Office (FINO), and the Investment Office (INVO) and currently occurs every four years with a mid-point review. This ALM cycle is the primary process by which investment portfolios and actuarial assumptions evolve to reflect the market opportunity set and demographic assumptions and experience.

The review and updating of the SIP Target Date Fund Glide Path is the culmination of a significant body of work undertaken by the ALM team during the past year and is a progression in the ALM process from the following presentations made earlier to the Investment Committee:

- February 2021 – Asset Liability Management: Timeline, Concepts, and Framework
- March 2021 - Asset Liability Management: Risk Concepts and Examples
- June 2021 – Current Market Environment
- July 2021- Capital Market Assumption Education, Capital Market Assumptions: Survey & Methodology, and Creating and Assessing Candidate Portfolios
- November 2021 – Asset Liability Management: Adoption of Affiliate Funds' Capital Market Assumptions
- March 2022 – Asset Liability Management: Affiliate Funds – Health, Defined Benefit, and Pre-Funding Trusts.

This agenda item, Asset Liability Management: Affiliate Funds – Supplemental Income Plans, is intended to provide comprehensive information and analysis to support the Investment Committee in reviewing the SIP Target Date Fund Glide Path recommended for adoption.

Analysis

Not applicable.

Budget and Fiscal Impacts

Not Applicable.

Benefits and Risks

The benefits of reviewing and updating the SIP Glide Path are:

1. Reviewing the current glide path provides support for adopting a refreshed glide path with an appropriate risk/return profile, based on current participant demographics and capital market assumptions.
2. The updated glide path may improve participant retirement outcomes.

The risks of reviewing and updating the glide path include:

1. Reviewing the current and updated glide path requires evaluating and balancing a variety of assumptions and risks.
2. Updating the glide path requires reliance on demographic and investment assumptions, which are uncertain.
3. Improvements to retirement outcomes may not be realized.

Attachments

Attachment 1 – Asset Liability Management: Affiliate Funds - Supplemental Income Plans

Attachment 2 – Wilshire Opinion Letter

James Sterling Gunn
Managing Investment Director
Trust Level Portfolio Management & Implementation

Nicole Musicco
Chief Investment Officer

Asset Liability Management Affiliate Funds: Supplemental Income Plans

Sterling Gunn, Managing Investment Director, TLPMI
Christine Reese, Investment Director, TLPMI

