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**APRIL 4, 2019**

**AGENDA ITEM 4  
ACTION ITEM**

**SCHOLARSHARE INVESTMENT BOARD**

*Resolution to Approve Change from the Age-Based Portfolio Structure to the Enrollment-Based Portfolio Structure for ScholarShare 529*

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***Recommendation***

ScholarShare Investment Board (SIB or Board) staff recommends the Board adopt Resolution No. 2019-03 approving the change from the Age-Based portfolio structure to the Enrollment-Based portfolio structure for ScholarShare 529 (Plan).

***Background***

Each year, SIB and the program manager, TIAA-CREF Tuition Financing, Inc. (TFI), review the asset allocation of the investment portfolios for the Plan to determine if any changes are necessary to continue to meet its investment objectives.

For 2019, TFI has provided its “2019 Glide Path Recommendation” (Exhibit A), which summarizes the analysis completed for their recommendation to convert the age-based structure in the Plan to an enrollment-based structure. The analysis also provides highlights about the proposed glide path structure, comparisons between the two structures, additional considerations, portfolio mapping, advantages to the proposed structure, and a proposed target project timeline. Due to the complexity associated with this proposed change, general background and details about the recommendation were presented to the Board as an informational item at the February 14, 2019 SIB meeting. As discussed, the recommendation is now being presented to the Board for review and approval.

SIB’s independent consultants, Pension Consulting Alliance, LLC (now Meketa Investment Group) and AKF Consulting Group, reviewed TFI’s recommendation and have provided a summary of their analyses and recommendations (Exhibit B and Exhibit C, respectively) for the Board’s review. The analyses and recommendations highlight key observations associated with TFI’s recommended change to an enrollment-based glide path, including a review of the prevalence of this structure within the 529 industry, the potential benefits and challenges, and other final considerations for the Board.

***Presenters***

Jeremy Thiessen, Senior Director, TIAA-CREF Tuition Financing, Inc.  
Glenn Friedman, Manager, TIAA-CREF Tuition Financing, Inc.  
Eric White, Executive Vice President, Meketa Investment Group  
Andrea Feirstein, Managing Director, AKF Consulting Group  
Soohyang Lee, Vice President, AKF Consulting Group

## RESOLUTION NO. 2019-03

### RESOLUTION OF THE SCHOLARSHARE INVESTMENT BOARD RELATING TO THE APPROVAL OF THE CHANGE FROM THE AGE-BASED PORTFOLIO STRUCTURE TO AN ENROLLMENT-BASED PORTFOLIO STRUCTURE FOR THE SCHOLARSHARE 529 COLLEGE SAVINGS PLAN

**WHEREAS**, the ScholarShare Investment Board (the “SIB” or “Board”) was created under Education Code section 69980 et seq. (the “Golden State ScholarShare Trust Act” or “Act”);

**WHEREAS**, Section 69981(c)(4) of the Act provides that the Board shall have the powers and authority to cause moneys in the program fund to be held and invested and reinvested;

**WHEREAS**, Section 69982(f) of the Act provides that the Board shall have the powers and authority to administer the funds of the ScholarShare Trust;

**WHEREAS**, Section 69984(a)(2)(D) of the Act provides that moneys in the program fund may be invested or reinvested by the Treasurer or may be invested in whole or in part under contract with an investment manager, as determined by the Board;

**WHEREAS**, the program manager for the ScholarShare 529 College Savings Plan (“ScholarShare 529” or “Plan”), currently TIAA-CREF Tuition Financing, Inc. (“TFI”), recommends a change from the existing active and passive age-based portfolio structure to an active and passive enrollment-based portfolio structure for the Plan.

**WHEREAS**, SIB staff, and the Board’s investment consultant and 529 industry consultant have reviewed TFI’s recommendation and concur with the change from an age-based portfolio structure to an enrollment-based portfolio structure for the Plan pursuant to the portfolio mapping outlined below:

#### SCHOLARSHARE 529 ACTIVE PORTFOLIOS

<i>CURRENT ACTIVE AGE-BASED PORTFOLIO</i>	<i>PROPOSED ACTIVE ENROLLMENT DATE FUND</i>
Age Band 0-4 Years	2037 2038 (Ages -1, 0)
	2035 2036 (Ages 1, 2)
	2033 2034 (Ages 3, 4)
Age Band 5-8 Years	2031 2032 (Ages 5, 6)
	2029 2030 (Ages 7, 8)
Age Band 9-10 Years	2027 2028 (Ages 9, 10)
Age Band 11-12 Years	2025 2026 (Ages 11, 12)
Age Band 13-14 Years	2023 2024 (Ages 13, 14)
Age Band 15 Years	2021 2022 (Ages 15, 16)
Age Band 16 Years	
Age Band 17 Years	2019 2020 (Ages 17)
Age Band 18 Years and Over	Enrollment (Ages 18 and Over)

**SCHOLARSHARE 529 PASSIVE PORTFOLIOS**

<i>CURRENT PASSIVE AGE-BASED PORTFOLIO</i>	<i>PROPOSED PASSIVE ENROLLMENT DATE FUND (AGE)</i>
Age Band 0-4 Years	2037 2038 (Ages -1, 0)
	2035 2036 (Ages 1, 2)
	2033 2034 (Ages 3, 4)
Age Band 5-8 Years	2031 2032 (Ages 5, 6)
	2029 2030 (Ages 7, 8)
Age Band 9-10 Years	2027 2028 (Ages 9, 10)
Age Band 11-12 Years	2025 2026 (Ages 11, 12)
Age Band 13-14 Years	2023 2024 (Ages 13, 14)
Age Band 15 Years	2021 2022 (Ages 15, 16)
Age Band 16 Years	
Age Band 17 Years	2019 2020 (Ages 17)
Age Band 18 Years and Over	Enrollment (Ages 18 and Over)

**NOW, THEREFORE, BE IT RESOLVED**, that the Board hereby approves the change from the active and passive age-based portfolio structure to the active and passive enrollment-based portfolio structure, respectively, for the Plan and for the change to take place at the time as mutually agreed upon between SIB and TFI.

**BE IT FURTHER RESOLVED**, that this Resolution becomes effective upon its adoption by the Board.

Attest: \_\_\_\_\_  
 Chairperson

Date of Adoption: \_\_\_\_\_



# 2019 Glide Path Recommendation Follow Up

Prepared by TIAA-CREF Tuition Financing, Inc.  
April 4, 2019

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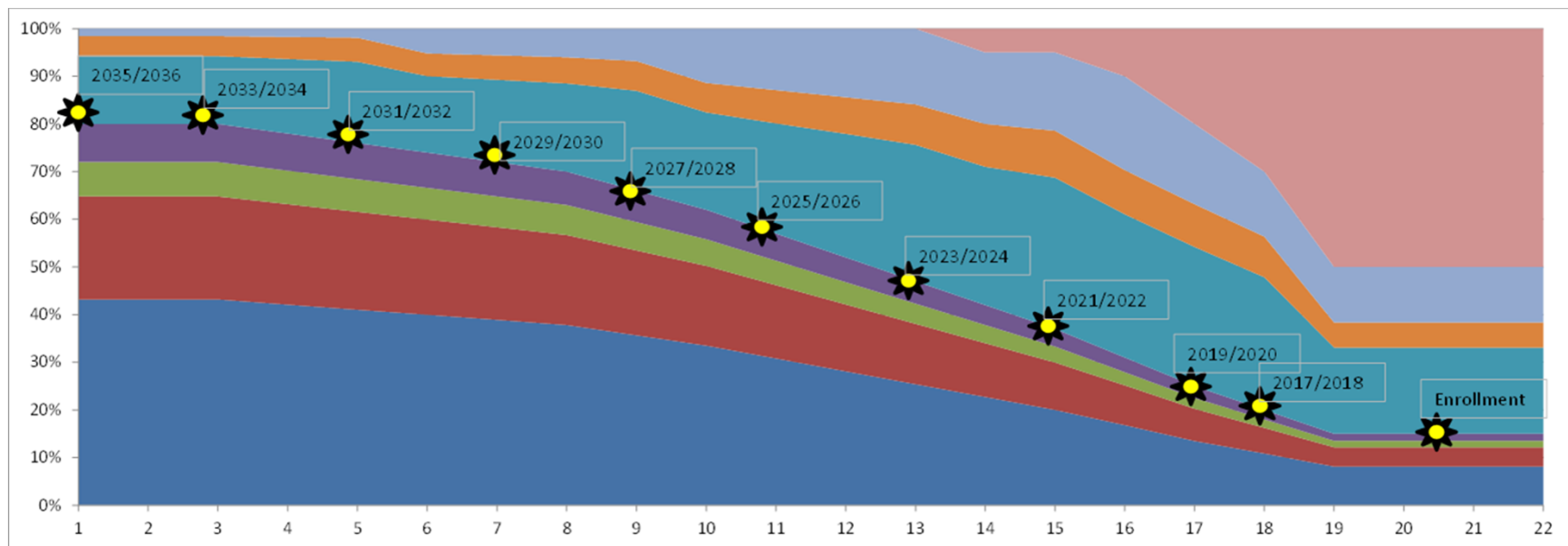
## Proposed Glide Path Structure

