MARCH 22, 2017

AGENDA ITEM 3
ACTION ITEM

SCHOLARSHARE INVESTMENT BOARD

Resolution to Approve Amendment to Agreement No. SIB 15-10 with TIAA-CREF Tuition Financing, Inc. for Program Management Services for the ScholarShare 529 College Savings Plan

Recommendation
ScholarShare Investment Board (SIB or Board) staff recommends the Board adopt Resolution No. 2017-01 approving an amendment to Agreement No. SIB 15-10 with TIAA-CREF Tuition Financing, Inc. (TFI) for program management services for the ScholarShare College Savings Plan (Plan).

Background
In 2011, following a competitive request for proposals process, TFI was selected to provide program management services for the Plan. Agreement No. SIB 15-10 (Contract) with TFI provides for an initial five-year term, with options for five (5) one-year extensions. In March 2016, the Board approved an amendment to the Contract to extend the term for one year. The Contract is set to expire in November 2017.

Discussion
SIB staff reviewed both quantitative and qualitative factors in determining the recommendation to grant a one-year extension to the Contract with TFI. As part of the review process, SIB staff sought input from SIB's 529 industry consultant, AKF Consulting Group (AKF), and SIB's investment consultant, Pension Consulting Alliance, LLC (PCA).

Following a review of the analyses provided by AKF and PCA (Exhibit A and Exhibit B, respectively), SIB staff has found that since TFI assumed the position of program manager in November 2011, ScholarShare remains competitively positioned amongst the 529 industry relative to asset and account growth, investment structure, and fees. ScholarShare's growth performance and overall positioning is in-line within the industry. Investment portfolios and underlying mutual funds have performed well relative to benchmark, industry, and peer group plans. Additionally, TFI has consistently met three of the four Board-approved marketing performance account and asset benchmarks for the Plan. However, TFI has lagged the 529 industry annual asset growth rate benchmark. While overall performance and comparison factors for ScholarShare are generally positive and places the Plan competitively within the 529 industry, there are opportunities for growth and improvement. As a result, SIB staff has determined that a one-year extension to the Contract is warranted.

Presenter
Julio Martinez, Executive Director, ScholarShare Investment Board

RESOLUTION NO. 2017-01

RESOLUTION OF THE SCHOLARSHARE INVESTMENT BOARD RELATING TO THE APPROVAL OF AN AMENDMENT TO AGREEMENT NO. SIB 15-10 WITH TIAA-CREF TUITION FINANCING, INC. FOR PROGRAM MANAGEMENT SERVICES FOR THE CALIFORNIA DIRECT-SOLD SCHOLARSHARE COLLEGE SAVINGS PLAN

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

WHEREAS, the Board, pursuant to Education Code Section 69982(b), has authority to contract for goods and services and engage personnel as necessary for the purpose of rendering professional, managerial, and technical assistance and advice to the Board;

WHEREAS, the Board, pursuant to Education Code Section 69981(c)(10), may authorize the Executive Director to enter into contracts on behalf of the Board or conduct any business necessary for the efficient operations of the Board;

WHEREAS, a program manager is needed to provide management services for California's ScholarShare College Savings Plan (the "Plan"), which includes maintaining and managing investments, performing administration and customer service, and providing marketing;

WHEREAS, the term of the Board's existing contract, Agreement No. SIB 15-10 (the "Agreement"), with TIAA-CREF Tuition Financing, Inc. ("TFI") for program management services for the Plan expires on November 6, 2017;

WHEREAS, the Agreement provides for five optional one-year extensions to the term of the Agreement; and

WHEREAS, following a review of the analyses prepared and provided by the Board's investment consultant, Pension Consulting Alliance, LLC, and 529 industry consultant, AKF Consulting Group, SIB staff has determined that a one-year extension term to the Agreement is warranted.

NOW, THEREFORE, BE IT RESOLVED, that the Executive Director is hereby authorized to execute necessary documents and take whatever steps necessary to obtain all required approvals for an amendment to the Agreement with TFI to extend the term of the Agreement for one additional year, expiring on November 6, 2018.

Attest: ______________________________________
Alan Gordon
For Chairperson, State Treasurer John Chiang

Date of Adoption: ______________________________

MEMORANDUM

TO:	**JULIO MARTINEZ, EXECUTIVE DIRECTOR** **STANLEY ZETO, DEPUTY EXECUTIVE DIRECTOR** **SCHOLARSHARE INVESTMENT BOARD**
FROM:	**AKF CONSULTING GROUP**
DATE:	**MARCH 3, 2017**
RE:	**UPDATE OF SCHOLARSHARE PLAN REVIEW**

I. INTRODUCTION

On March 4, 2016, AKF Consulting Group ("AKF Consulting" or "AKF") provided a ScholarShare Plan Review memorandum ("2016 Review Memo") to assist the ScholarShare Investment Board ("SIB" or the "Board") in its consideration of a one-year contract extension with TIAA-CREF Tuition Financing, Inc. ("TFI"). The Board is considering another one-year extension and has asked AKF to update the 2016 Review Memo. The memorandum we submit today includes the most current information about the ScholarShare 529 Plan and how it compares to the 529 National Market and certain Peer Plans, including relative asset and account growth rates (for the period ending December 31, 2016) and comparisons of investment structures and fees.

