

MINUTES of SERS Board Meeting – Wednesday, April 28, 2021

CALLED TO ORDER: 2:37 p.m. by Chair David R. Fillman

MICROSOFT TEAMS MEETING/LIVESTREAM

ATTENDEES:

Members and Designees

David R. Fillman – Chairperson

Glenn E. Becker – Assistant Chairperson

John M. DiSanto

Dan B. Frankel

Stacy Garrity

Gregory K. Jordan

Paul Schemel

Mary A. Soderberg

Gregory C. Thall

Richard Vague

James Bloom – Designee for Secretary Richard Vague

Susan Boyle – Designee for Representative Paul Schemel

Christopher Craig – Designee for Treasurer Stacy Garrity

Lloyd Ebright – Designee for Treasurer Stacy Garrity

Charles Erdman – Designee for Senator John M. DiSanto

Alan Flannigan – Designee for Secretary Richard Vague

Matt Lindsay – Designee for Senator Vincent J. Hughes

Toni Marchowsky – Designee for Senator Vincent J. Hughes

Dan Ocko – Designee for Representative Dan B. Frankel

Patrick Shaughnessy – Designee for Representative Dan B. Frankel

Jill Vecchio – Designee for Representative Paul Schemel

Executive Staff

Seth Kelly

N. Joseph Marcucci

Sara McSurdy

Terrill Sanchez

MINUTES of the SERS Board Meeting

Wednesday, April 28, 2021

1. CALL TO ORDER

Chair Fillman called the meeting to order at 2:37 p.m.

2. WELCOME AND ROLL CALL

Executive Director Terri Sanchez conducted a roll call of board members and designees who were on the Microsoft Teams meeting.

3. ADOPTION OF THE AGENDA

MOTION: 2021-17

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board adopts the agenda for the April 28, 2021, board meeting.

4. APPROVAL OF CONSENT CALENDAR

A. Approving Board Meeting Minutes – February 24, March 25 and April 9, 2021

MOTION: 2021-18

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board approves the Consent Calendar items, as listed, for the April 28, 2021, board meeting.

5. COMMITTEE REPORTS/ACTION ITEMS

A. Finance and Member Services Committee

Committee Chair Soderberg provided a report of the Finance and Member Services Committee to the board. The report was accepted by the board along with the following motion:

2020 ACTUARIAL VALUATION RESULTS AND THE FISCAL YEAR 2021/2022

CERTIFICATION OF DEFINED BENEFIT PLAN EMPLOYER CONTRIBUTION RATES

MOTION: 2021-19

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board accepts the recommendation of the Finance and Member Services Committee to:

(A) approve the results of the December 31, 2020, actuarial valuation and, for the commonwealth fiscal year 2021-2022, certify the following contribution rates:

1. Shared risk contribution rate of 0.0%;
2. Employer normal cost contribution rate of 1.50%;
3. Composite employer contribution rate necessary for the funding of the system of 33.76%; and
4. Employer contribution rates by group and class of service of employees as set forth in the actuarial valuation as calculated by SERS' consulting actuary, Korn Ferry, pursuant to Section 5508 of the State Employees' Retirement Code;

(B) authorize SERS staff and Korn Ferry to use such rates to develop all the employer rates for the period of July 1, 2021 to June 30, 2022, pursuant to Section 5902(k) of the State Employees' Retirement Code;

(C) establish an employer contribution rate of 0.05% for the fiscal year 2021-2022 to fund the Benefits Completion Plan established pursuant to Section 5941 of the State Employees' Retirement Code; and

(D) authorize SERS Executive Director to certify such rates to all employers with employees who are active members of SERS, and to the Secretary of the Budget.

B. Investment Committee

Committee Chair Becker provided a report of the Investment Committee to the board. The report was accepted by the board along with the following motions:

PRIVATE EQUITY – PSG V, L.P.

MOTION: 2021-20

By motion that was moved, seconded, and approved by board members, except Senator DiSanto, who voted NO, and Treasurer Garrity, who abstained, it was

RESOLVED: That the board accepts the recommendation of the Investment Committee to commit up to \$50 million to PSG V L.P., plus investment expenses and pro rata share of partnership operating expenses, consistent with executed partnership documents, as a follow-on investment within the Private Equity asset class, subject to successful completion of contract negotiations and execution and delivery of closing documents by all parties, including required Commonwealth legal approvals, within 12 months.

ACTIVE LONG CREDIT MANAGER

MOTION: 2021-21

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board accepts the recommendation of the Investment Committee to delegate authority to the Chief Investment Officer to hire actively-managed long credit mandates to increase efficiencies in the implementation of the enhanced Fixed Income structure through the following process:

1. The Chief Investment Officer and the board's general investment consultant will provide recommendation memos via email to the Investment Committee which detail the rationale to hire the actively-managed long credit mandates;
2. Investment Committee members will have two weeks from the timestamp on the sent email to review the recommendation;
3. If Investment Committee members are comfortable with the hire and there are no objections during the two-week period, SERS will proceed with hiring the actively-managed long credit mandates; and
4. If any Investment Committee members objects, SERS will postpone the hiring process and provide the recommendation at the next Investment Committee meeting for a formal vote.

ABEL NOSER TRANSACTION COST CONSULTANT

MOTION: 2021-22

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board accepts the recommendation of the Investment Committee to authorize the retention of Abel Noser as its investment transactions cost analysis consultant under a new Consulting Agreement, subject to successful completion of contract negotiations prior to the expiration of the current Agreement between SERS and Abel Noser.

U.S. MICRO-CAP STRATEGY

MOTION: 2021-23

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board accepts the recommendation of the Investment Committee to approve a new 2% target allocation to a U.S. Micro-Cap Strategy within the U.S. Equity asset class, with a corresponding reduction to the Private Equity asset class target allocation to 12%.

U.S. COVERED CALL STRATEGY

MOTION: 2021-24

By motion that was moved, seconded, and approved by board members, except Senator DiSanto, Representative Frankel, Ms. Marchowsky on behalf of Senator Hughes and Mr. Jordan who voted NO, it was

RESOLVED: That the board accepts the recommendation of the Investment Committee to approve a new 3% target allocation to a U.S. Covered Call Strategy within the U.S. Equity asset class, with a corresponding reduction to the U.S. Large/Mid-Cap strategy target allocation to 18%.

INVESTMENT POLICY STATEMENT

MOTION: 2021-25

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board accepts the recommendation of the Investment Committee to approve the following enhancements to the Defined Benefit Plan's Investment Policy Statement:

- a. Enhanced U.S. Equity Structure section – (Section 20, Page 32); and
- b. Updated Policy Target Asset Allocation percentages, Estimated Risk percentages, and Liquidity levels (Section 21, Page 39; Section 23, Page 41; and Section 24, Page 42).

The revised sections are in the attached (ATTACHMENT A) meeting material entitled "Public Equity Manager Structure Analysis Defined Benefit Plan IPS Update 2021.04.28.pdf".

C. Board Governance and Personnel Committee

Committee Chair Fillman provided a report of the Board Governance and Personnel Committee to the board. The report was accepted by the board along with the following motions:

SERS FIDUCIARY REVIEW AND SELF-ASSESSMENT FINAL REPORT

MOTION: 2021-26

By motion that was moved, seconded, and approved by board members, except Senator DiSanto, who voted NO, it was

RESOLVED: That the board accepts the recommendation of the Board Governance and Personnel Committee to:

- (1) accept Funston Advisory Services LLC's SERS Fiduciary Review and Self-Assessment Final Report (Final Report) dated April 19, 2021, as set forth in the attachment (ATTACHMENT B), and
- (2) direct staff to engage with the appropriate standing committees to: (a) review the Final Report's recommendations, and (b) make recommendations to the board for action, as appropriate.

AMENDMENT TO BYLAWS

MOTION: 2021-27

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board accepts the recommendation of the Board Governance and Personnel Committee to amend section 1.1 of the Commonwealth of Pennsylvania State Employees' Retirement System Bylaws, as set forth in the attachment (ATTACHMENT C) .

6. OLD BUSINESS - NONE

7. NEW BUSINESS - NONE8. SPECIAL PRESENTATION - NONE9. REPORT OF EXECUTIVE DIRECTOR

A. Executive Director Sanchez provided the following reports:

(i) Executive Director Sanchez noted that SERS received the MarCom Award for excellence in marketing and communication from the Association of Marketing and Communication Professionals (AMCP). This award was in recognition of the SERS Deferred Compensation Plan “active choice” handout.

(ii) Executive Director Sanchez noted the Communications and Policy Office is monitoring HB 71 which limits total spending by the Commonwealth. SERS is suggesting that the issue could be resolved by exempting pension contributions from the caps established in the legislation.

(iii) The following is the result of the notational ballots regarding the following account:

Account of Timothy G. Collins

Docket No. 2018-04

Claim of Timothy G. Collins

The State Employees' Retirement Board has **ORDERED** that the record of this appeal be reopened until May 10, 2021, to allow the Pennsylvania Office of Administration, the Pennsylvania Department of Corrections and the Pennsylvania Department of Education an opportunity to intervene.

10. EXECUTIVE SESSION

A. Notational Ballot

B. Pending Benefits Administration Appellate Litigation Update

C. Report on Referrals of Prospective or Existing Investment Transaction or Contract

D. Interview – Chief Compliance Officer

E. Executive Director Retirement

At 3:15 p.m., the board recessed and entered executive session to receive legal advice on the above executive session agenda items. The public meeting resumed at 4:25 p.m.

As a result of discussion in Executive Session, the following motion was made.

CHIEF COMPLIANCE OFFICER**MOTION: 2021-28**

By motion that was moved, seconded, and approved by board members, it was

RESOLVED: That the board delegates to the Chief Counsel the authority to hire a Chief Compliance Officer (Attorney 4) from the pool of applicants who responded to the position posting with an opening date of February 1, 2021, and closing date of February 26, 2021, subject to: (i) Board Chairman approval of the candidate to be hired, (ii) successful salary and start date negotiations and (iii) any other necessary approvals.

11. BOARD COMMENTS/ANNOUNCEMENTS/DATES TO REMEMBER

The next regular meeting of the SERS board is scheduled for June 8-9, 2021.

12. MOTION TO ADJOURN**MOTION: 2021-29**

By motion of Chair Fillman, the board unanimously agreed to adjourn the meeting at 4:30 p.m.

Respectfully submitted,



Terrill (Terri) J. Sanchez
Executive Director

U.S. Equity Structure Revisions (Section 20 of SERS' Defined Benefit Plan's IPS) (Page 32)

U.S. Equity

Objective

The objective of U.S. Equity is to generate returns through capital appreciation, ~~and~~ income from dividend payments, ~~and additional income from covered calls that meet or exceed the~~ to generate returns comparable to its public equity benchmark (67% Russell 1000 Index / 15% Russell 2000 Index / 11% S&P 500 BuyWrite 30-Delta Index / 7% Russell Microcap Index) ~~Russell 3000 Index~~ over 5-year periods (annualized, net of fees).

Structure

U.S. Equity investments are ~~traditional~~ equity investments made in the form of separate accounts and commingled funds. U.S. Equity contributes to a higher expected long-term return to the fund and is also a material contributor to volatility.

| <u>Strategy</u> | <u>Description</u> | <u>% of Total Plan</u> | <u>Allocation Range</u> |
|------------------------------|--|------------------------|-------------------------|
| <u>US Large/Mid Cap</u> | <u>Investments in U.S. large-cap and mid-cap companies as benchmarked to the Russell 1000 Index.</u> | <u>18%</u> | <u>13% to 23%</u> |
| <u>US Small Cap</u> | <u>Investments in U.S. small-cap companies as benchmarked to the Russell 2000 Index.</u> | <u>4%</u> | <u>0% to 8%</u> |
| <u>US Micro-Cap</u> | <u>Investments in U.S. micro-cap companies as benchmarked to the Russell Microcap Index.</u> | <u>2%</u> | <u>0% to 4%</u> |
| <u>Covered Call Strategy</u> | <u>Use of covered call strategies to generate additional income and efficiently harvest gains to fund benefit payments. Benchmarked to the S&P 500 BuyWrite 30-Delta Index (BXMD).</u> | <u>3%</u> | <u>0% to 6%</u> |

Guidelines

- The U.S. Equity strategies should be within the ranges established by this policy. If the range is breached, the CIO must follow the IPS' Rebalancing Policy to restore compliance.
- The aggregate U.S. Equity allocation must be +/- 5% of its target allocation as a share of the total portfolio value. If the range is breached, the CIO must follow the IPS' Rebalancing Policy to restore compliance.

- c. Focus on cost control by utilizing passive strategies as the first option.
- d. Focus on active management only when there is conviction in, and empirical data support for the use of active management.
- ~~b. Maintain an allocation to U.S. Equity within +/- 5% of its target allocation as stated in this Policy.~~
- e. Maintain an overweight to U.S. small cap equity (20% allocation to U.S. small cap within the U.S. public equity allocation).
- ~~c. Contain tracking error and maintain cost control by investing in passive strategies in more efficient areas of the U.S. equity market.~~

Policy Target Revisions (Section 21 of SERS' Defined Benefit Plan's IPS) (Page 39)

Asset Class Benchmarks

| Asset Class | Asset Class Benchmarks |
|--|---|
| Private Equity | 75% Russell 3000 Index / 25% MSCI World ex U.S. Index plus 300 basis points |
| Private Credit | S&P/LSTA Leveraged Loan Index plus 100 basis points |
| Real Estate | 90% NCREIF Fund Index – Open End Diversified Core Equity ("NFI-ODCE") / 10% FTSE NAREIT U.S. Real Estate Index |
| U.S. Equity | Russell 3000 Index 67% Russell 1000 Index / 15% Russell 2000 Index / 11% S&P 500 BuyWrite 30-Delta Index / 7% Russell Microcap Index |
| International Developed Markets Equity | MSCI World ex U.S. Index |
| Emerging Markets Equity | MSCI Emerging Markets Index |
| Fixed Income | Bloomberg Barclays U.S. Aggregate Bond Index |
| Inflation Protection (TIPS) | Bloomberg Barclays U.S. TIPS Index |
| Cash | ICE BofAML U.S. 3-Month Treasury Bill Index |

Total Fund Benchmark

The total fund benchmark is calculated monthly using asset class benchmark returns and policy target asset allocation weights, respectively (as shown in the table below).

| Asset Class | Asset Class Benchmarks | Policy Target Asset Allocation % |
|--|---|----------------------------------|
| Private Equity | 75% Russell 3000 Index / 25% MSCI World ex U.S. Index plus 300 basis points | 14 12.0% |
| Private Credit | S&P/LSTA Leveraged Loan Index plus 100 basis points | 4.0% |
| Real Estate | 90% NCREIF Fund Index – Open End Diversified Core Equity ("NFI-ODCE") / 10% FTSE NAREIT U.S. Real Estate Index | 8.0% |
| U.S. Equity | Russell 3000 Index 67% Russell 1000 Index / 15% Russell 2000 Index / 11% S&P 500 BuyWrite 30-Delta Index / 7% Russell Microcap Index | 25 27.0% |
| International Developed Markets Equity | MSCI World ex U.S. Index | 13.0% |
| Emerging Markets Equity | MSCI Emerging Markets Index | 4.0% |
| Fixed Income | Bloomberg Barclays U.S. Aggregate Bond Index | 26.0% [±] |
| Inflation Protection (TIPS) | Bloomberg Barclays U.S. TIPS Index | 4.0% |
| Cash | ICE BofAML U.S. 3-Month Treasury Bill Index | 2.0% |

[±]-22% target to Core Fixed Income, 4% target to Opportunistic Fixed Income

SERS' Policy Target Asset Allocation Revisions (Section 23 of SERS' Defined Benefit Plan's IPS) (Page 41)

Based on input from Board members, the following key themes were factored into the development of the SERS' policy target asset allocations.