### Recommendation:

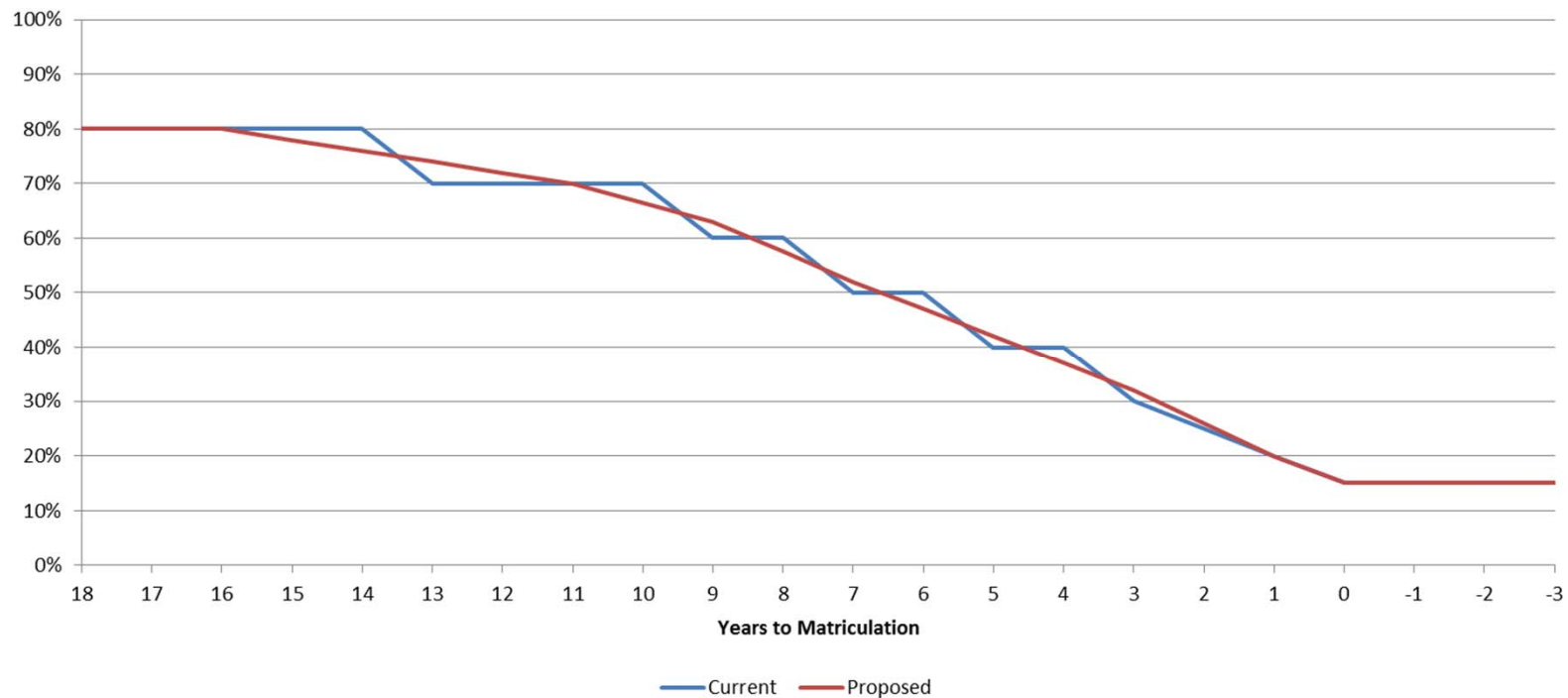
- **We propose converting the age-based structure to an enrollment-based structure**
- Participants would be grouped within an enrollment date fund, or cohort, for example, Enrollment 2035-2036, and remain in this cohort throughout their investment timeframe
- Instead of moving the participant between age bands, the participant will remain in the same enrollment date fund, and the fund will change asset allocations over time
- The glide path for each enrollment date fund is predetermined and would be based on the current glide path, which will minimize any disruption in the participant's investment experience upon conversion to this new structure
- While each model accomplishes similar goals, there are a few additional benefits to using an enrollment date model

## Proposed Glide Path Structure

- Participants stay in the same enrollment date fund as asset allocations shift quarterly
- At the end of the glide path, enrollment date funds will enter the Enrollment stage, which is the final, destination portfolio with a static investment allocation for use during expected payouts
- Below is an illustrative example of the glide path displaying all enrollment date funds at a single point in time



# Glide Path Equity Comparison



### Current 9 Age-Band Model

- Equity step downs run from 10% in the early years to 5% in the later years
- While an improvement over earlier models using only 5 or 6 bands, still has room to smooth outcomes and reduce the range of investor experiences

### Proposed Enrollment-Based Model

- Equity step downs only run from 0.50% to 1.50% because of more frequent rebalancing
- In line with the industry trend to utilize progressive glide paths to streamline investor outcomes and remove arbitrary band roll timing



## Costs and Other Things to Note

- The proposed smooth glide path was designed by using the current stepped glide path as a template, so
  - there are virtually no changes in asset allocations among underlying funds across the investment horizon
  - **there are no changes to participant costs**
- The operational costs associated with the transition will be absorbed by TFI
- Progressive glide paths are viewed positively by external parties
  - Morningstar recently called it an “industry best practice”
- Other 529 plans that currently use an enrollment date model:

Program Manager	Plan
Fidelity	U. Fund College Investing Plan
	UNIQUE College Investing Plan
	Delaware College Investment Plan
	Fidelity Arizona College Savings Plan
Invesco	CollegeBound 529 Plan (Advisor)
BlackRock	BlackRock CollegeAdvantage 529 (Advisor)
T. Rowe Price	T. Rowe Price College Savings Plan
	Maryland College Investment Plan
Sunday/BNY Mellon	Oregon College Savings Plan



## Portfolio Mapping

- Participants will be mapped to the enrollment date fund that matches the age of the beneficiary

Current ↓	Proposed ↓
Age-Based Portfolio	Enrollment Date Fund
Ages 0-4	2037 2038 (-1, 0)
	2035 2036 (1, 2)
	2033 2034 (3, 4)
Ages 5-8	2031 2032 (5, 6)
	2029 2030 (7, 8)
Ages 9-10	2027 2028 (9, 10)
Ages 11-12	2025 2026 (11, 12)
Ages 13-14	2023 2024 (13, 14)
Ages 15	2021 2022 (15, 16)
Ages 16	
Ages 17	2019 2020 (17)
Ages 18+	Enrollment (18 +)

### Advantages to an enrollment date glide path

- Smoother transitions
  - Less market timing risk
  - Smaller range of potential investor outcomes
- Flexibility in glide path shape
  - Potential for further customization down the road based on demographics and investment experiences
- K-12 accommodation
  - Catering to a wider audience of education savers who look for a glide path solution for K-12 expenses
- Improved performance reporting
  - Reporting on portfolios rather than age bands: more applicable to investors' true experience

Overall, we favor the move to an enrollment-based structure, and if approved, would like to implement it in 2019