II. RELATIVE GROWTH RATES

To assess relative growth rates, we have compared ScholarShare to (i) the national savings market ("National Total", including advisor and direct plans), (ii) the national direct market ("National Direct") and (iii) select direct plans ("Peer Plans"). Peer Plans include the direct plans offered in the following States[1]:

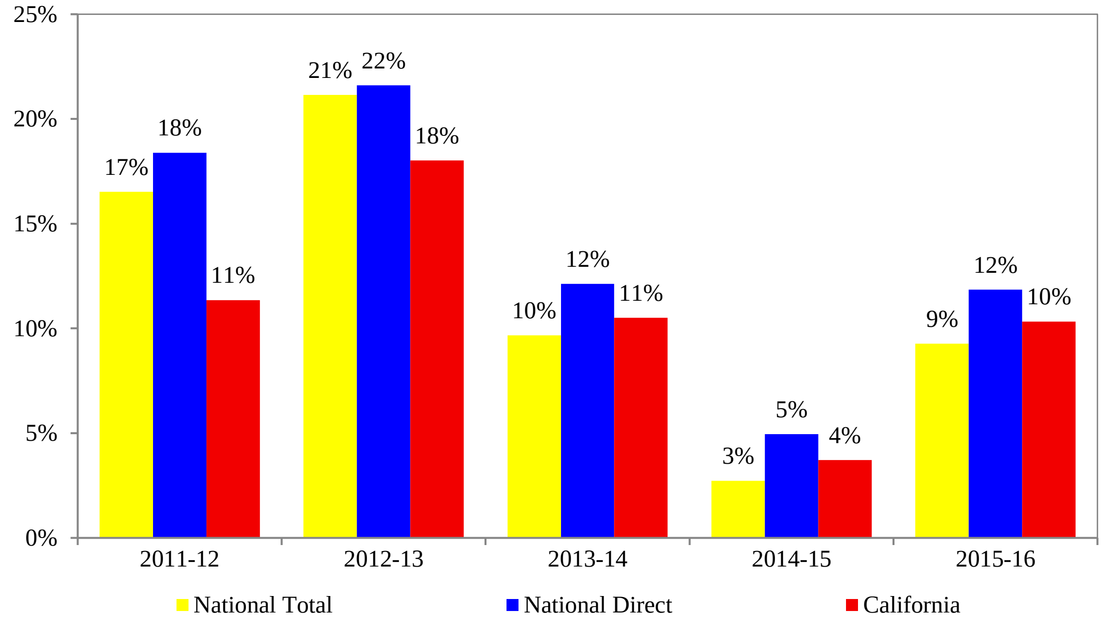
- Michigan and Wisconsin – direct plans managed by TFI
- Nevada Vanguard – second largest direct plan nationwide, managed by Ascensus
- New Hampshire – third largest direct plan nationwide, managed by Fidelity
- Kansas – Learning Quest and Schwab combined, high California concentration, managed by American Century
- Illinois – eleventh largest direct plan nationwide, managed by Oppenheimer

[1] Asset ranking are as of December 31, 2016

For this analysis, we reviewed data from 2012 through 2016, the time-period during which TFI has managed ScholarShare. The 2012 California assets and accounts include both ScholarShare Direct and Advisor since the Advisor Plan had not yet rolled into the Direct Plan. We base our analysis on year-end data from the College Savings Plans Network ("CSPN"), with clarifications by certain States[2].

National Asset Growth. The following chart shows the asset growth of California versus each of National Total and National Direct:

CALIFORNIA VS NATIONAL ASSET GROWTH 2012 – 2016



The chart above effectively shows that between 2012 and 2016, California asset growth lagged National growth in early years but has caught up more recently:

