

Pennsylvania Public School Employees' Retirement System

# Budget Report Appropriations Committee

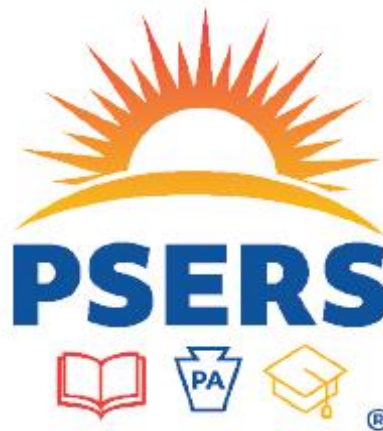
Fiscal Year 2024-2025

A Component Unit of the Commonwealth of Pennsylvania

# **PSERS Budget FY2024-25**

**Pennsylvania**  
**Public School Employees' Retirement System**  
A Component Unit of the Commonwealth of Pennsylvania

5 North 5th Street  
Harrisburg, PA 17101-1905



**FISCAL YEAR 2024-25 BUDGET REPORT**  
**APPROPRIATIONS COMMITTEE**  
**February 28, 2024**

**Richard Vague**

*Chair*

*Board of Trustees*

**Susan C. Lemmo**

*Vice Chair*

*Board of Trustees*

**Terrill J. Sanchez**

*Executive Director*

Report prepared primarily by the Public School Employees' Retirement System  
Office of Financial Management with support from Investment Office and other PSERS professionals

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# SECTION 1

## PSERS OVERVIEW

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**Overview, Board of Trustees,  
Mission, Vision and Values,  
Organizational Structure, and  
Legislation**

## Section 1 - PSERS Overview

### Overview

The Public School Employees' Retirement System (PSERS) is one of the oldest pension plans in the United States. Since 1917, PSERS has been serving the public school employees of the Commonwealth of Pennsylvania (Commonwealth). PSERS is a governmental, cost-sharing, multiple-employer pension plan to which public school employers, the Commonwealth, and school employees (members) contribute. PSERS was created by statute through the Public School Employees' Retirement Code (Retirement Code) as a defined benefit plan; a qualified trust under Section 401(a) of the Internal Revenue Service Code (DB Plan; Fund). PSERS' role expanded upon the passage of Act 5 of 2017, effective July 1, 2019, to include oversight of the School Employees' Defined Contribution Plan, a separate qualified 401(a) defined contribution plan (DC Plan; Trust).

PSERS is the 34th largest plan among U.S. corporate and public pension plans, and the 21st largest state-sponsored public pension fund in the nation based on total plan assets according to a February 12, 2024, *Pension & Investments* survey. As of June 30, 2023, PSERS fiduciary net position was approximately \$72.1 billion.

As of June 30, 2023, PSERS had approximately 251,000 active members. The annuitant membership was comprised of approximately 250,000 retirees and beneficiaries, who received pension disbursements totaling \$7.58 billion. The average yearly pension benefit paid to annuitants was \$26,197. As of June 30, 2023, PSERS had 770 participating school employers.

In addition to retirement benefits, PSERS administers a Premium Assistance Program and a PSERS Health Options Program. The Premium Assistance Program provides a health insurance premium subsidy of up to \$100 per month for those retirees who qualify. As of June 30, 2023, there are approximately 93,000 retirees who receive this benefit. PSERS Health Options Program is a voluntary, statewide plan that provides group health insurance coverage for school retirees, their spouses, and eligible dependents. The Health Options Program is entirely funded through participating member premiums with 124,000 annuitants and their dependents as of December 31, 2023.



**500k+ Members**

251k Active Members and Participants  
250k Retired Members and Beneficiaries



**770  
Participating  
Employers**

**\$7.46 Billion**

in Benefits paid in FY 2022-23

**\$72.1 Billion**

in Assets as of June 30, 2023

**\$26,197**

in Average Annual Benefits as of  
June 30, 2023

## Section 1 - PSERS Overview

### Board of Trustees

PSERS is managed and controlled within applicable state and federal laws by a 15-member Board of Trustees (Board). The Board is an independent administrative board of the Commonwealth that stands in a fiduciary relationship to the members of the DB Plan and the DC Plan regarding the investments and disbursements of moneys. The members of the Board have exclusive control and management of the Fund and full power to invest, subject to observance of such standards of fiduciary conduct. The Board also performs other functions as are required for the administration of the System, including the payment of benefits.

### PSERS BOARD MEMBERS - FEBRUARY 2024

<b>CHAIR</b> Richard Vague Governor Appointee	<b>VICE CHAIR</b> Susan Lemmo Elected Retired Member
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**MEMBERS**

The Honorable Matt D. Bradford  
Pennsylvania House of Representatives

Dr. Pamela Brown  
Elected Active Certified Member

Jason M. Davis  
Elected Active Certified Member

Eric O. DiTullio  
Elected by Pennsylvania Public School Boards

The Honorable Torren Ecker  
Pennsylvania House of Representatives

The Honorable Stacy Garrity  
Treasurer of Pennsylvania

Nathan G. Mains  
Chief Executive Officer of the Pennsylvania School Boards Association, Inc.

Ann Monaghan  
Elected Active Non-Certified Member

The Honorable Dr. Khalid N. Mumin  
Secretary of Education

The Honorable Katie J. Muth  
Pennsylvania State Senate

Brian A. Reiser  
Elected Active Certified Member

The Honorable Greg Rothman  
Pennsylvania State Senate

The Honorable Wendy Spicher  
Secretary of Banking & Securities



## Section 1 - PSERS Overview

### Mission, Vision, and Values

PSERS Board of Trustees formally adopted a strategic plan framework for the agency at its August 2023 Board meeting. The strategic plan represents months of hard work by both members of the Board and staff to better define and plan the work that the agency is committed to doing each and every day.

The Board identified six strategic priorities that are supported by 25 initiatives, many of which are either already under way or will begin soon. These clear priorities and initiatives provide the focus we need to efficiently work together on the right things at the right time.

To ensure that PSERS' strategic plan was created with a sense of purpose and built upon a strong foundation, we revisited and ultimately revised PSERS' mission, vision, and values statements. These changes reflect our continued dedication to partner with our members, employers, employees, and other stakeholders to provide a secure retirement benefit that will be there for members when they need it.

The entire agency is excited to embark on this journey over the next few years. Despite the challenges that may lie ahead, PSERS is confident that its talented and motivated staff, along with thoughtful leadership and planning, can deliver on these goals.

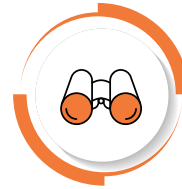
#### Our Mission



To be a partner with our members to fulfill the promise of a secure retirement.

#### Our Vision

To be a trusted partner in delivering exceptional retirement services and benefits.



#### Our Values

##### Public accountability and transparency.

We are committed to holding ourselves to the highest standards of ethics and accountability and believe that openness and honesty are fundamental to PSERS' success.

##### Staff growth and development

We are committed to cultivating a human-centered organizational culture and developing team-member competencies to meet the needs of today and tomorrow.

##### Exceptional levels of service

We are committed to continuous improvement and exploring innovative ways to increase productivity and enhance the customer experience.

##### Respect for our members, stakeholders, and staff

We are committed to creating an organizational culture that fosters diversity, equity, and inclusion where everyone receives fair treatment and civility.

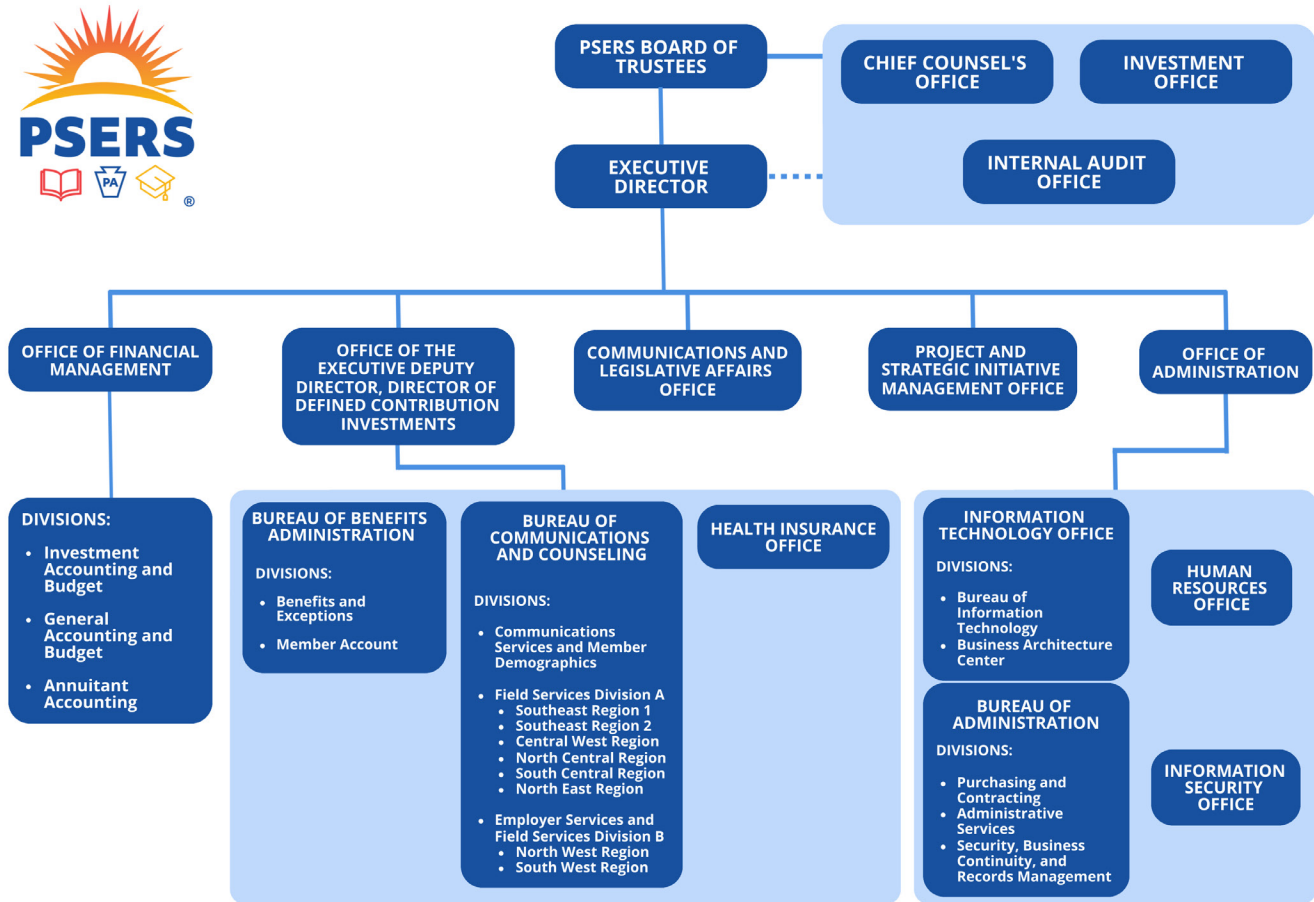
##### Stewardship of resources and investments

We are committed to prudently investing the assets and effectively managing the resources entrusted to our care.



# Section 1 - PSERS Overview

## PSERS Organizational Structure



### Executive Office

The Executive Office is led by the Executive Director, who serves as the chief executive officer with overall responsibility for the management of the agency to achieve the objectives and strategic initiatives as established by the Board. The position's primary duty is to lead PSERS employees in meeting the agency mission by partnering with our members to fulfill the promise of a secure retirement and being a trusted partner in delivering exceptional retirement services and benefits. This position is responsible for providing leadership, advice, and counsel to the Board, and ensuring public trust and confidence in the agency.

### Investment Office

Led by the Chief Investment Officer (CIO), the Investment Office is responsible for the investment activities of the agency. In compliance with the investment policy established by the Board, PSERS investment assets are diversified across several asset classes, managed both internally by the investment office professionals and by external investment managers. The CIO serves as the Board's liaison and senior staff administrator on managing and overseeing the investments of the Fund.

### **PSERS Organizational Structure (continued)**

#### **Office of Chief Counsel**

Led by the Chief Counsel, this office provides legal services through a team of professionals in collaboration with PSERS Executive Director and the Board. The legal staff is responsible for representing the System in all administrative hearings and other litigation matters and providing counsel in a wide variety of matters, including the interpretation of the Retirement Code, form and legality of all contracts, corporate governance issues and the structure and implementation of the varied financial investments.

#### **Internal Audit Office**

Led by the Chief Audit Officer (CAO), the Internal Audit Office provides a wide range of independent internal auditing services for the Audit, Compliance and Risk Committee of the Board and executive management. It performs independent assessments of the systems of risk management, internal controls and operating efficiency, guided by professional standards and using innovative approaches. The office also routinely monitors compliance with established laws, rules, regulations, policies, and procedures.

#### **Financial Management Office**

Led by the Chief Financial Officer (CFO), this office oversees accounting and financial reporting for the agency in conformance with accounting principles generally accepted in the United States of America. The Office is also responsible for PSERS budgetary matters, annuitant payroll, investment accounting, treasury operations, and taxation. This position oversees the General and Public Market Accounting Division, Investment Accounting and Budget Division, Annuitant Accounting, and Employer Accounting Division.

#### **Communications and Legislative Affairs Office**

Led by the Director of Government Affairs and Stakeholder Engagement, this office is responsible for effective collaboration and engagement with PSERS many key stakeholders, including the General Assembly, and oversight of agency internal and external communications, including coordination with the Bureau of Communications and Counseling to develop a member communication plan and strategy. Staff within this office also maintain the agency's external website as well as serve as a liaison to members of the General Assembly in responding to legislative inquiries, performing legislative research, and coordinating agency responses to proposed legislation.

#### **Project and Strategic Initiative Management Office**

Led by the Director of Governance and Strategic Initiatives, this office oversees and facilitates projects that support the implementation of the agency's strategic plan. Leveraging a governance-based framework, the office assists the Executive Director in supporting board governance; facilitating the development, evaluation, and revisions to board and agency policies; and ensuring projects align with the agency strategic plan. Guided by the Executive Director and Board, the office also oversees agency risk and performance management functions, including identifying, evaluating, monitoring, reporting on, and mitigating risks.

## Section 1 - PSERS Overview

### PSERS Organizational Structure (continued)

#### Office of Administration

Led by the Deputy Executive Director for Administration, this office provides comprehensive leadership to assist the Executive Director in accomplishing the agency's mission by maintaining oversight of PSERS administrative and information technology and security-related services for the agency. This includes managerial responsibility for the following areas: information technology; information security; human resources; physical security; facilities; contracting and procurement; business continuity; safety; records management; and mail, imaging, and printing services.

#### Office of the Deputy Executive Director and Director of Defined Contribution Investments

Led by the Deputy Executive Director and Director of Defined Contribution Investments, this office provides comprehensive leadership and oversight to assist the Executive Director in accomplishing the agency mission by maintaining oversight of the Bureau of Benefits Administration, Bureau of Communications and Counseling, the Health Insurance Office, and the agency Appeals Coordinator. This includes managerial responsibility for PSERS membership related benefit functions for the agency's Defined Benefit (DB) plan, the Defined Contribution (DC) plan, and the post-employment healthcare programs, namely: member and employer communications; member retirement counseling; member and employer data administration; benefits determinations and processing; member appeals; knowledge management of benefit policies and procedures; health insurance retirement programs including premium assistance; third-party contractor administration, and defined contribution contract investment management. This office also oversees seven regional offices located throughout the Commonwealth that provide services to both active and retired PSERS members and over 750 public school employers. Among these services are regularly scheduled informational presentations on various topics relating to retirement benefits and programs.

#### Northwest

Pennwood Center  
464 Allegheny Boulevard, Ste C  
Franklin, PA 16323-6210

#### Northcentral

300 Bellefonte Avenue, Suite 201  
Lock Haven, PA 17745-1903

#### Northeast

417 Lackawanna Avenue, Ste 201  
Scranton, PA 18503-2013



#### Southwest

300 Cedar Ridge Drive, Ste 301  
Pittsburgh, PA 15205-1159

#### Centralwest

219 W. High Street  
Ebensburg, PA 15931-1540

#### Southcentral

5 N 5th Street  
Harrisburg, PA 17101-1905

#### Southeast

605 Louis Drive, Suite 500  
Warminster, PA 18974-2830

### Legislation

Throughout 2023, PSERS was actively engaged in providing actuarial data, legislative analyses, and related technical information to members of the General Assembly and Executive Branch Officials on a range of pension policy proposals.