# Proposed Target Project Timeline



TASK	PLANNED START	PLANNED FINISH
<b>Enrollment Glide Path Go-Live</b>	<b>3/5/19</b>	<b>9/30/19</b>
<b>Board Review &amp; Approval</b>	4/4/19	4/4/19
<b>User-Friendly Description</b>	TBD	4/30/19
<b>Investments</b>		
Investment Mapping Development	3/5/19	5/1/19
Investment Mapping Execution	3/5/19	9/30/19
New Investment Reporting Developed	8/15/19	10/31/19
Investment Reporting (Web)	TBD	9/30/19
<b>Plan Disclosure Booklet</b>		
Plan Disclosure Booklet Revisions	3/5/19	6/30/19
Spanish-language Plan DB	TBD	8/31/19
Potential DB Cover Letter	5/1/19	6/30/19
DB Mailing	5/1/19	8/1/19
<b>Recordkeeping &amp; Operations</b>		
Operations/DST	3/5/19	9/1/19
Forms Update (incl. Spanish-language)	TBD	9/30/19
Reporting/Fund accounting/custody	3/5/19	9/1/19
Set-Up (web portal, operational readiness)	3/5/19	9/1/19
Testing	9/10/19	9/27/19
<b>Marketing, AO &amp; Internal Communications</b>		
AO Communication Plan Finalized	4/4/19	5/1/19
30-day AO communication	5/1/19	8/1/19
Digital Properties Updates		
Public Website Update	6/15/19	9/27/19
Secure Site Updates	6/15/19	9/27/19
Digital Advisor update	6/15/19	9/27/19
Default Investment	6/15/19	9/27/19
Marketing Collateral Updates (incl. Spanish-language updates)	6/15/19	9/27/19
Call Center Summary & FAQs	6/15/19	9/27/19



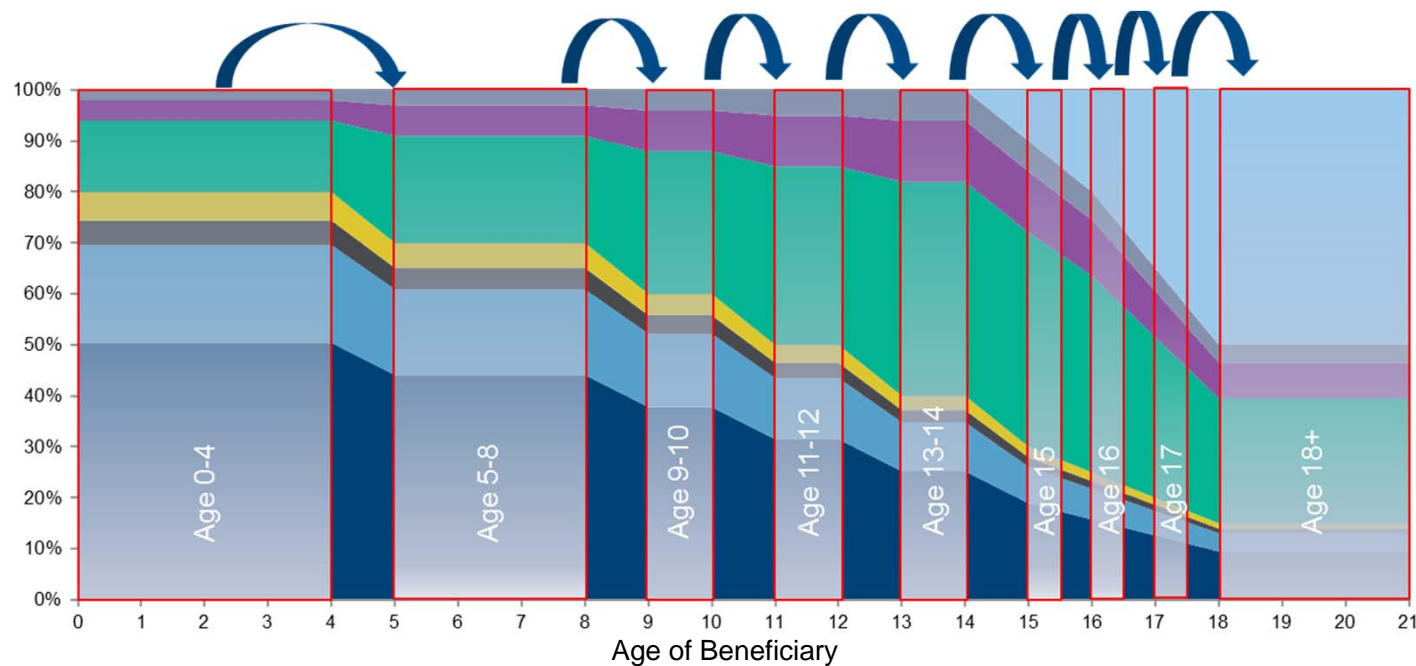
# Appendix

## Summary of Managed Allocation Option

- The Age-Based Option (or Managed Allocation Option) is a popular, highly utilized part of the investment menu for every 529 plan
  - Features a glide path that automatically adjusts asset allocations over time
  - Offers an easy, straightforward way for participants to invest
  - Constructed using various analytical tools, focusing on established techniques for asset allocation development and prospective risk and return
  - Professionally managed, monitored daily, and rebalanced as needed
- Typically comprises 60-70% of plan assets and receives most new contributions
- Used as a default option by less experienced investors

## Managed Allocation Option

- Features nine static age bands, each with a distinct asset allocation that participants utilize at an appropriate stage in their investment horizon
- Investors “roll” from one age band to another on a predetermined schedule based on the beneficiary’s birthday, which requires a series of sales and purchases of units in each portfolio to adjust the asset allocation
- Band rolls occur quarterly, on the 20<sup>th</sup> of March, June, September, and December after the beneficiary turns an age that is a part of a new age band



## Managed Allocation Option

- In thinking of ways to improve the plan's most utilized investment options, there were a few considerations
  - Changing the banding structure or adding more age bands would have the effect of smoothing the glide path, but would still require a series of unit transactions when band rolling, which creates more complexity without many other benefits
  - Underlying funds are routinely monitored and evaluated
    - None are on our internal Watch List
    - Many have had very strong performance and delivered on their respective risk and return objectives, which has helped plan ratings
    - Therefore, no reason to make changes at the fund level
  - Smoothing the glide path by switching to a target date (enrollment date) model allows the option to maintain all the same underlying funds in the same allocations, while providing additional benefits (detailed later)
- The fact that ScholarShare is already very highly regarded creates a high hurdle for any new changes, but this proposal is significant enough that we feel it can truly enhance outcomes





# Current Passive Age-Based Portfolio

Underlying Fund Fee	0.05%	0.06%	0.21%	0.51%	0.12%	0.26%	0.36%	N/A*	
Age of Beneficiary	TIAA-CREF Equity Index Fund	TIAA-CREF International Equity Index Fund	TIAA-CREF Emerging Markets Equity Index Fund	TIAA-CREF Real Estate Securities Fund	TIAA-CREF Bond Index Fund	TIAA-CREF Inflation-Linked Bond Fund	TIAA-CREF High Yield Fund	T-C Life Funding Agreement	Weighted Average Fund Fee**
0 - 4	50.40%	19.20%	4.80%	5.60%	14.00%	4.00%	2.00%	0.00%	0.11%
5 - 8	44.10%	16.80%	4.20%	4.90%	21.00%	6.00%	3.00%	0.00%	0.12%
9 - 10	37.80%	14.40%	3.60%	4.20%	28.00%	8.00%	4.00%	0.00%	0.13%
11 - 12	31.50%	12.00%	3.00%	3.50%	35.00%	10.00%	5.00%	0.00%	0.13%
13 - 14	25.20%	9.60%	2.40%	2.80%	42.00%	12.00%	6.00%	0.00%	0.14%
15	18.90%	7.20%	1.80%	2.10%	42.00%	12.00%	6.00%	10.00%	0.13%
16	15.75%	6.00%	1.50%	1.75%	38.50%	11.00%	5.50%	20.00%	0.12%
17	12.60%	4.80%	1.20%	1.40%	31.50%	9.00%	4.50%	35.00%	0.10%
18 +	9.45%	3.60%	0.90%	1.05%	24.50%	7.00%	3.50%	50.00%	0.07%

\*The T-C Life Funding Agreement is not a retail mutual fund, and as such, has no explicit fee.