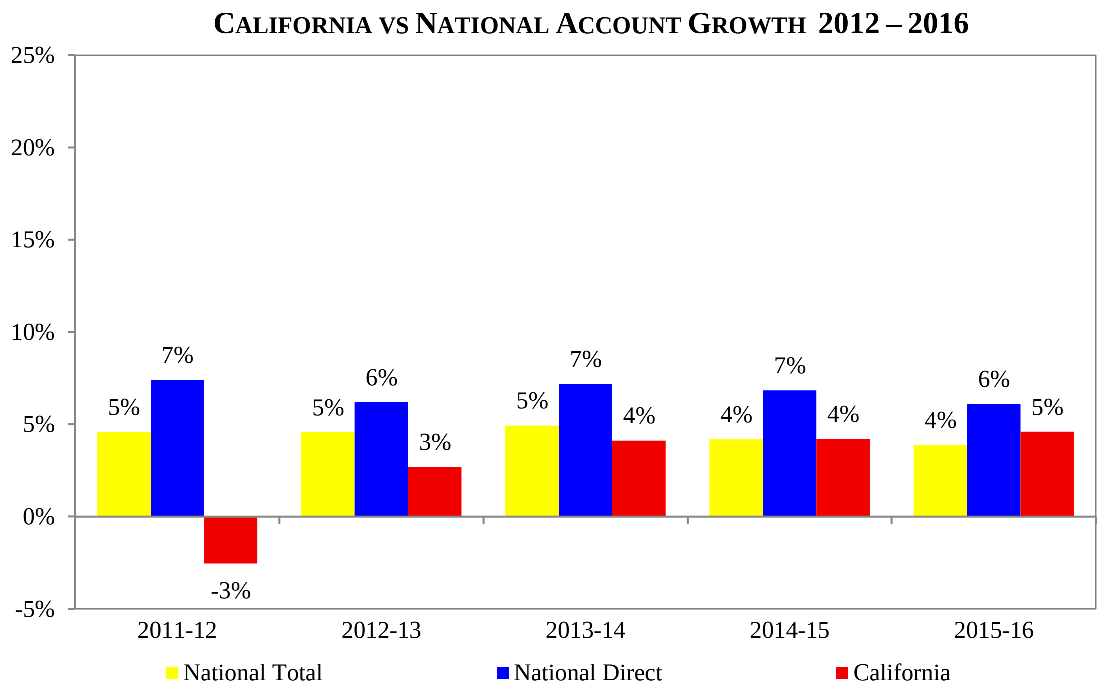
- California asset growth lagged National Total and National Direct growth rates in 2012 by approximately 6% and 7%, respectively
    - We attribute this to the management conversion from Fidelity to TFI
- The gap narrowed in 2013, with California asset growth rates lagging National Total and National Direct by just 3% and 4%, respectively
- Since 2014, California asset growth rates exceeded National Total growth rates and narrowed the difference from the National Direct market

[2] Direct vs Advisor splits unavailable for District of Columbia (assumed 12/30/2014 splits) and South Dakota (assumed 6/30/2016 splits).

During the TFI tenure as Program Manager, California asset growth has mirrored or just slightly lagged National growth rates:

Average Annual Growth	5-years (2012 – 2016)	4-years (2013 – 2016)
National Direct	13.6%	12.5%
National Total	11.7%	10.5%
California	10.7%	10.5%

National Account Growth. The following chart shows the account growth of California versus each of National Total and National Direct:



This chart effectively shows that between 2012 and 2016, California account growth rates lagged National in early years but began to approximate National growth rates in later years:

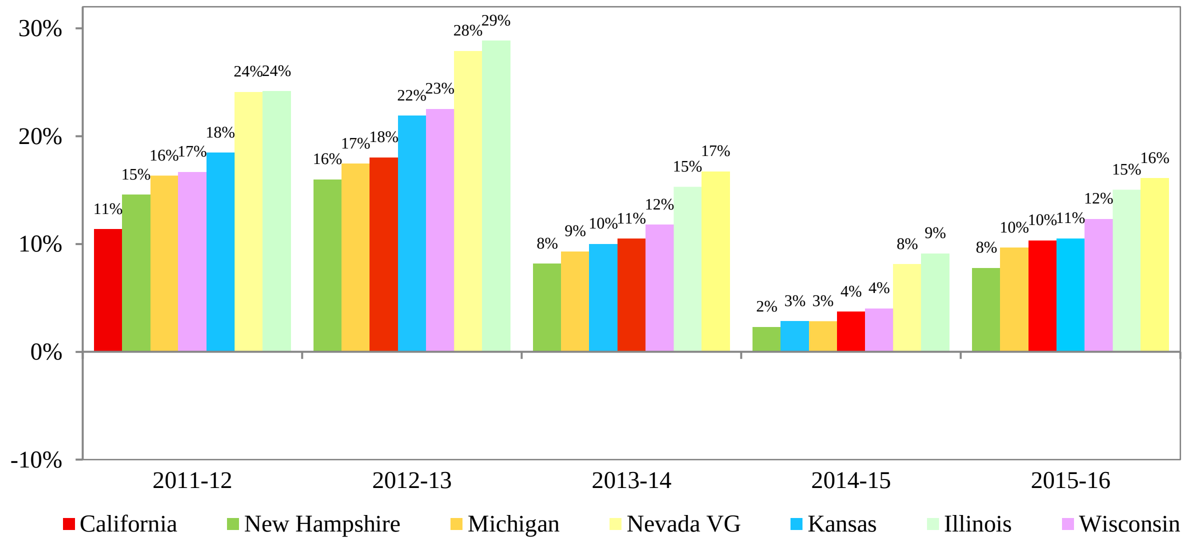
- Reflecting the conversion from Fidelity to TFI, California account growth lagged National Total and National Direct in 2012 by 8% and 10%, respectively
- California account growth rebounded strongly in 2013
- California account growth has been on an increasing trend over the last five years
- In 2016, California growth at 5% exceeded National Total growth at 3.9% while falling just short of National Direct growth at 6.1%

During TFI's tenure as Program Manager, California account growth has lagged National account growth rates, but the results have improved since 2013:

Average Annual Growth	5-years (2012 – 2016)	4-years (2013 – 2016)
National Direct	6.8%	6.6%
National Total	4.4%	4.4%
California	2.6%	3.9%