Investment Committee
June 13, 2022

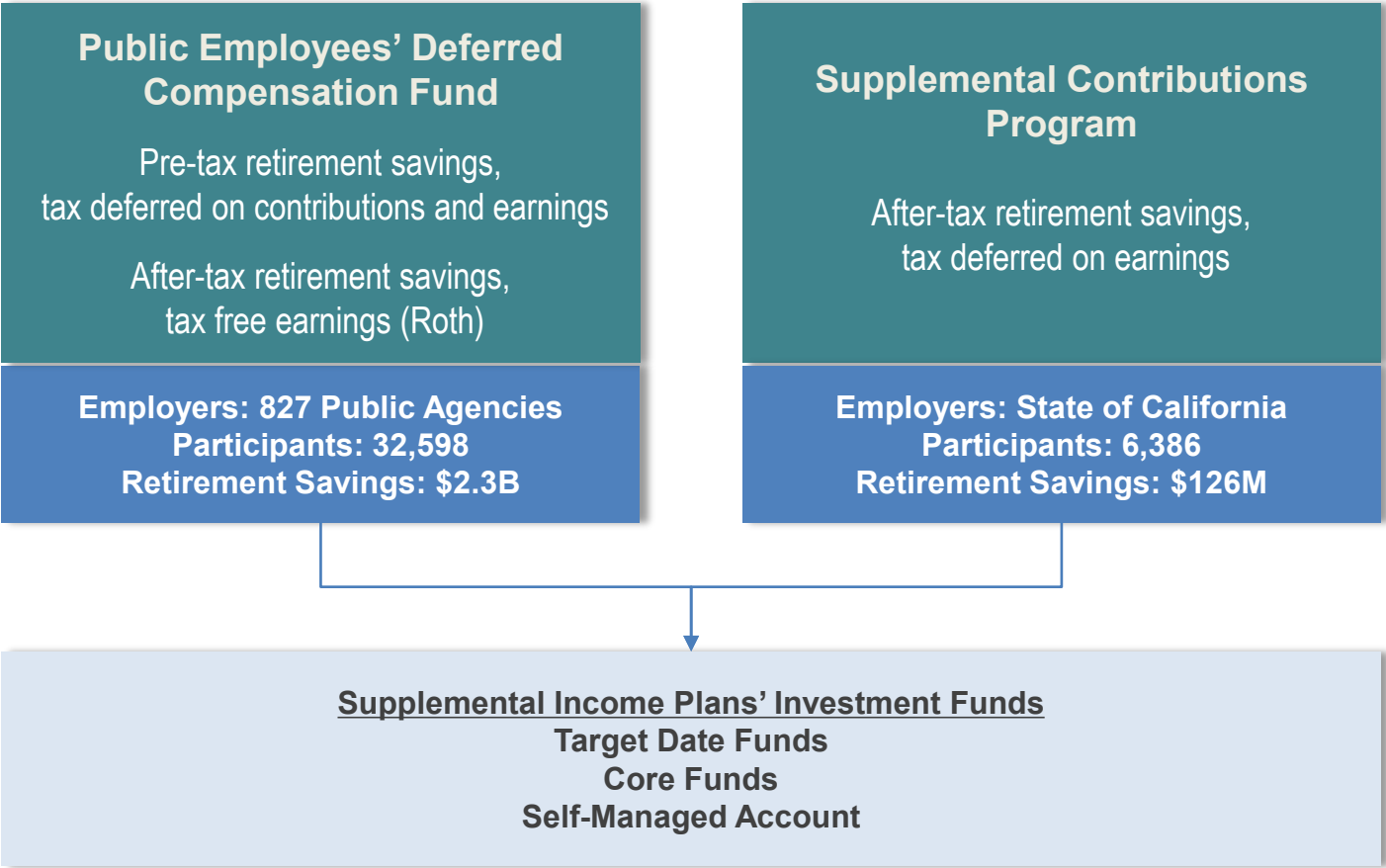
Summary

- The Affiliate Funds covered in this review are the Public Employees' Deferred Compensation Fund and the Supplemental Contributions Program Fund, each a defined contribution plan and together called the Supplemental Income Plans (SIP)¹.
- This agenda item includes an overview for the SIP Program and the Investment Funds (Target Date Funds, Core Funds, and a Self-Managed Account), and focuses on the strategic asset allocation analysis and recommendation for the Target Date Funds glide path. The glide path sets the asset allocation over time for the 11 age-based Target Date Funds. The glide path is designed to de-risk the allocation as participants get closer to and enter retirement.
- The Investment, Actuarial, and Financial Office teams have closely collaborated on this review and partnered with RVK, an investment consultant with expertise in defined contribution glide path analysis and design. CalPERS teams provided input data, RVK performed the analysis, and CalPERS teams reviewed and confirmed the analysis and recommendations presented in this agenda item.
- The objectives of minimizing retirement income shortfall, maximizing income replacement, and minimizing costs have been integral in the construction of the SIP Glide Path.
- Review highlights:
 - The current glide path closely matches the intended objectives; recommended changes are modest.
 - Participant outcomes are incrementally improved with the recommended glide path.
 - There are no asset class or benchmark changes recommended at this time.

¹ The name 'Supplemental Income Plans' is internal to CalPERS and refers to the combined program for the Public Employees' Deferred Compensation Fund and the Supplemental Contributions Program

Supplemental Income Plans Program Overview

Supplemental Income Plans' Structure and Characteristics¹



¹ Data as of 12/31/2021

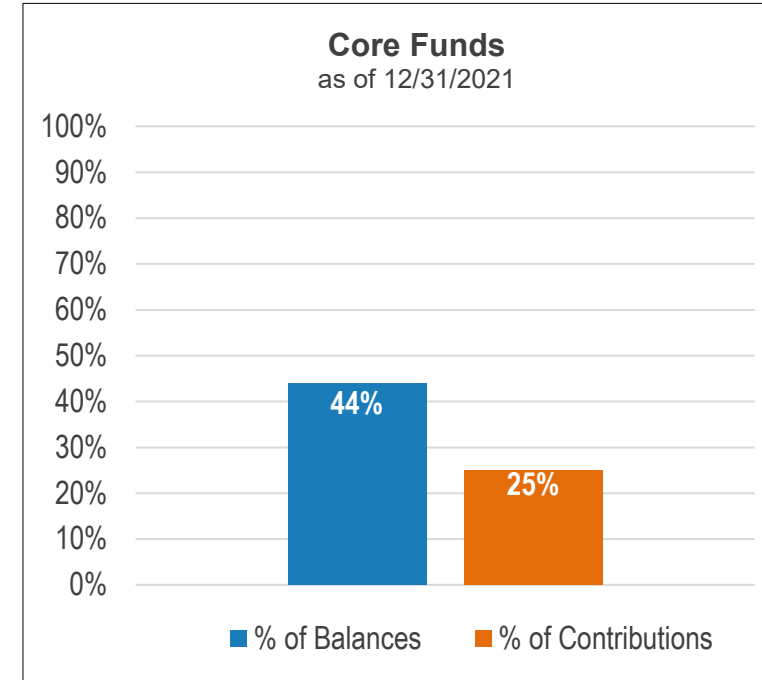
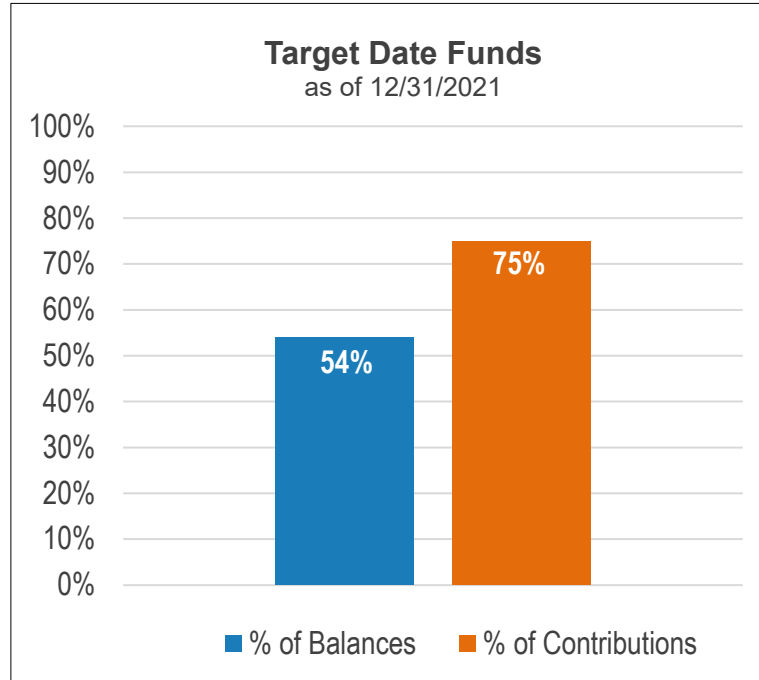
SIP Investment Fund Lineup