\*\*Includes a 0.00% underlying fund fee for the T-C Life Funding Agreement.



# Current Active Age-Based Portfolio

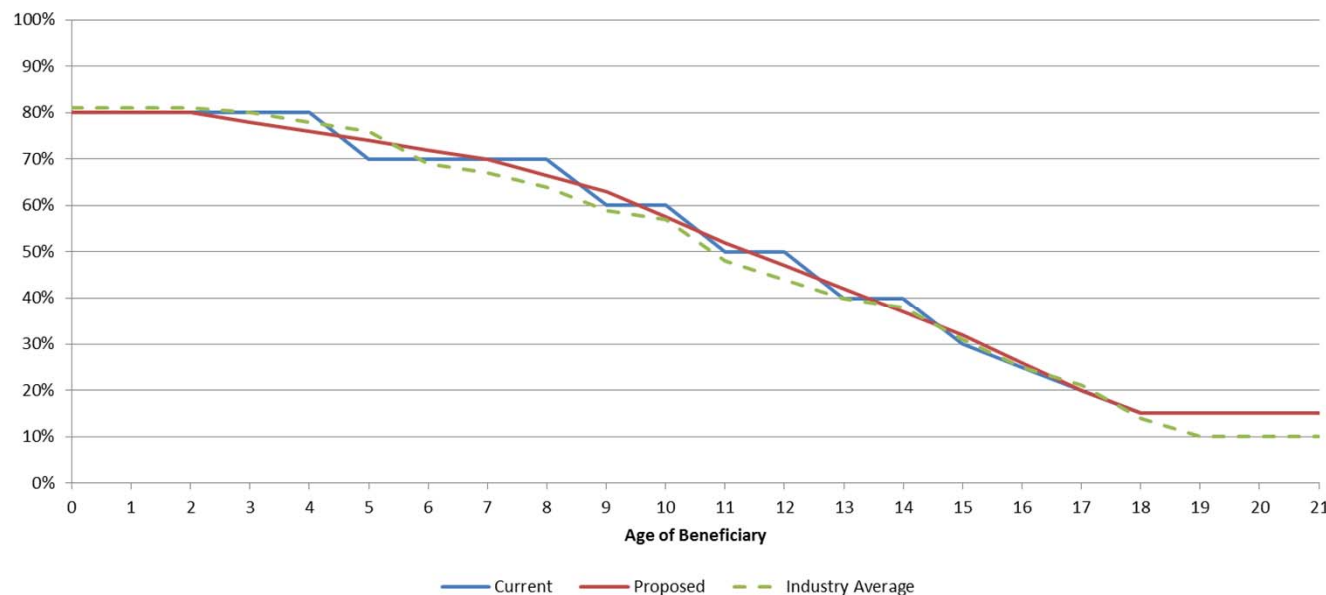
Underlying Fund Fee	0.56%	0.57%	0.41%	0.51%	0.24%	0.53%	0.37%	0.45%	0.50%	0.57%	N/A*	
Active Age-Based Portfolio Age of Beneficiary	T. Rowe Price Instl Large Cap Growth Fund	T. Rowe Price Instl Large Cap Value Fund	TIAA-CREF Quant Small Cap Equity Fund	TIAA-CREF Real Estate Securities Fund	DFA Large Cap International Portfolio	DFA Emerging Markets Core Equity I Portfolio	MetWest Total Return Bond Fund	PIMCO Real Return Instl Fund	PIMCO Income Instl Fund	T. Rowe Price Instl Floating Rate Fund	T-C Life Funding Agreement	Weighted Average Fund Fee**
0 - 4	22.68%	22.68%	5.04%	5.60%	19.20%	4.80%	10.00%	4.00%	4.00%	2.00%	0.00%	0.46%
5 - 8	19.85%	19.85%	4.40%	4.90%	16.80%	4.20%	15.00%	6.00%	6.00%	3.00%	0.00%	0.46%
9 - 10	17.01%	17.01%	3.78%	4.20%	14.40%	3.60%	20.00%	8.00%	8.00%	4.00%	0.00%	0.46%
11 - 12	14.18%	14.18%	3.14%	3.50%	12.00%	3.00%	25.00%	10.00%	10.00%	5.00%	0.00%	0.45%
13 - 14	11.34%	11.34%	2.52%	2.80%	9.60%	2.40%	30.00%	12.00%	12.00%	6.00%	0.00%	0.45%
15	8.51%	8.51%	1.88%	2.10%	7.20%	1.80%	30.00%	12.00%	12.00%	6.00%	10.00%	0.40%
16	7.09%	7.09%	1.57%	1.75%	6.00%	1.50%	27.50%	11.00%	11.00%	5.50%	20.00%	0.36%
17	5.67%	5.67%	1.26%	1.40%	4.80%	1.20%	22.50%	9.00%	9.00%	4.50%	35.00%	0.29%
18 +	4.25%	4.25%	0.95%	1.05%	3.60%	0.90%	17.50%	7.00%	7.00%	3.50%	50.00%	0.22%

\*The T-C Life Funding Agreement is not a retail mutual fund, and as such, has no explicit fee.

\*\*Includes a 0.00% underlying fund fee for the T-C Life Funding Agreement.

## Benefit #1: Smoother Transitions

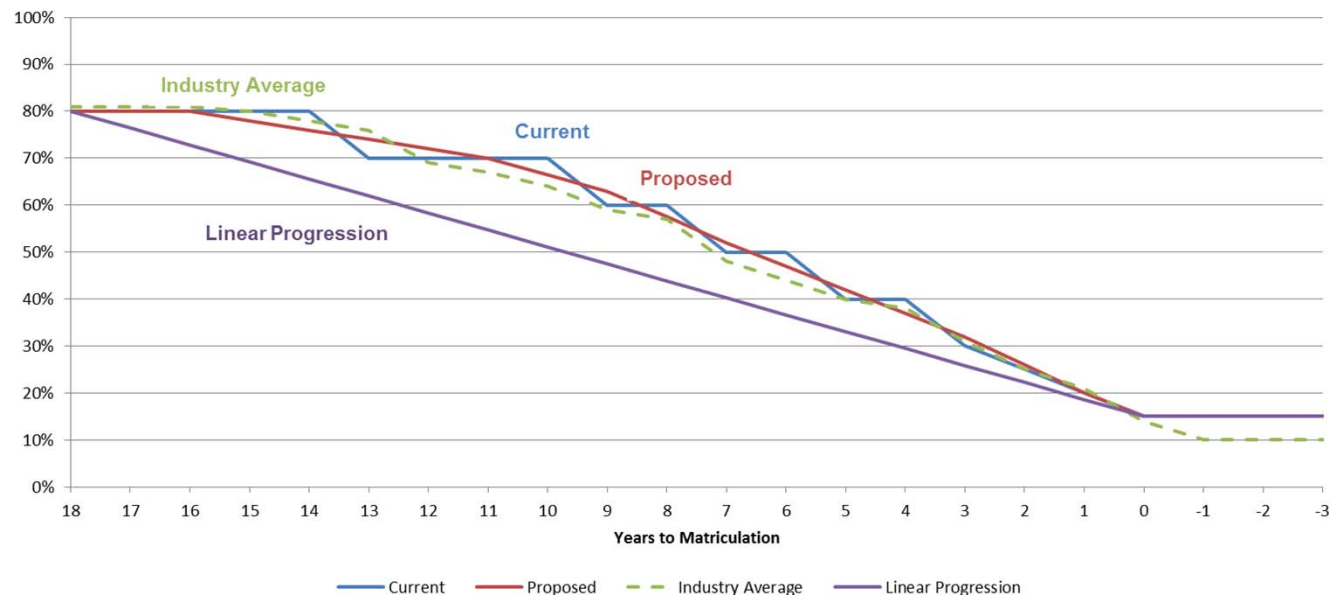
- The proposed framework builds on the nine age band model and rebalances more frequently and in smaller amounts, reducing the timing risk associated with making allocation changes to equity
- This adds another layer of risk mitigation that may improve investor results during periods of extreme market events