Peer Plan Asset Growth. The chart below shows the asset growth of California versus Peer Plans:

CALIFORNIA VS PEER PLAN ASSET GROWTH 2012 – 2016



The chart above effectively shows that between 2012 and 2016, California's relative asset growth rates have shifted over time:

- California asset growth (11%) underperformed all Peer Plans in 2012 (as noted elsewhere, we attribute this to disruption from the Program Manager conversion)
- In 2013, California asset growth (18%) surpassed Michigan (17%) and New Hampshire (16%), while in 2014 and 2015, California additionally surpassed Kansas
- Since 2014, California asset growth has approximated most Peers

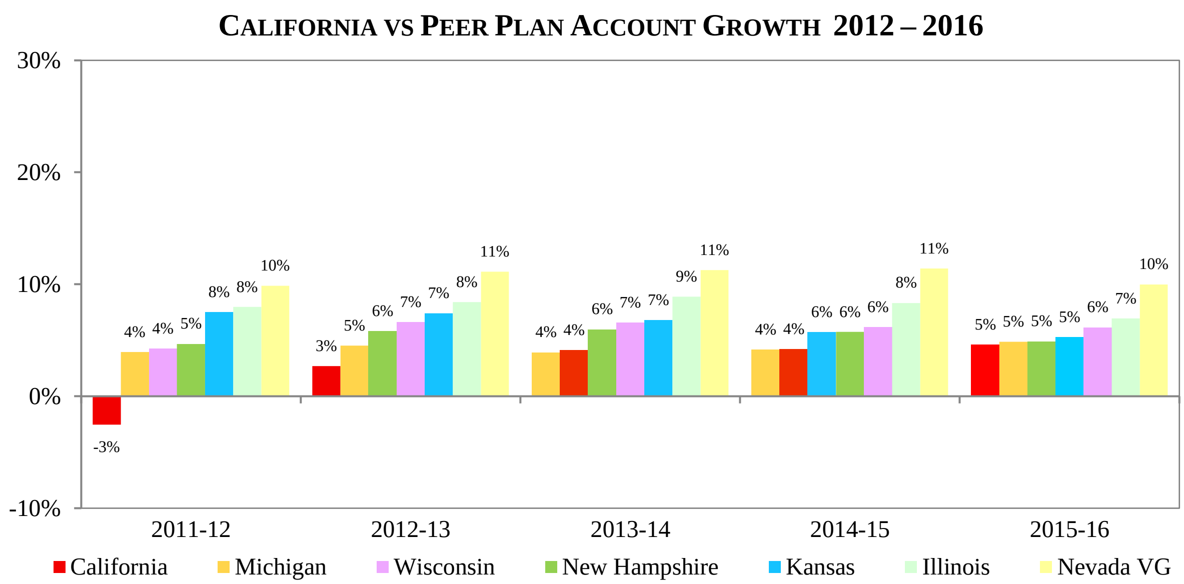
Peer Plan relative positions shifted over time:

- California's position improved from 2012 to 2014
- Large asset size partially explains New Hampshire lagging relative asset growth rates
- Small asset size partially explains Wisconsin's comparatively strong asset growth performance compared to other Peer Plans
- Nevada Vanguard and Illinois consistently outpace Peer Plans over time, although by decreasing margins

During TFI's tenure as Program Manager, California assets grew steadily but lagged other TFI-managed and Peer Plans:

Average Annual Growth	5-years (2012 – 2016)	4-years (2013 – 2016)
All Plans Shown	13.4%	12.3%
TFI-managed Plans[3]	11.7%	10.9%
California	10.7%	10.5%

Peer Plan Account Growth. The following chart shows the account growth of California versus Peer Plans:



The chart above effectively shows that California relative account growth rates have slightly shifted over time:

- California accounts experienced negative growth in 2012 reflecting the conversion to TFI as well as termination of the ScholarShare Advisor Plan
- California growth rates have gradually converged with growth rates of most Peer Plans. In 2016, California narrowed gap with Nevada by 5% from 13% in 2012 and 7% in 2014
- Wisconsin account growth rate surpassed Michigan and New Hampshire since 2013, partially boosted by its small account base compared to Peers
- Nevada and Illinois consistently outpaced Peers over time, despite larger account bases

[3] Simple average calculation of California, Michigan and Wisconsin average annual growth rates

During TFI's tenure as Program Manager, California account growth rates lagged Peer Plans:

Average Annual Growth	5-years (2012 – 2016)	4-years (2013 – 2016)
All Plans Shown	6.2%	6.5%
TFI-managed Plans[4]	4.3%	4.9%
California	2.6%	3.9%

In general, California has made notable improvements in relative asset and account growth over time. Importantly, it is worth mentioning that in absolute terms, California has maintained its status as the fifth largest direct plan in terms of 529 assets and accounts since 2012[5].