	Participant Investment Choices ¹	Asset Classes	Investment Funds
Target Date Funds	Participants can select a target date fund based on expected retirement date. CalPERS manages the glide path asset allocation, which de-risks over time and is customized based on CalPERS' participant demographics and capital market assumptions.	Global Equity U.S. Fixed Income Real Assets Cash Equivalents	CalPERS Target Date Funds: 2060, 2055, 2050, 2045, 2040, 2035, 2030, 2025, 2020, 2015 ² , & Income Fund
Core Funds	Participants can select broad market index funds and manage their asset allocation.	U.S. Equity => International Equity => U.S. Fixed Income => U.S. Fixed Income => Real Assets => Cash Equivalents =>	Russell All Cap Equity Index Fund Global All Cap ex-U.S. Equity Index Fund U.S. Bond Index Fund U.S. Short-Term Govt/Credit Bond Index Fund Real Asset Fund Short-Term Investment Fund
SMA	Participants can select the self-managed account to invest in retail mutual funds and certificates of deposit via a brokerage account. Participant manages the allocation.	Various	Mutual Funds Certificates of Deposit

¹ Participants can select any combination of investment choices and may select more than one target date fund, if desired.

² The 2015 fund has reached the final allocation, will close, and participants will move into the Income Fund during the implementation.