By smoothing the transitions, a similar risk profile is maintained across the glide path so as to not interrupt or significantly change overall investor experience

## Benefit #2: Not Just Smoothing, Smart Smoothing

- One of the concepts of a nine band approach is the idea of staying aggressive in the early part of the glide path, with limited changes in asset allocations, and then utilizing age bands in a smart way to gradually reduce risk when it counts
- The proposed glide path was created with this in mind and achieves this goal, but also smooths the progression through our **IntelliSmooth** framework

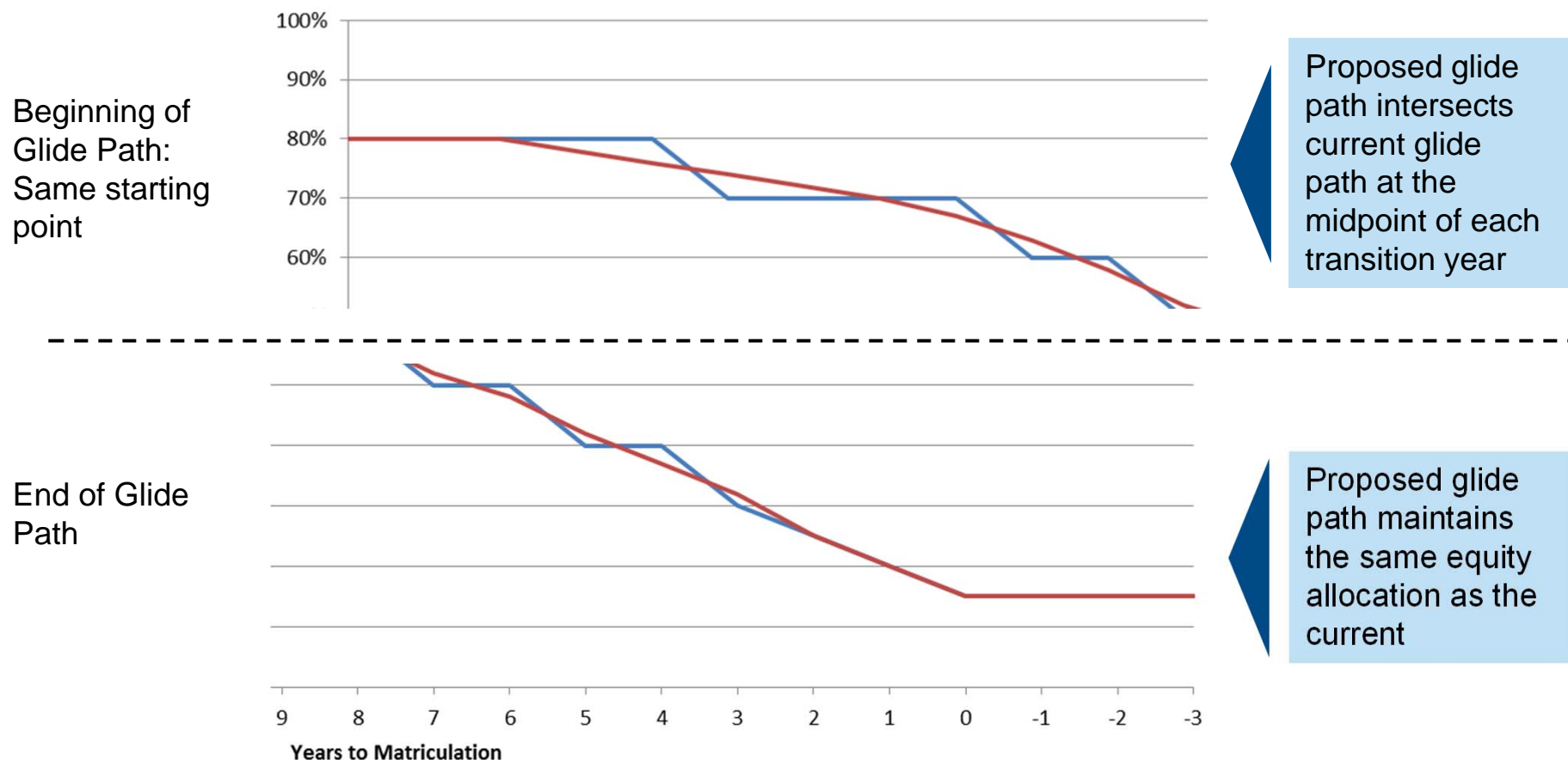


A linear or naïve progression across the glide path would also have a smoothing effect and is mathematically simpler, but creates a more conservative risk profile that may not deliver on savings objectives

## IntelliSmooth: Breaking Down the Smoothing Process

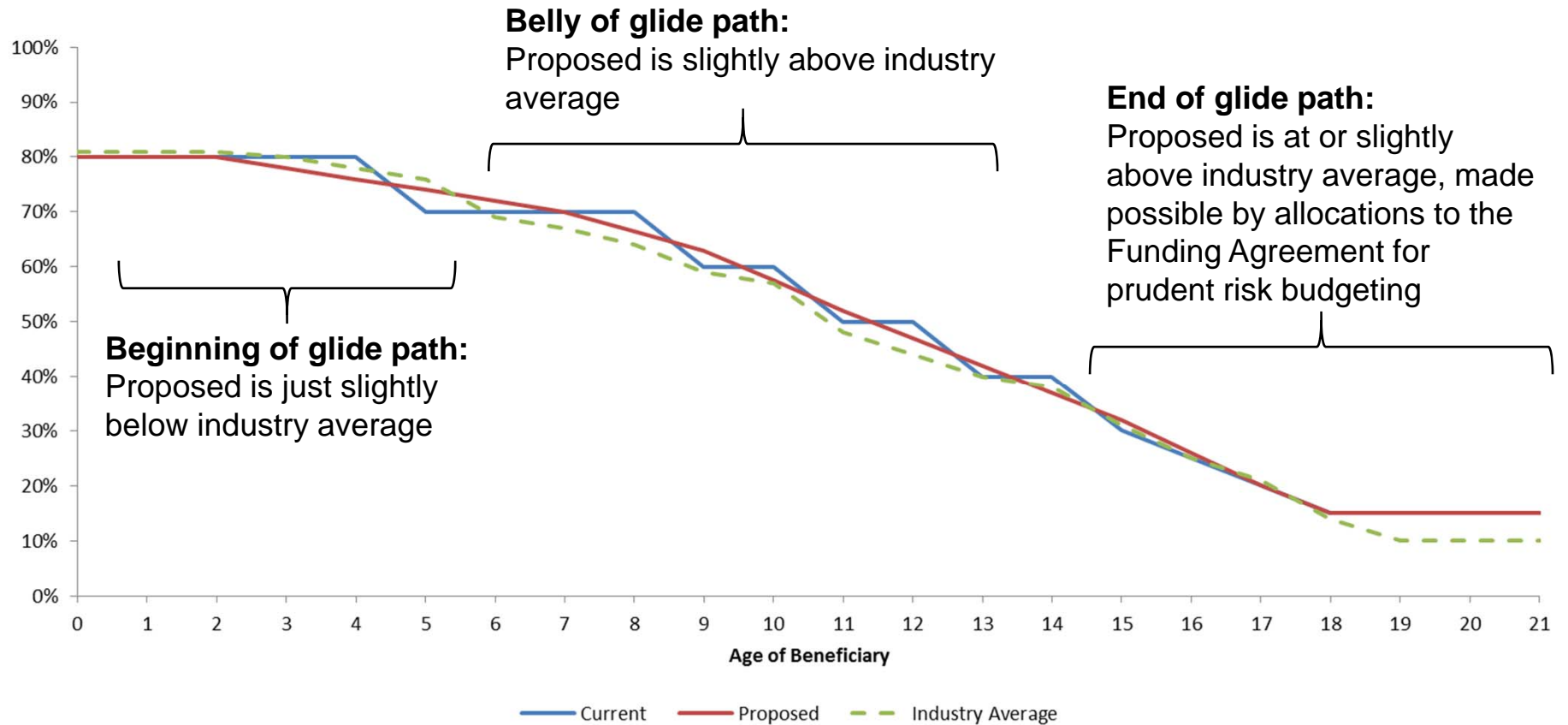


- Our IntelliSmooth framework builds upon the nine age-band structure to create a glide path with progressive transitions