[4] Simple average calculation of California, Michigan and Wisconsin average annual growth rates
[5] Data as of December 31, 2016. Only New York, Nevada, New Hampshire and Utah exceed California

III. Comparison of Investment Structures

We reviewed the investment structure of California and seven Peer Direct Plans to identify any meaningful differences in open/closed architecture, portfolio management style and the breadth of options offered. Data for this section is sourced to Morningstar Direct and Program Description Statements as of February 27, 2017. For this investment structure comparison, we modified the Peer Plans shown on page 1 of this memorandum to include the TFI-managed Connecticut Direct Plan and to exclude the Kansas Learning Quest Plan. Thus, the Peer Plans for investment purposes include:

- Connecticut, Michigan and Wisconsin – managed by TFI
- Nevada Vanguard – managed by Ascensus
- New Hampshire – managed by Fidelity
- Kansas Schwab – managed by American Century
- Illinois – managed by Oppenheimer

Overall Structure. In terms of overall investment structure and fund families involved, all but Nevada Vanguard include non-proprietary funds. Green rows represent TFI-managed Plans.

Overview of Plan Investment Structure

Direct Plan - *Program Manager*	Management Style[6]	Open Architecture	Underlying Funds
California – *TFI*	**Mostly Passive**	**Yes**	**Mostly TIAA (Others: DFA, T. Rowe Price and PIMCO)**
Connecticut – *TFI*	Blended	Yes	Mostly TIAA (Others: BlackRock, DFA, T. Rowe Price, et al)
Illinois – *Oppenheimer*	Passive and Blended	Yes	Mostly Vanguard – Passive Oppenheimer, Vanguard and Am Century – Blended
Kansas Schwab - *American Century*	Mostly Active	Yes	Mostly Schwab and one Vanguard – Passive Mostly American Century and Schwab – Active
Michigan – *TFI*	Passive	Yes	Almost 100% TIAA (Other: Vanguard)
Nevada Vanguard – *Ascensus*	Passive	No	100% Vanguard
New Hampshire – *Fidelity*	Mostly Active	Yes	Mostly Fidelity (Others: MFS, JPMorgan, PIMCO, et al)
Wisconsin – *TFI*	Blended	Yes	Mostly TIAA-CREF (Others: DFA, T. Rowe Price, et al)

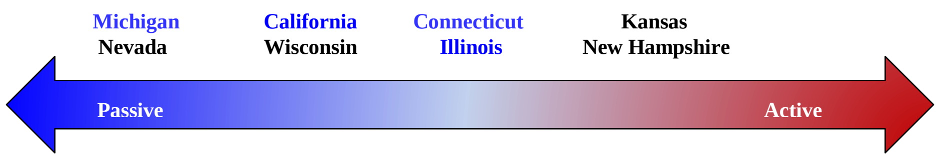
While the Peer Plans might be considered "open architecture" (based on at least one fund unrelated to the Program Manager), most of the funds offered are still proprietary to the Program Manager.[7] For example, the chart above shows that the TFI-managed Plans predominantly use TIAA-CREF funds. Illinois includes Vanguard funds for passive options but still relies upon Oppenheimer-managed funds for the blended portfolios.

[6] This column represents asset-weighted management style of age-based options only. See next section, *Management Style*

[7] In the case of Nevada Vanguard, we consider Ascensus a proxy for Vanguard given the dependent relationship between the two firms in direct plans generally

Management Style. The following graphic shows additional information about the portfolio management style for the Peer Plans. Not surprisingly, the style skews towards passive management since seven out of eight Plans, including California, offer passively managed age-based options.

OVERVIEW OF ASSET-WEIGHTED AGE-BASED MANAGEMENT STYLE[8]



Note: TFI-managed states shown in **blue**

As further detailed in the following chart, it is interesting to note that among the four TFI-managed Plans surveyed, only California offers a choice of passive and/or blended and active management. Connecticut and Wisconsin offers blended age-based options only while Michigan offers passive. Ascensus-managed Nevada Vanguard also employs 100% passive management for all three of their age-based options. In addition to California, three other Plans – Illinois, Kansas and New Hampshire – offer a choice of passive and/or blended and active management. These Plans are represented in blue.

MANAGEMENT STYLE OF AGE-BASED OPTIONS

Direct Plan	Number of Options		Asset Weighting[9]
	Passive	Blend or Active	
California	**1 Passive**	**1 Active**	**66% Passive / 33% Active**
Connecticut	--	3 Blend	100% Blend
Illinois	1 Passive	1 Blend	53% Passive / 47% Blend
Kansas Schwab	4 Passive	4 Active	22% Passive / 78% Active
Michigan	3 Passive	--	100% Passive[10]
Nevada Vanguard	3 Passive	--	100% Passive
New Hampshire	1 Passive	2 Active	21% Passive / 79% Active
Wisconsin	--	2 Blend	100% Blend

[8] Management style approximations based upon asset data provided by Morningstar Direct as of February 27, 2017

[9] Percentages based upon asset data provided by Morningstar Direct as of February 27, 2017

[10] All passive with the exception of TIAA-CREF High Yield Fund. Allocation ranges from 0% to 6.50% across age-based portfolios. For the purposes of this memo, we have categorized Michigan age-based portfolios as passively-managed.