PSERS will continue to cooperate in its role as a technical expert in providing fact-based information to support efforts in determining effective pension policy and providing input on funding, operational, and legal aspects of legislative proposals.

#### **Act 6A of 2023 (House Bill 618)**

Act 6A of 2023 (House Bill 618) appropriated \$57,489,000 from the Fund for expenses incurred by the Board to administer the Fund for the 2023-24 fiscal year beginning July 1, 2023, and for the payment of any remaining unpaid bills incurred up to June 30, 2023, the close of the 2022-23 fiscal year.

Additionally, the act appropriated \$1,182,000 from the Trust for expenses incurred by the Board for the administration of the DC Plan authorized by Act 5 of 2017 for the fiscal year beginning July 1, 2023, and for the payment of any remaining unpaid bills incurred up to June 30, 2023, the close of the 2022-23 fiscal year.

#### **Act 33 of 2023 (House Bill 301)**

Act 33 of 2023 (House Bill 301) serves as an omnibus Public School Code, amending various funding and programmatic areas in public and higher education. One provision of the act permanently allows a public school employer to hire annuitants to fill day-to-day substitute teacher positions without first attempting to hire non-retired teachers if the employer is experiencing a staffing “emergency” or “shortage” as defined by the Retirement Code.

#### **Act 56 of 2023 (House Bill 1507)**

Act 56 of 2023 (House Bill 1507) amends the Public School Code’s minimum number of days or hours of annual instruction time. Starting in the 2023-24 school year, a school entity shall set the instruction time at 180 days or 900 hours for the elementary level or 990 hours for the secondary level. (The prior law set instruction time at 180 days and 900 and 990 hours, respectively, for the elementary and secondary levels.) PSERS is currently reviewing any potential impacts on the crediting of service for members of school entities that use the hourly instructional time parameters rather than the daily instructional time.

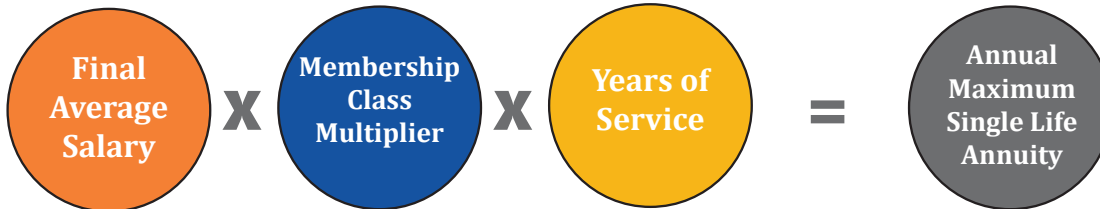
# **PSEERS Retirement Benefit Plans**



## Section 1 - PSERS Overview

### PSERS Retirement Benefit Plans

Once an employee qualifies for membership after July 1, 2019, they have the option to elect one of two membership classes consisting of defined benefit (DB) and defined contribution (DC) components or a standalone DC membership class. The DB plan provides a guaranteed monthly benefit for members who are vested. The formula used to determine the maximum benefit uses a member’s final average salary, their membership class multiplier, and their years of service.



The DC component of the retirement is based on the amount of contributions made by the member and the employer; the investment performance on those contributions, and the fees, costs, and expenses deducted from the PSERS DC Plan account. Contributions have the potential to grow based on investment earnings but are not guaranteed against loss in declining investment markets.



Members hired prior to July 1, 2019, have only the DB component. PSERS membership class is defined by statute and is used to determine the member’s benefit structure, including the member contribution rate. A member may only have one “active” membership class, and, by law, may have a one-time opportunity to elect to change their membership class.

<b>PSERS Membership Classes</b>		
Defined Benefit (DB) plan only:	DB plan with a separate Defined Contribution (DC) plan (401(a)):	DC Plan only:
<b>Class T-C</b> – Pre-Act 2001-9 <b>Class T-D</b> – Act 2001-9 <b>Class T-E</b> – Act 2010-120 (Default Membership for members hired on and after July 1, 2011) <b>Class T-F</b> – Act 2010-120	<b>Class T-G</b> – Act 2017-5 (Default Membership for members hired on and after July 1, 2019) <b>Class T-H</b> – Act 2017-5	<b>Class DC</b> – Act 2017-5

The average yearly DB benefit paid to annuitants was \$26,197, a benefit earned through a career averaging 23 years in public education.

- Nearly 72% of PSERS retirees receive less than \$40,000 per year in benefits.
- Six-figure pensions are rare, with fewer than one-half of 1% of PSERS retirees receiving an annual benefit over \$100,000. Retirees earning over six figures have spent an average of 38 years working in their careers and contributing to their retirement accounts.

# **Economic Impact on the Commonwealth**



# Financial Information

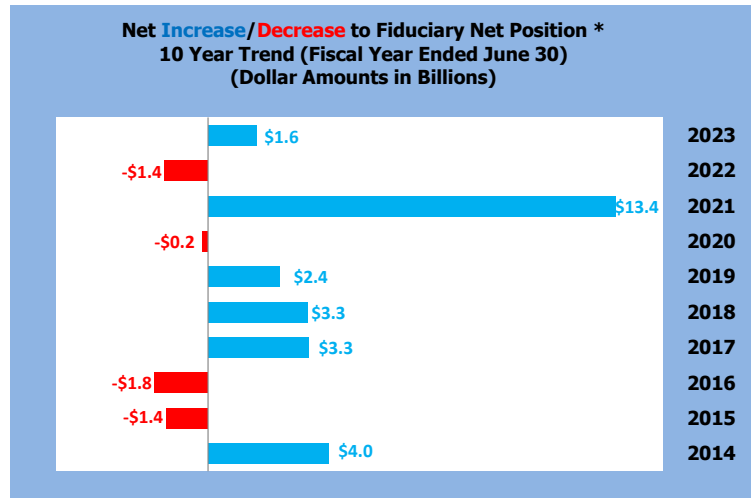
# Section 1 - PSERS Overview

## Financial Information

### PSERS Pension Fiduciary Net Position

As depicted in Chart 4.1, PSERS fiduciary net position increased by \$1.6 billion from \$70.5 billion at June 30, 2022 to \$72.1 billion at June 30, 2023. The increase was due mostly to the combination of additions for net investment income plus member and employer contributions exceeding deductions for benefit and administrative expenses.

Chart 4.1

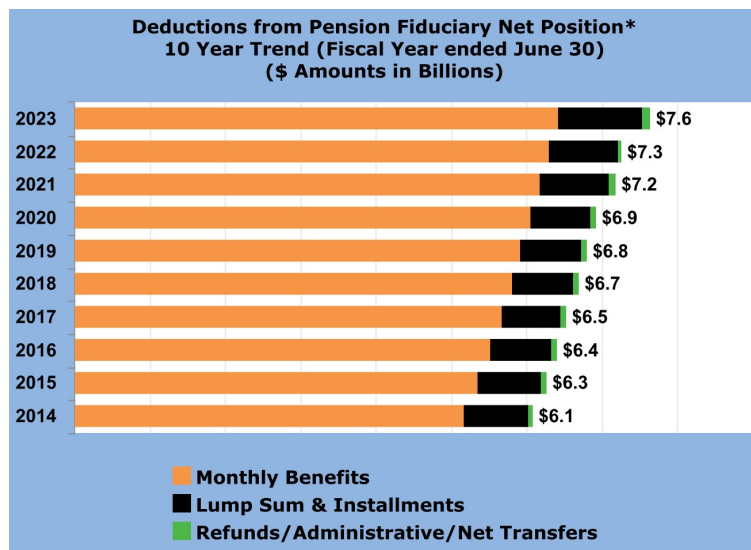


\*Does not include PSERS Postemployment Healthcare and DC Plans' Net Position.

### PSERS Deductions from Pension Fiduciary Net Position

As depicted in Chart 4.2, the increase for FY2021-22 to FY2022-23 is mainly attributed to an ongoing rise in the average monthly benefit and an increase in the number of members receiving benefits.

Chart 4.2



\* Does not include PSERS Postemployment Healthcare and DC Plans Net Position.

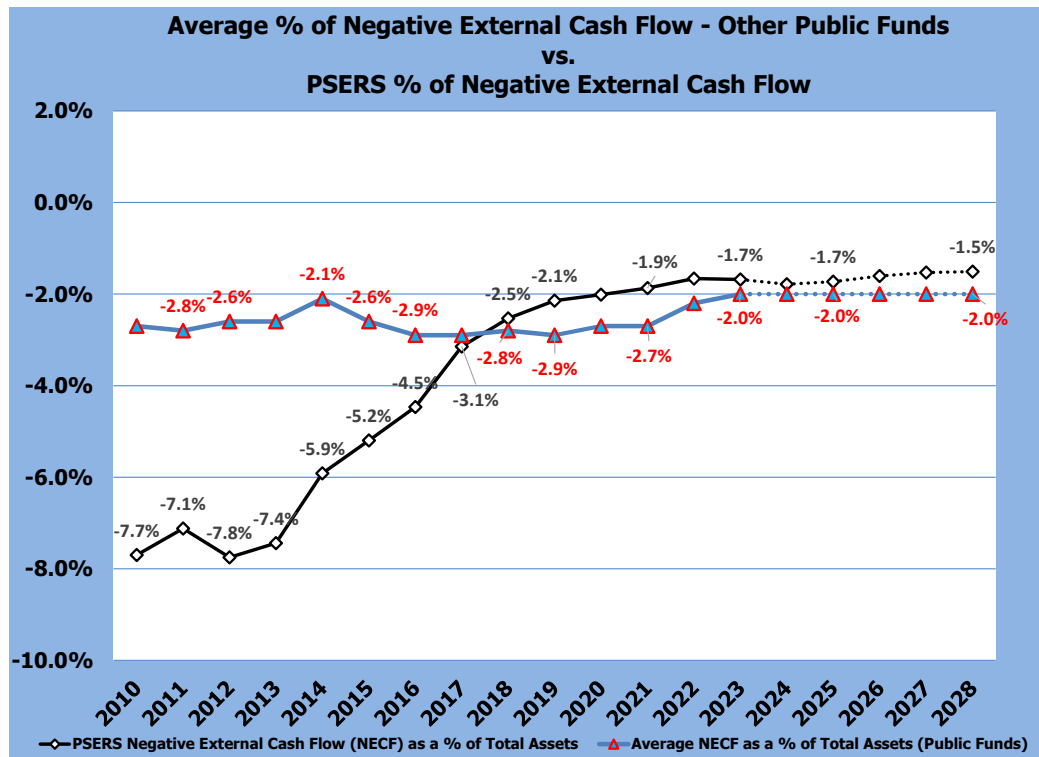
## Section 1 - PSERS Overview

### Financial Information (continued)

#### Negative External Cash Flow (NECF)

Although negative cash flow (comprised of total deductions less member and employer contributions) is not uncommon for a mature pension plan, PSERS negative cash flow has been exacerbated by the previous underfunding and was significantly worse than our peers. Due to receiving 100% of actuarially determined contributions, PSERS cash flow shortfall has now stabilized and is more favorable than the public fund average. If PSERS meets or exceeds its investment return assumptions, total assets are projected to grow in excess of total liabilities and will continue to pay down the unfunded liability.

Chart 4.3





## Section 1 - PSERS Overview

### Statement of Fiduciary Net Position - as of June 30, 2023 (Dollar Amounts in Thousands)

	Postemployment Healthcare				Totals
	Pension	Defined Contribution	Premium Assistance	Health Options Program	
<b>Assets:</b>					
Receivables:					
Members	\$ 404,819	\$ 509	\$ 1,541	\$ 133	\$ 407,002
Employers	1,418,716	399	30,880	-	1,449,995
Investment income	335,907	26	530	1,178	337,641
Investment proceeds	301,559	-	-	-	301,559
CMS Part D and prescriptions	-	-	-	46,074	46,074
Interfund receivable	1,146	-	-	-	1,146
<b>Total Receivables</b>	<b>2,462,147</b>	<b>934</b>	<b>32,951</b>	<b>47,385</b>	<b>2,543,417</b>
Investments, at fair value:					
Short-term	6,118,812	11,231	108,367	420,880	6,659,290
Fixed income	15,658,641	-	-	-	15,658,641
Equity	21,506,295	-	-	-	21,506,295
Collective trust funds	2,117,309	191,535	-	-	2,308,844
Real estate	7,437,732	-	-	-	7,437,732
Alternative investments	18,163,074	-	-	-	18,163,074
<b>Total Investments</b>	<b>71,001,863</b>	<b>202,766</b>	<b>108,367</b>	<b>420,880</b>	<b>71,733,876</b>
Securities lending collateral pool	6,147,770	-	-	-	6,147,770
Capital assets (net of accumulated depreciation 44,394)	35,880	-	-	-	35,880
Miscellaneous	44,713	-	-	170	44,883
<b>Total Assets</b>	<b>79,692,373</b>	<b>203,700</b>	<b>141,318</b>	<b>468,435</b>	<b>80,505,826</b>
<b>Liabilities:</b>					
Accounts payable and accrued expenses	96,521	203	205	1,829	98,758
Benefits payable	656,401	-	78	38,456	694,935
HOP participant premium advances	-	-	-	40,884	40,884
Investment purchases and other payables	490,388	1,041	-	-	491,429
Obligations under securities lending	6,147,770	-	-	-	6,147,770
Interfund payable	-	575	319	252	1,146
Other liabilities	188,963	-	-	-	188,963
<b>Total Liabilities</b>	<b>7,580,043</b>	<b>1,819</b>	<b>602</b>	<b>81,421</b>	<b>7,663,885</b>
<b>Net position restricted for pension, DC and postemployment healthcare benefits</b>	<b>\$ 72,112,330</b>	<b>\$ 201,881</b>	<b>\$ 140,716</b>	<b>\$ 387,014</b>	<b>\$ 72,841,941</b>

## Section 1 - PSERS Overview

### Statement of Changes in Fiduciary Net Position - Fiscal Year Ended June 30, 2023 (Dollar Amounts in Thousands)

	Postemployment Healthcare				Totals
	Pension	Defined Contribution	Premium Assistance	Health Options Program	
<b>Additions:</b>					
Contributions:					
Members	\$ 1,174,580	\$ 50,676	\$ -	\$ -	\$ 1,225,256
Employers	5,249,018	39,328	114,721	-	5,403,067
<b>Total contributions</b>	<b>6,423,598</b>	<b>90,004</b>	<b>114,721</b>	<b>-</b>	<b>6,628,323</b>
HOP participant premiums	-	-	-	413,136	413,136
Centers for Medicare & Medicaid Services	-	-	-	65,725	65,725
Investment income:					
From investing activities:					
Net appreciation (depreciation) in fair value of investments	1,315,367	21,437	-	-	1,336,804
Short-term	262,890	214	4,513	9,122	276,739
Fixed income	663,883	-	-	-	663,883
Equity	445,086	-	-	-	445,086
Collective trust funds	823	158	-	-	981
Real estate	188,922	-	-	-	188,922
Alternative investments	300,455	-	-	-	300,455
<b>Total investment activity income</b>	<b>3,177,426</b>	<b>21,809</b>	<b>4,513</b>	<b>9,122</b>	<b>3,212,870</b>
Investment expenses	(405,217)	(275)	(39)	(34)	(405,565)
Net income from investing activities	2,772,209	21,534	4,474	9,088	2,807,305
From securities lending activities:					
Securities lending income	402,300	-	-	-	402,300
Securities lending expense	(379,213)	-	-	-	(379,213)
Net income from securities lending activities	23,087	-	-	-	23,087
Total net investment income	2,795,296	21,534	4,474	9,088	2,830,392
<b>Total Additions</b>	<b>9,218,894</b>	<b>111,538</b>	<b>119,195</b>	<b>487,949</b>	<b>9,937,576</b>
<b>Deductions:</b>					
Benefits	7,537,873	-	112,870	450,984	8,101,727
Refunds of contributions	43,110	-	-	-	43,110
Distributions	-	6,170	-	-	6,170
Administrative expenses	53,823	2,458	1,085	39,740	97,106
<b>Total Deductions</b>	<b>7,634,806</b>	<b>8,628</b>	<b>113,955</b>	<b>490,724</b>	<b>8,248,113</b>
<b>Net increase (decrease)</b>	<b>1,584,088</b>	<b>102,910</b>	<b>5,240</b>	<b>(2,775)</b>	<b>1,689,463</b>
<b>Net position restricted for pension, DC and postemployment healthcare benefits:</b>					
Balance, beginning of year	70,528,242	98,971	135,476	389,789	71,152,478
Balance, end of year	\$ 72,112,330	\$ 201,881	\$ 140,716	\$ 387,014	\$ 72,841,941

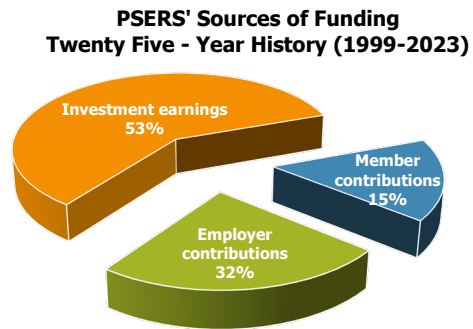
# Defined Benefit Pension Plan Funding

## Section 1 - PSERS Overview

### Defined Benefit Pension Plan Funding

The DB Plan is funded through three sources: (1) employer contributions (including the Commonwealth portion), (2) member contributions, and (3) investment earnings. As depicted in Chart 5.1, for the twenty-five-year period ended June 30, 2023, investment earnings provided 53% of DB Plan funding followed by 32% from employer contributions and 15% from member contributions.