SIP Investment Fund Usage

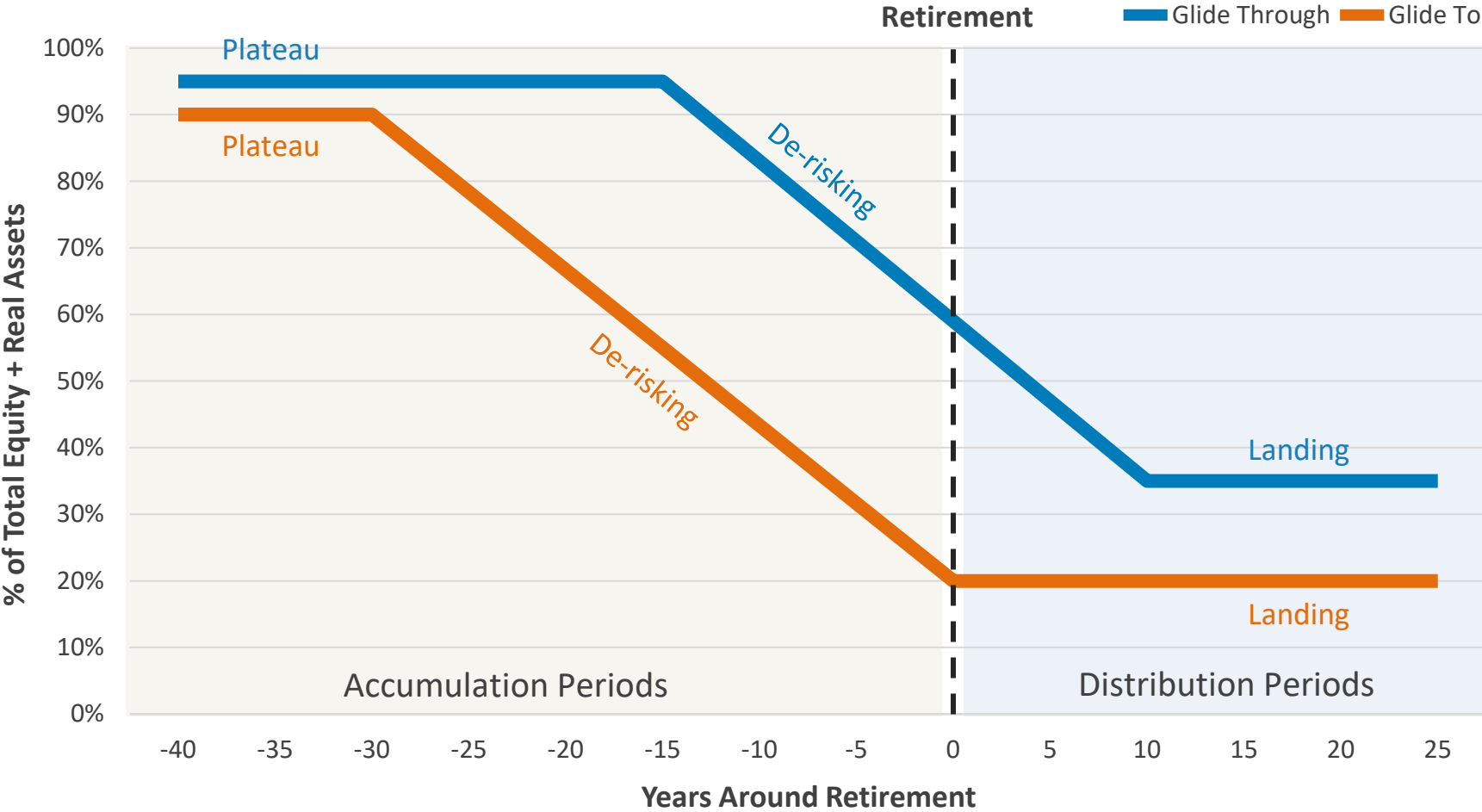


- Target Date Fund usage is increasing, accounting for 54% of balances and 75% of contributions. 68% of participants are invested 100% in TDFs. As TDFs are the Qualified Default Investment Alternative¹ this trend is expected to continue.
- Core Fund usage is declining, accounting for 44% of balances and 25% of contributions.
- Self-Managed Account usage has remained steady at 2%, which aligns with industry averages.

¹ The Qualified Default Investment Alternative (QDIA) is the fund selected automatically when a participant joins the program but does not make a fund selection for the direction of contributions. When this occurs, the QDIA is the Target Date Fund closest to the participant's estimated retirement date.