Breadth of Investment Options. With respect to investment choice, California offers a healthy selection that is on par with or exceeds Peer Plans. Notably, California offers more total investment options than an average Peer Plan (19 versus 16.5). We also see differences in the TFI Plans: Michigan offers just 9 investment options while Wisconsin offers 22. Kansas Schwab offers the greatest number of age-based options – four passively managed and four actively managed options. Nevada Vanguard with 14 individual options is also worth noting.

Distribution of Investment Options				
Direct Plan	**Total**	**Age-based**	**Static**	**Individual**
California	**19**	**2**	**12**	**5**
Connecticut	14	3	4	7
Illinois	10	2	7	1
Kansas Schwab	21	8	12	1
Michigan	9	3	4	2
Nevada Vanguard	22	3	5	14
New Hampshire	15	3	6	6
Wisconsin	22	2	8	7
Average of Plans Shown	**16.5**	**3.3**	**7.3**	**5.4**

Taking a closer look at individual options, we note that California is in the middle of the pack with 5 individual options, as shown in the following chart:

Individual Options Offered					
Direct Plan	**# Options**	**Passively-Mgd**	**Actively-Mgd**	**Guaranteed**	**Short Term**
California	**5**	**US Equity (2) Bond**	**Social Choice**	**Principal Plus**	**--**
Connecticut	7	Int'l Equity US Equity Bond	Global Tactical Social Choice	Principal Plus	Money Market
Illinois	1	--	--	--	Money Market
Kansas Schwab	1	--	--	--	Money Market
Michigan	2	US Equity	--	Principal Plus	--
Nevada Vanguard	14	US Equity (6) Int'l Equity Bond TIPS	Large Cap Value Large Cap Growth Balanced High Yield	--	Short Term Reserves
New Hampshire	6	US Equity (2) Int'l Equity Interm. Treasury	--	--	Money Market Bank
Wisconsin	7	Small Cap Large Cap Bond	US Equity Social Choice	Principal Plus	Bank
Number of Plans	**--**	**5 out of 8**	**4 out of 8**	**4 out of 8**	**6 out of 8**

As shown in the chart immediately above, six of eight Plans offer passively-managed or actively-managed individual options, which likely is appealing to investment savvy, do-it-yourself investors. We also note that Nevada Vanguard – with the highest number of individual investment options – offers the most diverse selection of passively- and actively-managed individual options across asset classes. TFI-managed California, Connecticut and Wisconsin each offer the actively-managed Social Choice Portfolio, while all four TFI Plans offer the TFI Principal Plus Interest Portfolio (all using the TIAA Life Funding Agreement). Two Plans – Illinois and Kansas – only offer the bare minimum of one Money Market.

More broadly, we also reviewed asset classes offered by California and Peer Plans as compared to the rest of the industry. The following chart shows a list of non-traditional asset classes that can play important roles in diversifying an investment portfolio to enhance the risk-return profile over time. California includes most of the asset classes either as part of its asset allocation strategies or as an individual option, as do other TFI-managed Plans and New Hampshire. Surprisingly, Illinois and Nevada Vanguard – the two Plans with consistently higher asset and account growth rates – only offer a few of the listed asset classes.

ASSET CLASSES OFFERED

Direct Plan	International Equity	Emerging Market Equity	Real Estate	Commodities	ETF	Guaranteed
California	**X**	**X**	**X**			**X**
Connecticut	X	X	X			X
Illinois	X					
Kansas Schwab	X					
Michigan	X	X	X			X
Nevada Vanguard	X					
New Hampshire	X	X	X	X		
Wisconsin	X	X	X			X
529 Savings Plans[11]	**92%**	**49%**	**50%**	**18%**	**22%**	**22%**

[11] Represents data compiled as of April 2016

IV. COMPARISON OF FEES

The following chart shows the weighted average total fees by management style for the age-based options. As you can see, the range of fees varies widely but California passive and active fees are the lowest among all Peer Plans. This is consistent with California's positive Morningstar Pillar rating on Price.

WEIGHTED AVERAGE TOTAL FEES OF AGE-BASED OPTIONS[12]				
Direct Plan	**AUMs**	**Passive**	**Blend**	**Active**
California	$7,031,977,920	**0.15%**	--	**0.52%**
Connecticut	$2,579,514,692	--	0.41 – 0.50%	--
Illinois	$4,395,462,202	0.18%	0.61%	--
Kansas Schwab	$3,230,986,977	0.30%	--	0.71 – 0.82%[13]
Michigan	$4,541,871,332	0.17 – 0.18%	--	--
Nevada Vanguard	$13,722,709,942	0.17%	--	--
New Hampshire	$10,727,242,582	**0.14%**	--	0.82 – 1.06%
Wisconsin	$2,543,681,596	0.22 – 0.27%	--	--
Range	--	**0.14 – 0.30%**	**0.41 – 0.61%**	**0.52 – 1.06%**

In looking at pricing across Program Managers, it is interesting to note that despite much larger AUMs, the Nevada Vanguard passive fees (0.17% or 17 basis points) are higher than California's (0.15% or 15 basis points). This certainly distinguishes the California pricing among direct plans nationwide. New Hampshire is $3 billion larger than California but its passive fees at 14 basis points is just one basis point lower than California. California's active fees (0.52% or 52 basis points) are among the lowest compared to other actively-managed options in Kansas and New Hampshire. Overall, California fees are consistent with asset size and comparatively well priced on both passive and active fees.