- **End Result:** No change to risk profile across the time horizon

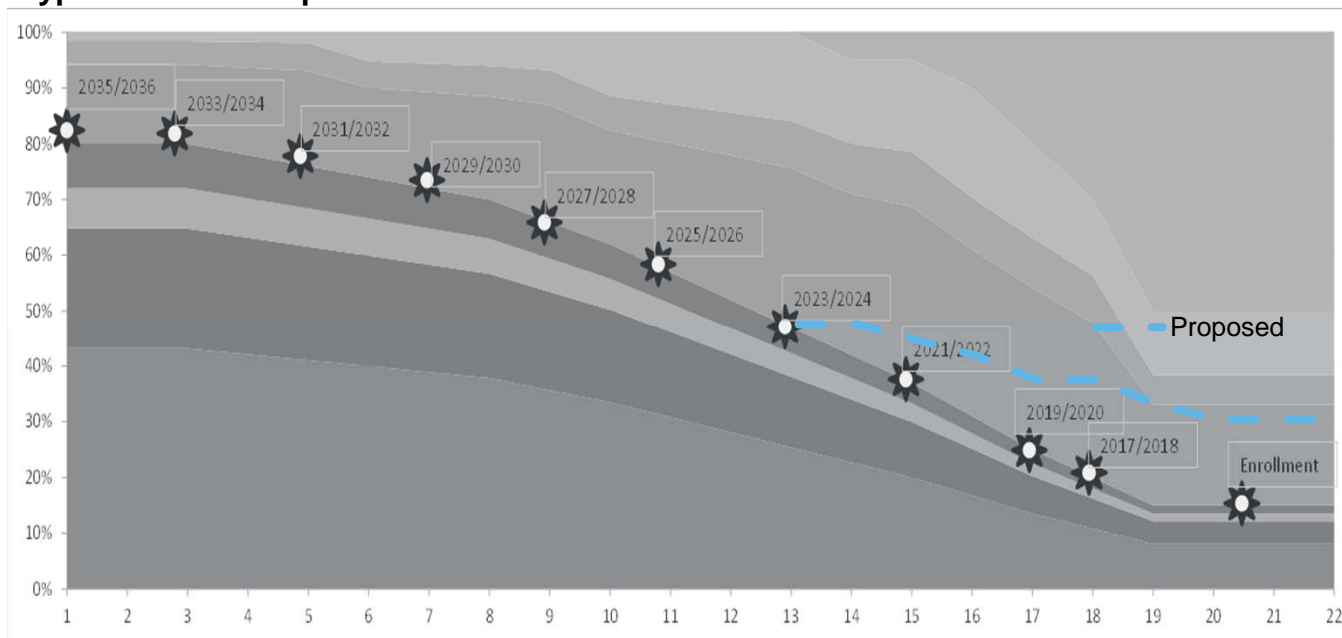
# Proposed Glide Path Equity vs. Industry Average



## Benefit # 3: Flexibility in Glide Path Shape

- An enrollment date structure separates the investor's portfolio from the rigidity of the age band asset allocation.
- This allows additional flexibility in the glide path, which may be beneficial for adjusting the shape of the glide path down the road or customizing specific enrollment date funds
  - There are no immediate plans to create a different glide path for a specific Enrollment Date Fund or group of Enrollment Date Funds, but the option would be available for consideration

### Hypothetical Example



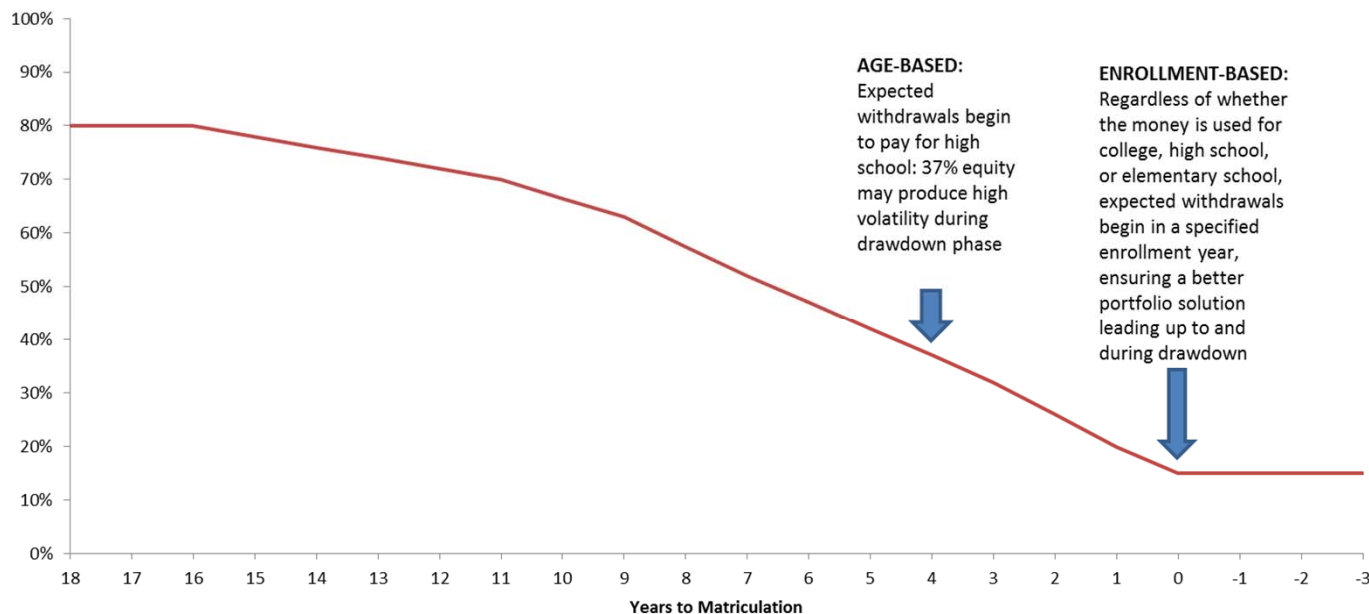
If there are future asset allocation changes (dashed blue line), they can be implemented more efficiently, and potentially customized by enrollment date fund for enhanced results



## Benefit # 4: K-12 Accommodation

- An age-based glide path may preselect an overly aggressive portfolio if the portfolio is to be used before college
- An enrollment-based glide path aligns all timelines for expected withdrawals to ensure a single, enrollment portfolio with more appropriate risk and return characteristics
- While California does not currently permit state tax benefits for withdrawals for K-12 expenses, an enrollment-based structure would be ready for changes to state law

### Illustrative Example



## Benefit # 5: Improved Performance Reporting

- The length of time that a participant currently spends in an age band can be as short as a single year, though standard performance reporting periods are 1Y, 3Y, 5Y, 10Y, Since Inception.
- Reporting performance for each enrollment date fund would specify the returns for the investor's portfolio, taking into account changes in asset allocations down the glide path

### Illustrative Example Current Reporting

Investment Portfolios	Average Annual Total Return					
	3 Month	YTD	1 Year	3 Year	5 Year	Since Inception
Passive Age-Based Portfolio 0-4	1.77%	0.80%	9.64%	8.10%	9.32%	10.13%
Blended Benchmark Returns	1.82%	0.69%	9.47%	8.07%	9.26%	10.13%
Passive Age-Based Portfolio 5-8	1.47%	0.45%	8.52%	7.42%	8.51%	9.19%
Blended Benchmark Returns	1.60%	0.47%	8.29%	7.33%	8.41%	9.15%
Passive Age-Based Portfolio 9-10	1.32%	0.30%	7.32%	6.62%	7.63%	8.18%
Blended Benchmark Returns	1.38%	0.26%	7.12%	6.59%	7.56%	8.17%
Passive Age-Based Portfolio 11-12	1.22%	0.19%	6.05%	5.74%	6.67%	7.08%
Blended Benchmark Returns	1.16%	0.04%	5.95%	5.83%	6.71%	7.18%
Passive Age-Based Portfolio 13-14	0.95%	-0.20%	4.80%	5.00%	5.83%	6.11%
Blended Benchmark Returns	0.94%	-0.19%	4.79%	5.08%	5.86%	6.20%
Passive Age-Based Portfolio 15	0.80%	-0.29%	3.88%	4.24%	4.92%	5.08%
Blended Benchmark Returns	0.76%	-0.23%	3.75%	4.18%	4.79%	5.01%
Passive Age-Based Portfolio 16	0.68%	-0.15%	3.48%	3.81%	4.37%	4.48%
Blended Benchmark Returns	0.69%	-0.15%	3.29%	3.66%	4.16%	4.32%