The policy target asset allocations are projected to:

1. ~~Achieve SERS' investment return assumption of 7.125%~~ [\(SERS Investment Office and Callan will conduct additional analysis with Callan's revised capital market assumptions.\)](#)
2. Target a lower annual investment management fee structure
3. ~~Maintain~~ [Target](#) a higher allocation to liquid assets with low correlation to the U.S. equity markets
4. ~~Target~~ a lower allocation to less liquid assets
5. [Increase income generation to better match portfolio cash flows to liability payments](#)

SERS' Policy Target Asset Allocations

| | Current Exposure 3/31/2021 | 2019 Policy Target Asset Allocation | Current Policy Target Asset Allocation | Policy Ranges |
|--|---------------------------------------|--|---|----------------------|
| Private Credit | 4.0% | 4.0% | 4.0% | n/a |
| Real Estate | 8.0% | 8.0% | 8.0% | n/a |
| Total Equity | 56.0% | - | 56.0% | +/- 6% |
| Private Equity | 14.0% | 14.0% | 12.0% | +/- 2% |
| U.S. Equity | 25.0% | 25.0% | 27.0% | +/- 5% |
| Large/Mid Cap | 19.4% | - | 18.0% | +/- 5% |
| Small Cap | 4.1% | - | 4.0% | +/- 4% |
| Microcap | 0.0% | - | 2.0% | +/- 2% |
| Covered Call Strategy | 0.0% | - | 3.0% | +/- 3% |
| International Developed Markets Equity | 13.0% | 13.0% | 13.0% | +/- 5% |
| Emerging Markets Equity | 4.0% | 4.0% | 4.0% | +/- 4% |
| Fixed Income | 26.0% | 26.0% | 26.0% | +/- 5% |
| Inflation Protection (TIPS) | 4.0% | 4.0% | 4.0% | +/- 3% |
| Cash | 2.0% | 2.0% | 2.0% | 7% max |

| | Current Exposure 7/31/2019 | 2018-2019 Current Target | Policy Target AA Refined Target 7.00% | Policy Ranges |
|---|---------------------------------------|-------------------------------------|--|--------------------------|
| Private Equity | 13.7% | 16.0% | 14.0% | n/a |
| Multi-Strategy | 5.1% | 10.0% | n/a | n/a |
| Private Credit | 0.7% | 0.0% | 4.0% | n/a |
| Real Estate | 6.8% | 12.0% | 8.0% | n/a |
| Global Equity | 3.5% | 48.0% | n/a | n/a |
| U.S. Equity | 26.6% | 0.0% | 25.0% | +/- 5% |
| International Developed Markets Equity | 18.7% | 0.0% | 13.0% | +/- 5% |
| Emerging Markets Equity | 6.2% | 0.0% | 4.0% | +/- 4% |
| Fixed Income | 14.5% | 11.0% | 26% ¹ | +/- 5% |
| Inflation Protection (TIPS) | 0.0% | 0.0% | 4.0% | +/- 3% |
| Cash | 4.2% | 3.0% | 2.0% | 7% max |
| Estimated Return (Geometric) | n/a | 7.397% | 7.000% | |
| Estimated Risk (Standard Deviation) | n/a | 16.34% | 13.66% | |

1. 22% target to Core FI, 4% target to Opportunistic FI

Projected Asset Class Returns and Liquidity of Policy Target Asset Allocation (Section 24 of SERS' Defined Benefit Plan's IPS) (Page 42)

| | Capital Preservation Assets | | | Return Seeking Assets | | | | | |
|--|-----------------------------|-----------------------------|---------------------------|-----------------------|-----------------------|----------------------|-------------|----------------|----------------|
| | Cash | Inflation Protection (TIPS) | Fixed Income ^A | US Equity | Int. Dev. Mkts Equity | Emerging Mkts Equity | Real Estate | Private Credit | Private Equity |
| Policy Target Asset Allocation | 2% | 4% | 26% | 27% | 13% | 4% | 8% | 4% | 12% |
| Expected Return (Geometric) | 1.00% | 1.70% | 1.75% | 6.60% | 6.50% | 6.90% | 5.75% | 6.25% | 8.00% |
| Expected Volatility | 0.90% | 5.05% | 3.75% | 17.95% | 19.90% | 25.15% | 14.10% | 14.60% | 27.80% |
| Liquidity | HIGH | HIGH | HIGH | HIGH | HIGH | MEDIUM | LOW | LOW | LOW |
| Correlation to US Equity | -0.06 | -0.08 | -0.10 | 1.00 | 0.78 | 0.80 | 0.71 | 0.74 | 0.80 |
| Months of Benefit Payments | 2.2 | 4.4 | 24.3 | | | | | | |
| Months of Benefit Payments (includes EE & ER contributions) | 7.2 | 14.5 | 79.8 | | | | | | |
| Cumulative Months of Benefit Payments (includes EE & ER contributions) | 101.5 | | | | | | | | |

Source: *Callan 2021 Capital Market Projections, **SERS IO as of 3/31/2021

^AFixed Income includes Opportunistic Fixed Income during the transition to the New Fixed Income Structure

| | Capital Preservation Assets | | | Return Seeking Assets | | | | | | |
|--|-----------------------------|-----------------------------|-----------------------|-----------------------|-----------------------|----------------------|-------------|---------|----------------|----------------|
| | Cash | Inflation Protection (TIPS) | Fixed Income (US Agg) | US Equity | Int. Dev. Mkts Equity | Emerging Mkts Equity | Real Estate | Opp. FI | Private Credit | Private Equity |
| Policy Target Asset Allocation | 2% | 4% | 22% | 25% | 13% | 4% | 8% | 4% | 4% | 14% |
| Expected Return (Geometric) | 2.50% | 3.75% | 3.75% | 7.15% | 7.00% | 7.25% | 7.85% | 5.25% | 6.50% | 8.50% |
| Expected Volatility | 0.90% | 5.05% | 3.75% | 17.95% | 19.75% | 27.45% | 19.55% | 7.70% | 12.50% | 29.30% |
| Liquidity | HIGH | HIGH | HIGH | HIGH | HIGH | MEDIUM | LOW | LOW | LOW | LOW |
| Correlation to US Equity | -0.04 | -0.05 | -0.11 | 1.00 | 0.81 | 0.87 | 0.74 | 0.72 | 0.85 | 0.92 |
| Months of Benefit Payments | 1.9 | 3.8 | 21.0 | | | | | | | |
| Months of Benefit Payments (includes EE & ER contributions) | 6.6 | 13.2 | 72.3 | | | | | | | |
| Cumulative Months of Benefit Payments (includes EE & ER contributions) | 92.1 | | | | | | | | | |

Source of Data: Callan A/L Study 10/16/19

Assumptions:

- Total fund assets as of ~~7/31/19~~ 3/31/2021 at ~~\$29.6 billion~~ \$34.9 billion
- Monthly benefit payments at \$3170 million
- Monthly benefit payments net of contributions at \$970 million

ATTACHMENT B

Pennsylvania State Employees' Retirement System (SERS) Fiduciary Review and Board Self-Assessment

Final Report

April 19, 2021



**SERS Fiduciary Review and Board Self-Assessment
Final Report**

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SERS Fiduciary Review and Board Self-Assessment Final Report

I. Executive Summary

Overview

Funston Advisory Services LLC (FAS) was engaged by the Pennsylvania State Employees' Retirement System (SERS) in December 2020 to complete two related assignments:

1. Conduct a fiduciary and governance review of the Board's performance of its duties in four task areas (non-economic investment requirements; the asset liability matching process; legislative positioning: reactive and proactive; and investment manager selection/ due diligence/ monitoring/ termination); and
2. Assist the Board in its review and assessment of its performance and identify subject areas that may be appropriate for educational/training sessions.

The report is organized in three main parts:

Part I contains the executive summaries of each of the four areas that comprised the Fiduciary and Governance Review and the recommendations from the Governance Self-Assessment.

Part II contains the more in-depth reports for each of the four areas of review.

Part III contains the main body of the self-assessment report plus Appendices.

Fiduciary and Governance Review Executive Summaries

Funston Advisory Services LLC (FAS) reviewed four governance topics during the period of January through April 2021. The scope of the governance review included:

1. Non-economic investment requirements (in-state managers, minority and women-owned programs, etc.);
2. The asset liability matching process;
3. Legislative positioning: reactive (awareness of and response to legislative proposals) and proactive (drafting and lobbying); and
4. Investment manager selection/due diligence/monitoring/termination.

As an initial step in the process, an online governance survey was administered during February 2021 with 23 responses from Pennsylvania SERS trustees, trustee designees, and executive staff. The survey included two questions on each topic. The first question asked for an effectiveness rating, and the second asked for suggestions on what could be improved.

As part of the FAS due diligence on these topics, interviews were conducted with eight trustees, with some including designees; ten members of the SERS executive team; and key external advisors including the general investment consultant, the private equity consultant, the real estate consultant, and the actuary.

Based upon feedback from the interviews and from the experience of the FAS team, each governance topic was assessed, and recommendations were developed. Where there seemed to be an overarching issue, policy alternatives were identified, with pros and cons of each alternative.

A summary of our assessment and recommendations for each topic follow.

SERS Fiduciary Review and Board Self-Assessment Final Report

A. Non-Economic Investment Requirements

Purpose: Evaluate and make recommendations regarding the consideration of non-economic investment requirements (in-state managers, minority and women-owned programs, etc.).

This was the only area that registered broad dissatisfaction by the Board in the self-assessment survey. Two-thirds of both Trustees and Designees rated the SERS special programs as “ineffective.”

SERS has an emerging manager program, and specific policies on diversity and inclusion and on in-state investing. Both the program and the policies are crafted to be consistent with SERS’ fiduciary obligations.

There is no stand-alone report on the program or policies, nor are they reported explicitly to the Board. SERS does make extensive disclosures about diversity and in-state investing in its annual budget submission to the State Legislature.

Recommendations

- A.1 Eliminate the use of “non-economic” as an adjective describing these programs.**
- A.2 The Investment office should develop a stand-alone annual report to the Board summarizing the past year with regard to the emerging manager program, and regarding the diversity initiative and in-state investing program.**
- A.3 SERS should update its investment policy statement to reflect the still extant Harbourvest emerging manager fund. (The IPS now states that the only allowable asset class for such a fund is public equity.)**
- A.4 The investment office, working together with the Chief Counsel’s office and the investment consultants, should develop an informational memorandum for all new partnerships, explaining SERS’ position with regard to in-state investments.**
- A.5 SERS should consider expanding the formal emerging manager program to other asset classes beyond public equity.**
- A.6 SERS investment office should design a program to monitor the underlying funds within the emerging manager funds-of-funds so as to judge the potential for “graduation”.**

B. The Asset Liability Matching Process

Purpose: Evaluate and make recommendations as to the asset liability matching process.

The basic concept of Asset-Liability (A-L) Matching is that liabilities are a stream of benefits, and certain assets are a stream of cash flows. SERS has begun to incorporate this concept in its investment policy. An embrace of full A-L Matching is unheard of in the public pension community. Leading practice among many pension systems is for liabilities to be considered through an Asset-Liability Modeling exercise, which is somewhat consistent with the SERS A-L Matching process and with the stress tests conducted by SERS’ actuary.

SERS Fiduciary Review and Board Self-Assessment Final Report

We see a spectrum of A-L matching approaches, with four basic alternatives.

- Alternative 1:** *Return to conventional practice of Asset Liability Modeling with no emphasis on Asset Liability Matching.*
- Alternative 2:** *Redefine Asset Liability Matching to be more of an Asset Liability Modeling process. Define specific objectives and modify asset policy decisions in accordance with modeling.*
- Alternative 3:** *Continue to put a “toe in the water” with respect to Asset Liability Matching. Gradually move toward Liability Driven Investing (LDI) as practical, but with the realization that SERS would be unlikely to move to full LDI unless there is a material change in funding status and the interest rate environment. Look for opportunities to reduce the assumed rate, if desired.*
- Alternative 4:** *Fully embrace Asset Liability Matching, including Liability Driven Investing. Build a glidepath for full funding of SERS based on a 100% bond portfolio.*

Recommendation

SERS has recognized the importance of cash flow on its ability to meet benefit obligations, and the risks associated with assuming a rate of return that might be overly optimistic. We recommend adoption of Alternative 3, with a possible shift toward Alternative 2, through the following specific recommendations:

- B.1** The SERS’ CIO should continue to educate the Board and senior staff with respect to A-L matching.
- B.2** The Board, with support from the CIO, should rigorously define the “end game,” which might include:
- Incremental changes in bond portfolio;
 - Increase expected return in equity portfolio through comfort of having short term cash flow covered;
 - Move toward reduction in actuarial expected rate of return, as needed; and/or
 - Glidepath toward increased bond exposure.
- B.3** Develop specific milestone objectives toward the “end-game.”
- B.4** Thoroughly develop cost implications and communicate them to constituents.
- B.5** Incorporate Asset-Liability Modeling to test potential policy changes.
- B.6** Clearly communicate the policy that there is no intent to embrace full LDI in the foreseeable future.

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C. Legislative Positioning: Reactive and Proactive

Purpose: Evaluate and make recommendations as to legislative positioning: reactive (awareness of and response to legislative proposals) and proactive (drafting and lobbying).

The State Employees' Retirement Code (71 Pa. C.S.A. §5101 et seq.) outlines the responsibilities of the Executive Director (ED), define the responsibilities of the ED as the Secretary of the board, and define the responsibilities of the ED in the context of legislative needs and issues. The SERS board has no policy or additional procedures referencing legislative duties and responsibilities of the ED. The Retirement Code describes the ED's responsibilities as reactive in nature, such as providing data to the legislature, drafting of legislation as requested by the legislature, doing cost analyses for proposed legislation, and responding to inquiries from the legislature or staff.

SERS is very unusual in having ex officio and other elected officials a majority of voting trustees. Missouri and Louisiana are the only other states besides Pennsylvania with any legislators as voting trustees. Having this majority presence of elected and appointed state officials as trustees may result in a different dynamic regarding legislative positioning than with a typical peer system which does not have legislative members and may only have one or two ex officio members representing the plan sponsor. SERS legislative trustees, while wearing their "legislative hats", could be sponsoring statutory changes that would affect SERS that may not be consistent with the full Board's position when acting as system fiduciaries. However, the Board does not have its own policy on how it handles such situations, which could put the Executive Director in a challenging situation when asked to provide a SERS position.

We have identified three potential approaches, depending upon how the Board prefers to handle legislative positioning:

Alternative 1: Status Quo – Continue to have no formal Board policy on legislative positioning.

Alternative 2: Develop a new Board policy on legislative positioning.

Alternative 3: Expand the responsibilities of the Executive Director by regulation.

Recommendation

None of the above approaches would be inappropriate at this point in time. A legislative policy, similar to some peers, could clearly state who has authority to speak for the system and in what context, and could identify what types of legislation are of interest to the system and its long-term sustainability.

- C.1 The Board should first determine the role it expects its Executive Director to play with respect to legislative policy or positioning and then determine whether or not a formal policy would be desirable.**

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D. Investment Manager Selection / Due Diligence / Monitoring / Termination

Purpose: Evaluate and make recommendations as to investment manager selection/due diligence/monitoring/termination.

The SERS Board directly appoints and terminates investment managers and general partners. In so doing, the Board relies on three major informational inputs: 1) The investment staff's due diligence report; 2) the consultant's due diligence report; and, 3) for hiring, the prospective investment manager's or general partner's presentation, which is presented at the meeting.

A review of the due diligence process and materials identified no major deficiencies. There is a documented investment manager monitoring process which primarily focuses on what criteria would place a manager on, or remove a manager from, the "Investment Manager Evaluation List" (watch list).

In general, the Board and staff are satisfied with the current processes, though open to improvements.

Slightly more than a majority (55%) of public plans with \$22-54 billion in assets delegates manager selection to staff, within appropriate constraints. The trend among public pension funds has been to increase delegation to staff. This is particularly true at larger funds, where the number of Boards funds retaining the manager selection function decreased from 40% to 20% in a decade.

SERS recently took a step towards more delegation, by allowing the CIO to select passive public equity managers. That change has been well-received by both staff and Board members.

Peer funds which delegate manager selection and termination tend to have strong governance practices in the form of checks and balances in place. These support effective delegation, help ensure the Board is providing appropriate oversight through the principle of "trust but verify," and reinforce accountability.

We have developed the following range of policy options, which build upon one another, as well as our recommendation.

Alternative 1: Status Quo – Continue to bring all new external manager hires and manager terminations to the Board for approval. Continue to listen to manager presentations.

Alternative 2: Continue to bring all new external manager hires and manager terminations to the Board for approval. However, do not continue to have manager presentations.

Alternative 3: Grant authority to the CIO to select follow-on funds in private asset classes.

Alternative 4: Grant authority to the CIO to select active managers in public asset classes.

Alternative 5: Delegate all manager and general partnership selection to the CIO, subject to appropriate constraints and conditions.

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Recommendations

SERS has recognized the benefits of delegation for passive public equity advisors (and for rebalancing). We encourage SERS to consider the range of options specified above. We recommend adoption of Alternative 4 (which is broken out below in recommendation D.5), with the ultimate objective of achieving Alternative 5.

- D.1 The new CIO should review and update, where appropriate, the “Hiring Investment Managers Process” and the due diligence questionnaires and process checklists.**
- D.2 The Board should end the requirement for the CIO to consult with the Chair of the Investment Committee and the Chair of the Board prior to implementing rebalancing actions, while retaining the requirement that such actions be reported to the Investment Committee or Board at the next available IC or Board meeting.**
- D.3 The staff should endeavor to meet the 12-month standard for removing managers from the Investment Manager Evaluation List.**
- D.4 The investment policy statement should be updated to reflect the recent decision to delegate manager selection of public equity passive managers to the Chief Investment Officer.**
- D.5 The Board should consider the incremental steps towards manager delegation outlined in “policy options” (above). Specifically, the Board should:**
 - Eliminate manager presentations to the Investment Committee and instead rely on the due diligence reports from staff and the consultants, as discussed above;**
 - Grant discretion to the CIO to execute “follow-on” (re-up) agreements to previously hired general partners. The Board should establish limits on that discretion, as discussed above; and**
 - Grant discretion to the CIO to hire and terminate active managers in liquid public markets, with established limits on that discretion.**
- D.6 SERS should revisit the level of delegation, including a review of how delegation has worked, trends among peers and other leading practices, at least once every three years.**

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Board Self-Assessment Executive Summary

Process

A self-assessment process of Pennsylvania SERS Board governance was conducted by Funston Advisory Services LLC (FAS) during the period of January through April 2021. The scope of the self-assessment included ten areas of governance:

1. Governance structure
2. By-laws, charters, and policies
3. Powers reserved for the Board and delegations
4. Board meetings and operations
5. Reporting and Board oversight
6. Board committees
7. Board education and development
8. Board interactions with staff
9. Evaluation of Board direct reports
10. Role of external advisors

As an initial step in the process, an online governance survey was administered during February 2021 with 23 responses from Pennsylvania SERS trustees, trustee designees, and executive staff. The results of this survey were summarized and discussed with trustees and, for the legislative and ex officio trustees, their designees, during March and April 2021, with a focus on the recommendations identified by trustees, designees, and staff.

Based upon feedback from the interviews and from the experience of the FAS team, the self-assessment findings and recommendations were refined and additional recommendations were added. The final set of recommendations are included in this report.

Self-Assessment Findings

The SERS Board has made significant improvements in its governance structure, policies, and practices over the past five years since its last governance review. The Board, Executive Director, and other senior staff are to be commended for such progress.

The results of these changes were reflected in both the effectiveness ratings and the comments provided by trustees, designees and staff. Using an effectiveness rating scale from 1 to 4, with 1 being very ineffective and 4 being very effective, in every instance the average rating by any group (i.e., trustees, designees, or staff) was assessed as effective or very effective. This is among the highest ratings we have seen in this type of Board self-assessment.

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The average self-assessment ratings for each area are indicated in the following table:

| Area of Governance Self-Assessment | Average Rating 1= very ineffective / 2 = ineffective / 3 = effective / 4 = very effective | | |
|--|---|------------------|--------------------|
| | Trustees (7) | Designees (6) | Executives (10) |
| 1. Governance structure | 3.71 | 3.33 | 3.44 |
| 2. By-laws, charters, and policies | 3.71 | 3.50 | 3.20 |
| 3. Powers reserved for the Board and delegations | 4.00 | 3.33 | 3.20 |
| 4. Board meetings and operations | 3.86 | 3.50 | 3.40 |
| 5. Reporting and Board oversight | 3.83 | 3.33 | 3.50 |
| 6. Board committees | 3.67 | 3.17 | 3.56 |
| 7. Board education and development | 3.43 | 3.17 | 3.11 |
| 8. Board interactions with staff | 3.86 | 3.67 | 3.55 |
| 9. Evaluation of Board direct reports | 3.60 | 3.33 | 3.55 |
| 10. Role of external advisors | 3.43 | 3.20 | 3.63 |

Although there were some less positive ratings and some critical comments, generally the trustees, designees and staff believe the governance of SERS is effective, as can be seen from the average ratings, and is continuing to improve. Leadership of the Board and the agency are considered to be competent and effective. There is confidence in the oversight structure and the functioning of the committees. The education program meets most of the needs of the trustees. The relationship between the Board and staff are considered very positive, with staff responding well to the Board's direction. The external advisors are valued.