Introduction to Glide Path Design

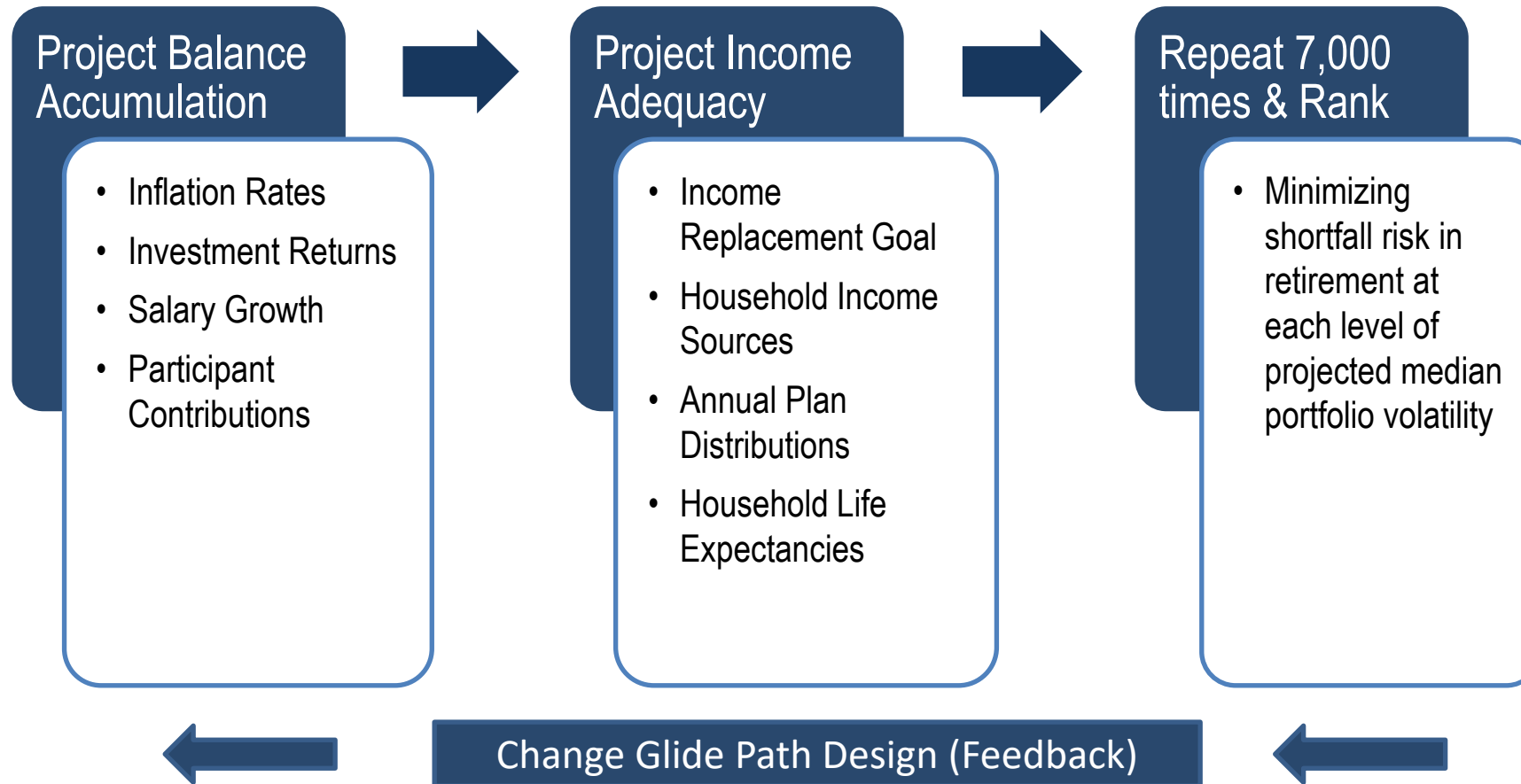
Basic Elements of A Glide Path



Benefits of a Glide Path

- Provides participants with an asset allocation framework that strives to maximize retirement income replacement during distribution years, while alleviating participants from having to manage their individual asset allocation and rebalancing.
- Diversified and risk-adjusted suite of target date funds from which participants can select based on their age or risk tolerance. Glide path reviewed every 4 years in line with the ALM cycle.
- Decades-long time horizon for balance accumulation and de-risking. The glide path has higher risk in the early years when participants typically have lower balances and a long time horizon to weather market volatility. The glide path de-risks in later years as participants near and enter retirement, when they typically have higher balances and capital preservation is important.
- Disciplined approach to quarterly asset class rebalancing and annual adjustments of the asset allocation along the glide path.
- Efficient portfolios built on risk/return trade-off of the entire accumulation and distribution period, instead of a static point of time.

Glide Path Construction



CalPERS Glide Path Design & Recommendation

SIP Glide Path Demographic Inputs and Assumptions

Input	Value	Input Assumptions
Starting Age	21	The projection period starting age is 21 years. The model is tailored to the typical demographic profile of new full-career employees who enroll in SIP, invest in the CalPERS 2060 Target Retirement Date Fund, and start saving annually, consistent with the Plans' historical saving patterns.
Retirement Age	62	While median retirement age for current retirees is 59, based on applicable pension benefit formulas for current 457 Plan employees, assuming a small delay in retirement from age 59 to 62 is reasonable.
Projection Period	42+ years	The projection period starts at age 21 to retirement at age 62, a total of 42 years, in addition to projected years in retirement, based on the projected household mortality.
Household Size	2 members	Due to data availability, a household comprised of two individuals, with a single wage earner, was assumed.
Annual Contribution	1.9%-3.2%	Contribution rates used are consistent with median age group contribution for eligible SIP participants in CY 2020. Data sourced from Voya.
Income Replacement Goal	83%	Estimate of the level of retirement income, adjusted for inflation, relative to income earned before retirement, that would be required to maintain the pre-retirement standard of living.
Pension Formula	2% at age 62	Estimated using CalPERS Retirement Estimate Calculator based on the weighted average full retirement age and benefit multiplier of current 457 Plan employees.
Social Security Coverage	None	The analysis assumes no Social Security Coverage during the tenure with CalPERS but that participants accrued Social Security credit prior to joining CalPERS.

SIP Distribution Analysis¹: Participants > 60 Years of Age

- Although participant distributions have slightly increased from the 2017 analysis, the results are supportive of maintaining a glide path that lands at the final asset allocation after retirement rather than at retirement.

Distribution Type		2021 Analysis	2017 Analysis	Difference
A	No Distributions	76%	79%	-3%
B	Partial Distributions	16%	14%	2%
A+B	Participants Remaining in Plan	92%	93%	-1%
C	Rollover Distributions	4%	4%	0%
D	Full Cash Distributions	5%	3%	2%
A+B+C	Participants Fully Invested	96%	97%	-1%
B+C+D	Participants Making Distributions	25%	21%	4%

¹ The 2021 Distribution Analysis is based on average distributions by participants from 1/1/2018 through 12/31/2019. Potentially due to the CARES Act expanded distribution options, which included additional in-service distributions and a waiver of 2020 mandatory minimum distributions, there was a notable change in distribution patterns in 2020. Given this, 2020 data was excluded from the 2021 Distribution analysis. Data is sourced from Voya.