Chart 5.1



### Actuarial Valuation

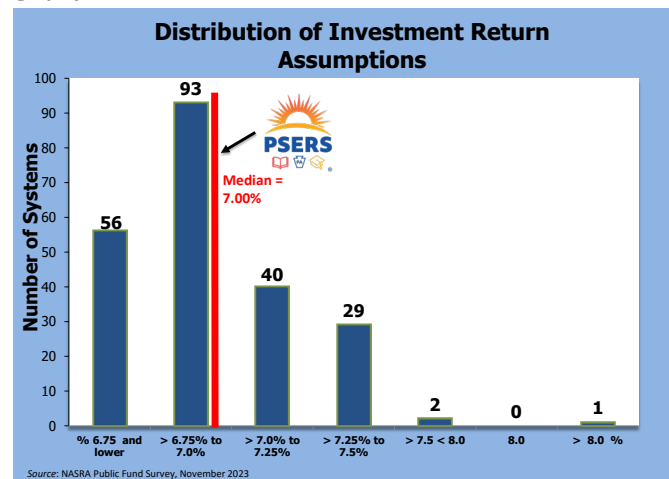
PSERS undergoes an annual independent actuarial valuation to calculate the actuarial assets and liabilities of the DB Plan. The valuation process also measures the progress of the pension system toward funding pensions for its active and retired members and determines the employer contribution rate.

The actuarial formula presumes that there will be a systematic flow of contributions at a specified level to pay for plan benefits and that the flow of contributions, together with investment earnings, will be sufficient to meet all benefit and expense requirements of the plan. The actuarial cost method for funding the DB plan is set forth in the Retirement Code and includes a five-year review of economic and demographic experience. The five-year actuarial experience study tests the validity of the underlying actuarial assumptions versus the actual experience of the DB Plan. That experience study is also used as a basis for formulating actuarial assumptions about what will occur in the future with respect to salary growth, investment returns, and demographic factors such as rates of retirement and death.

### Actuarial Experience Study - June 30, 2020

Effective with the June 30, 2021, actuarial valuation, PSERS adopted several new demographic and economic assumptions as a result of the five-year actuarial experience study completed by PSERS actuary. PSERS investment rate of return assumption was changed from 7.25% to 7.00%, the salary growth assumption was changed from 5.00% to 4.50%, the inflation assumption was reduced from 2.75% to 2.50%, the payroll growth assumption was reduced from 3.50% to 3.25% and the rates of withdrawal, disability, and retirement from employment among active members were updated and mortality rates were revised. Chart 5.2 displays PSERS 7.00% return assumption in comparison to other funds in the public pension universe.

Chart 5.2



### Defined Benefit Pension Plan Funding (continued)

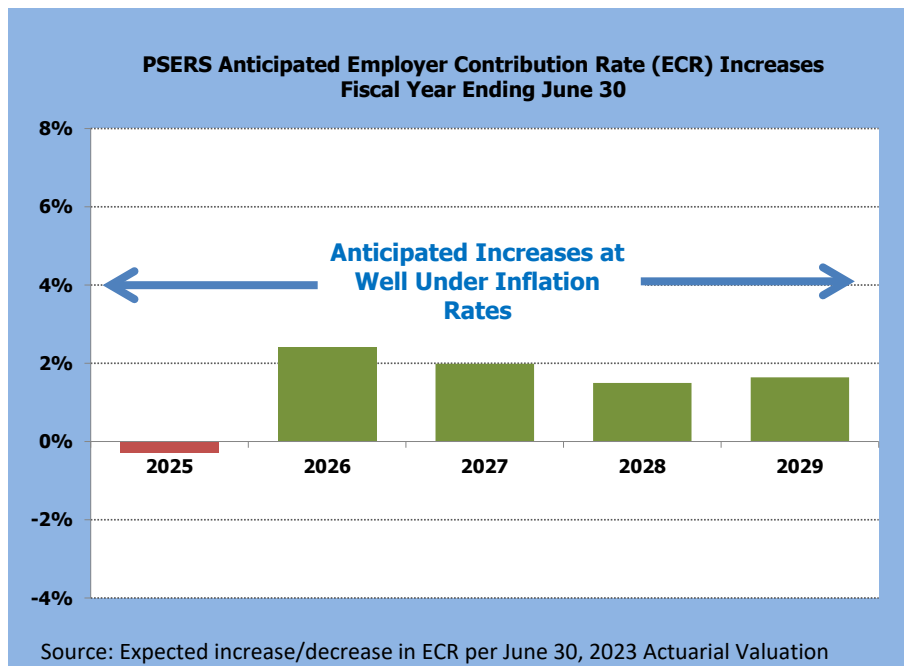
#### Employer Contribution Rate

The Retirement Code vests the Board with the authority to certify the employer contribution rate (ECR) based on the actuarial formula. The Board certifies the ECR annually as part of the annual actuarial valuation performed by the actuary. The ECR is expressed as a percentage of payroll and is composed of three items: (1) the pension rate, including the unfunded accrued liability; (2) the defined contribution rate; and (3) the premium assistance rate.

At its December 2023 meeting, the Board certified the ECR for fiscal year ended June 30, 2025, at 33.90%, an employer contribution estimate of \$5.387 billion. This rate consists of a 32.92% DB Plan rate, 0.35% DC Plan average rate, and 0.63% Premium Assistance rate. The ECR for the fiscal year ending June 30, 2024, was 34.00%, which consisted of a 33.09% DB Plan rate, 0.27% DC Plan average rate, and 0.64% Premium Assistance rate. The estimated total employer contributions for the fiscal year ending June 30, 2024, is \$5.260 billion, reflective of the 34.00% contribution rate.

The FY2024-2025 rate is declining by 10 basis points or .3% of the FY2023-24 ECR. The ECR decrease was caused primarily by PSERS' employers strong payroll growth and favorable demographic changes involving mortality and retirement experience. As displayed in Chart 5.3, the anticipated growth in the ECR is expected to be at less than inflationary levels for the next several years.

Chart 5.3



## Section 1 - PSERS Overview

### Defined Benefit Pension Plan Funding (continued)

The Commonwealth provides for its share of contributions to PSERS within the Department of Education budget. On average, the Commonwealth pays 55% of total employer contributions and employers pay 45%. Table 5.1 illustrates the actual amount of the Commonwealth's Appropriation for FY2023-24 and the projected requested amounts for FY2024-25 through FY2027-28.

*Table 5.1*

<b>Commonwealth's Department of Education School Employees Retirement Appropriation (Dollar Amounts in Billions)</b>					
	2023-24	-----Projected-----			
		2024-25	2025-26	2026-27	2027-28
School Employees Retirement	\$2.995	\$3.060	\$3.178	\$3.298	\$3.396

As depicted, the Commonwealth's share of contributions is expected to remain fairly level next fiscal year due to the decline in the ECR from 34.00% in FY2023-24 to 33.90% in FY2024-25 being offset by a small increase in anticipated payroll. The contributions are starting to level out as the projected ECR increases in the future are less than current levels of inflation.

### Member Contribution Rates

PSERS members contribute between 4.5% and 10.8% of their pay depending on their class of membership to help fund their own retirement benefit. The average contribution rate payable by members for the current year (FY2023-24) is 7.44%.

Member contribution rates for members hired on and after July 1, 2011 are subject to a Shared Risk/Shared Gain Contribution Rate. With a Shared Risk/Shared Gain Contribution Rate, members can benefit when PSERS' investments are doing well and share some of the risk when PSERS' investments underperform. DB contribution rates may increase or decrease by 0.50% or 0.75% within the specified range every three years.

In December 2023, the PSERS' Board certified the member contribution rates for Class T-E, Class T-F, Class T-G, and Class T-H members effective from July 1, 2024 to June 30, 2027. Because PSERS' investment performance exceeded the target range for the 10-year evaluation period ending June 30, 2023, the DB member contribution rates will decrease by 0.50% or 0.75%, depending on a member's membership class within PSERS until the next evaluation period in three years. This decrease will bring the rate back to the base rate for these membership classes. This change does not have any impact on the amount that is required to be contributed by participants to the DC Plan. This also does not impact the employer contribution rate for fiscal year 2024-2025.

The next evaluation will be based on PSERS investment experience for the period ending June 30, 2026, and will impact the DB member contribution rate for impacted members beginning July 1, 2027.

PSERS members contributed \$1.175 billion of pension contributions for FY2022-23. Total member contributions are estimated to be \$1.193 billion for the fiscal year ending June 30, 2024, and \$1.217 billion for the fiscal year ending June 30, 2025.



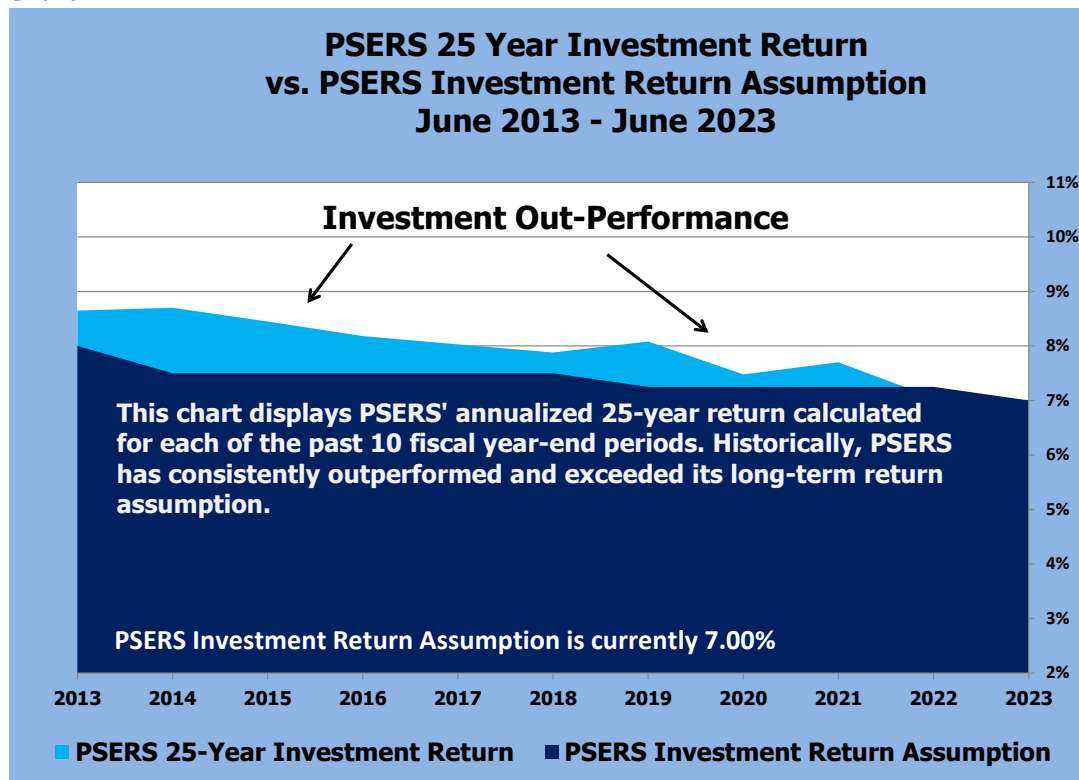
## Section 1 - PSERS Overview

### Defined Benefit Pension Plan Funding (continued)

#### Investment Returns

PSERS investment rate of return for the fiscal year ended June 30, 2023, was 3.54%, net of fees. The investment rates of return (net of fees) for the fiscal years ended June 30, 2022, and 2021 were 2.23% and 24.58%, respectively. PSERS' 25-year return, as shown in Chart 5.4, has historically outperformed the actuarial investment rate of return. However, the most recent 25-year period return through June 30, 2023 was 6.57%, which is 43 bps below this assumption. PSERS' investments still outperformed a blended 60% ACWI (IMI) Index and 40% Bloomberg Bond Index benchmark by .99% annualized (5.58% vs. 6.57%) over the same period. Overall, long-term investment performance has resulted in declining employer contribution rates and/or contribution rates lower than the annual normal cost of benefits.

Chart 5.4



## Section 1 - PSERS Overview

### Defined Benefit Pension Plan Funding (continued)

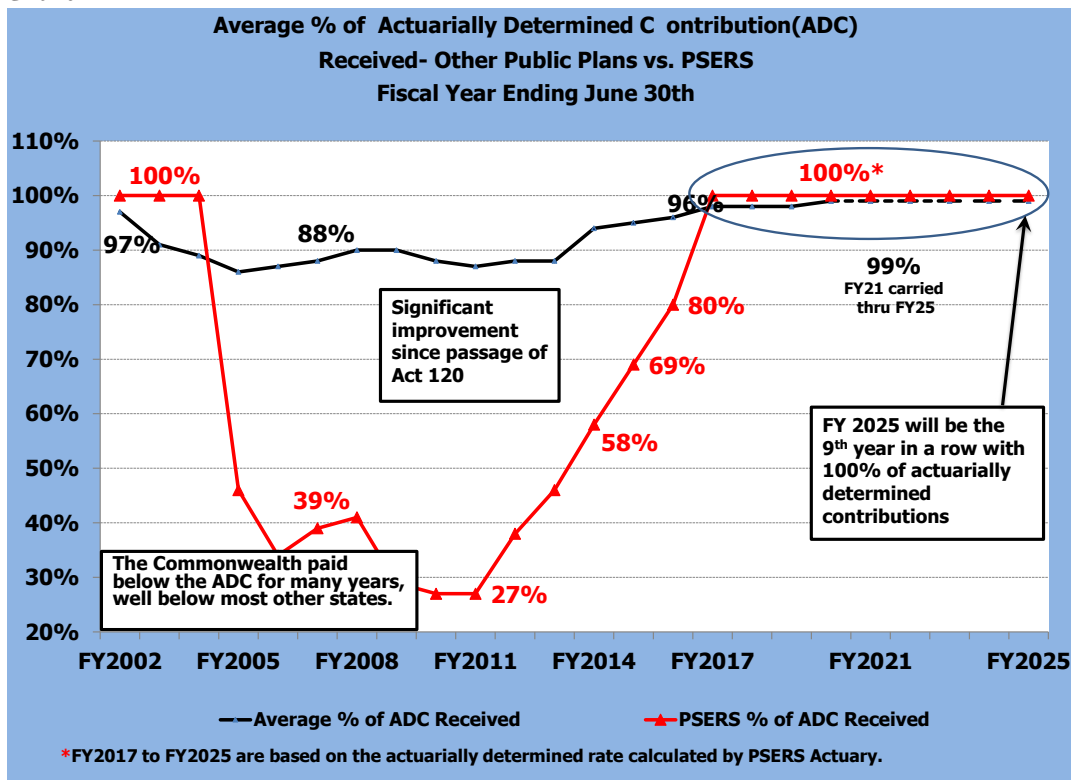
#### Funded Status and History

PSERS funded status is measured by comparing the actuarial value of assets with the accrued liability. The accrued liability is the present value of benefits accumulated to date for both active and retired members.