[12] Morningstar Direct fee data as of February 27, 2017; CSPN AUM data as of December 31, 2016

[13] Represents simple average fee. Asset data for each age-based portfolio was not provided by Morningstar Direct

V. Observations

Based upon our research, we conclude that California is generally well-positioned compared to the industry for the following reasons:

- Asset growth is on par with the National Direct market and Peer Plans generally

- Despite lagging on account growth, the gap is narrowing between the California growth rate and the National Direct and Peer Plan growth rates

- With respect to investment structures and breadth of investment options, California is well in line with the industry

- California's fees are among the lowest in the industry

As we indicated in our 2016 Review Memo, we continue to view the ScholarShare Program favorably. Once again, we support an extension of the Management Agreement, particularly given continued improvement in account growth rates as well as industry-low fees for account owners and beneficiaries.

We welcome the opportunity to discuss any part of our analysis in more detail. Thank you.

PENSION CONSULTING ALLIANCE

MEMORANDUM

Date: March 7, 2017

To: ScholarShare Investment Board (SIB)

From: Pension Consulting Alliance, LLC (PCA)

CC: Eric White, CFA – PCA; Kay Ceserani – PCA

RE: **Tuition Financing, Inc. (TFI) Peer Comparison Review**

Summary

PCA has conducted a peer comparison review of the ScholarShare College Savings Plan as of 12/31/2016. The review included an examination of the Plan's relative performance at both the Age-based and individual fund level, the asset allocation of Age-based options, available investments, and other considerations. In order to accomplish this, we looked at ScholarShare's Age-based portfolios' risk-adjusted performance compared to:

- The Morningstar median direct plan
- Other TFI managed plans
- Other plans with passive and active portfolios of similar size and characteristics to ScholarShare

We also examined the Plan's underlying mutual funds relative to their respective benchmarks and peer groups. We paid particular attention to the relative performance of the Plan's Age-based options as we believe this is the most important differentiator between competing plans within the 529 industry. We'll highlight the reason for this belief in more detail in the Discussion section. Generally, our findings are quite positive. In most circumstances, the performance of the Plan is equal to or superior to plans in the industry as well as the peers selected for comparison purposes on a risk-adjusted basis. As is expected, we found that asset allocation was the main driver of relative performance. In some cases, the Plan's asset allocation aided relative performance, whereas in other cases, it weighed on performance. Overall, the Plan has a strong asset allocation and reasonably strong performance from underlying funds. We believe the results should be viewed positively.

Discussion

As highlighted in the Summary, PCA was tasked with evaluating the performance of the Plan since the engagement of Tuition Financing, Inc. (TFI) as program manager through the end of 2016. Our analysis focused on the two areas we believe are most pertinent, from an investment perspective, in comparing one 529 plan to another: the Age-based options and the underlying funds. The majority of our review focuses on the relative performance of the Plan's Age-based options relative to the industry as measured by the Morningstar Direct Plan Median and other peer comparison plans that we view as good proxies for comparison; namely, other TFI managed plans and other plans with passive and active portfolios of similar size and characteristics to ScholarShare.

Our analysis focused heavily on the performance of the Age-based options for a number of important reasons:

- The majority of assets and flows are in and toward Age-based options.
- Individual options are often used as building blocks of the Age-based options and are thus incorporated into the analysis.
- Asset allocation is the largest determinant of a portfolio's risk and return. Asset allocation is determined at the Plan level for Age-based options.
- There are four main factors in determining the outcome of any savings program: size of the investment, timing of the investment, asset allocation, and fund selection. When looking to compare plans, Age-based options represent the only area where the Plan determines two of the four factors.

One issue that arises when comparing Age-based options across plans is the fact that plans differ on how often they transition their age bands. For example, one plan may have a single 0-7 age band, while a different plan may have 0-4 and 5-8 age bands. In recognizing this issue, PCA elected to use Morningstar's four age band buckets: Age 0-6, Age 7-12, Age 13-18, and Age 19+. As an example, both the ScholarShare Age 0-4 and Age 5-8 segments are compared against the Morningstar Age 0-6 segment. While this eliminates the possibility of a true apples-to-apples comparison, we believe the overall conclusions are still worthwhile because the general relationship holds; plans consistently producing above average results are superior to plans consistently producing below average returns.

The remainder of this memo will focus on Age-based performance analysis relative to the industry as measured by the Morningstar Direct Plan Median, other TFI managed plans and other passive and active portfolios of similar size and characteristics to ScholarShare. In addition, we will briefly look at the underlying fund performance relative to their benchmarks and peer groups.