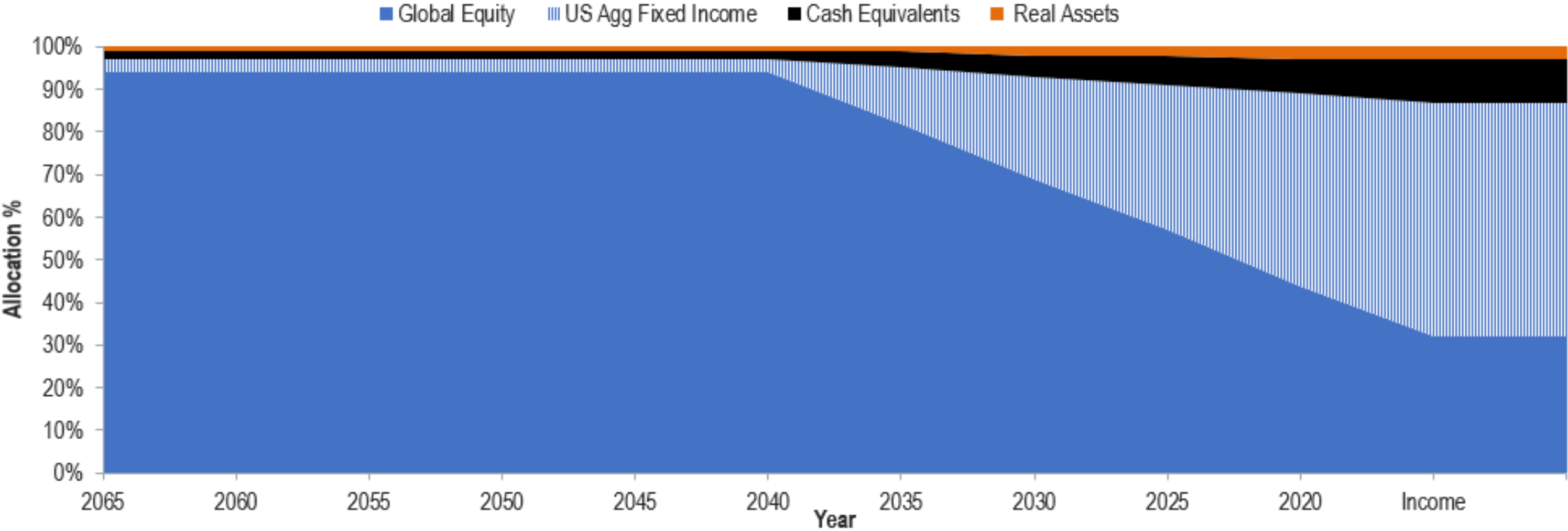
SIP Distribution Analysis¹: Participants in Retirement

- The majority of participants do not withdraw money before age 72. When distributions are made, they are typically partial rather than full distributions such as a rollover or cash out. This distribution pattern further supports maintaining a 'through' glide path that lands after retirement.

		Age Cohort					
Distribution Type		52-57	57-62	62-67	67-72	72-77	>=77
A	No Distributions	96%	93%	88%	86%	45%	16%
B	Partial Distributions	1%	3%	4%	5%	44%	76%
A+B	Participants Remaining in Plan	97%	96%	92%	91%	89%	92%
C	Rollover	1%	2%	4%	5%	3%	1%
D	Full Cash Distribution	2%	2%	4%	4%	8%	7%
A+B+C	Participants Fully Invested	98%	98%	96%	96%	92%	93%
C+D	Participants No Longer in Program	3%	4%	8%	9%	11%	8%

¹ The 2021 Distribution Analysis is based on average distributions by participants from 1/1/2018 through 12/31/2019. Potentially due to the CARES Act expanded distribution options, which included additional in-service distributions and a waiver of 2020 mandatory minimum distributions, there was a notable change in distribution patterns in 2020. Given this, 2020 data was excluded from the 2021 Distribution analysis. Data is sourced from Voya.

SIP Recommended Glide Path: Asset Allocation



Target Date Funds Recommended 2022 Asset Allocation

2065 ¹	2060	2055	2050	2045	2040	2035	2030	2025	2020	Income	Asset Classes
94%	94%	94%	94%	94%	94%	82%	69%	57%	44%	32%	Global Equity
1%	1%	1%	1%	1%	1%	1%	2%	2%	3%	3%	Real Assets
3%	3%	3%	3%	3%	3%	13%	24%	34%	45%	55%	U.S. Fixed Income
2%	2%	2%	2%	2%	2%	4%	5%	7%	8%	10%	Cash Equivalents

¹ The 2065 Fund will be opened and the 2015 fund will be closed as part of the implementation.

SIP Recommended Glide Path: Median Income Projections¹

- The recommended glide path results in slight improvements across most measures for the median participant.