Opportunities for Improvement

Despite the high effectiveness ratings and many positive comments, there were also many thoughtful suggestions for improvement. This was the focus for the follow-up interviews.

The thirty recommendations which follow were developed during this self-assessment process. Effectiveness ratings and trustee comments related to the recommendations are included in the body of the report.

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1. Governance Structure

1.1. The Board should recommend statutory revisions to the General Assembly to:

- **Require one or more appointed trustees to have professional investing experience.**
- **Give the SERS Board greater flexibility regarding procurement, including the ability to establish its own procurement policy.**
- **Increase the SERS Board's discretionary authority regarding budget, complement, classification, compensation and contracting, procurement process and authorities.**
- **Consider staggered terms for elected and appointed trustees to improve continuity.**

1.2. The Board should provide periodic guidance to the appointing authorities regarding desired experience, capabilities, and diversity of new appointments.

1.3. The Board should consider term limits of three terms of two years for Board and committee officer positions.

1.4. The Board should consider hiring its own Independent Counsel in specific situations, including potentially expediting the Board's role in handling disability reviews and appeals.

2. By-laws, Charters, and Policies

No recommendations

3. Powers Reserved for the Board and Delegations

3.1. Implement investment governance improvements which will facilitate further delegation of tactical investment decision-making, including incremental delegation of manager selection (See Appendix 2 and Governance Review item D).

4. Board Meeting and Operations

4.1 The Board should spend more time discussing strategic issues such as investment policy, asset allocation, and quality of investment staff and effective oversight of investment performance, member services quality, and operational performance.

4.2. Consider a Board policy regarding who can 'speak' on behalf of the 'seat' when both trustee principals and designees participate in a virtual setting.

4.3. Keep a record of dissenting opinions and concerns on 'no' votes which identify the issue or reason prompting that vote to help staff address the concern and make regular use of roll call votes except for meeting minutes and consent agenda items.

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5. Board Oversight and Independent Reassurance

5.1. Streamline performance reporting to the Board:

- Performance reports should address all vital retirement functions.
- Ensure that each report has a concise executive summary.
- Each report should contain key performance metrics that are vital signs of the state of health of that function.
- Develop data dashboards focused on key performance and risk metrics to help reduce information overload.
- Establish tolerances for acceptable variability in actual compared to expected performance.
- Require timely variance analysis and escalation of exceptions with related policy implications
- Develop links to supporting information to improve trustee accessibility to underlying data.
- Ensure there are independent verifications of the reliability of dashboard reports and related metrics.

5.2. Ensure adequate Board oversight of cybersecurity performance and risks.

6. Board Committees

- 6.1. Consider holding at least some committee meetings in between Board meetings, perhaps virtually, rather than the day before, in order to improve decision making and preparation time for Board meetings.
- 6.2. Ensure that each committee effectively reports out to the full Board on all key issues such as investment performance and risk and actuarial risks.
- 6.3. Require Ad Hoc Committees to be Board Committees and only Board members should vote.
- 6.4. Have Committee Chairs set Committee agendas and work plans, with input from committee members and the Executive Director and executive liaison for the committee.
- 6.5. Each committee, with input from the Executive Director and the committee's executive liaison should develop an annual list of policy priorities to be addressed by the committee, and those recommended policy priorities should be approved by the full Board.
- 6.6. Committees should recommend the selection of independent advisors to the board within their respective areas of responsibility; staff should not vote on these recommendations.
- 6.7. Review Committee Charters at least every three years.
- 6.8. Focus Committees more on critical success drivers and deeper analysis in evaluating performance and considering alternative strategies and related policy implications.

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7. Board Education and Development

7.1. Develop an overall continuing education plan:

- Develop a core curriculum and recommended elective offerings, tied to the Board's strategic agenda and timing of key decisions;
- Tailor individual plans, to the extent practical, to the individual learning needs of trustees; and
- Streamline and curate a list of focused educational recommendations.

7.2. Provide basic investment and actuarial fundamentals training for newer trustees and enhance opportunities for all trustees to learn more about investments, actuarial matters, fiduciary responsibilities, parliamentary procedures, etc.

7.3. Ensure all third-party education is provided by independent and unbiased parties.

7.4. Provide specific practical examples during ethics training and allow time for questions and answers.

7.5. Utilize the Board portal (BoardDocs) to make the most recent orientation packet available to all Trustees and Designees.

8. Board Interactions with Staff

8.1. Committee chairs should be regularly briefed by the staff liaison in advance of meetings to make sure committee agendas include all desired topics and that briefings and reports are timely and relevant.

8.2. Improve Board succession planning for direct reports as well as making sure there is good bench strength.

9. Evaluation of Board Direct Reports

9.1. Establish a more collaborative process in setting goals, including consideration of annual goals linked to the strategic plan, and link compensation to the achievement of goals to the extent permitted by the State.

9.2. Provide more informal feedback to direct reports on an ongoing basis, e.g., semi-annually.

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10. External Advisors

- 10.1. Meet annually with the external consultants and advisors in executive session, without staff present, to obtain more independent opinions from advisors.**
- 10.2. Review the performance of all of outside advisors on a regular schedule, e.g., annually, and discuss Board expectations for the upcoming year.**
- 10.3. Have external advisors provide more information to the Board on several topics:**
 - **The actuary should spend more time advising the Board (not just the Finance and Member Services Committee) on various actuarial and investment risks and explain how they arrive at their recommendations.**
 - **Have the specialty investment advisors provide general information in their investment area.**

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II. Fiduciary and Governance Review

The SERS Board's Fiduciary Review Policy provides that the Board should every 3-4 years obtain regular, independent reviews of its fiduciary and governance practices for improving its governance, policies and procedures.

FAS was engaged to conduct a review of the Board's performance of its duties, identify developing best practices and make recommendations to the Board for improving its governance, policies, and procedures that address the following tasks:

- A. Evaluate and make recommendations regarding the consideration of non-economic investment requirements (in-state managers, minority and women-owned programs, etc.).
- B. Evaluate and make recommendations as to the asset liability matching process.
- C. Evaluate and make recommendations as to legislative positioning: reactive (awareness of and response to legislative proposals) and proactive (drafting and lobbying).
- D. Evaluate and make recommendations as to investment manager selection/due diligence/monitoring/ termination.

The review was to include possible revisions to policies and procedures and/or the development of new policies and procedures that are considered industry best practices and that are tailored to the Board's needs. Recommended changes must be within the Board's ability and authority to adopt, and do not require enactment of legislation or action by other elected officials. A supplementary list of actions which require legislative enactment could be submitted for consideration but were not the primary focus of this effort.

Process Overview

Funston Advisory Services LLC (FAS) reviewed four governance topics during the period of January through April 2021. The scope of the governance review included:

- 1. Non-economic investment requirements (in-state managers, minority and women-owned programs, etc.);
- 2. The asset liability matching process;
- 3. Legislative positioning: reactive (awareness of and response to legislative proposals) and proactive (drafting and lobbying): and
- 4. Investment manager selection/due diligence/monitoring/termination.

As an initial step in the process, an online governance survey was administered during February 2021 with 23 responses from Pennsylvania SERS trustees, trustee designees, and executive staff. The survey included two questions on each topic. The first question asked for an effectiveness rating, and the second asked for suggestions on what could be improved.

As part of the FAS due diligence on these topics, interviews were conducted with eight trustees, with some including designees; ten members of the SERS executive team; and key external advisors including the general investment consultant, the private equity consultant, the real estate consultant, and the actuary.

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Based upon feedback from the interviews and from the experience of the FAS team, each governance topic was assessed, policy alternatives were identified, with pros and cons of each alternative, and recommendations were developed.

The assessment and recommendations for each topic follow.

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A. Non-Economic investment requirements

Overview

Public pension funds often include programs to invest with emerging managers (smaller or newer managers), diverse managers (minority- or women-owned and sometimes veteran-owned managers), or in-state managers.

The semantics of these programs, particularly “emerging managers” often is not clear. Some emerging manager programs include a diversity component. For others, it signifies an attempt to invest in earlier-stage, smaller managers regardless of ownership. For most, there is material overlap in an implicit, if not explicit, dual set of criteria.

Similarly, the goals of the programs are often multi-dimensional. Some are motivated by the academic and practitioner evidence that smaller firms can add economic value, as can gender and racial diversity. A number of funds desire to invest in emerging and diverse manager programs because they surface talent which refreshes the industry while providing opportunities to traditionally overlooked populations. Some programs seek to establish relationships with high-potential but less seasoned private market general managers so as to have access to their follow-on funds in future years. Advocates of in-state programs note that promoting the economic health of the sponsoring jurisdiction (e.g., Pennsylvania) can strengthen the ability of the sponsor to make future actuarially required contributions to the funds, as economic activity translates to tax or other revenue. Of course, many funds with such programs, perhaps most, invest for a multiple reasons.

As with all investments for a public pension fund, whatever the goal of such a program, the fiduciary duty of public pension trustees remains the same (unless otherwise directed by law). However, fiduciary obligation should not be used as a prohibition against such programs, as numerous funds have successfully implemented them by applying the programmatic criteria atop the same fiduciary standards as applied to the non-programmatic portions of the investment portfolio.

Clarity of purpose and of process are helpful in crafting a successful program that fulfills both the programmatic goals and fiduciary obligation. While that is no different than implementing a successful private equity, or real estate, or any other investing program, the specific criteria of what makes a successful program are different for each special program.

There are also common challenges to such programs. Regarding emerging manager programs, the combination of the newness of the manager, the manager’s smaller AUM, and the overall allocation to the emerging manager program means that individual allocations are relatively small. At the same time, the level of due diligence for emerging managers should be the same as that done for larger managers if fiduciary standards are to be met. This creates a dis-economy of small scale.

The most common solution to this challenge is to run an emerging manager program through a fund-of-funds structure, headed by a specialty manager-of-managers. There are clear advantages to this. The specialty manager-of-managers knows the space and the prospective emerging managers and can provide investment and operational due diligence of the underlying managers. In effect, the plan sponsor then just needs be satisfied in the diligence of the manager-of-managers.

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In addition, specialty managers-of-managers in this space often provide business, operational, and marketing advice to emerging managers who may have investment skill but have not yet demonstrated the ability to weather business cycles. This mitigates operational risk for the plan sponsor. And, of course a fund-of-funds structure provides instant diversification.

However, the fund-of-funds structure also means a second layer of fees. (The two layers of fees can be either disclosed or embedded, but the economic reality is that funds-of-funds means two layers of managers must be paid.) Many plan sponsors choose to pay that second level of fees, arguing that the prospective outperformance and/or access to graduated underlying managers makes economic sense.

Another issue with the manager-of-managers structure involves alignment of interests around “graduation”. Graduation is when a manager in an emerging manager program has proven itself over time, grown beyond the AUM limits of the program, and could be considered for a direct allocation at size. In direct emerging manager programs, graduation is a transparent decision by the investment staff. However, in a fund-of-funds program, the interests of the plan sponsor and the manager-of-managers may diverge. An underlying fund which is ready to graduate probably has performed well over a period of years and is attracting inflows. That means that when a manager-of-managers does the right thing for both the underlying manager and the plan sponsor, it is effectively removing a top performer from the fund-of-funds. For that reason, many observers suggest the plan sponsor have line-of-sight to the underlying managers and track which might be ready for graduation so as to ask the manager-of-managers about them and mitigate the risk of misalignment.

Finally, we note that another issue for emerging manager, diversity and in-state programs is the potential for political interference. While most programs never encounter such situations, and while such improper influence can be brought to bear without any special program involved, there have been some public accusations of improper influence in other states. Again, this should not be a bar to adoption of such programs; standard controls around referrals are adequate to deter improper influence. For example, one common control includes tracking requests and reporting them back to the Audit Committee. In fund-of-funds programs, the manager-of-managers adds another layer of fiduciary accountability. (We do not suggest that all referrals are improper; many such referrals are both substantive and well-motivated.)

The National Association of Investment Companies has identified what it considers seven best practices for emerging manager programs:

1. Top management commitment and support
2. Clearly stated goal and objectives
3. Well-structured and clear definitions of ‘emerging manager’
4. Strong, knowledgeable leadership of the overall program
5. An innovative and well-conceived program
6. Experienced strategic partners with proven track records
7. Broad outreach to the emerging manager community

An examination of one well-regarded emerging manager program helps visualize how these various factors play out in at least one real-world situation.

The Teachers Retirement System of Texas (TRS) started an emerging managers program in 2005 and is generally considered one of the preeminent such programs. It is now one of the largest in the United States, with approximately \$6 billion committed since inception, and a market value of more than \$2.1

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billion, with \$1.059 billion in private equity, \$626 million in energy, natural resources, infrastructure and real estate, and \$432 million in public markets. The program has a three-year annualized net return of 11.1% and outperformed its blended benchmark by 142 basis points annually. (All numbers as of September 30, 2019, the last data available on TRS website.) Some 53% of the emerging managers were diverse, according to TRS' definition, with 33% ownership by women, minorities, disabled, or veterans. TRS has funded nearly 200 emerging managers. In addition, it has "graduated" seven managers (five in private equity and two in real estate). Those seven managers have received an additional \$3 billion in allocations.

As to the criteria enunciated above:

1. Top Management commitment: Both the CIO and the Chair of the Board visibly support the program.
2. Clearly stated goal: "The TRS Emerging Manager Program is designed to identify and grow the next generation of exceptional, high performing managers, with the goal of potential graduation to a Trust level commitment."
3. Clear definitions: AUM limit of less than \$3 billion, and, in private markets, fourth generation or earlier funds with fund size of less than \$1 billion.
4. Strong leadership of the program: There is a designated director of the program.
5. Innovative and well-conceived. In addition to traditional types of investments, the program will consider joint ventures, seeding arrangements and secondaries.
6. Experienced strategic partners with proven track records: TRS prefers emerging managers to have a) an attributable track record within the strategy, b) investment teams with a history of working together, c) referenceable principals with reputations in the investment community, d) available co-investment opportunities (in private markets), e) aligned interests with TRS
7. Broad outreach: TRS runs a well-attended emerging manager conference designed to showcase best practices. Attendance has grown from 115 in 2012 to 1,800 in 2020.

This is not to suggest that all emerging manager programs work as well as TRS, nor to suggest that it is an exact model for SERS, but to illustrate that implementing the seven best practices can create a successful emerging manager program.

Findings and Conclusions

Non-economic investment requirements was the only area that registered broad dissatisfaction by the Board in the self-assessment survey. Two-thirds of both Trustees and Designees rated the SERS special programs as "ineffective," contributing to a numerical rating of 2.33 (one to four scale, with 2 as "ineffective" and 3 as "effective"). That is, literally, the only topic covered by the survey that rated less than 3.0.

The verbatim comments, and the one-on-one interviews revealed three overarching desires:

- To do more;
- To re-examine the criteria; and
- To make sure that fiduciary obligations continue to be met.

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SERS has an emerging manager program, and specific policies on diversity and inclusion and on in-state investing. Both the program and the policies are crafted to be consistent with SERS' fiduciary obligations.

There is no stand-alone report on the program or policies, nor are they reported explicitly to the Board. SERS does make extensive disclosures about diversity and in-state investing in its annual budget submission to the State Legislature. There is not separate disclosure or discussion about the emerging manager program, which is run through a two funds-of-funds. They are reported as single line items and do not disclose the underlying emerging managers. To guard against improper influence, SERS has a policy that all referrals to the Investment Office must go through Legal.

Emerging Managers

SERS implemented a formal emerging manager program within the public asset class in 2019.

The Investment Policy Statement cites the goal of the program as two-fold:

- 1) Identify and gain early access to talented investment managers in their early stages to generate above benchmark returns (net of fees); and
- 2) Provide an evaluation platform of potential investment managers who have demonstrated superior risk-adjusted returns for consideration into the Fund.

The program is limited to public equities and is run through two specialty funds-of-funds. One invests in emerging market equities, and one in international small cap equities. The asset class and sub-asset class were chosen because SERS believes they are relatively inefficient markets where active management can reasonably be expected to achieve the program's performance goal of performance exceeding benchmark net of fees.

SERS defines emerging managers as those firms with less than \$5 billion under management, or less than \$1 billion in a particular investment strategy. All the underlying managers in the funds of funds must meet a series of criteria designed to comply with fiduciary standards, including appropriate legal registration; quantifiable, GIPS-compliant track record; portfolio managers with a minimum two-year relevant track record; and position and transaction level transparency. If those criteria are satisfied, and if the prospective emerging managers meet the diligence standards of the two specialty managers-of-managers, preference may be given to women- and minority-owned firms, and to Pennsylvania firms.

There is also a dormant emerging manager fund-of-funds program in private equity, run through Harbourvest, which pre-dates the 2019 emerging manager program. (There is also a fund-of-funds for Asian private equity, but the motivation for that was solely diversification, and was never intended as an emerging manager program.)

While one of the goals of the emerging manager program is to, "Provide an evaluation platform of potential investment managers who have demonstrated superior risk-adjusted returns for consideration into the Fund," there is not yet a formal process in place to identify underlying managers which may be ready to "graduate" from the fund-of-funds and be ready for a direct allocation.

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Diversity and Inclusion

SERS encourages the use of diverse investment managers in all asset classes and tries “to take affirmative steps to remove any barriers to the full participation in investment opportunities afforded by the Fund,” consistent with the recommendation of the Public Pension Management and Asset Investment Review Commission recommendations. SERS believes that professionals and decision-makers who come from diverse backgrounds contribute different points of view that enhance organizational quality and economic performance.

SERS’s desire for diversity and inclusion has been communicated effectively to all relevant investment consultants so that searches can start from the most diverse pool of potential managers possible. SERS defines a diverse manager as firm that is owned or controlled by women and/or minorities. As of December 31, 2021, SERS has 19 diverse firms on its roster. The four public market firms manage a total of \$766 million and SERS has committed a total of \$1.895 billion to the 15 private market firms. The four public market firms include the two manager of managers which run the emerging manager program but does not count any of the underlying managers in those funds-of-funds.