### Proposed Reporting

Investment Portfolios	Average Annual Total Return					
	3 Month	YTD	1 Year	3 Year	5 Year	Since Inception
Enrollment 2037-2038	1.77%	0.80%	9.64%	8.10%	9.32%	10.13%
Blended Benchmark Returns	1.82%	0.69%	9.47%	8.07%	9.26%	10.13%
Enrollment 2035-2036	1.47%	0.45%	8.52%	7.42%	8.51%	9.19%
Blended Benchmark Returns	1.60%	0.47%	8.29%	7.33%	8.41%	9.15%
Enrollment 2033-2034	1.32%	0.30%	7.32%	6.62%	7.63%	8.18%
Blended Benchmark Returns	1.38%	0.26%	7.12%	6.59%	7.56%	8.17%
Enrollment 2031-2032	1.22%	0.19%	6.05%	5.74%	6.67%	7.08%
Blended Benchmark Returns	1.16%	0.04%	5.95%	5.83%	6.71%	7.18%
Enrollment 2029-2030	0.95%	-0.20%	4.80%	5.00%	5.83%	6.11%
Blended Benchmark Returns	0.94%	-0.19%	4.79%	5.08%	5.86%	6.20%
Enrollment 2027-2028	0.80%	-0.29%	3.88%	4.24%	4.92%	5.08%
Blended Benchmark Returns	0.76%	-0.23%	3.75%	4.18%	4.79%	5.01%
Enrollment 2023-2024	0.68%	-0.15%	3.48%	3.81%	4.37%	4.48%
Blended Benchmark Returns	0.69%	-0.15%	3.29%	3.66%	4.16%	4.32%

# Current vs. Proposed Passive Glide Paths

## Current Structure

Age of Beneficiary	0 - 4	5 - 8	9 - 10	11 - 12	13 - 14	15	16	17	18 +
TIAA-CREF Equity Index Fund	50.40%	44.10%	37.80%	31.50%	25.20%	18.90%	15.75%	12.60%	9.45%
TIAA-CREF International Equity Index Fund	19.20%	16.80%	14.40%	12.00%	9.60%	7.20%	6.00%	4.80%	3.60%
TIAA-CREF Emerging Markets Equity Index Fund	4.80%	4.20%	3.60%	3.00%	2.40%	1.80%	1.50%	1.20%	0.90%
TIAA-CREF Real Estate Securities Fund	5.60%	4.90%	4.20%	3.50%	2.80%	2.10%	1.75%	1.40%	1.05%
TIAA-CREF Bond Index Fund	14.00%	21.00%	28.00%	35.00%	42.00%	42.00%	38.50%	31.50%	24.50%
TIAA-CREF Inflation-Linked Bond Fund	4.00%	6.00%	8.00%	10.00%	12.00%	12.00%	11.00%	9.00%	7.00%
TIAA-CREF High Yield Fund	2.00%	3.00%	4.00%	5.00%	6.00%	6.00%	5.50%	4.50%	3.50%
TIAA Life Funding Agreement	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	20.00%	35.00%	50.00%

Asset allocation adjustments occur via band rolls and move participant accounts to the next static portfolio

## Proposed Structure: Year 2018\*

Enrollment Year	2037 2038	2035 2036	2033 2034	2031 3032	2029 2030	2027 2028	2025 2026	2023 2024	2021 2022	2019 2020	Enrollment
TIAA-CREF Equity Index Fund	50.40%	50.40%	49.14%	46.62%	44.10%	39.69%	32.76%	26.46%	20.16%	12.60%	9.45%
TIAA-CREF International Equity Index Fund	19.20%	19.20%	18.72%	17.76%	16.80%	15.12%	12.48%	10.08%	7.68%	4.80%	3.60%
TIAA-CREF Emerging Markets Equity Index Fund	4.80%	4.80%	4.68%	4.44%	4.20%	3.78%	3.12%	2.52%	1.92%	1.20%	0.90%
TIAA-CREF Real Estate Securities Fund	5.60%	5.60%	5.46%	5.18%	4.90%	4.41%	3.64%	2.94%	2.24%	1.40%	1.05%
TIAA-CREF Bond Index Fund	14.00%	14.00%	15.40%	18.20%	21.00%	25.90%	33.60%	40.60%	40.60%	35.00%	24.50%
TIAA-CREF Inflation-Linked Bond Fund	4.00%	4.00%	4.40%	5.20%	6.00%	7.40%	9.60%	11.60%	11.60%	10.00%	7.00%
TIAA-CREF High Yield Fund	2.00%	2.00%	2.20%	2.60%	3.00%	3.70%	4.80%	5.80%	5.80%	5.00%	3.50%
TIAA Life Funding Agreement	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	30.00%	50.00%

Asset allocation adjustments occur more frequently within each enrollment date fund for a more gradual shift

\*Starting allocation in each enrollment date fund.

**Date:** March 22, 2019

**To:** ScholarShare Investment Board (SIB)

**From:** Pension Consulting Alliance, LLC (PCA)  
Eric White, CFA, Kay Ceserani, Ashley Yoshida

**RE: TIAA Enrollment-based Structure Recommendation**

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## Recommendation

This memo provides PCA's recommendation regarding TIAA-CREF Tuition Financing, Inc.'s (TFI) Proposal to move to an enrollment-based structure. PCA sees many benefits to the proposed structure with only minor performance reporting related issues. PCA believes the proposed structure offers both immediate improvement and the potential for even greater improvement in the future and therefore represents a material improvement to the Program's current structure. **As such, PCA recommends the Board adopt TFI's proposal to move to an enrollment-based framework.**

## Discussion

From a structural standpoint, PCA believes moving to an enrollment-based framework makes sense for several reasons: 1) proposal preserves current risk profile over investment period, 2) provides more frequent rebalancing which should improve participants' results during periods of market stress, 3) each enrollment-based fund's performance reflects the participants experience over the life of the investment, and 4) creates framework to implement TFI's best thinking on a go forward basis (e.g. rebalancing on a more frequent basis).

TFI's proposal to move to enrollment-based funds does not call for changes in asset allocation as the glidepath for each enrollment-based fund is predetermined and would follow the current glidepath albeit with more frequent adjustments along the investment period. The more frequent adjustment smooths the transition between asset classes which alleviates the issues that arise from large stepdowns in risky assets.

Another benefit is that an enrollment-based glidepath accurately reflects participants' actual experience, where the returns of the fund represent the experience of the participant from age zero to matriculation (assuming the initial investment is made at birth). Under ScholarShare's current construct, performance results are shown for each of the age-based portfolios over various periods of time (1-, 3-, 5-years, etc.). However, investors are only invested in each of these segments of the glidepath for a short period of time. This is important for both evaluation purposes but also for the potential use of tactical asset allocation shifts.

Arguably the largest benefit of an enrollment-based glidepath is the ability to leverage TFI's best thinking. Since each portfolio can be thought of as a customized portfolio designed for a

specific cohort of investors far greater customization can take place within a dynamic enrollment-based framework versus the rigid structure of traditional age-based options. Some of this customization can be dynamic portfolio weighting and rebalancing used to strategically take risk on-and-off the table depending on market conditions. For example, interest rates have been near historic lows up until recently when the Federal Reserve began its interest rate normalization process. As interest rates increase bond investors suffer capital losses which can be quite dramatic at times for what it usually considered a safe asset class. Using a dynamic allocation strategy, which is easily implemented in an enrollment-based framework, TFI could efficiently mitigate interest rate risk by reallocating the portfolio on a temporary basis away from interest rate sensitive asset classes and into other asset classes with similar risk characteristics.