Measure	Recommended Glide Path	Current Glide Path	Change	Definition
Expected Return	6.1%	6.0%	.1%	Projected annualized return during the accumulation phase.
Expected Volatility	13.6%	13.5%	.1%	Projected annualized volatility during the accumulation phase.
Ending Balance	\$281,767	\$281,677	\$90	Projected balance accumulation at age 62 for the median participant, saving at the current median savings rate.
Replacement Rate	70.9%	70%	.9%	Estimated annual retirement income, adjusted for inflation, as a percent of final salary prior to retirement, that will be achieved from their pension and SIP savings.
Probability of Shortfall	83%	85%	-2%	Probability that a participant will deplete the entire SIP balance in retirement and then rely solely on pension income and personal savings.
Years Before Drawdown	11	10	1	Number of years the median participant can draw on their SIP savings balance to meet any income shortfall.
Median Additional Contribution	3.2%	4.0%	-.8%	Estimated amount of additional savings as a percent of salary a participant would need to save annually to reduce the probability of shortfall down to 50%.
Median SIP Replacement Income	6.6%	6.2%	.4%	Estimated annual retirement income, adjusted for inflation, as a percent of final salary prior to retirement, that will be achieved from SIP savings alone.

¹ The RVK Retirement Income Model estimates future retirement outcomes of the median SIP participant, based on typical saving/spending patterns, and expected income sources.

SIP Recommended Glide Path:

- The recommended target date fund glide path results in a starting allocation shift of between 2%-5% by asset class when compared to the current policy asset allocation.

Recommended 2022 Policy Allocation

Asset Classes	2065 ¹	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015 ²	Income
Global Equity	94%	94%	94%	94%	94%	94%	82%	69%	57%	44%	-	32%
Real Assets	1%	1%	1%	1%	1%	1%	1%	2%	2%	3%	-	3%
U.S. Fixed Income	3%	3%	3%	3%	3%	3%	13%	24%	34%	45%	-	55%
Cash Equivalents	2%	2%	2%	2%	2%	2%	4%	5%	7%	8%	-	10%

Current 2022 Policy Allocation

Asset Classes	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	Income
Global Equity	-	92%	92%	92%	92%	92%	80%	67%	55%	42%	30%	30%
Real Assets	-	3%	3%	3%	3%	3%	3%	4%	4%	5%	5%	5%
U.S. Fixed Income	-	5%	5%	5%	5%	5%	16%	27%	38%	49%	60%	60%
Cash Equivalents	-	0%	0%	0%	0%	0%	1%	2%	3%	4%	5%	5%

Allocation Shift from Current to Recommended for 2022 Policy Allocation

Asset Classes	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	Income
Global Equity	no shift	2%	2%	2%	2%	2%	2%	2%	2%	2%	closing =>	2%
Real Assets	no shift	-2%	-2%	-2%	-2%	-2%	-2%	-2%	-2%	-2%	closing =>	-2%
U.S. Fixed Income	no shift	-2%	-2%	-2%	-2%	-2%	-3%	-3%	-4%	-4%	closing =>	-5%
Cash Equivalents	no shift	2%	2%	2%	2%	2%	3%	3%	4%	4%	closing =>	5%

¹ The 2065 Fund will be opened and will have a balance when participants select the fund for investment.

² The 2015 fund has reached the final allocation, will close, and participants will move into the Income Fund during the implementation.

Recommendation and Next Steps

Recommendation:

- Adopt the updated glide path for the Supplemental Income Plans.

Next Steps:

- Planning for all aspects of implementation.
- Launch communication campaign with employers and participants.
- Update Investment Policy to reflect new glide path.
- Close the 2015 fund and open the 2065 fund.
- Implement new glide path, effective October 1, 2022.

Appendix

SIP 20-Year Capital Market Assumptions

Asset Class	SIP Benchmark	Arithmetic Return	Geometric Return	Volatility	Correlations			
					Global Equity	Real Assets	Fixed Income	Liquidity
Global Equity	Global Equity Composite ¹	8.1	6.8	17.0	1	0.82	0.19	0.11
Real Assets	Real Asset Composite ²	6.2	5.5	12.3	0.82	1	0.18	0.15
U.S. Fixed Income	Barclays U.S. Aggregate	2.8	2.7	4.5	0.19	0.18	1	0.12
Cash Equivalents	BofA Merrill Lynch 3-Month US Treasury Bill	1.7	1.7	0.8	0.11	0.15	0.12	1

¹ The Global public equity assumption is based on the market capitalization weights within the MSCI ACWI IMI Index.

² Real Asset Composite is composed of 25% Bloomberg Roll Select Commodity, 25% S&P Global Large/Mid Cap Commodity and Resources, 10% Dow Jones U.S. Select REIT, 20% Bloomberg U.S. Government Inflation-Linked 1-10 Year Bond, and 20% S&P Global Infrastructure.

May 25, 2022

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

Re: Agenda Item 5a: Asset Liability Management – Affiliate Funds: Supplemental Income Plans

Dear Mr. Miller:

You requested Wilshire's opinion as it relates to Staff's recommended asset allocation glidepath for the Supplemental Income Plans (SIP). The CalPERS SIP represents retirement savings of approximately \$2.4B in assets, which includes the Public Employees' Deferred Compensation Fund (\$2.3B) and the Supplemental Contributions Program (\$126M).