The total funded status of the DB Plan, including Premium Assistance, is 63.6% as of June 30, 2023. This funded status is based on an actuarial value of assets of \$74.04 billion and a total accrued liability of \$116.38 billion which equates to a \$42.34 billion unfunded liability.

Since July 1, 2016, the employers have contributed 100% of the actuarially required contributions. As depicted in Chart 5.5, the gradual rate increases since 2011 have raised the ECR to the 100% annual required contribution (ARC) goal, now referred to as the actuarially determined contributions (ADC) starting in FY2016-17. An ADC includes both the employer's normal cost and the amount required to amortize the unfunded actuarial accrued liability (UAAL) in an actuarially sound manner. This was the first major step needed for the DB Plan funded status to begin to improve. As a result of receiving 100% of the actuarially required contributions for the second consecutive year, PSERS funded status began to increase in FY2017-18 and has steadily improved through FY2022-23.

Chart 5.5

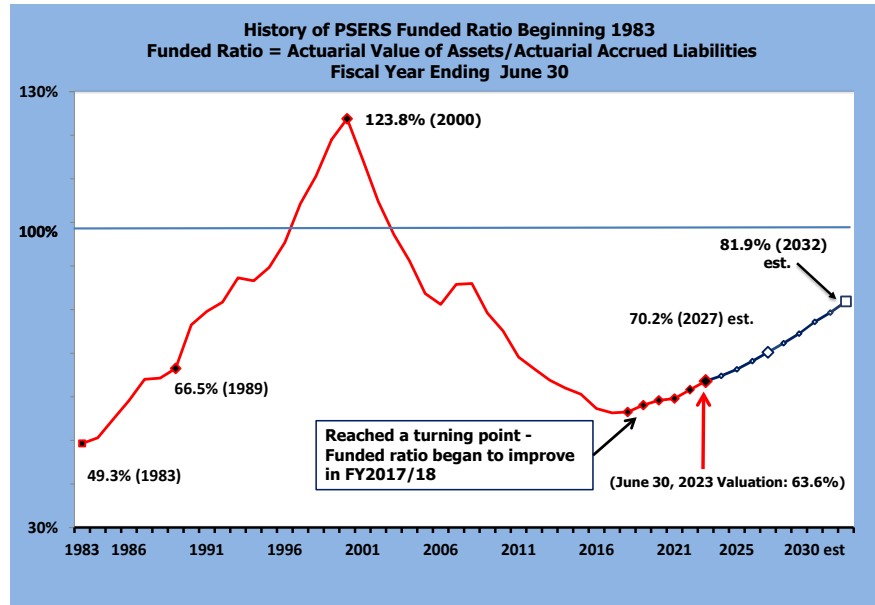


## Section 1 - PSERS Overview

### Defined Benefit Pension Plan Funding (continued)

Strong payroll growth among PSERS employers and favorable demographic changes, including mortality and retirement experience, coupled with sustained actuarial ECR funding, have contributed to a \$1.6 billion decrease in the System's long-term unfunded actuarial liability in FY2022-23, the largest decline since FY2006-07.

Chart 5.6

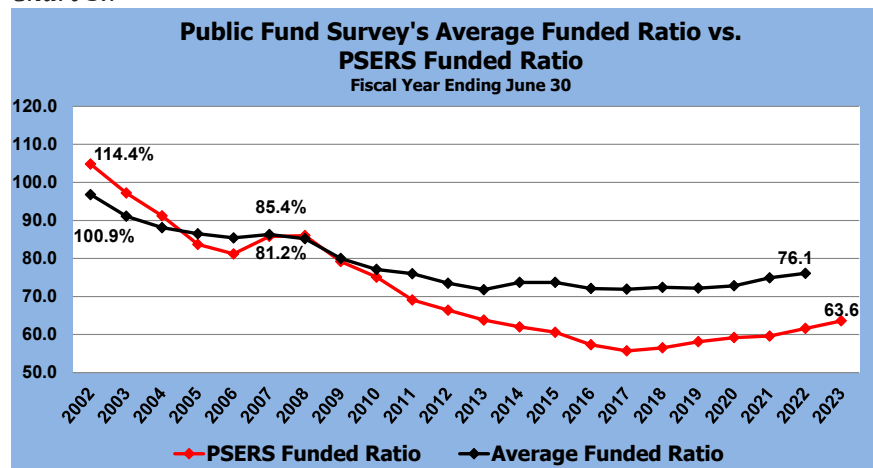


The decrease in the funded status from 2000 to 2017 as depicted in Chart 5.6 was the result of several factors including: the unfavorable investment markets from 2001 to FY2002-03 and FY2007-08 to FY2008-09; funding changes enacted in Act 38 of 2002 and Act 40 of 2003 which resulted in the employer underfunding of the DB Plan; benefit enhancements from Act 9 and Act 38; the adoption of new demographic and economic assumptions in FY2015-16; funding collars in Act 120, which continued the employer underfunding of the DB Plan; and actuarial losses.

PSERS funded status began in FY2017-18 to slowly improve after declining for many years. Future projections now reflect a steadily increasing funded ratio reaching 81.9% in less than a decade.

A comparison of PSERS funded status to the public fund projected weighted average funding ratio provided by the National Association of State Retirement Administrators (NASRA) is shown in Chart 5.7 below. The gap between PSERS funded status and the public fund average is shrinking.

Chart 5.7



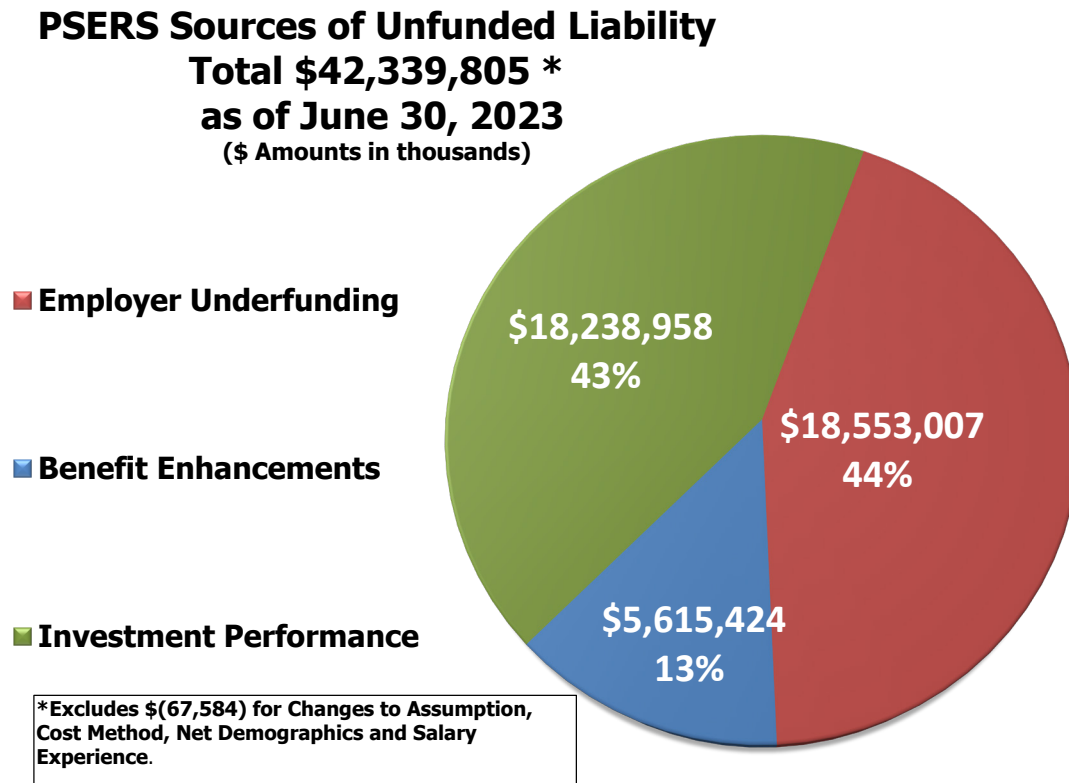
**Defined Benefit Pension Plan Funding (continued)**

**Sources of Unfunded Liability**

Chart 5.8 depicts the sources of the unfunded liability. The sources of unfunded liability in order of magnitude are employer funding deferrals (44%), investment performance (43%), and benefit enhancements (13%), which include Act 9, cost of living increases and early retirement incentives that were not prefunded. Throughout the 1990's and early 2000's, PSERS outstanding investment performance compensated for unfunded benefit enhancements and employer funding deferrals. The Great Recession of 2008-2009 had a negative impact upon the System's long-term investment performance and eliminated most of the significant investment out-performance. Without the significant investment out-performance to compensate, the employer funding deferrals and benefit enhancements have significantly increased PSERS unfunded liability.

Approximately 57% of PSERS June 30, 2023 unfunded liability is due to employer funding deferrals and benefit enhancements.

Chart 5.8



## Section 1 - PSERS Overview

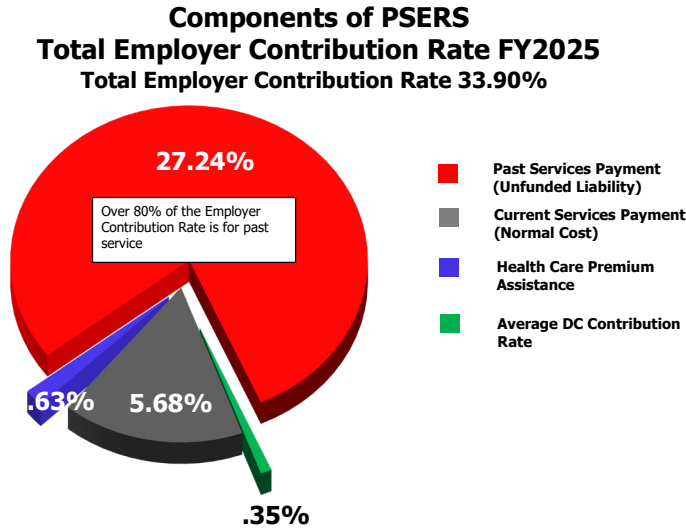
### Defined Benefit Pension Plan Funding (continued)

#### Components of ECR

Chart 5.9 displays the components of 33.90% ECR in FY2024-25. The majority of the rate, over 80%, is dedicated toward paying the cost of debt payments for past service (unfunded liability).

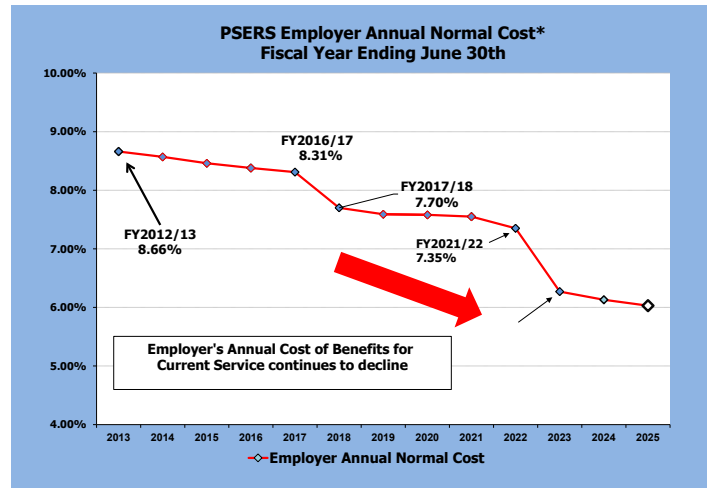
The employers' cost for current service, or the normal cost, is a much smaller portion of the contribution rate.

Chart 5.9



The cost of post-Act 120 and post-Act 5 members is lower than pre-Act 120 members. As Chart 5.10 depicts, the employer normal cost decreases over time as Act 120 and Act 5 members replace retiring pre-Act 120 members. The employer normal cost of current benefits earned by Act 120 and Act 5 members is less than 3% of payroll, which is less than 65% of the normal cost for pre-Act 120 members. Chart 5.10 projects the employer normal cost to be 6.03% in FY2024-25, which is a 30% reduction from the 8.66% normal cost in FY2012-13. The substantial decline from 7.35% in FY2021-22 to 6.27% in FY2022-23 is mainly due to the enrollment of Act 120 and Act 5 members and the new actuarial assumptions adopted by the Board.

Chart 5.10



\*Includes average employer DC contribution rate for FY2019/20 and thereafter.

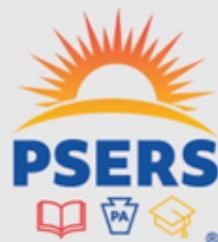
# SECTION 2 PSERS FY2024-25 BUDGET

Consultants Fees

Tab 6

PSERS FY2024-25 Administrative and Defined  
Contribution Budgets

Tab 7



# Consultants Fees



## Section 2 - FY2024-25 Budget

### Consultants Fees (\$100,000 and Over)

Tables 6.1 and 6.2 list professional service firms under contract to provide services to PSERS during the fiscal year ended June 30, 2023.

**Table 6.1**

#### Investment, Pension and Defined Contribution Plan Administration Consultants

<u>Firm</u>	<u>Services Provided</u>	<u>Consultant Fee</u>
ViTech Systems Group, Inc.	Pension administration system services	\$ 5,769,000
Aksia LLC	Private market consulting	\$ 2,515,000
Hamilton Lane Advisors LLC	Private market consulting	\$ 1,654,900
OST Inc.	Information technology services	\$ 914,928 *
Aon Investment Consulting	General investment consulting	\$ 688,434
Constellation Advisors LLC	Compliance consulting	\$ 654,994
Verus Advisory Inc.	General investment consulting	\$ 625,000
Buck Global, LLC	Pension benefit actuarial services	\$ 303,207 *
Ernst & Young US LLC	Internal controls consulting	\$ 334,147
Hudepohl & Associates Inc.	Executive search consulting	\$ 106,933 *
Glass, Lewis & Co., LLC	Proxy voting consulting	\$ 148,106
Clifton Larson Allen LLP	Financial audit - pension, defined contribution, healthcare	\$ 145,300 *
Cheiron, Inc.	Pension actuarial consulting	\$ 105,000

**Table 6.2**

#### Health Options and Premium Assistance Program Consultants

<u>Firm</u>	<u>Services Provided</u>	<u>Consultant Fee</u>
Trustmark Health Benefits	Post employment healthcare benefits administration and claims adjudication	\$ 32,509,092 *
Optum Rx, Inc.	Post employment healthcare benefits administration and prescription drug plan	\$ 7,151,332 *
The Segal Company, Inc.	Consulting services for the Health Options Program and prescription drug plan	\$ 3,536,660 *
Gallagher Benefits Services, Inc.	Pharmacy benefit consulting services	\$ 1,097,220 *
Tivity Health	Silver Sneakers Fitness Program administration	\$ 856,383 *