SERS standard due diligence questionnaire asks all prospective managers about relevant policies and asks for general partners to complete the ILPA Diversity and Inclusion report, which provides a breakdown of gender and racial/ethnic composition by position for the firm.

All due diligence packages presented to the Board now include the “PA SERS Diversity and Inclusion Template,” which details whether or not the prospective manager has a formal Diversity and Inclusion policy. If so, that policy is included in the passage. Staff also details the manager’s commitment to diversity and inclusion including workforce statistics, as well as retention, mentoring and other internal efforts that shape the investment teams. Due diligence also examines issues such as policies on workplace harassment, family leave, mentorship and outreach to external organizations related to diversity and inclusion and workplace issues.

In-state

Title 71 of the Pennsylvania Consolidated Statute, Section 5931(e) states in part, and as quoted in SERS’ Investment Policy Statement, that “The board may, when possible and consistent with its fiduciary duties imposed by this subsection or other law, including its obligation to invest and manage the fund for the exclusive benefit of the members of the system, consider whether an investment in any project or business enhances and promotes the general welfare of this Commonwealth and its citizens, including, but not limited to, investments that increase and enhance the employment of Commonwealth residents, encourage the construction and retention of adequate housing and stimulate further investment and economic activity in this Commonwealth.”

As SERS’ submission to the State Legislature makes clear, SERS follows an “all other things being equal” philosophy regarding in-state investments. “Where investment characteristics are equivalent, the board’s current policy favors investments that have a positive impact on the economy of Pennsylvania.” As one Board member told FAS, it’s a “nice to have” once all the other fiduciary needs are fulfilled.

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There is not currently any dedicated allocation that targets in-state investments. One such program existed in the past but was suspended because of the difficulty in finding fiduciarily appropriate investment opportunities. That said, SERS investment staff does verbally discuss the desire for in-state investments consistent with fiduciary standards with managers and general partners and does seek to hire in-state managers where appropriate.

SERS reports in-state investments in its annual budget submission. As of December 31, 2020, SERS owned some \$598.1 million of Pennsylvania investments, or approximately 1.7% of the total fund. That included \$42.4 million in private equity investments in 36 Pennsylvania companies, \$253.5 million in publicly traded Pennsylvania companies (either Pennsylvania headquartered or with more than 25% of their employee base in the Commonwealth), and \$248 million in 43 Pennsylvania private real estate investments. The remainder of the Pennsylvania assets were in fixed income, publicly traded REITS.

Recommendations

A.1 Eliminate the use of “non-economic” as an adjective describing these programs.

SERS has identified economic reasons for the emerging manager program. The use of “non-economic” as an adjective immediately raises issues of fiduciary duty. In reality, SERS is very cognizant of the Fund’s fiduciary obligations and the crafting of, and criteria for, the emerging manager program and the diversity and in-state policies reflects that awareness.

A.2 The Investment office should develop a stand-alone annual report to the Board summarizing the past year with regard to the emerging manager program, and regarding the diversity initiative and in-state investing program.

The report should include a look through to all underlying emerging managers, including strategy, diversity status, in-state status, assets under management from the SERS fund-of-funds, total assets under management, performance, and benchmark. Regarding diversity and inclusion, and in-state investments, the report should include the data provided to the State in the budget submission, as well as a narrative description of the investment office’s efforts in those areas.

A.3 SERS should update its investment policy statement to reflect the still extant Harbourvest emerging manager fund. (The IPS now states that the only allowable asset class for such a fund is public equity.)

A.4 The investment office, working together with the Chief Counsel’s office and the investment consultants, should develop an informational memorandum for all new partnerships, explaining SERS’ position with regard to in-state investments.

That informational memoranda should be part of the standard side letter packet given to all general partnerships.

A.5 SERS should consider expanding the formal emerging manager program to other asset classes beyond public equity.

Part of the economic rationale for the emerging manager program is to evaluate those managers for future direct investments by the fund. This would suggest expansion to the private asset classes. The

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investment office and general consultant should present the Board with a short overview of the pros and cons of potential expansion of the program by asset class. As part of that consideration, the investment office, in consultation with the relevant investment consultants, should provide the Board with a market survey of the availability of specialty managers of such emerging manager funds-of-funds, by asset class, with indicative terms and conditions.

A.6 SERS investment office should design a program to monitor the underlying funds within the emerging manager funds-of-funds so as to judge the potential for “graduation”.

Grooming the underlying funds for growth and eventual graduation should be part of the evaluation and monitoring of the managers-of-managers.

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B. The asset liability matching process

Overview

1. Background on Asset-Liability Matching

The basic concept of A-L Matching is that liabilities are a stream of benefits, and certain assets are a stream of cash flows. If a pension plan (or any other financial system) has a stream of asset cash flows with the same timing as a stream of benefit payment liabilities or obligations, then no matter how the prevailing interest rates change, the positive cash flows (contributions plus investment income) and negative cash flows (benefits and expenses) will continue to exactly offset each other. Therefore, the system will remain fully funded as long as the liabilities are measured at the prevailing interest rates of the bonds in the portfolio.

Other concepts that are consistent with A-L Matching include:

- Liability Driven Investing (LDI)
- Financial Economics (FE)
- Corporate Finance
- Market Value of Liability (MVL)

The concept of Asset-Liability **Modeling** is more broad and not specific to Asset-Liability **Matching**. A-L Modeling is a powerful technique that can be used to stress-test various asset and liability strategies through various uncertain future economic scenarios.

2. What is the SERS Asset-Liability Matching Process

*HARRISBURG – The board of the Pennsylvania State Employees’ Retirement System, meeting here today, redefined the fixed income allocations for the SERS Defined Benefit Plan fund, moving toward a **liability-driven benchmark**, ...*

*“The SERS board showed leadership and foresight by adopting a fixed income portfolio that is intended to hedge the liability; thereby, strengthening the benefit for the members. The only focus of this strategy is to secure the member’s benefit,” explained SERS Chief Investment Officer Seth Kelly. “This **liability-driven** or cash flow-driven **investing** makes SERS a leader in the public fund industry.”*

This SERS press release from December 2, 2020 suggests a bold, yet unconventional approach to investment and liability management strategy.

The Chief Investment Officer began to educate the Board in September 2020 with a presentation “Liability as the Benchmark.” The main messages were that “[t]here are no quick fixes to unfunded liabilities,” and encouraged the Board to be attentive to:

- “Small, but steady, changes that help manage the risk of unfunded liabilities growing larger (within the plan sponsors fiscal tolerance)

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- Recognize the cashflow pattern of the liability to build an asset portfolio that better matches those liabilities (alleviate pressure of asset sales for benefit payments).
- Look at institutions that solve a similar problem and learn from their solutions.”

The presentation identified life insurance companies and corporate pension plans as institutions solving this similar problem, while recognizing regulatory and tax differences between them and SERS.

The financial implications were also measured as follows:

| | SERS Rate | FTSE AA Corp Rate | PPA Discount Curve | US Govt Zero Curve |
|-------------------------------|-----------|-------------------|--------------------|--------------------|
| Liability Present Value | \$45,595 | \$78,143 | \$75,374 | \$92,042 |
| Internal Rate of Return (IRR) | 7.125% | 2.35% | 2.61% | 1.24% |
| Duration (Years) | 10.0 | 13.8 | 13.6 | 15.7 |

Without getting into detail with the various alternative IRRs considered, the message is clear. At today's low prevailing discount rates, the liability would be much higher than the \$45,595 reported on SERS actuarial statements.

The presentation identified SERS' options as:

1. Can SERS quickly and fully adopt liability benchmarking?
No. The associated costs would be high and unnecessary.
2. Does SERS need to quickly and fully adopt liability benchmarking?
No. Corporate pensions have been headed this direction for decades, but still take some risk with their pension portfolios. They incorporate glidepaths.
3. Can SERS make marginal changes by refining our process?
Yes, but how...?

Since that time, the major activities of this initiative are:

- Continuing Board education, including:
 - Incorporating Asset Liability Matching to this Board Governance Review
 - October 2020 Callan Presentation on LDI (Liability Driven Investing) in Public Plans
 - November 2020 NISA Presentation on LDI Overview
 - February 2021 Board meeting agenda to enhance Board understanding by Fall.
 - Ongoing emphasis on cash flow matching including March 2021 Board retreat

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- Specific actions, including
 - Revision of Investment Policy Statement to include concepts of Asset-Liability Matching
 - Beginning to match assets cash flows with near-term benefit payments.

3. History of A-L Matching in Pensions

In 2002, Larry Bader and Jeremy Gold authored a ground-breaking paper “Reinventing Pension Actuarial Science.” Their main thesis is:

The 1974 passage of ERISA halted the evolution of the actuarial pension model. This frozen model was unable to incorporate the emerging science of financial economics, which in turn revealed fundamental flaws in the model. Contrary to the teachings of financial economics, the actuarial pension model anticipates expected outcomes without reflecting the price of risk. It then camouflages the risky distribution of outcomes by various smoothings and amortizations.

The flawed pension model has caused widespread, though rarely recognized, damage to pension plan stakeholders. This paper illustrates the flaws and the injuries they cause.

To protect the pension system and the vitality of our profession, we urge pension actuaries to reexamine and redesign the model. The new model must incorporate the market value paradigm and reporting transparency that is rapidly becoming a worldwide minimum standard in finance.

This began a decades-long controversy, particularly with respect to US public pensions. The basic idea is that the current practice of assuming a return based on a balanced portfolio of equity and fixed income investments is flawed. Instead of assuming a 7.125% rate of return, for example, the pension actuarial science should be based on a return on fixed income assets at today’s rates of less than 3%.

Bader and Gold clarified this with their 2007 article in Financial Analysts Journal “The Case against Stock in Public Pension Funds,” arguing that assets and liabilities must be matched and this cannot be accomplished with risky assets such as stocks.

This was also reinforced with the 2006 Pension Protection Act for corporate pensions which essentially required that they be nearly fully funded based on a discount rate consistent with prevailing bond rates.

In 2011, Congressmen Devin Nunes, Darrell Issa, and Paul Ryan introduced federal legislation – “The Public Employee Pension Transparency Act” (PEPTA) to require states and local governments to report their pension liabilities to the federal government using what is known as a “riskless rate” — an interest rate tied to the Treasury bond rate. This would have the impact of increasing the reported liabilities consistent with the table above.

While strict Asset-Liability Matching may have made sense for insurance companies and for corporate pensions (for companies that are bought and sold and which could become insolvent), the public pension community came out strongly against this approach, with arguments including:

- Public plans have a long time horizon (30+ years);
- It is more efficient for taxpayers to invest pension funds in portfolios that include equities;

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- The public entity guarantee reduces the need to be 100% funded at all times;
- Reporting Unfunded Liabilities in a manner inconsistent with funding practices is misleading and alarmist;
- This reporting is merely an attempt to undermine public pensions by showing liabilities far larger than necessary for a prudent long-term investor.

There has been much activity with A-L Matching. Many private sector pensions are de-risking and even selling off their liability to insurers. This is particularly used for closed plans that no longer are providing ongoing benefit accruals.

All US private sector plans and most worldwide public sector pensions report their liabilities using bond rates rather than based on the expected rate of investment return.

The Actuarial Standards Board (ASB) has been wrestling with this issue for more than a decade and has currently proposed an Actuarial Standard of Practice (ASOP) which would require the disclosure of a Low Default-Risk Obligation Measure which is based on bonds (\$75+ billion for SERS), rather than only the disclosure of liability based on expected rate of investment return (\$45 billion for SERS).

The Government Accounting Standards Board (GASB) also considered this approach when updating their standards for reporting pension costs and liabilities on the Consolidated Annual Financial Reports. Despite pressure from rating agencies, financial economists, and others, they did not embrace this approach. There is some speculation that GASB may be revisiting this concept in the next year.

National organizations supporting public pensions have repeatedly written comment letters to the ASB and GASB opposing this practice, as with their opposition to PEPTA legislation. These organizations include:

- National Association of State Retirement Administrators (NASRA)
- National Conference of State Legislatures (NCSL)
- National Association of Counties (NACo)
- National League of Cities (NLC)
- American Federation of State, County and Municipal Employees (AFSCME)
- International City/County Management Association (ICMA)
- National Association of State Treasurers (NAST)
- National Association of State Auditors Comptrollers and Treasurers (NASACT)
- Government Finance Officers Association (GFOA)
- International Public Management Association for Human Resources (IPMA-HR)
- County Executives of America (CEA)
- National Public Employer Labor Relations Association (NPELRA)

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- National Conference of State Social Security Administrators (NCSSSA)
- National Conference on Public Employee Retirement Systems (NCPERS)

While the SERS A-L Matching initiative has not fully embraced this type of reporting, an understanding of the context and broader issues is critical. A complete move to 100% A-L matching would have pros and cons:

Pro:

- the plan would be almost completely secure against market swings;
- participants would have almost no risk of benefits not being able to be paid due to investment volatility;

Con:

- all assets are invested in bonds that match the cash flows of anticipated benefit payments (net of contributions);
- reported liabilities would increase from \$45 billion to more than \$75 billion as shown above;
- employer contribution requirements would increase dramatically (we have not made these calculations, but in some similar situations, costs would double);

4. Low Interest Rates – The Underlying Concern

The root of this problem can be traced to the decades-long continuing decline in interest rates. This can be illustrated in the following table:

| | 2002 | 2020 | Change |
|--|-------|-------|------------|
| Average Nominal Investment Return Assumption | 8.05% | 7.18% | Down 0.87% |
| Thirty Year Treasury Yield | 5.56% | 2.33% | Down 3.23% |
| Assumed Risk Premium | 2.49% | 4.85% | Up 2.36% |

Pension funds are now required to find 4.85% additional return over what could be earned on treasury bonds, while in 2002, they were only required to earn an extra 2.49%. This is a real concern that reporting liabilities at 7.125% (for SERS) may be overly optimistic. Proponents of LDI are strong advocates that the assumed rate of return must be reduced, even before moving toward full LDI. A move toward full asset-liability matching (aka LDI) would thus require a further reduction in the assumed rate of return.

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5. Leading and Prevailing Peer Practices

Without a doubt, an embrace of full Asset-Liability Matching is virtually unheard of in the public pension community. Funston Advisory Services has a *National Public Pension Policy Repository*. This includes policies from more than seventy-five public pension systems. The only reference to LDI, Asset-Liability Matching, or a related topic was from one large municipal system:

“While the Board believes that a liability-matching strategy is suboptimal, the liabilities should still be considered in setting investment strategy to ensure sufficient portfolio liquidity and an understanding of their and the Fund’s shared market and economic sensitivities”.

Rather than an endorsement of A-L matching, this policy suggests that it is a suboptimal strategy, although liabilities should be considered.

Leading practice among many pension systems is for liabilities to be considered through an Asset-Liability **Modeling** exercise. This is somewhat consistent with the SERS A-L Matching process and even more consistent with the stress tests conducted by SERS’ actuaries, Korn-Ferry. A well-designed A-L Modeling exercise has the following components:

- Define the specific concerns that the Board may have. These might include risk of:
 - Significant increase in required employer contributions;
 - Plan insolvency;
 - Not becoming fully funded within a specific planned timeline;
 - Inability to pay a variable cost-of-living increase;
 - Investment return significantly lagging peers; and
 - Triggering a shared-risk program
- Identify variables which contribute to the concerns:
 - Investment Return;
 - By asset class
 - With correlations and variance
 - Inflation;
 - Payroll growth;
 - Longevity;
 - Plan sponsor revenues.
- Build a projection model that considers variables.
- Analyze likelihood of specific concerns above.
- Test alternate policies (investment policy, funding policy, etc.) to learn the effect of such policies on likelihood of specific concerns.
- Modify policies based on results of the modelling.

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Findings and conclusions

“Asset-Liability Matching” is a policy that is not at all embraced in the public pension community and in its pure form is viewed as impractical and costly. However, the de facto A-L Matching process that SERS has adopted so far is nowhere near the full LDI process so rigorously opposed by SERS’ peers.

This helps explain the wide range of understanding of the SERS A-L Matching process and enthusiasm for the SERS A-L Matching process. Following are some quotes from various Board members, consultants and senior staff members showing the range of understanding and range of enthusiasm:

This project is still very much in its infancy. It took corporate plans a decade or longer to truly embrace LDI. [I hope we] start thinking about the assumed rate of return in a more economic way.

No way the political machine would target discounting liabilities at bond rates. No aspiration for full ALM in the foreseeable future. Look again in 7 years, see what the funded ratio is, maybe could consider further steps. This is a good way to start it.

This [ALM] is new to us too. We should start with our toe in the water. Modest makes sense. Some intractable issues of the plan are negative cash flow. This is a huge problem. To the extent that this strategy helps, that’s very valuable.

We are learning about it, taking a measured approach, developing a glide path. More of a shift or evolution from equity investments to fixed income – but there is potential for increased employer contributions – which would be very difficult – maybe could consider over 20-25 years. Apparently has been done a lot in private DB plans, but not in the public sector. We have started down the road, an interesting approach, need to learn more about it, worth trying. Have had great volatility over the past 10-15 years, difficult for the General Assembly to pay at times.

We are a very underfunded plan – moving to a corporate discount model would reduce our funding level dramatically. Not feasible to fully match asset and liability cash flows. We are trying to focus on long-term liabilities. We don’t want to mislead the Board to think that a true asset liability matching program is in the cards. This hasn’t been pursued this year, other than bringing in long bonds. Not sure that the Board understood it initially. Now several trustees have turned over, so even less understanding. Fixed income moves are very incremental, can’t get to LDI. CIO is very reasonable about incremental nature of ALM – seems to have the idea of a glide path.

I think this will happen only on a small scale for now. I do not get the sense that this will go much further than our current shift in the bond portfolio. Post 2008 liquidity issues were a concern. This does help with that. We are only doing a small portion of A-L Matching. This may help with the liquidity issues.

We have begun to educate and inform. This will take a number of meetings. We are making some changes in fixed income portfolio. This is fine and does make a lot of sense. The question as we go into this area, is what do we need to do to be successful? I understand that other funds may not be using A-L Matching.