<u>Morningstar Direct Plan Median</u>

We compared the performance of the ScholarShare Age-based options to those of the Morningstar Direct Plan Median. Our analysis finds that both the active and passive portfolios perform well relative to the Morningstar median. In early age bands, both the active and passive portfolios perform in-line with or outperform the Morningstar median. However, both Active and Passive Age 13-14 bands underperform the median. This underperformance can largely be attributed to differences in asset allocation.

Notably, the Plan's higher than average allocation to Treasury Inflation Protected Securities (TIPS). Both Plans have a significantly higher allocation to TIPS than the Morningstar median and as a result the performance differential between core fixed income and TIPS drove the relative results. Over the 3-year measurement period, TIPS returned roughly 2.25% per year, while core fixed income returned 3% per year. This underperformance of TIPS relative to core bonds drove the underperformance of the Age 13-14 bands. Both the active and passive portfolios outperformed the median in the 19+ age band due to the positive economics of the funding agreement.

Other TFI Managed Plans

PCA compared the performance of ScholarShare to other 529 plans managed by TFI for which they have been the program manager for a similar length of time. This peer group consists of the Connecticut, Mississippi, Oklahoma, and Oregon Direct sold actively managed 529 plans. Our analysis finds that all the Plan's actively managed age bands perform in line with or outperform all actively managed peer group age bands. This indicates that for a participant desiring active management, they would have received the similar or better risk-adjusted results being in ScholarShare than in the other peer group plans.

Non-TFI Managed Plans

PCA compared the performance of ScholarShare to other 529 plans not managed by TFI but which had certain characteristics that make them similar to ScholarShare. We broke this analysis into two segments: one for plans with actively managed portfolios and one for plans with passively managed portfolios. The passively managed peer group consists of the Utah, Illinois, Nebraska, and Nevada plans; while the actively managed peer group consists of the Massachusetts, Illinois, Maryland, and Maine plans.

For the passively managed Age 0-6 and Age 7-12 bands, ScholarShare's performance was in-line or better than the peer group. For the Age 13-18 band, ScholarShare on average generated higher returns than much of the peer group, yet did so with greater volatility than many of the peers. This can be attributed to differences in asset allocation. ScholarShare outperformed in the Age 19+ band due to the funding agreement.

Relative to other non-TFI actively managed plans, ScholarShare as a whole largely outperformed its peer groups. For all age bands, ScholarShare outperformed on either an absolute or risk adjusted basis. ScholarShare's actively managed Plan stands out for its strong performance relative to peers and the Morningstar median.

Underlying Fund Performance

In addition to evaluating ScholarShare's Age-based portfolios, PCA also reviewed the underlying mutual funds, which comprise both the building blocks of the Age-based options and the stand-alone fund options for the Plan. Since the revamping of the ScholarShare Plan with TFI as program manager, only two mutual fund have been on Watch status for performance reasons. This is unlike other PCA client utilizing actively managed funds wherein often a third or more of the funds are on Watch status. Given the realities of actively managed mutual funds, this achievement will surely end; however, it is a surprising and impressive accomplishment over the measurement period.

When evaluating the efficacy of actively managed funds, two key questions are paramount:

1. Has the fund outperformed its stated benchmark on a risk-adjusted basis?
2. How has the fund performed relative to its peers?

Question one is important due simply to the fact that an investor chooses active management to accomplish just that. An investor can usually replicate the performance of a benchmark at very low cost (through a passive index fund), so an active manager unable to outperform the benchmark on a risk-adjusted basis hinders an investor through both foregone returns and higher fees. Question two tries to address (regardless of the answer to question one) whether the active manager is superior to other funds available to the investor.

In general, the actively managed funds within the ScholarShare Plan have outperformed both their respective benchmark and peer groups. Of the actively managed funds in the Plan, 7 out of 13 (or 54%) have outperformed their respective benchmarks since the inception of TFI as program manager. In addition, 11 out of the 13 funds (or 85%) have produced results in the top half of their respective peer groups, of which 6 funds (or 46%) have performed in the top quartile of their peer group. This is exceptionally good performance.

Based on this, we can see that the underlying funds in the ScholarShare program, in aggregate, can answer affirmatively to both questions. The measurement period happens to coincide with a period, regarded by many in the asset management industry, of being quite challenging for active portfolio management. The fact that over 50% of the actively managed funds outperformed their respective benchmarks over this time period is even that much more impressive given the difficulty of the environment.

PCA also evaluated the passively managed underlying mutual funds, which act as building blocks for the Age-based option and represent stand-alone funds within the Plan. We measured how closely the funds tracked their respective benchmarks and concluded that all passively managed funds have tracked their respective benchmark well within what we consider a tolerable level of deviation.

Conclusion

PCA has reviewed the performance of the ScholarShare program since the inception of TFI as program manager. Over this time period, the Plan has performed well on both an absolute and relative basis. The Plan's Age-based portfolios consistently perform in-line with or outperform the Morningstar Direct Median Fund and the custom peer groups PCA created for comparison purposes, on a risk-adjusted basis. In the few instances where the Plan underperformed, there is a clearly identified reason for the underperformance and we believe it should be transitory in nature. In addition, the Plan's underlying mutual funds have performed extremely well versus both their benchmarks and peer groups.

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