\*As reported on PSERS ACFR

**PSERS FY2024-25  
Administrative and  
Defined Contribution  
Budgets**

## Section 2 - FY2024-25 Budget

### Public School Employees Retirement System Fiscal Year 2024-2025 Administrative Budget

	<u>Appropriated Budget FY2022-23</u>	<u>Appropriated Budget FY2023-24</u>	<u>Budget Request FY2024-25</u>
<b>Total Personnel Services</b>	\$ 29,381,000	\$ 33,141,000	\$ 36,500,000
<b>Operating Expenses and Fixed Assets</b>			
Travel	\$ 158,800	\$ 163,300	\$ 178,600
Training & Conference Registration	164,900	196,200	227,300
Telecomm	427,000	409,300	408,000
Electricity	20,700	25,900	25,900
Consultant Services - Non EDP	1,576,100	1,412,500	1,728,500
Consulting - Maint & Support - (Post Implementation)	45,000	400	65,000
IT Con Mng Srvcs SW	50,000	50,000	75,400
Consulting - General IT Support	1,050,600	1,026,600	1,364,600
Consulting - Outsourced Infrastructure Svcs (PACS)	2,655,000	2,357,100	2,055,800
Legal Services/Fees	1,329,700	1,379,700	1,390,700
Specialized Services	856,400	781,200	715,700
Other Specialized Services	244,700	419,800	404,000
Advertising	10,000	10,000	10,000
Medical, Mental & Dental Services	6,500	6,500	6,500
IT Shared Services	240,000	686,000	686,000
Software Licensing - Maintenance	1,096,800	1,895,400	1,647,000
Hardware - Maintenance	73,000	74,000	73,300
Contracted Maintenance Non EDP	166,000	169,700	169,700
Telecomm Data Services	56,000	28,000	—
Contracted Repairs - Non EDP	15,500	15,500	15,500
Real Estate Rental	2,022,900	1,982,500	1,986,800
Vehicle Rental	7,600	6,900	7,200
Office Equipment Rental	158,400	149,400	149,400
Other Rentals	15,600	3,500	3,500
Office Supplies	135,400	117,300	129,100
Educational & Medical Supplies	4,800	5,500	5,400
Software License Non-Recurring	246,100	234,400	191,300
Software Licensing - Proc. - Recurring	464,400	457,200	567,100
Hardware Desktop	49,500	55,500	50,500
Furniture and Fixtures	60,200	56,000	54,000
Other Equipment	10,000	10,000	10,000
Motorized Equipment Supplies	20,000	17,500	22,500

## Section 2 - FY2024-25 Budget

	<u>Appropriated Budget FY2022-23</u>	<u>Appropriated Budget FY2023-24</u>	<u>Budget Request FY2024-25</u>
Postage and Freight	\$ 727,000	\$ 665,000	\$ 615,000
Printing	183,400	167,500	210,900
Subscriptions	37,200	37,400	33,300
Member Dues	49,500	63,100	67,100
Conference Expense	69,700	62,300	76,200
Insurance, Surety & Fidelity Bonds	191,800	314,000	318,000
Other Operational Expenses	4,641,500	2,093,700	2,190,200
HW Network and Server	—	—	197,500
Automobiles	20,000	—	24,400
Software License	6,700,000	6,710,500	6,714,300
Office Equipment	28,300	31,700	31,800
<b>Total Operating Expenses and Fixed Assets</b>	<b>\$ 26,086,000</b>	<b>\$ 24,348,000</b>	<b>\$ 24,903,000</b>
<b>Total Administrative Budget</b>	<b>\$ 55,467,000</b>	<b>\$ 57,489,000</b>	<b>\$ 61,403,000</b>

### Administrative Budget

Table 7.1 displays PSERS Administrative Budget Request for FY2024-25. The \$61,403,000 administrative budget is not funded from the Commonwealth's General Fund, but rather from the earnings of the Fund itself. Historically, PSERS has under spent its approved budget, keeping more funds available to invest for PSERS members.

PSERS Administrative Budget Request for FY2024-25 resulted in an increase of \$3,914,000 or 6.81% above the FY2023-24 available budget. The majority of the increase is in personnel costs due in large part to the Commonwealth's new collective bargaining agreement which includes a 2.00% general pay increase effective July 1, 2024 and a step increase of 2.25% effective January 1, 2025.

PSERS continues to be a leader among large U.S. public pension funds in its effective control of expenses while providing necessary services to its membership. In the past five years, the System has added significantly to the number of active and retired members electing to receive newsletters, statement of accounts, 1099-Rs and other publications electronically, which saves the agency over \$275,000 per year in postage, printing and paper costs. During FY2022-23 specifically, the agency lowered its consultant and legal fees, reduced real estate rental expenses, and decreased electricity costs, all of which preserve more of PSERS assets for the benefit of the Fund and its members.

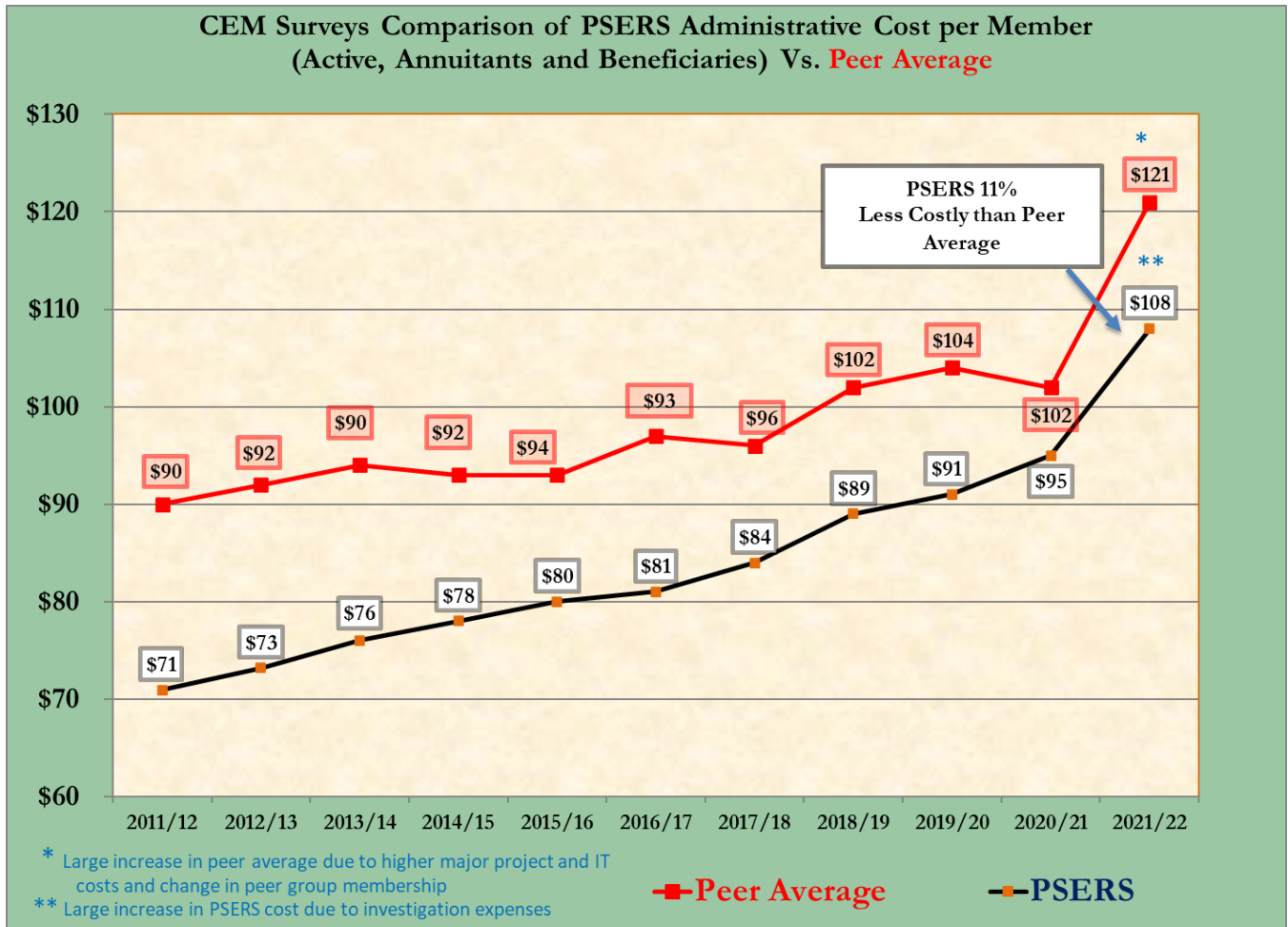
## Section 2 - FY2024-25 Budget

### PSERS Administrative Costs are Significantly Below Peers

PSERS participates in an independent, international benchmarking survey evaluating its costs and service performance in comparison to other similar public pension funds. Based on the results of the most recent survey, PSERS has 32% fewer full-time equivalent staff per member than the peer group average. Chart 7.1 below illustrates that PSERS had

a 11% lower pension administration cost per member than the average cost for its peer group. By running a lean and efficient operation, PSERS saves the Commonwealth and school employers approximately \$6.4 million annually in administrative expenses compared to its peers.

Chart 7.1



## Section 2 - FY2024-25 Budget

### Fiscal Year 2024-25 Defined Contribution (DC) Administrative Budget

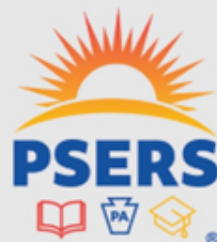
<b>Table 7.2</b>			
	<u>Budget</u> <u>FY2022-23</u>	<u>Budget</u> <u>FY2023-24</u>	<u>Budget</u> <u>Request</u> <u>FY2024-25</u>
<b>Total Personnel Services</b>	\$808,000	\$887,000	<b>\$1,007,000</b>
<b>Operating Expenses and Fixed Assets</b>			
Consultant Services - Non EDP	96,000	175,000	<b>150,000</b>
Legal Services/Fees	20,000	50,000	<b>50,000</b>
Insurance, Surety & Fidelity Bonds	25,000	30,000	<b>35,000</b>
Other Operational Expenses	—	40,000	<b>40,000</b>
<b>Total Operating Expenses and Fixed Assets</b>	<u>\$141,000</u>	<u>\$295,000</u>	<b><u>\$275,000</u></b>
<b>Total Administrative Budget</b>	<u><u>\$949,000</u></u>	<u><u>\$1,182,000</u></u>	<b><u><u>\$1,282,000</u></u></b>

### Defined Contribution Administrative Budget

Table 7.2 displays PSERS Defined Contribution Administrative Budget Request for FY2024-25. The \$1,282,000 amount requested represents an increase of 8.5% above the FY2023-24 available budget. The significant increase is due to the pay increases in the new collective bargaining agreement and a small reallocation of staff time between the Administrative and Defined Contribution appropriations.

# SECTION 3 INVESTMENT INFORMATION

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Investment Guidelines, Philosophy, and Risk Management	Tab 9
Fiscal Year Update	Tab 10
Asset Exposure and Investment Program Summary	Tab 11
Performance	Tab 12
Managing Investment Fees, Expenses, and Carried Interest	Tab 13
Commitment to Pennsylvania Based Investments and DC Investment Options and Expenses	Tab 14





# **Investment Office Structure**

## Section 3 Investment Information

### Investment Office Structure

The members of the PSERS Board exercise exclusive control and management of the System, including the investment of its assets. The Board appoints staff and retains outside managers, consultants and others as needed to assist it in performing its duties.

**The Board** – Based on recommendations of its Investment Committee, the Board, as ultimate governing fiduciary, establishes investment policies and monitors compliance with its policies and progress made towards stated goals. The Board establishes the Investment Policy Statement, including the Asset Allocation, investment performance benchmarks and risk tolerances it contains. The Board also appoints the Chief Investment Officer (CIO), External Managers, and Investment Consultants.

**CIO** – The CIO serves as the Board’s liaison and senior staff administrator on all investment matters. The CIO oversees the implementation of Board policies through the management of the Investment Office Professionals (IOP), the development and implementation of investment procedures, implementation of asset allocation within ranges established by the Board, authorization of investment guidelines, execution of investment contracts and other documents, and negotiation of reasonable compensation for investment-related service providers. The CIO shall make regular reports to the Board and provide full transparency to the Board with respect to investment activities. All IOP are accountable to the CIO. The CIO is responsible for all IOP actions relative to the management of PSERS investments. In this regard, it is the responsibility of the CIO to be satisfied that all investment policies and directives of the Board are implemented.

**IOP** – The IOP assists the CIO in the execution of the CIO’s duties and the management of the System’s investment program on a day-to-day basis in accordance with Board policies. The IOP assists the CIO in the development, implementation, and monitoring of the asset allocation policy, the assessment of Investment Manager compliance with applicable policies, guidelines, and contracts, the monitoring of the performance of other entities supporting the Investment Program, the making of direct investments subject to strict compliance with Board policies, the performance of risk management functions, the provision of recommendations relating to Investment Manager selection and discharge, and the administration of ancillary investment programs such as Securities Lending and Proxy Voting. The IOP also assists the CIO by performing operational tasks supporting these investment functions, including custodian bank relationship management, investment office technology administration, trade settlement, and portfolio manager support, as appropriate.

# **Investment Guidelines, Philosophy, and Risk Management**

## Section 3 Investment Information

### Investment Guidelines, Philosophy, and Risk Management

#### Investment Guidelines In Summary

The Board has established investment objectives for the Fund as follows:

To generate returns to support the System's actuarial soundness so it may provide its members with benefits as required by law.

To earn a long-term total return, net of fees and investment expenses, that equals or exceeds the Actuarial Assumed Rate approved by the Board.

To earn a long-term total return, net of fees and investment expenses, that equals or exceeds the Policy Index approved by the Board.

To prudently manage investment risks that are related to the achievement of investment goals.

#### Investment Philosophy

The PSERS Board of Trustees believes PSERS assets should be managed in accordance with PSERS unique liability stream, funding sources, cash flows, and portfolio size, focusing on the prudent accumulation of wealth over the long term to meet the retirement benefit obligations established by the plan sponsor to its members.

PSERS assets should be managed based on the following beliefs:

##### 1. Uncertainty

The future is difficult to forecast with any accuracy or certainty, particularly changes in the economic and market environment.

##### 2. Asset Allocation

The strategic asset allocation mix, more than implementation or any other factor or decision, largely determines the portfolio's overall risk and return.

##### 3. Diversification

Diversification is the best approach to addressing future uncertainty and therefore meeting PSERS long-term investment objectives.

Diversification should be across multiple dimensions: by and within asset classes, by geography, by strategy, and by vintage year for Private Investments.

Over any given period, any number of asset classes, geographies, strategies, and vintages will underperform others; that is to be expected and accepted.

##### 4. Risk

For an underfunded plan or for a plan with negative cash flow (benefits paid exceed contributions received), peak-to-trough declines transform unrealized losses into permanent ones. This heightens the importance of managing drawdown risk and liquidity should be managed to ensure the Fund can meet its obligations during periods of market dislocations.

##### 5. Leverage

Leverage at the total fund level can be an effective tool to increase or decrease total fund risk in a diversified manner.

##### 6. Rebalancing

Disciplined rebalancing enhances long term returns as it is an inherently contrarian process. Rebalancing restores strategic asset allocation as the primary driver of return and risk.

##### 7. Portfolio Size

Managing a large pool of assets provides investors unique access to investment opportunities not available to smaller institutional investors or individual investors. PSERS should use its size to its advantage to enhance its net-of-fees return and diversification opportunities.

##### 8. Private Investments

Allocations to private markets may provide exposure to sectors, businesses, and governance oversight not generally available through public markets. Such investments may also involve a illiquidity risk premium.

### Investment Guidelines In Summary (continued)

#### 9. Active Management

Passive investing, rather than active management, is the default choice to be used for any asset class that is highly efficient or where skilled active managers are less likely to be identified.

Certain asset classes continue to exhibit information inefficiency, where skilled active management and well-resourced investors such as PSERS can potentially persistently outperform peers and the benchmark for that asset class.

#### 10. Internal Management

PSERS has developed skilled internal investment managers; as such internal investment management is preferred over external investment management in cases where internal management most likely can match or exceed the long term, net of fees, risk-adjusted returns provided by external managers, provided the internal investment and operational resources are available to do so.

#### 11. Investment Fees

Investment management fees for external management are one of the few aspects of investment management that are certain and over which the investor has control. Investment management and performance fees should be managed to (i) maximize long term, net of fees, risk-adjusted returns, (ii) split the value added fairly between the investment manager and PSERS, and (iii) align the interests of the investment manager with PSERS.

#### Risk Management

Risk management is essential to the entire investment process. The goal of investment risk management is to find the appropriate balance between expected returns and the risks taken to generate those returns. An entirely risk-free investment portfolio that has a high probability of meeting all investment goals does not exist. Therefore, PSERS does not attempt to eliminate all risk but instead seeks to limit the possibility of permanent loss. Risk itself is neither good nor bad, but it is necessary that the System expose itself to some appropriate level of risk if it is to generate the long-term investment returns required to maintain stable and cost-effective contribution rates.

The investment related policies of the Board can be found on the Investment page on PSERS website.