Intellectually I guess I understand it. But in reality, not really. I came in with the idea that it makes sense, but don’t quite understand how to do it.

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This involves liquidity. Give everything a shot. Need to be flexible, particularly with liquidity.

Not really involved in A-L Matching discussions. Fourth CIO in nine years.

The incomplete understanding of SERS A-L matching process ranges from a lack of understanding of what A-L matching actually is (a few cases) to the question of “what is the SERS end-game in terms of A-L matching” (most cases). While most agree that “*No way political machine would target discounting liabilities at bond rates,*” there is no general consensus of how far along the “glidepath” SERS will go and when.

Policy options

We see a spectrum of A-L matching approaches, with four basic alternatives.

Alternative 1: ***Return to conventional practice of Asset Liability Modeling with no emphasis on Asset Liability Matching.***

Pros:

- Focus is on investment return.
- Consistent with peer practice.
- Target asset decisions to specific objective needs.
- Can expand understanding of risks and rewards.
- No potential for increase in costs as a result of shifting portfolio away from high yielding non-bond investments.

Cons:

- Asset Liability Modelling is also complicated and challenging.
- Change in approach can be confusing to Board and the public.
- If there is a trend toward LDI, this process will have done little towards that end.

Alternative 2: ***Redefine Asset Liability Matching to be more of an Asset Liability Modeling process. Define specific objectives and modify asset policy decisions in accordance with modeling.***

Pros:

- Can also improve benefit security
- Consistent with current practice as well as peer practice
- Targets asset decisions to specific objective needs.
- Complete understanding of risks and rewards

Cons:

- Asset Liability Modelling is complicated and challenging.
- Change in approach can be confusing to Board and the public.
- If there is a trend toward LDI, this process will have done little towards that end.

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Alternative 3: *Continue to put “toe in the water” with respect to Asset Liability Matching. Gradually move toward LDI as practical, but with realization that unlikely to ever move to full LDI. Look for opportunities to reduce assumed rate of investment return, if desired.*

Pros:

- May improve benefit security.
- Consistent with SERS’ current practice.
- Will move toward objective of matching more of near-term benefit obligations to bond portfolio.
- If LDI becomes the prevalent practice, will be easy to shift toward full LDI.

Cons:

- Could be marginally more expensive.
- Changes in asset allocation might prove to be a drag on investment returns.
- Can be confusing to Board and the public.

Alternative 4: *Full embracing Asset Liability Matching, including Liability Driven Investing. Build a glidepath for full funding of SERS based on 100% bond portfolio*

Pros:

- Maximizes benefit security.
- Will always maintain full funding.
- Most robust and secure way to fund pensions.
- Consistent with private pensions, insurers, and financial economic theory.
- If this is inevitable, SERS will be ahead of the curve compared to other public pensions.
- SERS will be well positioned to respond to possible changes in GASB, Actuarial Standards of Practice, and federal legislation.

Cons:

- Extraordinarily expensive.
- Controversial.
- Inconsistent with public pension peers.
- Could lead to termination of defined benefit pensions

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Recommendations

SERS has recognized the importance of cash flow on its ability to meet benefit obligations, and the risks associated with assuming a rate of return that might be overly optimistic. We encourage SERS to consider the range of options specified above. We recommend adoption of Alternative 3 with a possible shift toward Alternative 2.

- B.1 The SERS' CIO should continue to educate the Board and senior staff with respect to A-L matching.**
- B.2 The Board, with support from the CIO, should rigorously define the "end game," which might include:**
 - Incremental changes in bond portfolio;
 - Increase expected return in equity portfolio through comfort of having short term cash flow covered;
 - Move toward reduction in actuarial expected rate of return, as needed; and/or
 - Glidepath toward increased bond exposure.
- B.3 Develop specific milestone objectives toward the "end-game."**
- B.4 Thoroughly develop cost implications and communicate them to constituents.**
- B.5 Incorporate Asset-Liability Modeling to test potential policy changes.**
- B.6 Clearly communicate the policy that there is no intent to embrace full LDI in the foreseeable future.**

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C. Legislative positioning

Overview

Regardless of the specific structure and governance of state-wide public pension funds, they are all created by state legislative enabling and defining legislation. In this instance, the State Employees Retirement System (SERS) was created by the Commonwealth's legislature. The Commonwealth legislature, as the SERS plan sponsor, outlined the governance structure and composition of the fiduciary board of Trustees and created SERS essentially as a state agency with certain delegated authority. The legislature prescribed a fiduciary board of eleven, with members of the legislature or designees included among other elected fiduciaries serving on this board. As fiduciaries serving on a public pension board of trustees, these eleven individuals have very specific fiduciary responsibilities to act with prudence and solely in the best interest of the fund, its members, participants, and beneficiaries.

SERS is very unusual in having ex officio and other elected officials a majority of voting trustees – of the largest 53 integrated state public retirement systems, only PSERS in Pennsylvania and MOSERS in Missouri share this composition. Missouri and Louisiana are the only other states besides Pennsylvania with any legislators as voting trustees. Having this majority presence of elected and appointed state officials as trustees may result in a different dynamic regarding legislative positioning than with a typical peer system which does not have legislative members and may only have one or two ex officio members representing the plan sponsor. SERS legislative trustees, while wearing their “legislative hats”, could be sponsoring statutory changes that would affect SERS that may not be consistent with the full Board's position when acting as system fiduciaries.. However, the Board does not have its own policy on how it handles such situations, which could put the Executive Director in a challenging situation when asked to provide a SERS position.

The State Employees' Retirement Code (71 Pa. C.S.A. §5101 et seq.) outlines the responsibilities of the Executive Director (ED), define the responsibilities of the ED as the Secretary of the board, and define the responsibilities of the ED in the context of legislative needs and issues. The SERS board has no policy or additional procedures referencing legislative duties and responsibilities of the ED. The Retirement Code describes the ED's responsibilities as reactive in nature, such as providing data to the legislature, drafting of legislation as requested by the legislature, doing cost analyses for proposed legislation, and responding to inquiries from the legislature or staff.

At the request of legislators or staff, the SERS Office of General Counsel provides drafting support for legislative initiatives or bills pertaining to pension issues.

Findings and Conclusions

The ED and various trustees have described that SERS has an informal and traditional approach on legislative matters and that it “takes no position” on any proposed legislation. One reason for this position is that there are legislators (or designees) sitting on the Board and thus taking a position can be difficult and potentially divisive. This approach of having no position on legislation is also described by staff and some trustees as long-established custom.

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It appears that the legislation drafting within the General Counsel's office is at times not shared with the Trustees in any substantive way, and some Trustees have expressed an interest in being more informed about legislative drafting requests. The referenced Retirement Code defines specific expectations of the ED, acting as Board Secretary, including providing information to the Board and seeking input. They do not define what the ED cannot do in response to legislative needs.

The current ED and staff are described as very responsive to legislative needs and perform well within the current structure. The Director of Communications and Policy, the Legislative Specialist and the Deputy ED for Member and Participant Services, along with the Executive Director have a well-defined and robust process for monitoring, responding to the legislature and constituents, and keeping staff and Board informed of legislative activity.

The ED and staff also have developed very positive legislative relationships and have frequent interaction with the legislature. The ED and Director of Communications and Policy spend significant time in the legislature educating new legislators, meeting with key legislators and staff, and making presentations to legislative caucuses. All inquiries on legislation come to the communications office and are quickly handled. SERS has a reputation for being very responsive, providing whatever is requested and doing so in a collaborative manner. In summary, ED and staff working on legislative matters are doing all the right things to position SERS well as a respected pension fund, with an ED and staff that are the "go to contacts" for pension information. This is appropriate positioning for SERS and a leading practice. They step into legislative issues, answer questions honestly and directly, are timely and helpful and explain the challenging and complicated pension world in clearly understandable terms.

As one example, the ED wrote a very clear and well received Op Ed on the difficult-to-explain "carried interest" issue. This Op Ed was published around the state and was a very positive and open manner to present the SERS commitment to transparency.

As another example, SERS responded very publicly and directly on the recommendations of the PPMAIRC report that primarily addressed the funding needs of SERS and PSERS. The Board dealt with each item by resolution to adopt the recommendation or study further. In this instance, the ED was guided by Board resolution on each PPMAIRC recommendation.

There is not much overall guidance provided to the ED on legislation positioning outside of the Board responding to a specific legislative action. SERS does not have a legislative policy or more extensive definition of ED duties referencing legislative positions and boundaries for the ED, either of which could be helpful to use "in the moment" when the ED is put on the spot. It would not be unusual for legislators or staff to ask an ED for a fund's general position or reaction on a particular legislative idea or initiative pertaining to pensions. As described by staff, some legislative matters can arise on a Friday with the expectation of a response to the legislature on a Monday. While the ED stays in very close touch with the Board Chair on legislation and discusses questions that arise between meetings in a manner of open and constructive communication, some see this lack of formal guidance as a gap where a legislative policy or more specific process direction would be helpful and transparent. For example, some funds' Board Governance manuals specifically authorize the ED in consultation with the Board Chair to speak on legislative issues between Board meetings and to bring that matter to the Board at the next meeting.

Many Trustees feel the legislative interaction and responsiveness of the current ED, Terri Sanchez, is working quite well and they are very complimentary of the ED. This approval of the manner in which

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legislation is handled now, however, is attached to the skills of the current and successful ED and to capable staff under her direction who handle legislative matters and interact with the legislature and public.

What is also not present for SERS is an interactive relationship with constituent/beneficiary associations. These relationships can be extremely helpful on legislative issues where an association can speak up and advocate in a manner the fund cannot do or is uncomfortable doing. The SERS strategic plan interestingly notes that developing strong constituent and external relationships is desired.

Policy Options

A key assumption in this analysis is that SERS at a minimum wants to continue in its commitment to responsiveness and transparency and would want to continue to have a solid and positive working relationship with the legislature and with elected officials. Another key assumption is that SERS wants to keep pace with peer prevailing and leading practices. And, a final key assumption is that SERS would like its prevailing and leading practices to be well-anchored organizationally and not dependent on the skills of any particular staff members.

Alternative 1: Status Quo – Continue to have no formal Board policy on legislative positioning.

SERS is very well respected. The Trustees have been responsive to public and legislative matters and their ED has carried out her responsibilities very well. She has a good working relationship with the current Board Chair who is complimentary of ED handling of legislative issues and does not feel a policy on legislation is necessary.

Given the current Board culture and its recent history, and with the current Trustees and ED, there would not be any observable differences on this topic should the Trustees decide to take no action.. One should note, however, that the current climate is specific to the current mix of people, the current Board culture and issue management, and is dependent upon the skills of this Executive Director. However, for the long-term, the way in which SERS approaches legislation is not grounded in its governance structure and is not sustainable.

Pros:

- Things are working well now, so there is no reason to change anything.
- Avoids any conflict on the Board with elected officials or designees.
- Allows the Board to focus on matters that are of higher concern to the system at the present.

Cons:

- Does not reinforce current effective practices for the future and for transitions in Board or staff leadership.
- Potential lack of clarity on responsibilities could expose ED to charges of misjudgment when she makes good-faith positioning decisions without Board guidance.

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Alternative 2: Develop a new Board policy on legislative positioning.

Development of a policy on legislation would formalize present staff and leadership actions, both proactive and reactive, and the manner in which the Executive Director positions SERS in the eyes in the legislature and in the eyes of the public.

This could benefit not only staff but also SERS members, participants, and beneficiaries. A policy that defines the boundaries of the ED in representing the system and defines the approach SERS takes to legislation, particularly to that which challenges the stability of the fund, could protect the fund with transparent and consistent positioning. Such approach to legislation is at a minimum a prevailing practice among peer systems. It is unusual to find a public pension system that does not make clear a position on any legislation threatening its existence; one could argue that this is in keeping with the fiduciary responsibility to act solely in the best interests of the members and beneficiaries of the pension trust fund.

Some funds may not have a specifically named “legislative policy” but may make clear the role or duties of the ED elsewhere in its Board Governance manual so that there is clarity around the limits of authority of the ED in a legislative setting.

Pros:

- A policy would provide clarity on boundaries not just for the ED but would also be clear for all Trustees and fund constituents.
- A policy would make transparent what the Board believes is important to SERS and its future, and would be helpful in developing relationships with constituent associations.
- A written policy could provide a foundation for SERS to develop a leading practice of speaking out on any issues, including federal legislation, impacting public pensions if so desired.

Cons:

- A rules-based policy could be overly-restrictive and result in unintended consequences if not properly structured.
- The development of a policy would require Board attention and in-depth discussion, and a time commitment on something that currently works well.
- The Board discussion could be divisive and Trustees would have to be willing to work through differences to achieve at least an informed consent among a majority.
- The Board Chair and ED would have to be willing to spend whatever amount of time necessary with elected officials to educate and answer questions about the proposed policy content - what it would mean and not mean regarding legislative interaction.

Alternative 3: Expand the responsibilities of the Executive Director by regulation.

The State Employees’ Retirement Code defines the responsibilities of the Executive Director as Board Secretary, which is customary and consistent with prevailing practice. The Retirement Code also describes responsibilities of the ED as the administrative agent of the Board to serve as a legislation liaison between the Board, certain legislative committees, and certain elected officials. Additionally, the ED is to review and analyze legislative developments and present them to the Board, the Board’s legislative committee or to interested parties.

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The Board could expand on who and in what circumstances the ED or others, such as the Board Chair, may speak for SERS. The ED could be authorized to speak on legislative matters consistent with past Board discussions and, in consultation with the Board Chair, to speak with legislators in the event that legislative proposals challenge the funding or stability of the system. This type of language may not be as transparent as a policy in the Board Governance manual but may provide some guardrails for the ED who is in constant interaction with the legislature.

Pros:

- The expansion of a duty or responsibility may be easier for the Trustees to discuss in comparison to developing a Board Policy.
- This option stops one step away from any Board position, but clearly outlines expectations and procedural guardrails for the ED in consultation with the Board Chair.

Cons:

- A definition of duties and responsibilities of the ED is not as strong a foundation for the ED to develop a relationship with any member or retiree constituent groups.

Recommendations

None of the above approaches would be inappropriate at this point in time. A legislative policy, similar to some peers, could clearly state who has authority to speak for the system and in what context, and could identify what types of legislation are of interest to the system and its long-term sustainability.

C.1 The Board should first determine the role it expects its Executive Director to play with respect to legislative policy or positioning and then determine whether or not a formal policy would be desirable.

This approach positions the ED and Board to develop external relationships and partner for the longer-term around strategic goals.

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D. Investment manager selection/due diligence/monitoring/termination

Overview

SERS Board directly appoints and terminates investment managers and general partners as specified in Section 13 of SERS' Investment Policy Statement. In so doing, the Board relies on three major informational inputs: The investment staff's due diligence report, the consultant's due diligent report, and, for hiring, the prospective investment manager's or general partner's presentation, which is presented at the meeting.

SERS is a bit of an outlier regarding manager selection, retention and termination. Slightly more than a majority (55%) of public plans with \$22-54 billion in assets delegates manager selection to staff, within appropriate constraints. By contrast, the SERS Board reserves to itself hiring and termination authority, except for passive public equity managers and in "emergency situations.

| Retirement Systems by AUM | Delegated Selection |
|--|---------------------|
| Twenty largest (\$426 – \$57 billion) | 80% |
| Next 20 largest (\$54 – \$22 billion) | 55% |
| Next 22 largest (\$22 – \$10 billion) | 41% |
| PA SERS (\$34.45 billion as of 12/31/20) | No * |

*SERS recently delegated selection of passive managers in public equity only

Based upon Funston Advisory Services research which examined the 62 U.S. Board-managed state retirement funds with assets under management of at least \$10 billion. Excludes the three funds managed by a sole fiduciary (New York State CRF, North Carolina, Connecticut)

The trend amongst public pension funds has been increased delegation to staff, particularly at larger funds, where the number of Boards funds retaining the manager selection function decreased from 40% to 20% in a decade. We also note that even funds which retain manager selection often do not require prospective investment managers present to the Board. Ending manager presentations ends the common understanding in the asset management business that "the firms with the best marketers win". Plans which end presentations try to gain efficiency and avoid having their decisions swayed by presentation, rather than investment, skill.

There are five primary reasons for SERS to seriously consider further delegation of investment-related decisions to the Chief Investment Officer.

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1. Fiduciary Duty

Evolving fiduciary standards and the definition of prudence can increase trustee exposure to fiduciary liability when the Board directly approves individual investments.

The Restatement (Third) of Trusts (1992; a. 2003) provides that a “trustee has a duty to perform the responsibilities of trusteeship personally, except as a prudent person of comparable skill might delegate those responsibilities to others.” This represented a significant shift in trust law and a reversal of the prior constraints on delegation under Restatement (Second). Prudent delegation is a subjective analysis that looks at what a trustee with comparative skill might do.

The Restatement (Third) provides further that “[a] trustee’s discretionary authority in matters of delegation may be abused by imprudent failure to delegate as well as by making an imprudent decision to delegate.” This has been interpreted in the context of public pension funds to create an affirmative duty to delegate where a board does not have the requisite investment skill or experience (or the time) to make informed investment decisions.

Both the Uniform Prudent Investor Act (“UPIA”) and the Uniform Prudent Management of Institutional Funds Act (“UPMIFA”) take a substantially similar approach. Section 9(a) of the UPIA provides that “[a] trustee may delegate investment and management functions that a prudent trustee of comparable skills could properly delegate under the circumstances. The trustee shall exercise reasonable care, skill and caution in (1) selecting an agent; (2) establishing the scope and terms of the delegation, consistent with the purposes and terms of the trust; and (3) periodically reviewing the agent’s actions in order to monitor the agent’s performance and compliance with the terms of the delegation.”

The emergence of these model laws and their widespread adoption by the states allowed public pension plans to rely on qualified staff, investment advisors and investment managers to make informed investment decisions in a dynamic environment where investment products are increasingly complex. Board members should focus their attention on the growing list of important direction setting, such as asset allocation policy, as well as oversight functions such as ongoing monitoring and evaluation of performance, risk and delegated responsibilities and then holding accountable those to whom those responsibilities were delegated.

2. Leading and Prevailing Peer Practices

Prevailing peer practices at peer public retirement systems are to delegate manager selection and termination to staff, and increasingly so.

As noted above, SERS is a bit of an outlier regarding manager selection, retention and termination. 55% of its peer group of public plans with \$22-54 billion in assets delegates manager selection to staff.