Another example can be gaining exposure to asset (sub-asset) classes that are appealing on a time-dependent (market environment specific) basis. These asset classes can materially improve portfolio outcomes if held during the appropriate market regime but because of their unique nature make suboptimal static allocation investments. An example of such an investment is Emerging Market bonds which PCA, TFI, and the SIB spent a good deal of time discussing last year. One of the many conclusions was that while the investment was compelling, the market environment into which the investment was being made was suboptimal and would have an outsized impact on future performance.

To be clear these changes are not being proposed at this time but are examples of the potential benefits an enrollment-based structure offer over the rigidity an age-based framework. Given the investment talent and resources of the greater TIAA organization particularly the asset allocation expertise held within their Nuveen subsidiary, PCA believes these are enhancements that should, at a minimum, be discussed at some future time.

While the proposed progressive roll-down structure has many benefits, the progressive structure of the funds also creates some challenges in monitoring them. Such as, a limited number of programs (portfolios) structured with the same framework, loss or lack of performance history, and endpoint sensitivity as each fund's expected life is finite.

#### Performance History

In converting to an enrollment-based structure, it is likely ScholarShare will lose its performance history for most, if not all, the portfolios. While this may seem concerning, PCA points out there is currently a data deficiency as over the last few years many states have modified their glidepaths adding additional steps (portfolios) while reducing the equity step-downs. As track records build, PCA expects the data universe providers to increase the number of peer universes to more closely align with how programs are structured.

#### Endpoint Sensitivity

PCA notes, having one fund is advantageous to an investor as the performance reflects what they would have received over the life of their investment. In contrast, to know an individual's results invested in the traditional age-based scheme one would have to string together the returns of each portfolio in the glidepath. Unlike traditional age-based portfolios, enrollment-based funds, in a sense, have an expiration date which makes comparisons for future investors

more challenging. Today, consumers can look at historical performance for each of the age-based portfolios (age-bands) which can span a decade or more and represent a specific asset mix (i.e. 90% equity/10% fixed). Given enrollment-based funds move through the glidepath, past performance of these funds won't provide consumers the same type of information as the age-based funds. In many ways, performance for enrollment-based funds will be more accurate as potential participants will be able to see the results of current investors, which encompass the dynamic changes of the portfolios over time. This differs from how information is currently presented to potential participants, wherein they can only see the results for individual age-bands but not a composite of what it looks like for actual participants who move between age-bands.

One potential drawback of this will be that it becomes far clearer the differences in savings outcomes by participant cohort (enrollment-based fund) depending on the market environment over their investment timeframe, especially during the early (equity-heavy) portion of the time-period.

## **Conclusion**

PCA finds the recommendation by TFI to implement an enrollment-based structure offers both immediate improvement and the potential for even greater improvement in the future and therefore represents a material improvement to the Program's current structure. Moving to an enrollment-based framework preserves the current risk profile while providing for more frequent rebalancing which should improve participants' results during periods of market stress. Another added benefit is that each enrollment-based fund's performance reflects the participants' experience over the life of the investment. On a prospective basis, the move to an enrollment-based framework also creates the infrastructure to more efficiently implement TFI's best thinking. Based on these findings we recommend the Board approve TFI's proposal.

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# ScholarShare Investment Board

## Recommendation for Enrollment-Based Model

April 4, 2019

# Overview of TIAA's Proposed Structure

Current Structure	Proposed Structure
<ul style="list-style-type: none"> <li>• <b>“Age-Based” portfolios</b></li> <li>• <b>9 age-bands in each age-based option</b></li> <li>• <b>Beneficiary is placed into an age-based portfolio based upon current age</b></li> <li>• <b>Beneficiary assets are rolled into new portfolios (i.e., age-bands) over time based upon age</b></li> <li>• <b>Unique Committee on Uniform Security Identification Procedures (“CUSIP”) number for each portfolio required for the sale and purchase of units between age-bands</b></li> <li>• <b>Asset allocation shifts occur only between portfolios (maximum of eight shifts)</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>“Enrollment Based” portfolios</b></li> <li>• <b>11 target date funds per age-based option</b></li> <li>• <b>Account owner selects a target date fund based upon the beneficiary’s expected enrollment year</b></li> <li>• <b>Beneficiary assets remain in the same target date fund throughout investment horizon</b></li> <li>• <b>Single CUSIP for each fund; there are no sales or purchases of units required</b></li> <li>• <b>Quarterly asset allocation shifts</b></li> </ul>

## 529 Plans Using the Proposed Model

Investment Advisor (Program Manager)	Direct Plans	Advisor Plans	
Ascensus	DC IN KY	IN	
BlackRock	--	AR	OH
Capital Research	--	VA	
Fidelity	AZ DE MA NH	NH	
Invesco (Ascensus)	RI	RI	
Lockwood (BNY)	WA	--	
Mercer (Virginia529)	VA	--	
Putnam (Ascensus)	--	NV	
Sellwood (BNY)	OR	--	
SSGA (Ascensus)	NV	--	
T. Rowe Price	AK(2) MD	AK <sup>1</sup>	
Wilshire (OTTA)	OH	--	
<b>12 Investment Advisors</b>	<b>16 Plans</b>	<b>8 Plans</b>	

Green shaded cells indicate Morningstar Medal-rated Plans that have a Positive Process Pillar

Blue shaded cells indicate Morningstar Neutral-rated Plans that have a Positive Process Pillar

<sup>1</sup> John Hancock provides input on “selection, oversight and changes” to underlying funds and investment managers

# Key Programmatic Benefits

Proposed Benefits	Potential Impact
Smoother Glide Path	<ul style="list-style-type: none"> <li>• Reduces market timing risk over time</li> <li>• Adds protection from loss of capital for near college-age beneficiaries</li> <li>• Simplifies portfolio management</li> <li>• Considered industry best practice by Morningstar</li> </ul>
K-12 Accommodation	<ul style="list-style-type: none"> <li>• A more universal portfolio naming convention aligns withdrawal timelines for all investors, including those using funds for K-12 expenses</li> </ul>
Performance Reporting	<ul style="list-style-type: none"> <li>• Performance reflects full investment horizon</li> </ul>
Enhanced Flexibility to adjust Glide Path	<ul style="list-style-type: none"> <li>• Changes to asset allocation can be more easily implemented, if needed</li> </ul>
No Cost or Fund Allocation Changes	<ul style="list-style-type: none"> <li>• Minimizes disruption to existing accounts</li> </ul>

# Considerations Ahead

Potential Challenges	Mitigating Factors
<p style="text-align: center;"><b>Conversion of Significant Participant Assets</b></p>	<ul style="list-style-type: none"> <li>• TIAA has considerable conversion experience</li> <li>• For the most part, account owners will not see a notable change in investments but for the naming of portfolios</li> </ul>
<p style="text-align: center;"><b>Communication to Account Owners</b></p>	<ul style="list-style-type: none"> <li>• Project timeline builds in multiple waves of notification to ensure awareness</li> <li>• Changes will not impact investor costs or investment lineup</li> </ul>
<p style="text-align: center;"><b>Morningstar's View on TIAA's Asset Allocation Team</b></p>	<ul style="list-style-type: none"> <li>• TIAA has significant retirement experience</li> <li>• Seasoned 529 asset allocation team</li> </ul>

# Conclusion

- **ScholarShare 529 will be in the early stages of an emerging trend:**
  - **Sixteen of ninety 529 Plans nationwide currently use a target date fund structure**
  - **TIAA will join twelve prominent investment advisors that already use a target date structure**
  - **In the last two years, other Plans have adopted more progressive, non-target date structures**
- **Anticipated industry view of this adoption:**
  - **Morningstar views progressive glide paths favorably**
  - **Proposal reflects TIAA's best thinking on Plan enhancement**
  - **Provides an opportunity to reinforce TIAA's already progressive approach to asset allocation**
- **AKF recommends that the Board approve TIAA's proposal:**
  - **The proposal includes clear benefits with minimal downside**
  - **Most importantly, neither fees nor the investment line-up will change for investors**