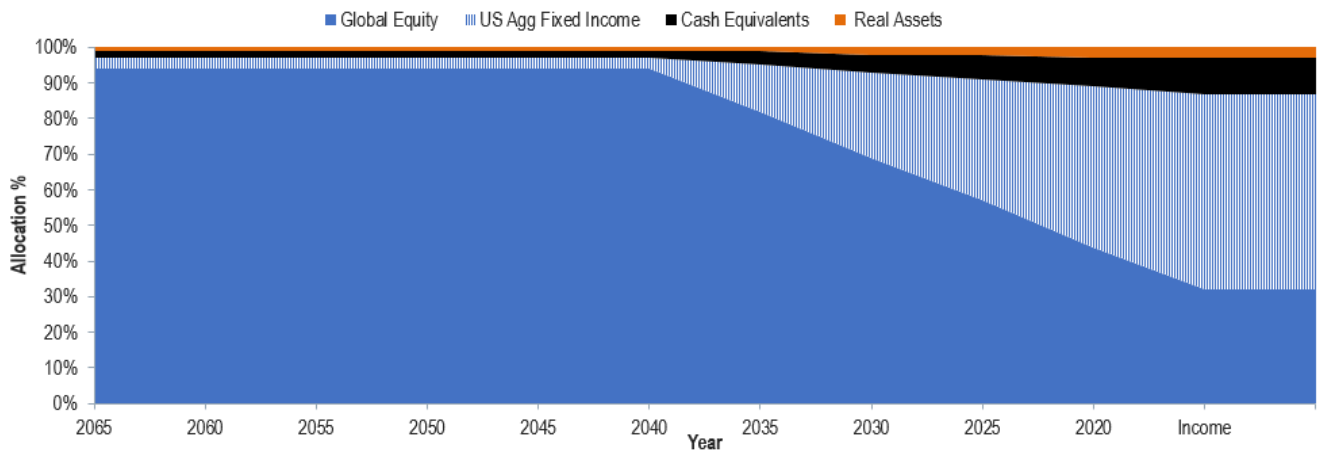
The Process

Staff engaged an external consultant to conduct glidepath analysis for the SIP program. Wilshire believes that the methods, inputs, and data used to perform the evaluation are appropriate and reasonable. For example, the menu of asset classes included in the analysis provide ample flexibility to identify well-diversified portfolios and the assumptions used for these investments were consistent with those approved and utilized within the PERF's ALM cycle and as supplemented in informing the recently approved asset allocation recommendations for other plans within the broader Affiliate Investment Programs. Demographic and participant behavior data were incorporated through the modeling and/or gathering of elements such as salary growth, contribution rates, income replacement goals, sources of household income, plan distributions, and life expectancies. The importance of including liability estimates within the analysis is consistent with Investment Belief 1 (i.e., liabilities must influence the asset structure).

In evaluating the appropriateness of various glidepath options, Staff and the external consultant primarily focused on trade-offs between the competing goals of minimizing expected retirement shortfall risk and minimizing expected portfolio volatility. However, as can be seen on slide 16 of Staff's presentation deck, other estimates such as expected return, ending balance, replacement rate, years before drawdown, median additional contribution, etc. were also assessed within the glidepath analysis. The consideration of this wide variety of risk metrics is both important to understanding glidepath characteristics and consistent with Investment Belief 9 (i.e., Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error).

Glidepath Selection

The proposed glidepath, which is presented on slide 15 of Staff's presentation deck and is pasted below, reflects Staff's and their external consultant's recommended glidepath based on their assessment of the various risk trade-offs referenced above.



2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	Income	Asset Classes
94%	94%	94%	94%	94%	94%	82%	69%	57%	44%	32%	Global Equity
1%	1%	1%	1%	1%	1%	1%	2%	2%	3%	3%	Real Assets
3%	3%	3%	3%	3%	3%	13%	24%	34%	45%	55%	U.S. Fixed Income
2%	2%	2%	2%	2%	2%	4%	5%	7%	8%	10%	Cash Equivalents

Wilshire is comfortable with the recommended glidepath, which is very similar to the SIP's current glidepath. Reflective of the modest implied changes, the proposed glidepath improves the expected return from 6.0% to 6.1%, reduces the expected probability of shortfall from 85% to 83%, and increases the expected replacement rate from 70.0% to 70.9%. Consistent with these modest changes, the recommended glidepath maintains the general increase in portfolio volatility approved in the previous SIP glidepath review with a small incremental expected increase from 13.5% to 13.6%.

Should you require anything further or have any questions, please do not hesitate to contact us.

Best regards,

Steven J. Foresti
Chief Investment Officer, Asset Allocation & Research

Thomas Toth, CFA
Managing Director