Of course, at peer funds, even with what is considered full delegation, there are typically limits and certain types of investment decisions that still require Board approval (consistent with UPIA’s “establishing the scope and terms of the delegation”. The constraints are typically ones that would not allow delegation where, de facto, such delegation would establish new policies (investments in new asset classes) or embody risk management considerations (investments larger than a specified level, or investments that utilize new types of securities). In addition, there can be provisions that allow the Board to request any

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investment opportunity scheduled for consideration to be submitted for Board consideration on an exception basis. Other common provisions include a requirement that the general or asset class consultant concur in writing before a selection, and that all investments be reported to a board, or the investment committee of a board, at the very next opportunity to do so.

3. Appropriate Focus and Expertise

Staff and consultants are professional investment professionals skilled in due diligence and analysis, who frequently conduct manager due diligence. The ability of a lay board to add value to manager selection/termination is limited. That is not to say that the Board cannot add value on policy questions, such as asset allocation, sensitivity to ESG issues, appropriate levels of liquidity and leverage, etc., but those are strategic issues that overarch all manager selections and can be dealt with through policy direction to the staff vis a vis manager qualification.

Funds with substantial full-time in-house investment staff and a robust internal investment committee vetting process typically spend many person-weeks conducting due diligence on an investment with the assistance of other full-time experts from the Board's consultants. Most boards recognize it would be inappropriate to reject a recommended manager based upon a 20–30-minute presentation and discussion.

More specifically, regarding manager presentations, there is little reason to think that presentation skills correlate with investment skills. Investment managers often employ “product managers”, “investor relations” and other quasi-portfolio roles filled by people with excellent presentation skills. When a portfolio manager is the one making a presentation, some are skilled at presentations and some are not. Allowing such presentations introduces a behavioral wild card atop the due diligence process.

4. Effective and Efficient Use of Board and Committee Time

Delegation shifts the focus of a board and an investment committee from manager selection/termination, which FAS considers a tactical decision, to strategic decisions such as asset allocation, risk targets and tolerances, desirable terms and conditions, fees, transparency and ESG issues. All those are able to be conveyed to staff to execute a board's instructions, and area able to be overseen by a board.

5. Specific issues relating to defined contribution plans

For the defined contribution plans specifically, changes in investment options require coordination with a number of outside vendors and participants. As a result, changes can take 90 days or more, even when a change is recognized as urgent. There is a fiduciary risk in allowing a manager to remain in place, continuing to manage participants money, for longer than the minimum period needed to facilitate the change.

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Findings and conclusions

A review of the due diligence packages presented to the Board from staff and from the consultants reveal an appropriate level of documented information and analysis to allow the Board to make informed decisions.

The Board spends a significant amount of time reading the due diligence reports and then discussing and approving selection of investment managers.

Internal investment office policies and procedures seem adequate for current functions and responsibilities.¹ There is a documented investment manager hiring process, as well as a list of approved due diligence questionnaires by asset class, and related checklists. All were last updated in June 2018.

There is a documented investment manager monitoring process, which primarily focuses on what criteria would place a manager on, or remove a manager from, the “Investment Manager Evaluation List” (watch list). That list is provided to the Investment Committee at each meeting when the consultant’s quarterly performance report is presented. By policy, staff and the consultant are to attempt to resolve a manager’s status on the list within 12 months of that manager initially being placed on it. Resolution can include removing a manager from the list due to improved performance, removing the manager from the list because staff and the consultant jointly agree that whatever issue placed the manager on the list is not of concern, or a recommendation for termination or other action to Board. While the policy is specific as to the 12-month goal for resolution of the manager’s status, there were a few interview comments from Board members that managers occasionally languish on the list.

In general, as documented through both the governance on-line survey and the individual interviews, the Board and staff are satisfied with the current processes, though open to improvements. Some 87% of the survey respondents said the processes were either effective or very effective, though a number of trustees and staff did suggest that the process could be made more efficient.

SERS recently took a step towards more delegation, by allowing the CIO to select passive public equity managers. That change has been well-received by both staff and Board members. In addition to that delegation, the CIO may “make investment decisions on behalf of the Board in emergency situations. Emergency situations are defined as those that are unforeseeable and in the absence of action taken, the Fund may be adversely impacted.” We also note that the Board has granted rebalancing authority to the CIO².

Peer funds that delegate manager selection and termination tend to have strong governance practices in the form of checks and balances in place. These support effective delegation, help ensure the Board is providing appropriate oversight through the principle of “trust but verify,” and reinforce accountability. Although SERS already utilizes many of these practices, it would not be unreasonable for the Board to require additional provisions prior to full delegation.

¹ Based on a document review and staff, Board and consultant input. Interviewing managers and general partners was not in scope, so this was not a 360-degree review.

² While FAS does not generally consider rebalancing to be a managerial selection/termination decision, we note that multiple SERS staff and trustees mentioned the rebalancing authority when discussing managerial selection and Board delegation to staff. We also note that the CIO must consult with the head of the Board’s Investment Committee and the Chair of the Board “prior to executing any rebalancing actions.”

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Examples of these additional checks and balances which we would suggest before “full” delegation include the following:

- Create a formal internal investment committee. At present, recommendations for manager selection or termination flow up from the asset class head through the CIO, with concurrence of the consultant. There is no formal internal investment committee process. Should SERS consider creating such an internal investment committee, we would suggest there be a representative from Compliance and/or the Chief Counsel’s office as voting members. Such non-investment office representation is a leading practice to guard against group think and to ensure that operational considerations are appropriately weighted.
- Give the Executive Director veto authority over investments. If utilized, such a veto should be immediately reported to the Investment Committee of the Board.
- Utilize enhanced risk modeling for each investment; as a stand-alone investment; for asset class portfolio impact; and for impact on the entire SERS fund; as well as standard risk scenarios, prior to any new approval.
- Require the CIO to provide a report at each Investment Committee meeting that identifies investment managers and/or general partners who are being considered for upcoming investments. The goal is to give the Investment Committee early indication of what is to come, so there are no surprises. To deal with confidentiality and market perceptions within the private asset classes, the pipeline report should be limited to private market deals coming to market within three months.
- Include a discussion of due diligence and monitoring processes in annual asset class reviews.
- Require the general investment consultant to provide its independent opinion to the Board/ Investment Committee, annually, regarding:
 - Any potential improvements to the SERS due diligence processes based upon industry leading practices; and
 - Adequacy of investment office resources, both quantitatively and qualitatively.
- Continue the process of requiring a proposed new manager to be signed off in writing by the senior investment officer sponsoring that manager, the CIO on behalf of the internal investment committee, and the relevant investment consultant. Those sign-offs and both the SERS and investment consultant diligence reports should be documented and available for review, should the Investment Committee decide to do so.
- The Audit Committee, with input from the Investment Committee, should ensure that the internal audit plan includes appropriate reviews of investment processes and controls.
- Require Compliance to regularly report to the Board regarding investment compliance results, on an exception reporting basis.
- Require Compliance to affirm to Board Investment Committee that all new portfolios have been established in accordance with policies and procedures.

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Additionally, we note that the recent turnover of CIOs and other key staff at SERS diminishes institutional memory. Assuming regular levels of stability, time will resolve that issue.

Finally, while much of the focus of the surveys and interviews has been on manager selection at the defined benefit plan, SERS also sponsors a relatively new defined contribution plan. Because of the interplay between SERS, the record-keeper, participants, and employers, it can take more than 90 days to change a plan investment option once a decision has been made to replace a manager for underperformance or other reasons. Delegation can shorten the upfront decision time period, thereby minimizing the time participants stay in investment options that SERS has determined to be sub-optimal.

Policy options

Delegation, while a prevailing practice amongst SERS' peers, was amongst the more contentious issues discussed during the one-on-one interviews. For that reason, we have developed the following range of policy options, which includes the pros and cons of each, as well as our recommendation.

Please note that these alternatives, and the pros and cons associated with them, build one upon the other (alternative 3 includes the change suggested in alternative 2) as the alternatives become more expansive. None of the alternatives are mutually exclusive.

Alternative 1: Status Quo – Continue to bring all new external manager hires and manager terminations to the Board for approval. Continue to listen to manager presentations.

Pros:

- Familiar and most of the Board believes it is functioning effectively.
- Seeing and talking to the prospective managers enables the Board to ask questions and sensitize managers to fee, or ESG, or other issues.

Cons:

- Increasingly seen by peers as of little value.
- Uses Board time that could better be spent on higher-value strategic decisions.
- The “sensitizing” aspect of speaking with managers can be embedded in policy instruction for staff, which could make such issues more consistent in application.
- Continued trustee exposure to fiduciary liability.
- Slower selection, which may have particular impact in the defined contribution plan. (At other public funds, FAS has seen it also cause missed opportunities to participate in first- or earlier-closings for private investments and therefore affect terms and conditions. This does not appear to have been a particular issue for SERS.)

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Alternative 2: Continue to bring all new external manager hires and manager terminations to the Board for approval. However, do not continue to have manager presentations.

Pros:

- Would save Board some time.
- Manager presentations uncorrelated to managerial skill; would eliminate a “behavioral wild card” that can detract from analytical decision making.
- Sensitizing managers can be embedded in policy instruction to investment staff.

Cons:

- Only marginal improvement in Board efficiency.
- Ends ability of Board Members to directly question managers.

Alternative 3: Grant authority to the CIO to select follow-on funds in private asset classes.

Pros:

- Ends low-value use of Board time. Some private asset class investments are follow-on funds (also called re-ups), which are subsequent funds raised by a general partner previously selected by SERS. In such a case, assuming the previous partnership has functioned as anticipated, and that there is no material change in the general partnership (nor to other conditionalities such as the terms and conditions being acceptable to SERS), there is a reasonable assumption that the Board continues to be comfortable with a general partner it has previously selected.
- The frequency of “re-ups” is increasing. General partners used to raise follow-on funds every 3-5 years. That is now more likely to be every 2-3 years.

Cons:

- Would not eliminate Board time spent on discussion of manager selection, only reduce it.

Alternative 4: Grant authority to the CIO to select active managers in public asset classes.

Pros:

- Limiting discretion to public asset classes allows termination at any time.
- Could provide the Board significantly more time to focus on strategic issues.
- Would be more consistent with standards of fiduciary prudence.
- Would potentially improve timeliness of some manager selection decisions.

Cons:

- Some trustees may feel uncomfortable not overseeing each individual investment manager hiring and termination.

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Alternative 5: Delegate all manager and general partnership selection to the CIO, subject to appropriate constraints and conditions.

Pros:

- Is leading practice and becoming prevailing practice.
- Would align with all five reasons for delegation.
- Would be the most efficient option for both Board and staff.
- Would encourage policy discussions away from individual manager selection fact patterns.

Cons:

- Investment processes and procedures currently may not be robust enough, or at a maturity level necessary, to give the Board comfort, particularly given the inability to terminate private market partnerships prior to multi-year term.
- Recent turnover in the SERS investment office means there may not be adequate institutional knowledge, depth, and experience for the Board to feel this is appropriate at this time.

Recommendations

SERS has recognized the benefits of delegation for passive public equity advisors (and for rebalancing). We encourage SERS to consider the range of options specified above. We recommend adoption of Alternative 4 (which is broken out below in recommendation D.5), with the ultimate objective of achieving Alternative 5.

D.1 The new CIO should review and update, where appropriate, the “Hiring Investment Managers Process” and the due diligence questionnaires and process checklists.

The SERS “Hiring Investment Managers Process” document and the related list of due diligence questionnaires and process checklists were last updated in June 2018. In general, such key process documents should be reviewed on a two- to three-year cycle. The desirability of such a review is magnified given the turnover in the Investment Office, which means the document was last reviewed two CIOs ago.

D.2 The Board should end the requirement for the CIO to consult with the Chair of the Investment Committee and the Chair of the Board prior to implementing rebalancing actions, while retaining the requirement that such actions be reported to the Investment Committee or Board at the next available IC or Board meeting.

Rebalancing is a tactical process designed to implement the Board’s asset allocation. It is not a strategic decision which requires Board input. The constraints contained within SERS’ rebalancing policies (use of cash and index options only, must rebalance to within target asset class ranges so as to prevent unauthorized over- or underweights, need to report as soon as practicable) both make that clear and provide adequate control and instruction around the process. Consulting with the two Chairs prior to implementing a rebalancing is not likely to add value and could delay implementation.

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- D.3** The staff should endeavor to meet the 12-month standard for removing managers from the Investment Manager Evaluation List.
- D.4** The investment policy statement should be updated to reflect the recent decision to delegate manager selection of public equity passive managers to the Chief Investment Officer.
- D.5** The Board should consider the incremental steps towards manager delegation outlined in “policy options” (above). Specifically, the Board should:
- Eliminate manager presentations to the Investment Committee and instead rely on the due diligence reports from staff and the consultants, as discussed above;
 - Grant discretion to the CIO to execute “follow-on” (re-up) agreements to previously hired general partners. The Board should establish limits on that discretion, as discussed above; and
 - Grant discretion to the CIO to hire and terminate active managers in liquid public markets, with established limits on that discretion.
- D.6** SERS should revisit the level of delegation, including a review of how delegation has worked, trends among peers and other leading practices, at least once every three years.

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III. Board Self-Assessment

The SERS Board Self-Assessment Policy provides a process by which the Board can regularly review and assess its performance and to identify subject areas that may be appropriate for educational/training sessions, pursuant to the Board Education Policy. The Board Self-Assessment Policy is based on a determination that self-assessment is necessary to maintain a high functioning Board and to foster a culture of continuous improvement, consistent with the Board's fiduciary duties. The Board, as a whole, is responsible for evaluating its own performance. All Board members are responsible for assessing their knowledge in relevant subject areas and are expected to participate in the Board self-assessment process.

Process Overview

The following is a self-assessment report prepared by Funston Advisory Services LLC (FAS) based on:

- A self-assessment governance survey conducted during February 2021 with responses from Pennsylvania SERS trustees, trustee designees, and executive staff; participants included:
 - Seven trustees out of nine who were asked to participate (two new trustees were excluded due to having not yet attended their first meeting);
 - Six trustee designees (including the designees for the two invited trustees who did not respond and one designee who represents one of the new trustees); and
 - Ten agency executives.
- Subsequent interviews with nine trustees (several of whom included one or more designees) which included a discussion of the recommendations identified by participants in the survey.
- FAS knowledge of public retirement system leading governance practices, which was used to refine the recommendations and identify additional opportunities for improvement.

This report contains a summary of effectiveness ratings in each of ten topical areas. It should be noted that, in general, there is a high level of satisfaction among both the Board and staff respondents, as reflected in the average ratings in each area. In every instance the average rating by any group (i.e., trustees, designees, or staff) was effective or very effective.

The effectiveness rating scale utilized in each table is based upon:

- Very ineffective = 1
- Ineffective = 2
- Effective = 3
- Very effective = 4

Trustees and Designees were also asked about their time spent on SERS matters. Their responses are included in Appendix 1.

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Self-Assessment Findings

The SERS Board has made significant improvements in its governance structure, policies, and practices over the past five years since its last governance review. The Board, Executive Director, and other senior staff are to be commended for such progress.

The results of these changes were reflected in both the effectiveness ratings and the comments provided by trustees, designees and staff. Using an effectiveness rating scale from 1 to 4, with 1 being very ineffective and 4 being very effective, in every instance the average rating by any group (i.e., trustees, designees, or staff) was assessed as effective or very effective. This is among the highest ratings we have seen in this type of Board self-assessment.

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Governance Structure

| How effectively do you believe the SERS Board of Trustees governance structure is working? | Trustees | Designees | Executives |
|--|----------|-----------|------------|
| Average Rating | 3.71 | 3.33 | 3.44 |

Trustee comments:

- The Board has come together well and things are improving.
- Most trustees are very pleased with the governance changes over the past few years and with SERS' current state, and especially with the current ED and CIO.
- The key to improved governance is educational and training opportunities – the more members and designees can learn about investments, actuarial matters, fiduciary responsibility, etc., the better our performance will become.
- We have an excellent board, but we would benefit if the appointing authorities would pay more consideration to how their appointments add value to the board; just as we look for diversity in our managers, our board would benefit from more diversity.
- Some trustees should be required to have professional investment experience.
- Having Board Counsel could expedite Board's role in handling disability reviews and appeals.

Governance Structure Recommendations

1.1. The Board should recommend statutory revisions to the General Assembly to:

- **Require one or more appointed trustees to have professional investing experience.**
- **Give the SERS Board greater flexibility regarding procurement, including the ability to establish its own procurement policy.**
- **Increase the SERS Board's discretionary authority regarding budget, complement, classification, compensation and contracting, procurement process and authorities.**
- **Consider staggered terms for elected and appointed trustees to improve continuity.**

1.2. The Board should provide periodic guidance to the appointing authorities regarding desired experience, capabilities, and diversity of new appointments.

1.3. The Board should consider term limits of three terms of two years for Board and committee officer positions.

1.4. The Board should consider hiring its own Independent Counsel in specific situations, including potentially expediting the Board's role in handling disability reviews and appeals.

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By-laws, Charters, and Policies

| How effectively do you believe the SERS by-laws, charters, and policies are working? | Trustees | Designees | Executives |
|--|----------|-----------|------------|
| Average Rating | 3.71 | 3.50 | 3.20 |

Trustee comments:

- SERS has good policies, the Board has been doing a good job implementing improvements.
- Many of SERS' policies are complex and seem to have tried to anticipate every possible outcome or action.

By-laws, Charters, and Policies Recommendations

No recommendations

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Powers Reserved for the Board and Delegations

| How effectively do you believe the powers reserved for the Board of Trustees and delegations to the Executive Director are working? | Trustees | Designees | Executives |
|---|----------|-----------|------------|
| Average Rating | 4.00 | 3.33 | 3.20 |

Trustee comments:

- The clarification of our Powers through our Governance program has resulted in the Board and Staff doing a better job.
- SERS is in a good spot with delegations – staff has asked the Board for more, we have had good discussions, and we have agreed, for example, last year with rebalancing.
- We need to look at delegation of investment manager selection to staff so that we can better focus on the big picture.
- The Board shouldn't be voting on managers, we have a professional staff who should be making the choices and held accountable.
- We need to be spending more time discussing the asset allocation, as it is the most important decision the Board will make and we don't spend enough time and focus on it.