# **Fiscal Year Update**

### Fiscal Year Update

PSERS Board hired Ben Cotton as PSERS' Chief Investment Officer in January 2023 to oversee PSERS multi-billion-dollar contributory defined benefit governmental pension fund. He serves as liaison to the Board on all investment matters, and as a member of the senior leadership team. Ben brings over 25 years of corporate leadership, investment, and internal control experience that is well suited for PSERS' commitment to excellent service and continuous improvement.

FY 2022 and FY 2023 was a time of continued development in the Investment Office. In addition to new leadership and the heightened focus on internal controls, the investment staff continues its focus on implementing the Strategic Asset Allocation (SAA) targets approved by the PSERS Board, on August 11, 2023, effective from October 1, 2023. While continuing the prudent reductions to more expensive strategies approved for the previous targets, the new targets reduce leverage from 7.5% to zero, increase investment grade fixed income assets from 10% to 14%, and make other adjustments within public equity and real assets that better reflect the present economic environment.

As a result of the Board's direction to prudently reduce allocations to more expensive strategies, investment related expenses relative to net assets continues to decline. As the Fund's net assets rose 23 percent to \$72.8 billion between FY2020 and FY2023, Investment Related Expenses declined 31 basis points (bps), from 87 bps to 56 bps, representing a go-forward annualized savings of \$215 million assuming present plan asset values. Prospectively, investment related expenses as a percent of net assets should reduce further to approximately 39 bps once the investment staff brings allocations in line with the SAA targets.

Over the past several years, the investment staff has also focused on increasing internal management of assets where to do so resulted in lower investment related expenses overall, without compromising return expectations. As a result, internally managed assets increased from 46% of the Funds assets in 2022 to 50% as of June 30, 2023. Going forward, however, we expect that this trend will stabilize, and in some instances reverse, as the investment staff reaches the limits of prudently available saving through internal management. The Board's recent approval for the outsourcing of PSERS derivatives trading exemplifies this shift. The increased operational cost associated with evolving regulations over such activities combined with the availability of highly qualified, well-resourced, lower cost external solutions, in this case results in improved efficiencies and a more robust control environment through outsourcing.



# **Asset Exposure and Investment Program Summary**

## Section 3 - Investment Information

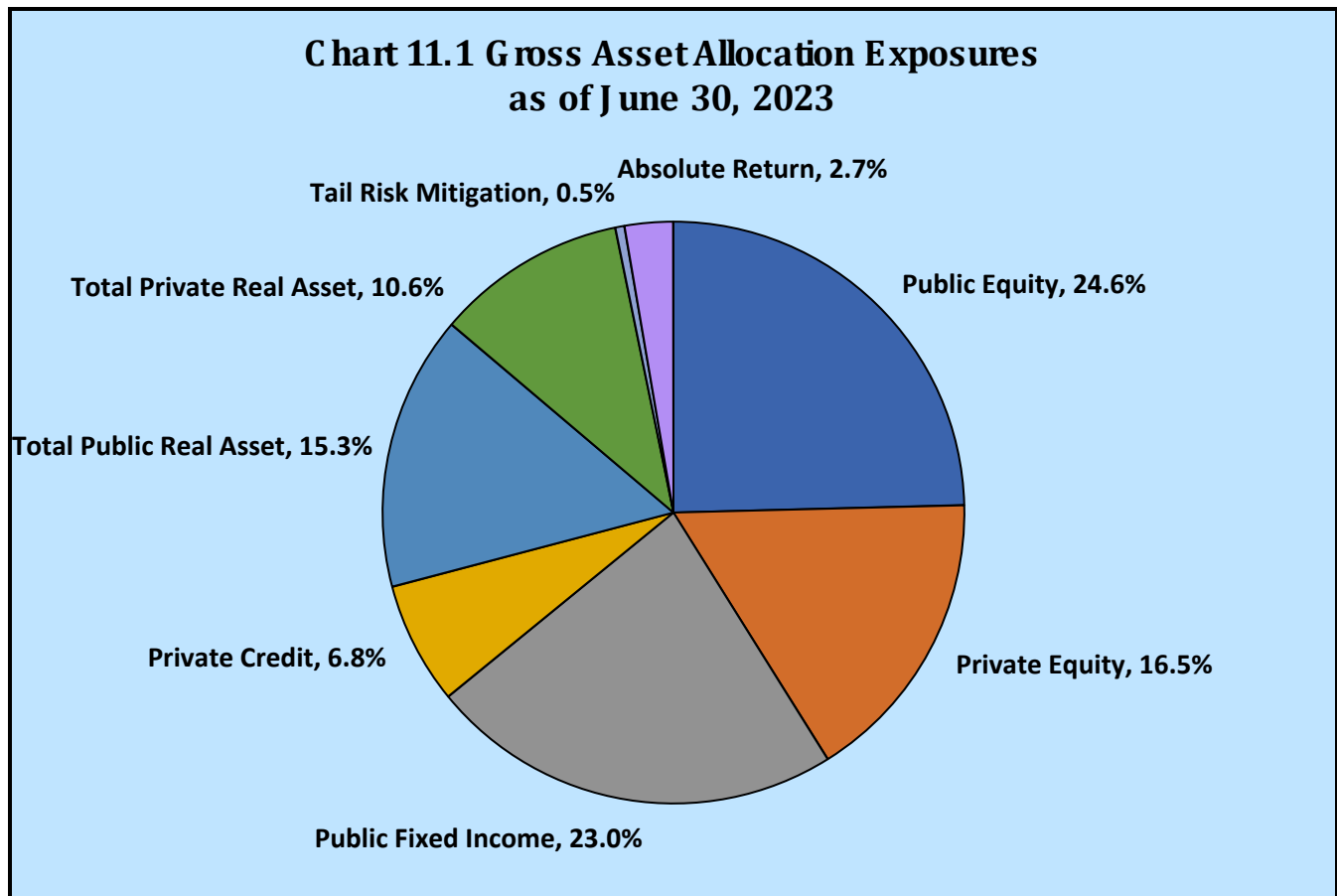
### Asset Exposure (as of June 30, 2023)

The Board maintains a disciplined and thorough process to establish a new asset allocation policy presently every three years while monitoring the implementation of any related adjustments ongoing. This process begins following the Board's review and acceptance of the actuary's annual report, as described in Tab 5. PSERS' investment professionals and general investment consultant collaborate to analyze potential asset allocations (using actuarial as well as capital market return assumptions) in order to identify those potential asset allocations that meet the long-term return and risk objectives of the Fund. The Board is then presented with various asset allocations choices

with detailed analysis of probable long-term return and risk characteristics from which it will select a new Asset Allocation Policy for further implementation by staff.

The Board reassesses the long-term asset allocation targets of the System not less than every three years. In establishing the asset allocation plan, the Board will consult with its actuary, consultants, investment staff, and other sources of information it deems appropriate in formulating this allocation. The purpose of the asset allocation is to align strategic investment objectives with the long-term financial needs of the System.

Chart 11.1 illustrates PSERS' asset allocation exposure as of June 30, 2023:



Note: Financing represents a negative 4.6% allocation and is not reflected in Chart 11.1.

## Section 3 - Investment Information

### Asset Exposure (continued)

Table 11.1 represents PSERS asset exposure and target allocation plan that became effective October 1, 2022, and was in effect on June 30, 2023.

<b>Table 11.1</b>					
<b>PSERS Asset Exposure and Target Asset Allocation Plan</b>					
<b>(as of June 30, 2023)</b>					
<u>Asset Class</u>	<u>Market Value (in millions)</u>	<u>Percentage of Gross Asset Exposure</u>	<u>Percentage of Net Asset Exposure</u>	<u>Target Allocation %</u>	<u>Target Allocation Range</u>
Public Equity	\$ 18,273.9	24.6 %	25.8 %	30.0 %	
Private Equity	12,220.7	16.5 %	17.3 %	12.0 %	
<b>Total Equity</b>	<b>\$ 30,494.7</b>	<b>41.1 %</b>	<b>43.1 %</b>	<b>42.0 %</b>	<b>± 5%</b>
Public Fixed Income*	\$ 17,075.0	23.0 %	24.1 %	27.0 %	
Private Credit	5,063.9	6.8 %	7.2 %	6.0 %	
<b>Total Fixed Income</b>	<b>\$ 22,138.9</b>	<b>29.8 %</b>	<b>31.3 %</b>	<b>33.0 %</b>	<b>± 5%</b>
Public Real Asset*	11,318.8	15.3 %	16.0 %	16.5 %	
Private Real Asset	7,835.0	10.6 %	11.1 %	12.0 %	
<b>Total Real Asset</b>	<b>\$ 19,153.7</b>	<b>25.9 %</b>	<b>27.1 %</b>	<b>28.5 %</b>	<b>± 3%</b>
<b>Tail Risk Mitigation</b>	<b>\$ 355.2</b>	<b>0.5 %</b>	<b>0.5 %</b>	<b>— %</b>	
<b>Absolute Return</b>	<b>\$ 2,036.7</b>	<b>2.7 %</b>	<b>2.9 %</b>	<b>4.0 %</b>	<b>0 to 7%</b>
<b>Gross Asset Exposure</b>	<b>\$ 74,179.3</b>	<b>100.0 %</b>	<b>104.8 %</b>	<b>107.5 %</b>	
Cash	\$ 2,912.4	3.9 %	4.1 %	3.0 %	
Explicit Leverage	(6,337.3)	(8.5)%	(9.0)%	(10.5)%	
<b>Net Leverage</b>	<b>(3,425.0)</b>	<b>(4.6)%</b>	<b>(4.8)%</b>	<b>(7.5)%</b>	<b>10 to -20%</b>
<b>Net Asset Exposure</b>	<b>\$ 70,754.3</b>		<b>100.0%</b>	<b>100.0%</b>	

\*PSERS uses leverage to achieve increased economic exposure to diversifying asset classes to manage the overall portfolio risk while maintaining an allocation designed to achieve the long-term return goals of the System. Increased economic exposure is generally achieved through the use of either derivative positions or higher volatility funds. As of June 30, 2023, PSERS had total increased economic exposure of \$6.3 billion related to the following asset classes: Equities (\$0.3 billion), Fixed Income (\$1.5 billion); Infrastructure (\$0.7 billion); Real Estate (\$0.8 billion) and Commodities (\$3.0 billion). An allocation of 3% to Cash is included in the Target Allocation.

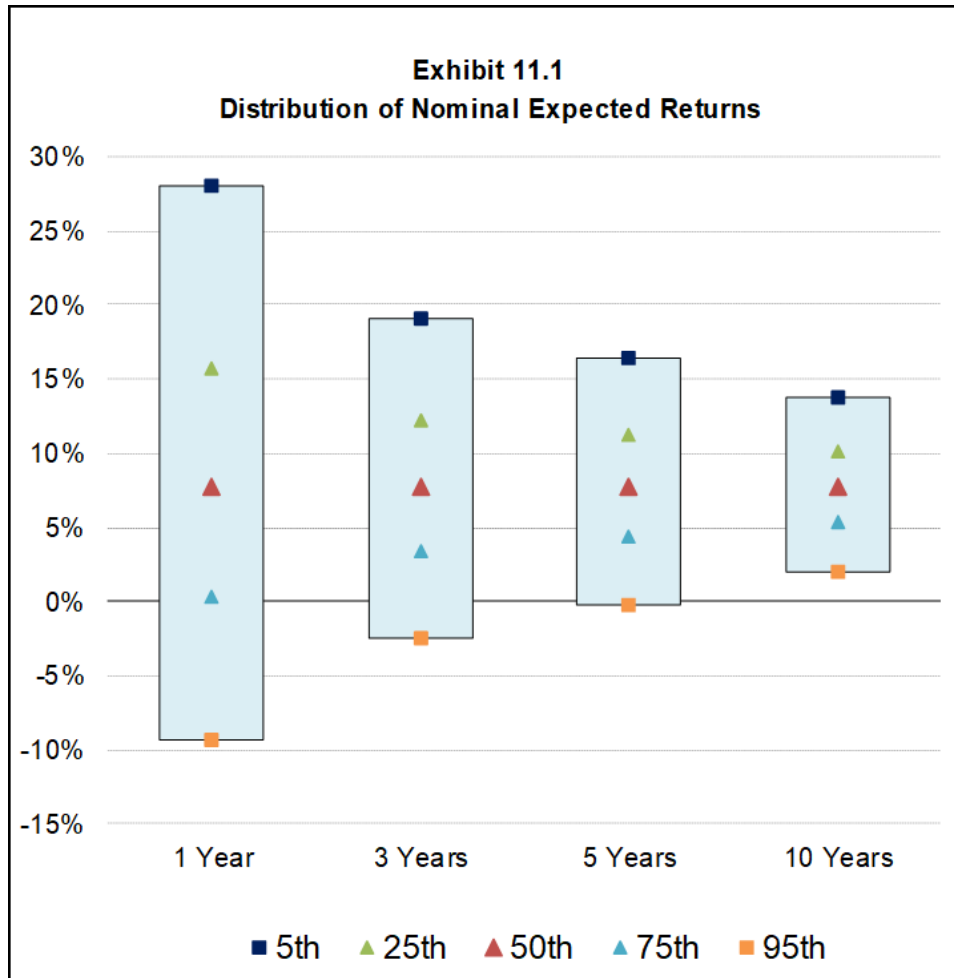
**Note: PSERS asset allocation was updated August 11, 2023 and is available for review at <https://www.psers.pa.gov>**

## Section 3 - Investment Information

### Asset Exposure (continued)

The purpose of the asset allocation is to meet the long-term investment objectives of the System. PSERS considers the expected range of returns for 1, 3, 5, and 10 year periods of various asset allocations choices to select the optimal asset allocation. While the range of expected returns can be high for any single year, volatility is expected to decrease and converge around a median expected return over time. This is demonstrated in Exhibit 11.1 below, which depicts expected future returns for PSERS current asset allocation:

Exhibit 11.1



<b>Range of Returns</b>				
<b>Percentiles</b>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
5%	28.1%	19.0%	16.4%	13.8%
25%	15.7%	12.2%	11.2%	10.2%
50%	7.7%	7.7%	7.7%	7.7%
75%	0.4%	3.4%	4.4%	5.4%
95%	(9.4)%	(2.5)%	(0.3)%	2.0%

Source: Verus capital market assumptions.

## Section 3 - Investment Information

### Asset Classifications

#### Asset Class Definition

An asset class is a group of investments having similar financial characteristics and behaving similarly in the marketplace. An asset class is homogeneous and exhibits different risk and return characteristics from other asset classes with varying degrees of correlations (i.e., diversifying).

PSERS seeks to diversify the assets of the Fund across regions, sectors, maturity segments, credit quality, geography, industry focus, vintage year, property sectors, regional footprints, market capitalization segments, and investment styles.

#### Public Market Investments

Instruments used to invest in public markets may be exchange-traded or non-exchange-traded and may be physical securities or derivatives and leverage may be employed. Public market asset classes generally have high liquidity and low transaction costs.

#### Public Equity Investments

Public Equity provides a return premium over inflation, thereby preserving and enhancing the real value of the Fund, and by performing well when economic growth is stronger than expected or inflation is lower than expected.

#### Public Fixed Income Investments

Nominal bonds serve as a hedge against lower inflation and weak economic growth, produce current income in the form of periodic interest payments, and provide liquidity to meet the Fund's obligations. Inflation protected bonds serve as a hedge against higher inflation and weaker economic growth and provide liquidity. Higher quality bond returns have also served as a diversifier relative to equity returns. Credit-related securities such as emerging market debt and public high yield bonds generate higher current income relative to investment grade debt and tend to do well when economic growth is stronger than expected.

#### Public Commodities Investments

Commodity investments consist of energy, precious metals, industrial metals, and agricultural. The prices of commodities are determined primarily by near-term events in global supply and demand conditions and are positively related with both the level of inflation and changes in the rate of inflation. Public Commodities provide a hedge against unanticipated inflation and diversification.

#### Public Infrastructure Investments

Public Infrastructure investments target stable, defensive investments with steady cash flows primarily within the energy, power, water, and transportation sectors. Public Infrastructure provides steady returns and cash yields, defensive growth, inflation protection, capital preservation, liquidity and diversification benefits.