Powers Reserved for the Board and Delegations Recommendations

- 3.1. Implement investment governance improvements which will facilitate further delegation of tactical investment decision-making, including incremental delegation of manager selection (See Appendix 2 and Governance Review item D).**

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Board Meeting and Operations

| How effectively do you believe the SERS Board of Trustees Board meetings and operations processes are working? | Trustees | Designees | Executives |
|--|----------|-----------|------------|
| Average Rating | 3.86 | 3.50 | 3.40 |

Trustee comments:

- Trustee input is encouraged during board meetings, there is a lot of good discussion.
- The Board and staff have embraced the opportunity for additional transparency through livestreaming of meetings.
- We have generally been able to reach a consensus.
- The Board Chair does a great job facilitating discussion and building consensus while ensuring trustees' views are appropriately considered.
- Designees add value and ask good questions, but with virtual meetings, the normal protocol of one speaker for each trustee becomes blurred when both the trustee and one or more designees also participates.

Board Meeting and Operations Recommendations

- 4.1 The Board should spend more time discussing strategic issues such as investment policy, asset allocation, and quality of investment staff and effective oversight of investment performance, member services quality, and operational performance.**
- 4.2. Consider a Board policy regarding who can 'speak' on behalf of the 'seat' when both trustee principals and designees participate in a virtual setting.**
- 4.3. Keep a record of dissenting opinions and concerns on 'no' votes which identify the issue or reason prompting that vote to help staff address the concern and make regular use of roll call votes except for meeting minutes and consent agenda items.**

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Board Oversight and Independent Reassurance

| How effectively do you believe the SERS Board of Trustees oversight (e.g., management and performance reporting) and independent reassurance processes (e.g., external audit, internal audit, other third-party reviews) are working? | Trustees | Designees | Executives |
|---|----------|-----------|------------|
| Average Rating | 3.83 | 3.33 | 3.50 |

Trustee comments:

- Feel that every area in Reporting and Board Oversight has improved.
- Meeting materials are provided well in advance of scheduled meetings, providing ample time for trustees to review.
- Periodically, the board receives detailed risk assessments with clear and actionable steps that can be taken to mitigate any issues identified.
- We have a strong framework in place – now the Board and Executive Director need to be engaged, set the tone, and hold people accountable.
- The Board is overwhelmed by the quantity of information – it should be pared down to key reports and performance metrics that are critical success drivers.
- Would like to see staff doing a better job of reporting performance – exception reporting makes sense.
- Want to focus on longevity risk – we currently spend very little time discussing it – should the actuary be presenting more directly to the Board rather than committee?

Board Oversight and Independent Reassurance Recommendations

5.1. Streamline performance reporting to the Board:

- **Performance reports should address all vital retirement functions.**
- **Ensure that each report has a concise executive summary.**
- **Each report should contain key performance metrics that are vital signs of the state of health of that function.**
- **Develop data dashboards focused on key performance and risk metrics to help reduce information overload.**
- **Establish tolerances for acceptable variability in actual compared to expected performance.**
- **Require timely variance analysis and escalation of exceptions with related policy implications**
- **Develop links to supporting information to improve trustee accessibility to underlying data.**
- **Ensure there are independent verifications of the reliability of dashboard reports and related metrics.**

5.2. Ensure adequate Board oversight of cybersecurity performance and risks.

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Board Committees

| How effectively do you believe the SERS Board of Trustees committees are working? | Trustees | Designees | Executives |
|---|----------|-----------|------------|
| All Board Committees Overall | 3.67 | 3.17 | 3.56 |
| Audit, Risk and Compliance | 3.67 | 3.50 | 3.63 |
| Board Governance and Personnel | 3.67 | 3.40 | 3.63 |
| Defined Contribution | 3.75 | 3.25 | 3.29 |
| Finance and Member Services | 3.40 | 3.20 | 3.43 |
| Investment | 3.67 | 3.17 | 3.43 |
| Securities Litigation | 3.25 | 4.00 | 3.57 |

Trustee comments:

- The committee structure seems to be appropriate, but performance depends on the committee.
- Having all the meetings in two days makes it hard for the committee report outs – if there were committee meetings in between, maybe virtually, it could help the workflow and workload.
- The committee process appears to be working well, with excellent staff support.
- For some of the committees, the amount of information to be reviewed in preparation for the committee meeting is voluminous and some is redundant.

Board Committees Recommendations

- 6.1. Consider holding at least some committee meetings in between Board meetings, perhaps virtually, rather than the day before, in order to improve decision making and preparation time for Board meetings.**
- 6.2. Ensure that each committee effectively reports out to the full Board on all key issues such as investment performance and risk and actuarial risks.**
- 6.3. Require Ad Hoc Committees to be Board Committees and only Board members should vote.**
- 6.4. Have Committee Chairs set Committee agendas and work plans, with input from committee members and the Executive Director and executive liaison for the committee.**
- 6.5. Each committee, with input from the Executive Director and the committee's executive liaison should develop an annual list of policy priorities to be addressed by the committee, and those recommended policy priorities should be approved by the full Board.**
- 6.6. Committees should recommend the selection of independent advisors to the board within their respective areas of responsibility; staff should not vote on these recommendations.**
- 6.7. Review Committee Charters at least every three years.**
- 6.8. Focus Committees more on critical success drivers and deeper analysis in evaluating performance and considering alternative strategies and related policy implications.**

SERS Fiduciary Review and Board Self-Assessment Final Report

Board Education and Development

| How effectively do you believe the SERS Board of Trustees education and development program is working? | Trustees | Designees | Executives |
|---|----------|-----------|------------|
| Average Rating | 3.43 | 3.17 | 3.11 |

Trustee comments:

- It's hard to make this perfect, as there is a lot out there, and quality and quantity can be challenging to discern.
- While the educational sessions provided by staff are usually very informative, the outside educational sessions are hit and miss.
- The training has been helpful; however, there is a need for basic investment and actuarial fundamentals training.
- Generally pleased with the continuing education offerings.
- We are given a list of educational opportunities with a lot of options, but the Board should determine what it needs and be more targeted.
- Our significant preference is for education to be provided by completely independent and unbiased parties, which isn't currently always the case.

Board Education and Development Recommendations

7.1. Develop an overall continuing education plan:

- **Develop a core curriculum and recommended elective offerings, tied to the Board's strategic agenda and timing of key decisions;**
- **Tailor individual plans, to the extent practical, to the individual learning needs of trustees; and**
- **Streamline and curate a list of focused educational recommendations.**

7.2. Provide basic investment and actuarial fundamentals training for newer trustees and enhance opportunities for all trustees to learn more about investments, actuarial matters, fiduciary responsibilities, parliamentary procedures, etc.

7.3. Ensure all third-party education is provided by independent and unbiased parties.

7.4. Provide specific practical examples during ethics training and allow time for questions and answers.

7.5. Utilize the Board portal (BoardDocs) to make the most recent orientation packet available to all Trustees and Designees.

SERS Fiduciary Review and Board Self-Assessment Final Report

Board Interactions with Staff

| How effectively do you believe the SERS Board of Trustees interactions with staff are working? | Trustees | Designees | Executives |
|--|----------|-----------|------------|
| Average Rating | 3.86 | 3.67 | 3.55 |

Trustee comments:

- SERS has an excellent senior staff which is very effective – all of my experiences have been positive.
- Staff is very responsive to the Board, and there is a lot of respect by the Board of staff.
- The new committee structure has allowed more interaction with staff, not just senior executives, which has been very helpful in getting to know staff and understanding bench strength.
- Staff prioritize issues identified by the board, they follow-up on areas of concern, and when the Board gives direction, they get it done.
- Succession planning is an area that is worth additional attention.

Board Interactions with Staff Recommendations

- 8.1. Committee chairs should be regularly briefed by the staff liaison in advance of meetings to make sure committee agendas include all desired topics and that briefings and reports are timely and relevant.**
- 8.2. Improve Board succession planning for direct reports as well as making sure there is good bench strength.**

SERS Fiduciary Review and Board Self-Assessment Final Report

Evaluation of Board Direct Reports

| How effectively do you believe the SERS Board of Trustees evaluation of Board direct reports is working? | Trustees | Designees | Executives |
|--|----------|-----------|------------|
| Average Rating | 3.60 | 3.33 | 3.55 |

Trustee comments:

- This process needs more input from Board members, which has been lacking in years previous.
- The annual process is working well and has been tied to Act 5 improvements – going forward there should be more formal goal setting.
- It is working primarily because we have such good staff – how effective would the Board be dealing with a problem situation?
- Throughout the year, there is ample opportunity to provide less formal feedback on an ongoing basis, as the culture is open to dialogue and direct feedback is appreciated.

Evaluation of Board Direct Reports Recommendations

- 9.1. Establish a more collaborative process in setting goals, including consideration of annual goals linked to the strategic plan, and link compensation to the achievement of goals to the extent permitted by the State.**
- 9.2. Provide more informal feedback to direct reports on an ongoing basis, e.g., semi-annually.**

SERS Fiduciary Review and Board Self-Assessment Final Report

External Advisors

| How effectively do you believe the SERS Board of Trustees is being served by its external advisors? | Trustees | Designees | Executives |
|---|----------|-----------|------------|
| Outside advisors overall | 3.43 | 3.20 | 3.63 |
| DB Plan Actuary (Korn Ferry) | 3.43 | 3.17 | 3.75 |
| Auditors (KPMG) | 3.50 | 3.17 | 3.63 |
| General Investment Consultant (Callan) | 3.57 | 3.67 | 3.63 |
| Private Equity Consultant (StepStone Group) | 3.50 | 3.00 | 3.60 |
| Real Estate Consultant (NEPC) | 3.33 | 3.00 | 3.40 |

Trustee comments:

- Generally, the advisors are doing a good job for SERS and making suggestions to the Board.
- The level of trustee interaction with the advisors is much better now with the committees.
- We have had some opportunities to meet with the Consultants on a Board only process, and this should be held more frequently.
- Should be additional focus on the risks related to key actuarial assumptions and the effect of deviation from our assumptions; there could be considerable risk embedded within our assumptions that the Board is not as aware of as it should be.
- We have relied upon Callan heavily, particularly during a period with several senior departures in the investment office, and they have been a great asset.

External Advisor Recommendations

10.1. Meet annually with the external consultants and advisors in executive session, without staff present, to obtain more independent opinions from advisors.

10.2. Review the performance of all of outside advisors on a regular schedule, e.g., annually, and discuss Board expectations for the upcoming year.

10.3. Have external advisors provide more information to the Board on several topics:

- **The actuary should spend more time advising the Board (not just the Finance and Member Services Committee) on various actuarial and investment risks and explain how they arrive at their recommendations.**
- **Have the specialty investment advisors provide general information in their investment area.**

SERS Fiduciary Review and Board Self-Assessment Final Report

Priorities

Respondents were asked to rate the priority for improvement in each area. None were identified as high priority improvement areas. The highest priority ratings for each respondent group are circled below.

| Among the ten areas just discussed, how would you rate the priority for improvement for each area? | Trustees | | | | | Designees | | | | | Executives | | | | |
|--|------------------|--------------|-----------------|---------------|--------|------------------|--------------|-----------------|---------------|--------|------------------|--------------|-----------------|---------------|--------|
| | No Change Needed | Low Priority | Medium Priority | High Priority | Rating | No Change Needed | Low Priority | Medium Priority | High Priority | Rating | No Change Needed | Low Priority | Medium Priority | High Priority | Rating |
| Governance structure | 4 | 2 | 0 | 1 | 0.71 | 2 | 3 | 1 | 0 | 0.83 | 2 | 5 | 1 | 3 | 1.45 |
| By-laws, charters, and policies | 3 | 1 | 2 | 0 | 0.71 | 2 | 3 | 1 | 0 | 0.83 | 3 | 1 | 4 | 3 | 1.64 |
| Powers reserved for the Board and delegations | 1 | 2 | 4 | 0 | 1.43 | 2 | 3 | 0 | 1 | 1.00 | 3 | 4 | 2 | 2 | 1.27 |
| Board meetings and operations | 3 | 2 | 1 | 1 | 1.00 | 1 | 2 | 2 | 1 | 1.50 | 0 | 4 | 7 | 0 | 1.64 |
| Reporting and Board oversight | 1 | 2 | 1 | 2 | 1.43 | 1 | 3 | 1 | 0 | 0.83 | 3 | 4 | 3 | 1 | 1.18 |
| Board committees | 2 | 3 | 2 | 0 | 1.00 | 2 | 3 | 0 | 1 | 1.00 | 2 | 5 | 2 | 2 | 1.36 |
| Board education and development | 1 | 3 | 2 | 1 | 1.43 | 1 | 3 | 1 | 1 | 1.33 | 3 | 2 | 3 | 2 | 1.27 |
| Board interactions with staff | 4 | 0 | 1 | 2 | 1.00 | 3 | 1 | 0 | 2 | 1.17 | 2 | 6 | 0 | 3 | 1.36 |
| Evaluation of Board direct reports | 1 | 4 | 1 | 0 | 1.00 | 1 | 3 | 0 | 2 | 1.50 | 2 | 6 | 2 | 0 | 0.91 |
| Role of external advisors | 1 | 1 | 3 | 2 | 1.86 | 0 | 0 | 4 | 2 | 2.33 | 4 | 4 | 3 | 0 | 0.91 |

Rating Scale:

| | |
|-------------------|-----|
| No changes needed | = 0 |
| Low priority | = 1 |
| Medium priority | = 2 |
| High priority | = 3 |

**SERS Fiduciary Review and Board Self-Assessment
Final Report**

IV. Appendix 1 – Board Time Spent on SERS Matters

Trustees and trustee designees were asked about their time spent on SERS matters. Their responses are included in the table below:

| Approximately what is the average number of hours you spend per year for preparation and participation for each of the following? | Trustees (N=7) | | | Designees (N=6) | | |
|---|----------------|------|------|-----------------|------|------|
| | Ave. | Min. | Max. | Ave. | Min. | Max. |
| Board Meetings | 71 | 16 | 130 | 107 | 20 | 212 |
| Committee Meetings | 82 | 24 | 176 | 102 | 80 | 125 |
| SERS-related continuing education | 26 | 8 | 70 | 15 | 8 | 25 |
| Other SERS-related business | 36 | 15 | 72 | 103 | 0 | 500 |
| Total | 214 | 96 | 404 | 327 | 110 | 750 |

**SERS Fiduciary Review and Board Self-Assessment
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V. Appendix 2 – Investment Governance Leading Practices with Delegated Manager Selection

Funston Advisory Services LLC has identified leading governance practices for a public retirement system with a fiduciary board and investment manager selection delegated to the Executive Director and/or Chief Investment Officer. These practices are listed below.

1. Identified Investment Beliefs and a clearly-articulated investment policy statement (IPS) that identifies the board's risk appetite, asset allocation decisions, and related policies to be implemented.
2. Well-documented transparency to the board of decision rationale for investments made by investment staff.
3. An internal investment decision-making committee or group that provides a peer review of each investment opportunity and includes other key staff such as general counsel, compliance, and operational due diligence, with the ability of non-investment office staff to either veto, or escalate the decision on, investments for operational or legal reasons.
4. Organizational checks and balances that provide effective controls and minimize the potential for single point of failure decision making.
5. Effective investment risk management policies, procedures, and reporting.
6. Periodic risk and return reports, as well as operational reviews of external managers, to flag issues so as to allow appropriate oversight.
7. Pipeline reports of contemplated investment changes so as to, as much as possible, create a "no surprises" environment for the Board.
8. Annual asset class reviews by the Board which include a discussion of the due diligence processes utilized for each investment.
9. An effective internal audit capability and process that monitors investment processes and controls.
10. An effective investment compliance function that ensures investments remain within policy guidelines.
11. A general investment consultant that is hired by the board, provides counsel to both the board and investment staff, and opines on investment staff decisions.
12. Other external sources of independent reassurance to the board, for example, an investment consultant independent of staff, peer investment performance benchmarking, or fiduciary reviews.
13. Strong ethics and compliance policies in place.

ATTACHMENT C

COMMONWEALTH OF PENNSYLVANIA STATE EMPLOYEES' RETIREMENT SYSTEM BYLAWS

BYLAWS

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COMMONWEALTH OF PENNSYLVANIA
STATE EMPLOYEES' RETIREMENT SYSTEM
BYLAWS

ARTICLE I
BOARD COMPOSITION AND POWERS

Section 1.1. Composition. As provided in the State Employees' Retirement Code (71 Pa. C.S. §5101 *et seq.*) (the "Retirement Code"), the State Employees' Retirement Board (the "Board") shall consist of the following persons: two Senators, two members of the House of Representatives, five members appointed by the Governor, one of whom shall be an annuitant of the State Employees' Retirement System (the "System") or a participant in the State Employees' Defined Contribution Plan (the "Plan") who has terminated state service and is receiving or is eligible to receive distributions, subject to confirmation by the Senate, the Treasurer of the Commonwealth of Pennsylvania (the "Treasurer"), ex officio, and the Secretary of Banking and Securities, ex officio (hereafter, the Treasurer and the Secretary of Banking and Securities shall be collectively referred to as the "Ex officio Members"). At least five members of the Board (each a "Member") shall be active members of the System or active participants in the Plan and at least two Members shall have ten or more years of credited State service or shall have been active participants in the Plan for ten calendar years or have a combination of years of credited state service in the System and calendar years as active participants in the Plan equal to ten or more years. By written notice to the Board, the Ex officio Members and each Member who is a member of the General Assembly (each a "Legislative Member") may appoint one or more duly authorized designees who shall have authority to act in such Member's stead. In the event that a Member, who is designated as an active participant or as a participant in the Plan who is receiving or is eligible to receive distributions, receives a total distribution of his interest in the plan, that Member may continue to serve on the Board for the remainder of his term.

The two Members who are Senators shall be appointed by the President pro tempore of the Senate and shall consist of a majority and a minority member. The two Members who are members of the House of Representatives shall be appointed by the Speaker of the House of Representatives and shall consist of a majority and a minority member. The Legislative Members shall serve on the Board for the duration of their legislative terms and shall continue to serve until 30 days after the convening of the next regular session of the General Assembly after the expiration of their respective legislative terms or until a successor is appointed for the new term, whichever occurs first. Each Member appointed by the Governor shall serve for a term of four years or until such Member's successor is duly appointed and qualified, with the terms of those Members appointed by the Governor and serving on the date of adoption of these Bylaws to have the expiration dates in effect on such date.