#### Public Real Estate Investments

Public Real Estate provides steady returns and cash yields, inflation protection, defensive growth, capital preservation, liquidity and diversification benefits.

#### Private Asset Classes

Private investments are intended to provide exposure to higher potential returns and better alignment of interests. Private Asset Classes provide access to investment opportunities not available in Public Asset Classes. Private Asset Classes will achieve diversification by investing in funds, co-investments, separate accounts, joint ventures, partnerships, limited liability companies, closed-end and evergreen funds. PSERS will only consider investment structures that limit PSERS losses to the amount committed.

## Section 3 - Investment Information

### Asset Classifications (continued)

#### Private Equity Investments

Private Equity provides access to investment opportunities not available in Public Equity markets. Although estimates vary on the number of private versus public companies, there are approximately three times as many private backed as compared to public companies. This opportunity set enhances the pool of diverse companies otherwise available through public markets only.

#### Private Credit Investments

Private Credit typically provides enhanced yields over publicly-traded fixed income markets and serves as a diversifier to the overall portfolio by providing exposure to a variety of underlying collateral types not easily accessed through traditional publicly traded markets.

#### Private Infrastructure Investments

While providing a current income return and a potential hedge against inflation, Private Infrastructure also provides access to investment opportunities not available in publicly traded infrastructure markets.

#### Private Real Estate Investments

Private Real Estate typically provides current income, appreciation, and a potential hedge against inflation, and serves as a diversifier to the overall portfolio. Private Real Estate also provides access to investment opportunities not available in the publicly traded real estate markets.

**PSERS Asset Class Policies can be found on our website at <https://www.psers.pa.gov/About/Investment/Pages/Guide.aspx>**

# Performance



## Section 3 - Investment Information

### Performance

PSERS general investment consultant calculates the total investment return of the System as well as the performance of each external investment management firm and each internal investment manager retained by the Board to invest the System's assets. Performance is calculated using a time-weighted return methodology. For the one-year period ended June 30, 2023, the System generated a total net of fee return of 3.54%. This return was above the Total Fund Policy Index return of 3.21% by 33 basis points. Annualized total net of fee returns for the three-, five-, and ten- year periods ended June 30, 2023 were 9.66%, 7.30%, and 7.46%, respectively. The three-, five-, and ten-year returns ended June 30, 2023 exceeded the Total Fund Policy Index returns by 178, 50, and 38 basis points, respectively.

The past fiscal year was positive for the System with a net of fee return of 3.54%, exceeding the Total Fund Policy Index by 0.33%. The following asset classes were significant contributors to asset class returns this past fiscal year:

- U.S. Equity, as represented by a blended policy index comprised of the S&P 500, S&P 400 and S&P 600 indices, was up 18.2%.
- Non-US Equity, as represented by the MSCI ACWI ex US IMI with Developed Market Currencies (50% Hedged) benchmark, was up 13.6%.
- Private Credit, as represented by S&P LSTA Leveraged Loan Total Return Index +200 basis points, was up 12.9%.

Significant detractors from performance this past fiscal year included:

- U.S. Long Treasuries, as represented by the Bloomberg Barclays U.S. Long Treasury Index, were down 6.8%.
- Private Infrastructure, as represented by the FTSE Developed Core Infrastructure 50/50 (Hedged to USD) Index (Quarter-Lagged), were down 4.3%.

As noted, two of the best performing asset classes this past fiscal year were U.S. Equity and Non-U.S. Developed Markets Equity, which were up 18.2% and 13.6%, respectively while two of the worst performers were U.S. Long Treasuries and Private Infrastructure, returning -6.8% and -4.3%, respectively, for FY 2023. This illustrates the importance of diversification. Many investment professionals discuss diversification using terms such as standard deviation, correlation, and co- variance. However, at its most basic level, diversification is insurance against bad outcomes.

## Section 3 - Investment Information

Table 12.1 provides the System's total time-weighted investment returns for each major asset class and the total portfolio, including, where applicable and available, respective benchmark indexes used by asset class and median performance by asset class:

<b>Table 12.1 Annualized Total Returns (%) Net of Fees Ended June 30, 2023</b>				
	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>	<b>10 Year</b>
<b>PSERS Total Fund</b>	<b>3.54</b>	<b>9.66</b>	<b>7.30</b>	<b>7.46</b>
Total Fund Policy Index	3.21	7.88	6.80	7.08
Median Public Defined Benefit Plan (DBP) Fund Universe (Aon Hewitt Database)	7.64	8.28	6.25	6.94
60% Global Equity / 40% Barclays U.S. Aggregate Bond Index	9.36	5.01	5.61	6.11
<b>Total Equity</b>				
<b>Public and Private Equity Exposure</b>	<b>8.78</b>	<b>16.31</b>	<b>11.16</b>	<b>N/A</b>
Blended Policy Index	7.02	15.07	10.55	N/A
<b>PSERS Public Global Equity Composite</b>	<b>14.61</b>	<b>10.29</b>	<b>7.80</b>	<b>9.47</b>
Blended Policy Index	14.66	10.24	6.86	8.83
<b>PSERS Total Private Equity Composite</b>	<b>1.11</b>	<b>24.90</b>	<b>15.73</b>	<b>12.86</b>
Burgiss Private Equity (1Q Lag)	-2.90	21.49	14.84	13.81
<b>Total Fixed Income</b>				
<b>PSERS Fixed Income Portfolios</b>	<b>0.53</b>	<b>0.25</b>	<b>3.10</b>	<b>4.60</b>
Fixed Income Policy Index	1.64	-1.49	2.41	2.87
<b>PSERS Public Fixed Income Composite</b>	<b>-1.86</b>	<b>-3.66</b>	<b>N/A</b>	<b>N/A</b>
Blended Policy Index	-1.59	-4.43	N/A	N/A
<b>PSERS Private Fixed Income Composite</b>	<b>8.58</b>	<b>12.40</b>	<b>7.40</b>	<b>7.59</b>
Blended Policy Index	12.92	8.44	6.47	5.99
<b>Total Real Assets</b>				
<b>PSERS Real Assets Portfolios</b>	<b>0.22</b>	<b>10.01</b>	<b>5.81</b>	<b>N/A</b>
Real Assets Policy Index	-0.92	8.43	5.05	N/A
<b>PSERS Public Real Assets</b>	<b>0.33</b>	<b>7.66</b>	<b>2.85</b>	<b>N/A</b>
Blended Policy Index	0.38	7.36	3.03	N/A
<b>PSERS Private Real Assets</b>	<b>0.42</b>	<b>16.37</b>	<b>N/A</b>	<b>N/A</b>
Blended Policy Index	N/A	N/A	N/A	N/A
<b>PSERS Financing Composite</b>	<b>3.95</b>	<b>1.39</b>	<b>N/A</b>	<b>N/A</b>
<b>Financing Composite Policy Index</b>	<b>4.33</b>	<b>1.66</b>	<b>N/A</b>	<b>N/A</b>
PSERS Cash and Cash Equivalents	4.81	2.14	2.06	1.33
<b>Cash and Cash Equivalents Policy Index</b>	<b>3.73</b>	<b>1.32</b>	<b>1.54</b>	<b>0.96</b>
<b>Footnotes to the Total Portfolio are available on page 103 of PSERS Annual Comprehensive Financial Report.</b>				

## Section 3 - Investment Information

### Performance (continued)

The System diversifies simply because it is difficult to predict how actual events in the future will transpire relative to what is priced into the market. Diversification is a prudent approach to investing.

Over the past fiscal year, the U.S. equity market outperformed relative to international developed and emerging market counterparts. The total U.S. equity market (as represented by the Russell 3000) returned 19% overall, with the growth side of the market (up 27.1%), significantly outpacing value stocks (up 11.5%) over the 1-year period. The growth market surge was largely driven by stocks in the technology sector, especially with excitement around artificial intelligence (AI).

Within the non-U.S. equity markets, developed market stocks (represented by the MSCI EAFE index) were up 18.8% for the fiscal year, while emerging market stocks (represented by the MSCI EM index) were up only 1.7%. While Europe faced tighter central bank policies due to high inflation, resilience was much better than expected, especially in comparison to the negative sentiment following Russia's invasion of Ukraine in 2022 and subsequently heightened concerns around geopolitical tensions between the US and China.

EM shares initially outperformed on enthusiasm around China's reopening, but that momentum turned out to be short-lived, as negative sentiment overshadowed the move away from an almost three-year "zero-covid" policy.

Inflation and Federal Reserve action continued to be the dominant driver of fixed income performance over the past year. The bulk of Federal Reserve rate hikes occurred in the second half of 2022, but the Federal Reserve continued to increase rates in 2023 in response to continued inflation, albeit at a considerably slower pace. Positive performance in the first half of 2023 helped improve one-year performance for fixed income.

Core fixed income (Bloomberg U.S. Aggregate) saw a 2.1% gain over the first six months of 2023, bringing the one-year loss to -0.9%. In terms of duration, short maturity U.S. treasuries outperformed, with the Bloomberg U.S. Treasury 1-3 Year index gaining 0.1% over the one-year, compared to -2.1% and -6.8% losses from the U.S. Treasury index and U.S. Treasury Long index, respectively.

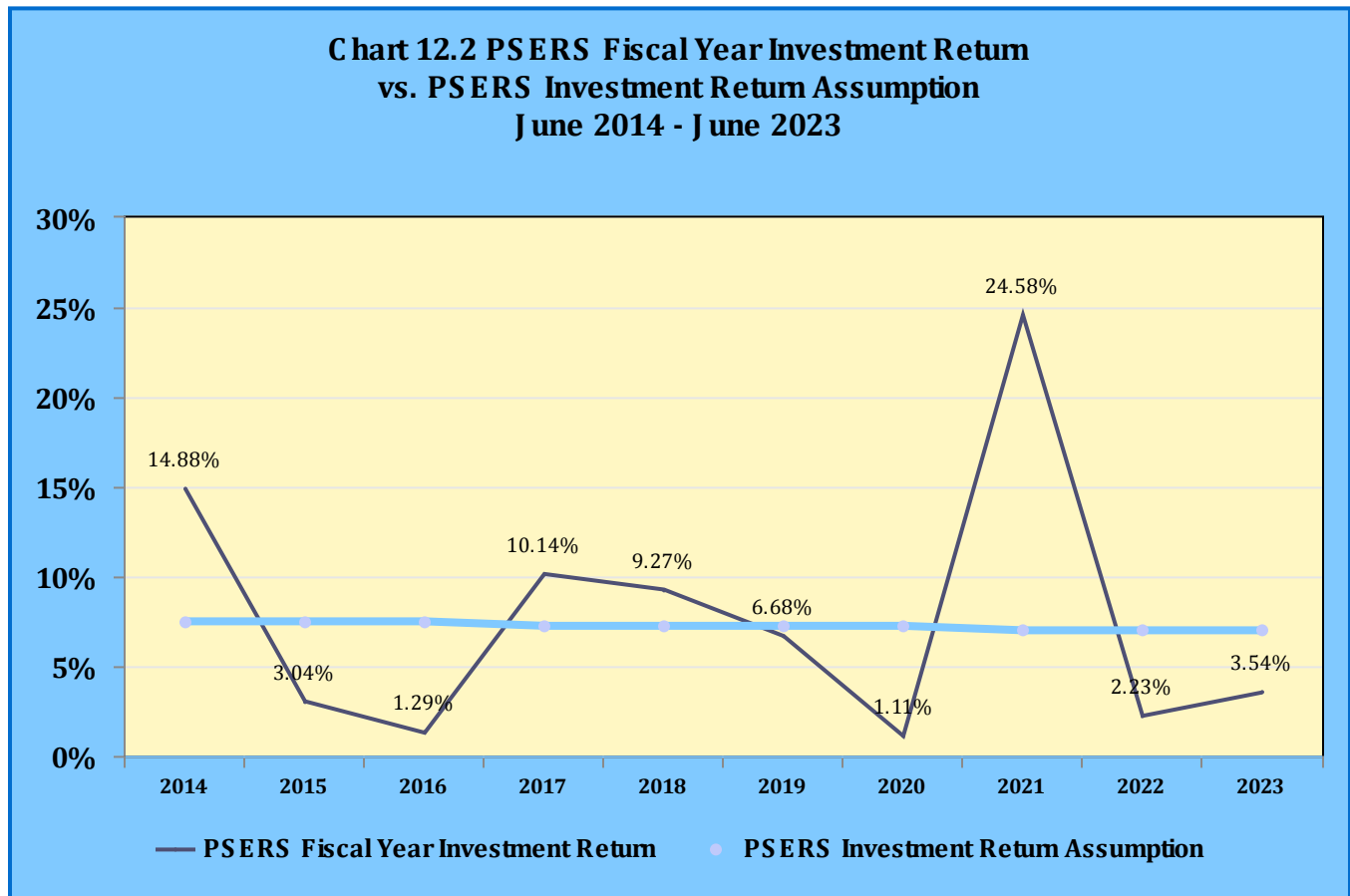
Commodities were one of the few asset classes to post a positive return during 2022, however commodities turned negative in 2023, as a combination of easing supply pressures and lower demand hurt price performance. The Bloomberg Commodity index fell -9.6% over the fiscal year.

## Section 3 - Investment Information

### Performance (continued)

PSERS annualized net of fee return for the ten-year period ended June 30, 2023 was 7.46%. The system seeks to achieve a long-term rate of return of 7% while taking prudent risk and has built a diversified allocation to allow it to meet that goal over the long-term. Over short-term periods the system can experience periods when annual returns are both below and above 7%. The System continues to believe the best way to achieve its long-term objectives is to maintain a very diversified portfolio which includes all asset classes available to it, such as equities, fixed income, and real assets. In any given year, the System expects some assets to perform well, such as Public and Private Equity did this past fiscal year, and some assets to not perform as well, such as Public Fixed Income and Real Assets did this past fiscal year. However, over the long term, the System expects each of its asset classes to generate a positive return commensurate with the risks taken. The future is uncertain, but PSERS believes it is well positioned to accomplish its objectives.

As depicted in chart 12.2, PSERS one-year investment return was below the investment return assumption for the fiscal year 2023.



## Section 3 - Investment Information

### Performance (continued)

Table 12.2 demonstrates that over the past 24 fiscal years, on average, every dollar PSERS has spent in investment fees and expenses has resulted in investment earnings of \$2.07 above the Policy Benchmark's dollar returns.

**Table 12.2**  
**PSERS Investment Earnings**  
**over Policy Benchmark**  
**Fiscal Years Ended June 30**

<u>Fiscal Year</u>	<u>Total Investment Expenses *</u>	<u>PSERS Net Return over Policy Benchmark (AFTER Payment of all Expenses)</u>	<u>PSERS Investment Earnings over Policy Benchmark Net of Total Investment Expenses *</u>	<u>\$'s of Gross Alpha for every \$1 of Investment Expenses</u>
2023	\$406	0.33%	\$208	\$1.51
2022	525	2.41%	1,332	3.54
2021	618	3.50%	1,827	3.96
2020	515	-1.46%	(816)	(0.58)
2019	450	(1.20)%	(653)	(0.45)
2018	468	1.11%	545	2.16
2017	474	1.80%	821	2.73
2016	416	-1.95%	(1,006)	(1.42)
2015	455	0.04%	10	1.02
2014	482	0.50%	222	1.46
2013	558	1.25%	579	2.04
2012	481	1.10%	518	2.08
2011	515	1.01%	413	1.80
2010	522	2.19%	890	2.70
2009	478	(5.22)%	(3,131)	(5.55)
2008	399	-0.98%	(618)	(0.55)
2007	314	4.36%	2,360	8.52
2006	211	3.26%	1,635	8.75
2005	193	2.36%	1,090	6.65
2004	191	3.51%	1,388	8.27
2003	179	(0.42)%	(140)	(0.22)
2002	163	0.56%	316	2.94
2001	144	2.13%	1,200	9.33
2000	125	1.85%	934	8.47
<b>Total</b>	<b>\$9,282</b>		<b>\$9,925</b>	<b>\$2.07</b>

\*Dollar amounts in millions.