Section 1.2. Powers. Except as otherwise provided by law and these Bylaws, all powers of the System shall be exercised by or under the authority of, and the business and affairs of the System shall be managed under the direction of, the Board.

Section 1.3. Vacancies. Each Member shall hold office until such Member's resignation, removal, death or, in the case of Members serving ex officio or as legislative appointees, ceasing to hold office. Any vacancy occurring during the term of an appointed Member shall be filled for the unexpired term by the appointment and confirmation of a successor in the same manner as the predecessor.

Section 1.4. Ex officio Members' and Legislative Members' Designees. The Ex officio Members and each Legislative Member may at any time and from time to time appoint one or more duly authorized designees (and if more than one, either in priority preference or as alternates) to act in his or her stead at any meeting of the Board or of any committee thereof or with respect to official business and activities of the Board conducted outside of meetings. Each appointment shall be made in writing signed by the appointing Member and filed with the Secretary. Designees of an Ex officio Member shall be an officer or employee of the Ex officio Member's agency. The appointment of a designee in the foregoing manner shall remain in full force and effect unless and until revoked in a writing signed by the Member by whom such designee was appointed and filed with the Secretary, or until the earlier removal or resignation of such designee from the office or employment that qualified that person for appointment, or until the Member who appointed such designee ceases to be a Member. Each designee shall have the same rights, duties and obligations as a Member, and shall be subject to the same standard of care as a Member, when acting in the stead of a Member. In these Bylaws, any committee charter, policy or procedure adopted by the Board, any reference to Board "members," "committee members," or "trustees," including the defined terms "Members" or "Committee Members" in these Bylaws, shall be deemed to refer to the authorized designees described in this section where the context permits such interpretation.

Section 1.5. Oath of Office. Each Member shall, before exercising any power or privilege of office as a Member, take and subscribe to the oath of office in the form prescribed by law. Such oath shall be certified to by the officer before whom it is taken and immediately filed in the office of the Secretary of the Commonwealth. Designees of the Ex officio Members or the Legislative Members shall take and subscribe to the same oath of office as Members do. No person shall be allowed to take the oath of office or enter or continue upon his or her duties as a Member or as a designee of the Ex officio Members or Legislative Members unless that person has filed a statement of financial interests for the preceding calendar year pursuant to the Public Official and Employee Ethics Act, 65 Pa. C.S. §§ 1101-1113 and, if applicable, pursuant to the Governor's Code of Conduct, promulgated by Executive Order 1980-18, as amended, in accordance with State Employees' Retirement System policies or other applicable law and has filed copies thereof (through the Chief Compliance Officer) with the Board.

Section 1.6. Removal and Resignation from Office. A Member shall be subject to removal from office only in accordance with the provisions of Article VI of the Constitution of

Pennsylvania or other applicable law. Any Member may resign at any time. Such resignation shall be in writing filed with the Secretary, but acceptance thereof by the Secretary or by any other party shall not be necessary to make it effective.

Section 1.7. Compensation. Members who are members of the System or participants in the Plan shall serve without compensation. Members who are not members of the System or participants in the Plan shall receive \$100 per day when attending meetings of the Board or committees established by the Board. All Members shall be reimbursed for any necessary expenses while attending to official business.

Section 1.8. Attendance. Each Member, or the Member's duly appointed designee, is expected to attend substantially all Board meetings and committee meetings for the committees to which such Member has been appointed. The Board may establish a process to grant excused absences for good cause. Non-committee Members are invited to participate in committee meetings as non-voting observers. Absences shall be noted in the minutes of the Board or committee meeting.

ARTICLE II MEETINGS OF THE BOARD AND COMMITTEES

Section 2.1. Place of Meetings. Meetings of the Board and any committee of the Board shall be held at the main office of the System, 30 North Third Street, Harrisburg, PA, unless another place within the Commonwealth of Pennsylvania is designated in the notice of the meeting. When determined necessary by the Chairperson in his/her sole discretion either to achieve a quorum or due to special circumstances, Members may participate in regular or special meetings of the Board by means of conference telephone or similar communications equipment, provided that during the conduct of such meeting all persons participating therein can hear each other and the meeting is conducted in accordance with the Pennsylvania Sunshine Act (65 Pa. C.S. §701 *et seq.*) (the "Sunshine Act"). Any Member may participate in a committee meeting by means of conference telephone or similar communications equipment, provided that during the conduct of such meeting all persons participating therein can hear each other and the meeting is conducted in accordance with the Sunshine Act. A roll call shall be taken for all votes during the attendance of any Members by telephone or teleconferencing. In the event there is a technical problem with the connection at any time during the meeting, or during a vote, the meeting will be temporarily held in abeyance until the connection has been restored or three unsuccessful attempts have been made to restore the connection. Participation in a meeting pursuant to this section shall constitute a presence in person at such meeting.

Section 2.2. Regular Meetings. The Board shall hold at least six regular meetings annually. The committees shall hold as many meetings as may be required in their respective committee charters. The Chairperson, after consulting with Members, shall establish the agenda for each regular meeting of the Board and shall give notice of the agenda to the Members prior to the meeting. The committee chair, after consulting with the Members of the committee, shall establish the agenda for each regular meeting of the committee. The Board and each committee

required to have regular meetings shall give public notice of its first regular meeting in each year as required by the Sunshine Act and other applicable law and, prior thereto or immediately thereafter, shall give public notice of other scheduled regular meetings for the year in compliance with the Sunshine Act and other applicable law.

Section 2.3. Special Meetings. Special meetings of the Board shall be held whenever called by the Chairperson or two-thirds of Members. Special meetings of committees shall be held whenever called by the committee chair or two-thirds of the committee members. Notice of a special meeting shall be given to the public as required by the Sunshine Act and other applicable law.

Section 2.4. Emergency Meetings. The Chairperson may call an emergency meeting of the Board for the purpose of dealing with a real or potential emergency involving a clear and present danger to life or property.

Section 2.5. Notice of Meetings.

(a) Regular Meetings. No notice shall be required to be given of any regular meeting held on the date specified in the public notice referred to in Section 2.2 and at the location established for holding the meeting. In the event any regular meeting is to be held on a date which has not been so advertised or at a different location, notice shall be given as required by the Sunshine Act or other applicable law.

(b) Special Meetings. Notice of special meetings shall be given as required by the Sunshine Act or other applicable law.

(c) Emergency Meetings. Advance public notice of an emergency meeting of the Board is not required; but, to the extent practicable, the Chairperson shall attempt to give actual advance notice of such meeting, especially to individuals or organizations with a direct and substantial interest in the official action scheduled for consideration.

Section 2.6. Quorum and Voting. A majority of the Members or Committee Members in office shall be necessary to constitute a quorum for the transaction of business at a Board or committee meeting, and the acts of a majority of the Members or Committee Members present and voting at a meeting at which a quorum is present (so long as such majority constitutes a majority of a quorum) shall be the acts of the Board or committee. If there is no quorum present at a duly convened meeting of the Board or committee, a majority of those present may adjourn the meeting from time to time.

Section 2.7. Open Meetings. Official actions and deliberations by a quorum of the Board or any committee shall take place at a meeting open to the public unless permitted otherwise by the Sunshine Act or other applicable law.

Section 2.8. Executive Sessions. The Board or any committee may hold an executive session for any one or more of the reasons enumerated in the Sunshine Act or as permitted by other applicable law, including, without limitation, the discussion of personnel matters, the purchase or lease of real property, pending or expected litigation, agency business which, if conducted in public, would violate a privilege or lead to the disclosure of information or confidentiality protected by law, or quasi-judicial deliberations. “Information or confidentiality protected by law” shall include, without limitation, any information submitted to the Board under the terms of an express confidentiality agreement with a business entity offering any security for sale to and purchase by the Board in a non-public offering; deliberations with respect to the purchase, holding or sale of, or the exercise of voting rights with respect to, the publicly traded securities of any business entity, which deliberations, if conducted in public, may or might have a material bearing on the market for such securities; and any other deliberations with respect to any proposed or actual investment of the Board which, if conducted in public, may or might so substantially affect the price or terms of any transaction concerning such investment, or the value thereof, as to adversely affect the System and its participants.

Section 2.9. Voting Conflicts. Any Member who by voting would be voting on a matter that would result in a conflict of interest shall abstain from voting on such matter, refrain from participating in any discussions concerning such matter, and, prior to the vote being taken on such matter, publicly announce and disclose the nature of his or her interest as a matter of public record. A conflict of interest does not arise in connection with an action which would have an insignificant economic effect on any interest of the Member or which affects the Member only as a member of the general public or of a not de minimus subclass of the general public, or as a member of the System, Plan, or Commonwealth Deferred Compensation Plan as a whole; provided, however, that no Member shall vote on any quasi-judicial matter to which such Member or a member of his or her immediate family is a party; and provided, further, that this Section 2.9 applies only to the possible use by a Member of his or her vote for private pecuniary benefit and does not in any way affect the Member’s other fiduciary responsibilities to the members of the System in connection with official actions in which the Member has no private interest.

Section 2.10. Notational Voting. Members may cast votes by notational voting by ballot whereby a vote is taken of members individually upon a recommended written motion, resolution, rule, proposal, regulation, report or order prepared by the staff of the System or an individual Member and circulated for approval to all Members. Absent unusual circumstances to be determined by the Chairperson, the Board will resort to notational voting only in quasi-judicial matters to promote timely decision-making after full deliberations have been completed in executive session, or in certain financial or investment transactions in which a resolution or other similar formal action of the Board is required to expedite or complete the appropriate documentation. In quasi-judicial matters, the Chairperson or the Secretary shall, at the first open meeting after the adoption of written opinions or orders by notational voting, announce the substance of matters so decided and cause the record of the votes cast by individual members on each such matter to be entered in the minutes of the meeting.

Section 2.11. Rules of Order; Construction. Except to the extent otherwise provided by law or by these Bylaws, the rules of order for meetings of the Board and committees thereof shall follow as closely as practicable those prescribed for small assemblies or similar small bodies in the most recently published revision of Robert's Rules of Order. Such rules of order shall be construed to promote the orderly and efficient conduct of business and to avoid procedural complexity which may delay or hinder the taking of action required by law or advisable in the prudent exercise of the Board's fiduciary responsibility to members of the System.

Section 2.12. Minutes of Meetings. Written minutes shall be kept of each open meeting; and after approval by the Board or committee, such minutes shall be made available for public inspection and copying. The minutes shall be prepared as required by Section 6 of the Sunshine Act or other applicable law. Audio tape recordings of open Board meetings may be made solely for the purpose of facilitating the preparation of written minutes. Such tape recordings shall be retained until Board approval of the minutes to which they relate.

ARTICLE III COMMITTEES

Section 3.1. Board Committees. The Board may establish by resolution one or more standing or special committees, each to consist of two or more Members. In addition, the Chairperson may establish special advisory or review committees. Any committee, to the extent, but only to the extent, provided in an applicable resolution of the Board, committee charter or in these Bylaws, shall have and may exercise any of the powers and authority of the Board. The Board has established the following standing committees, which may be changed from time to time by Board resolution: Audit, Risk and Compliance Committee; Investment Committee; Board Governance and Personnel Committee; Finance and Member Services Committee; Defined Contribution Committee; and Securities Litigation Committee (collectively, the "Standing Committees"). The Board shall delegate to the Standing Committees the authority to take such actions and perform such duties as expressly stated in the Standing Committees' committee charters; provided that no committee shall have the power to amend, modify or repeal a resolution of the Board or to amend these Bylaws or to take any action on matters committed by Board resolution or applicable law to the full Board under terms or provisions that make such action non-delegable.

Section 3.2. Committee Membership. Unless designated by resolution, the Members of any committee ("Committee Members") shall be appointed by the Chairperson, with the Board's advice. The Chairperson may appoint a Member to multiple committees. The Chairperson shall appoint each Member to a committee as the Chairperson may reasonably determine.

Section 3.3. Committee Member Terms. Except for the Treasurer of the Commonwealth of Pennsylvania and the Secretary of Banking and Securities, who are permanent Committee Members on the Investment Committee, in January of each year, the Chairperson shall appoint the Committee Members, who shall have terms through December 31st of that year, with service at the pleasure of the Chairperson. In the event of a vacancy on a

committee, the Chairperson shall appoint a replacement Committee Member for the balance of the term of the vacating Committee Member. Except as to membership on the Audit, Risk and Compliance Committee, there shall be no limitation on the number of full terms for which a Committee Member may be reappointed. No Member shall serve on the Audit, Risk and Compliance Committee for more than four consecutive full terms, except that a Committee Member may be reappointed to the Audit, Risk and Compliance Committee by the Chairperson following a one-year absence from the committee. Notwithstanding the foregoing, each Committee Member shall serve until his or her successor is duly appointed or until his or her earlier death, resignation or removal, it being understood that termination of membership on the Board shall constitute a resignation from the committee.

Section 3.4. Committee Chairs. Annually, Committee Members shall elect a chair of the committee ("Committee Chair") at such time as the first committee meeting of the year or at such time as the Committee Chair position becomes vacant. The Chairperson may not serve as a Committee Chair, except that the Chairperson may serve as the Committee Chair for the Board Governance and Personnel Committee. The Committee Chair shall take office effective as of the day of his or her election and shall serve as Committee Chair through December 31st or until the Committee Chair's successor is duly elected or such officer's earlier death, resignation or removal. If the Committee Chair does not complete his or her term, then the Committee Members shall elect an interim Committee Chair at the Committee meeting following the Committee Chair's departure from the Committee. The interim Committee Chair shall serve until the new Committee Chair takes office according to the procedures outlined above. The Committee Chair shall preside at all meetings of the committee. The Committee Chair shall have such other powers and perform such other duties as may be delegated by the Board and as described in the Committee Chair Position Description.

Section 3.5. Committee Assistant Chairs. Annually, the Committee Chair shall appoint a committee assistant chair with the advice and consent of the Committee ("Committee Assistant Chair"). The Committee Assistant Chair shall preside at all meetings of the committee in the absence of the Committee Chair. The Committee Assistant Chair shall have such other powers and perform such other duties as may be delegated by the Committee Chair and as described in the Committee Assistant Chair Position Description. The Committee Assistant Chair shall serve through December 31st or until the Assistant Chair's successor is duly appointed or such officer's earlier death, resignation or removal, with service at the pleasure of the Committee Chair.

Section 3.6. Committee Officers. Except as otherwise provided in these Bylaws or by Board resolution, Committee Members may, in their discretion, elect such other officer(s) for the committee as they shall determine from time to time.

Section 3.7. Bylaws Apply to Committee Governance. The term "Board," when used in any provision of these Bylaws relating to the organization or procedures of, or the manner of taking action by, the Board, shall be construed to include and refer to any committee of the Board. Any provision of these Bylaws relating or referring to action to be taken by the Board or the procedure required therefor shall be satisfied by the taking of corresponding action by a

committee of the Board to the extent authority to take the action has been delegated to such committee pursuant a resolution of the Board, committee charter or these Bylaws.

ARTICLE IV OFFICERS

Section 4.1. Officers and Terms. The System shall have a Chairperson, Assistant Chair, and a Secretary. The Secretary also shall serve as Executive Director. The Chairperson shall be designated by the Governor from among the Members. The Assistant Chair shall be appointed by the Chairperson after consulting with the Board. The Secretary shall be appointed by the Board. The Board may appoint one or more other officers or assistant officers having such powers and duties as may be assigned to such officers by the Board. Each officer other than the Chairperson and the Assistant Chair shall serve at the pleasure of the Board, until such officer's earlier death, resignation or removal.

Section 4.2. Powers and Duties of the Chairperson. The Chairperson shall preside at all meetings of Board. In the absence of the Chairperson at a duly convened meeting of the Board, or the inability of the Chairperson to participate in a meeting telephonically, the Assistant Chair shall preside at such meeting of the Board. The Chairperson shall have such other powers and perform such other duties as may be assigned to such officer by the Board or as described in the Chairperson Position Description.

Section 4.3. Powers and Duties of the Assistant Chair. The Assistant Chair shall preside at all meetings of the Board in the absence of the Chairperson, as described in Section 4.2. The Assistant Chair shall have such other powers and perform such other duties as may be delegated by the Chairperson or as described in the Assistant Chair Position Description. The Assistant Chair shall serve a nominal two-year term, with service at the pleasure of the Chairperson, or until such officer's earlier death, resignation or removal.

Section 4.4. Powers and Duties of the Secretary/Executive Director. The Executive Director in his or her capacity as Secretary, shall have the powers and duties set out in Section 5902(a.1) of the Retirement Code and such other powers and duties as have been or are assigned to the Secretary and the Executive Director by the Board and generally shall have the usual duties of an executive officer with general supervision over and direction of the affairs of the System. The Executive Director/Secretary shall serve as the primary point of contact between the Board and the System. Except as otherwise established by Board approved policy, the Executive Director/Secretary shall be responsible for providing and/or delivering all information, reports, documents and communications from the System, other than from the Chief Counsel or the Chief Compliance Officer, but including from the Investment Office, to the Board. Notwithstanding the foregoing, the Executive Director/Secretary may delegate such responsibilities to System staff, agents and independent contractors as the Executive Director/Secretary may reasonably determine, provided that the Executive Director/Secretary shall remain responsible for overseeing such reporting to the Board.

ARTICLE V AMENDMENTS

The Board (but not a committee thereof) shall have the power to modify, amend and repeal these Bylaws or any committee charter by a two thirds (2/3) vote of the Members present and voting at any open meeting at which a quorum is present after 15 days advance written notice to all Members. Such notice shall set forth the proposed modifications or amendments or specify the provisions proposed to be repealed. The text of each modification, amendment or repeal of the Bylaws or committee charter shall be attached to the Bylaws or committee charter (as appropriate) with a notation of the date of such modification, amendment or repeal. At any time and from time to time, the Chairperson may direct the Executive Director/Secretary to certify and publish a restatement of these Bylaws or any committee charter, as amended as of the date of such certification.

ARTICLE VI INDEMNIFICATION

The System shall, to the extent required by applicable law or policy adopted by the Board, indemnify each Member against any and all liabilities and advance any and all reasonable expenses (including attorneys' fees) as incurred by such person, arising out of or in connection with any proceeding to which such person is a party because such person is or was a Member.