# **Managing Investment Fees, Expenses and Carried Interest**

## Section 3 - Investment Information

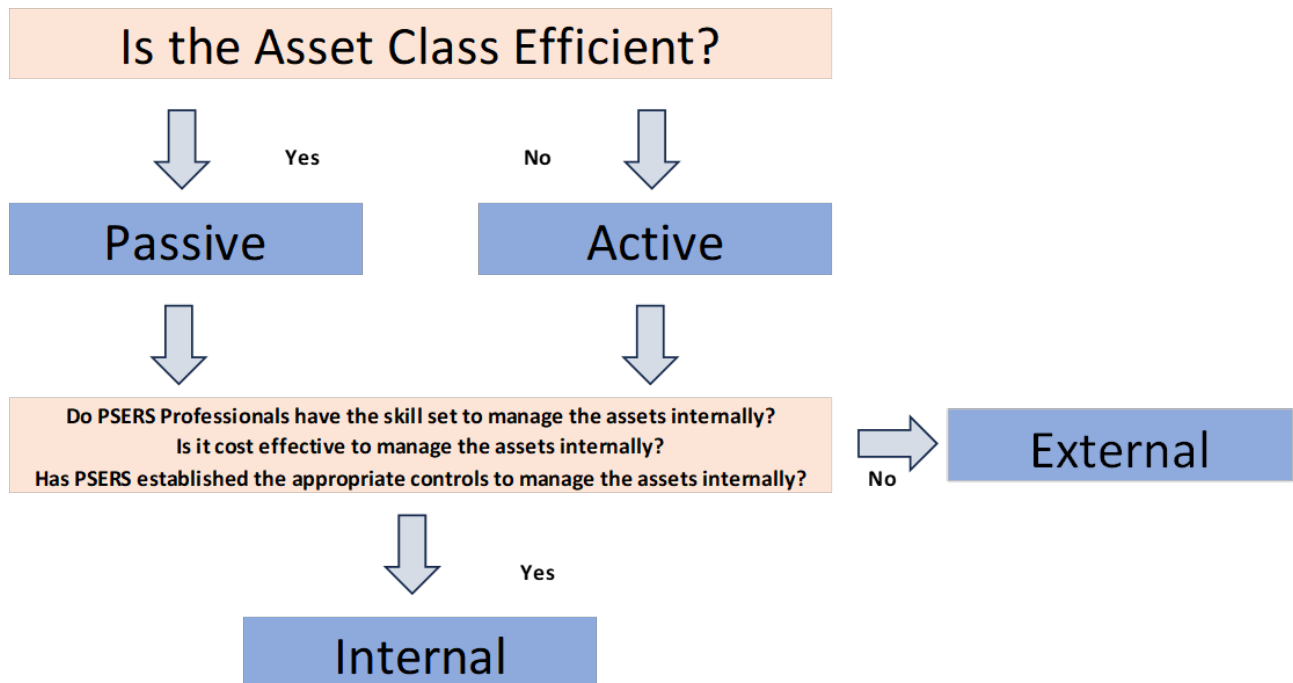
### Managing Investment Fees, Expenses, and Carried Interest

PSERS investment professionals formulate an Asset Allocation Policy every three years (as more fully described in Tab 9) with input from the general investment consultant, and work on an ongoing basis to implement the Policy through identification of attractive investment strategies and well-qualified investment managers. The Board reviews and reconfirms the long-term asset allocation targets of the System every three years unless there has been a materially change in the underlying assumptions supporting those targets.

A fundamental part of this implementation process is making key decisions with regard to use of active or passive strategies implemented by internal professionals or external investment managers. Management of investment fees and expenses is integrated into the process of making these key decisions.

PSERS ability to select a prudent combination of both internal and external managers, and both active and passive strategies, can help generate excess risk-adjusted, net of fee returns relative to the Policy Benchmarks.

Chart 13.1



## Section 3 - Investment Information

### Managing Investment Fees, Expenses, and Carried Interest (continued)

Chart 13.2 below demonstrates that over the past 23 fiscal years, PSERS has earned \$10.0 billion in additional investment returns above the Board-approved Policy Index, net of fees.

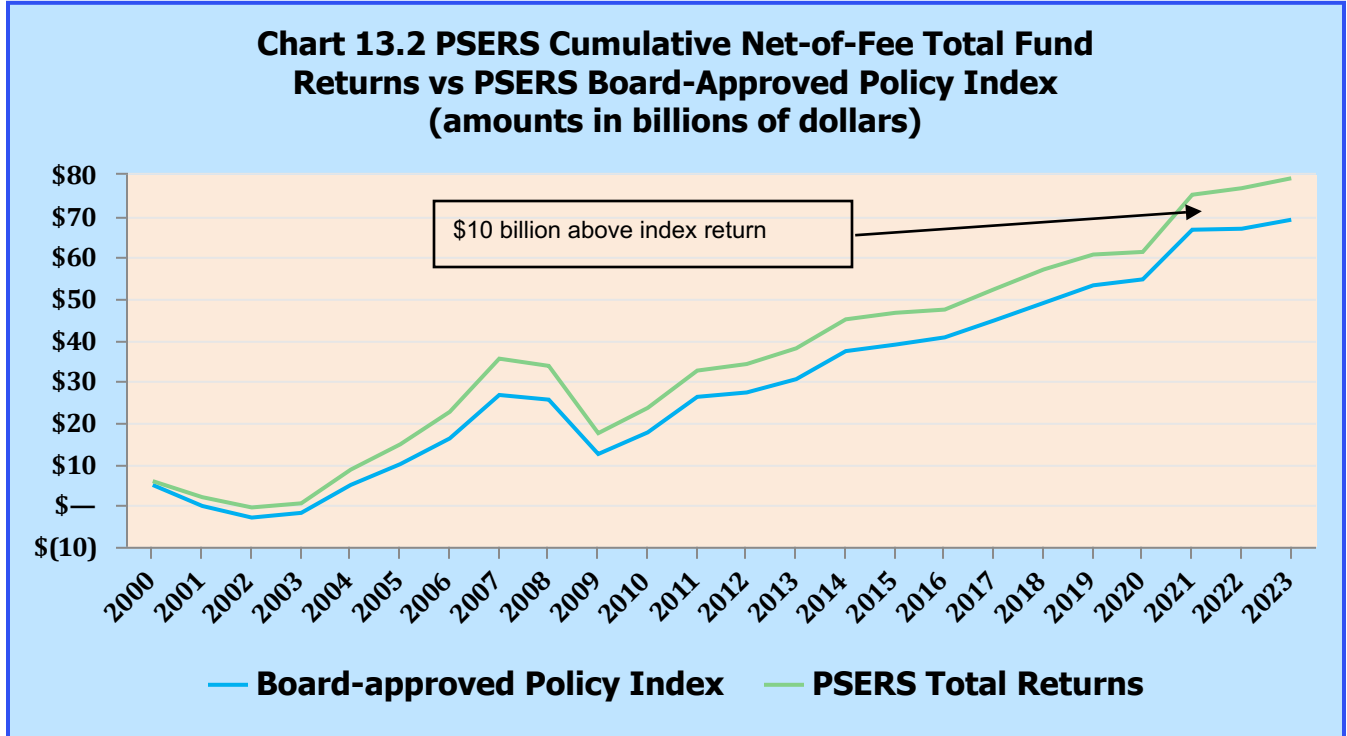
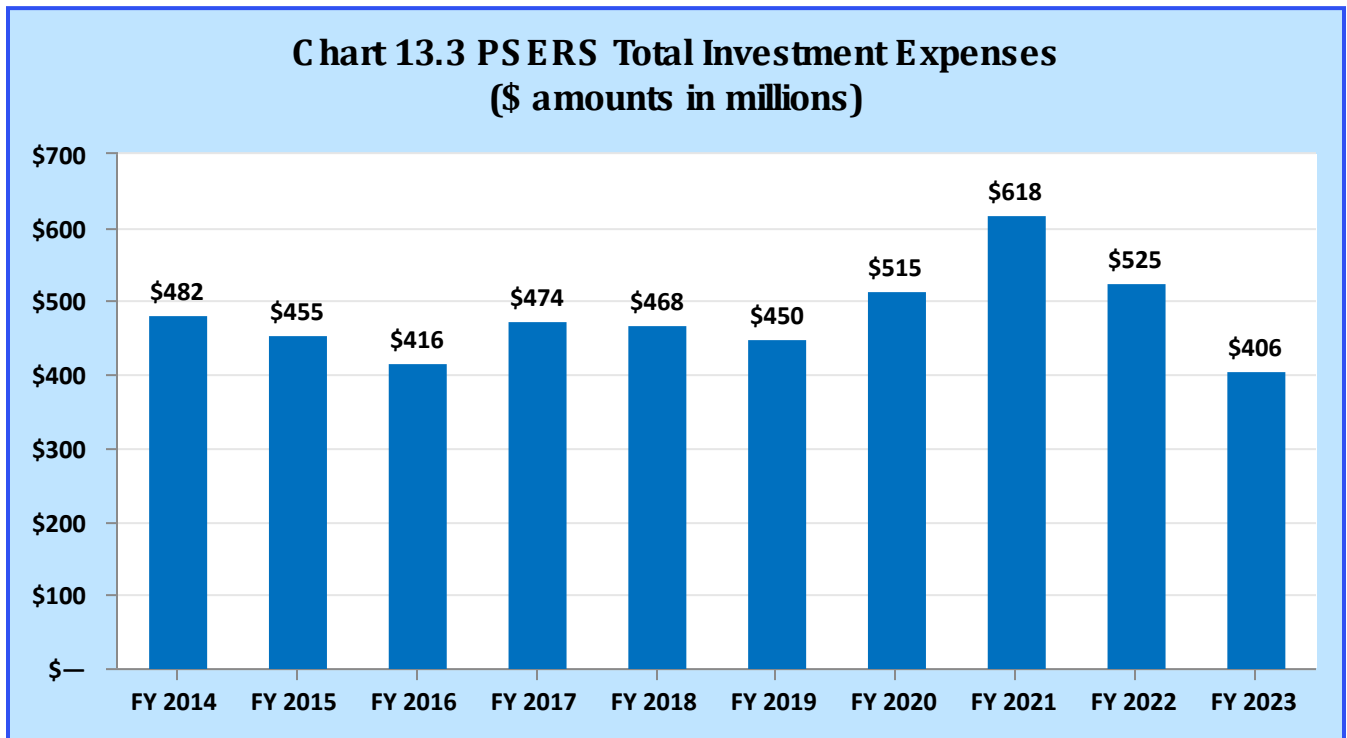


Chart 13.3 shows PSERS Total Investment Expenses over the past ten fiscal years.





## Section 3 - Investment Information

### Key Decision: Internal vs. External Investment Management

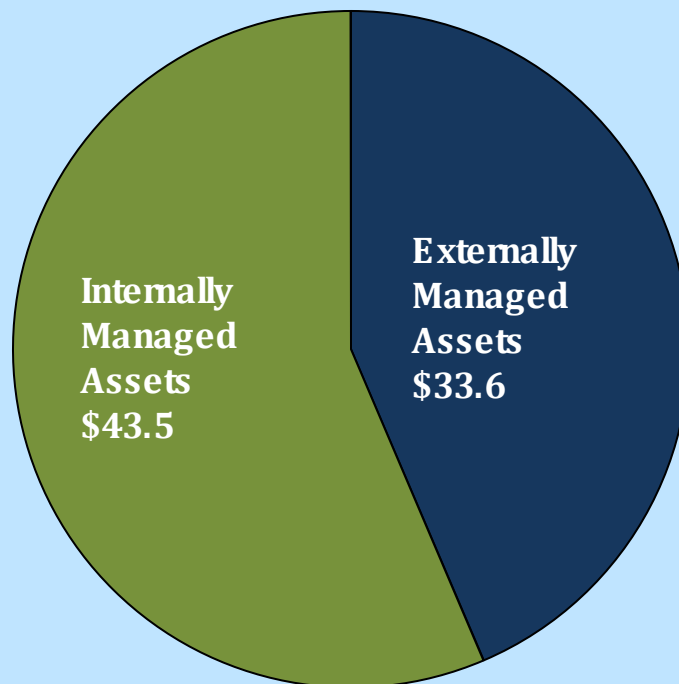
PSERS generally prefers to assign investment management responsibilities to internal professionals rather than to external investment management companies when certain conditions are present (see Chart 13.1). For example, it must be clear that internal professionals can achieve risk-adjusted returns that are at least equal to what might be earned by external investment managers in equivalent strategies net of all cost and fees, and PSERS investment professionals must simultaneously have the operational capacity to take on the additional assets without compromising internal control or compliance obligations. When assets are assigned to PSERS professionals, the total costs (e.g., salary and benefits, computers and office supplies, incremental operational support)

must be lower than those of even the largest “very low fee” investment fund managers delivering a similar strategy.

When PSERS does select external investment managers, the decision is based in part on the fees the System has negotiated and in part on the likelihood the manager will meet or exceed the performance expected. Fee negotiations begin with the expectation that the contract with the investment manager will have a “Most Favored Nations” clause guaranteeing that PSERS fees will be at least as low as other clients with a similar investment amount, and the System then negotiates fees lower from that point wherever possible.

Chart 13.4 displays the distribution of PSERS managed assets as of June 30, 2023.

**Chart 13.4 PSERS Asset Exposures under Management  
as of June 30, 2023  
(\$ Billions)**



Note: Financing represents a negative \$6.3 billion allocation exposure and is not reflected in Chart 13.4.

## Section 3 - Investment Information

### Key Decision: Internal vs. External Investment Management (continued)

PSERS investment staff managed 27 portfolios internally, with a total estimated net asset value of over \$43 billion on June 30, 2023. We estimate that this has resulted in net savings for the entire fiscal year of approximately \$58 million. PSERS

investment staff also oversee external managers, manage the asset allocation, oversee risk, and perform other tasks in managing the overall investment program.

As shown in Table 13.1 below, managing these assets externally would have cost PSERS over \$86 million in fees (\$ amounts in thousands).

**Table 13.1**  
**Internally Managed Accounts as of June 30, 2023**

Asset Class	Market Value *	Estimated Annual Fee %**	Estimated Cost to Manage Externally
Public Equity	\$ 13,608,986	0.06%	\$ 8,795
Private Equity	1,262,052	1.50%	18,931
Public Fixed Income	14,395,897	0.08%	11,266
Private Fixed Income	177,645	1.40%	2,487
Public Real Assets	10,757,070	0.29%	31,653
Private Real Assets	865,814	1.25%	10,823
Absolute Return	300	1.54%	5
Tail Risk Mitigation	87,246	0.00%	—
Cash	2,336,136	0.10%	2,336
<b>Total</b>	<b>\$ 43,491,146</b>	<b>0.20%</b>	<b>\$ 86,296</b>
<b>Internal Management Costs</b>		<b>(0.07%)</b>	<b>\$ (28,997)</b>
<b>Net Savings</b>		<b>0.13%</b>	<b>\$ 57,299</b>

*\*Market values include cash and derivatives exposure*

*\*\*Represents consultants peer cost comparisons*

## Section 3 - Investment Information

### Key Decision: Active vs. Passive Investment Management (continued)

Passive investment strategies form the basis that the Fund uses to attain market exposure in many public market asset classes. The advantage of passive strategies, such as indexing, is that they are generally very inexpensive to implement. If solely using passive strategies, however, performance will be limited to general market performance with little or no potential for excess earnings.

PSERS evaluates and selects active managers on a case-by-case basis with strong emphasis on understanding the manager's sustainable investment edge. If PSERS investment professionals and consultants have conviction that the manager's process will generate attractive and potentially uncorrelated risk-adjusted net of fee returns in excess of the most competitive passive benchmarks, the active manager will be considered. Active strategies are also used by PSERS in asset classes where passive strategies are not available.

In selecting active managers, PSERS strives to hire managers that meet the following criteria:

- have a unique insight or process;
- have the ability to add long-term excess returns above passive alternatives, net of fees;
- have adequate capacity to execute the strategy;
- add diversification to PSERS existing investment structure;
- do not exhibit style drift; and
- exhibit a high level of ethical behavior.

The advantage of active strategies is that they endeavor to generate net of fee returns in excess of the passive alternatives, if available, and/or provide diversification benefits which help manage total portfolio risk. The disadvantages of active strategies include being more expensive to implement than passive strategies and the risk that they may underperform passive strategies.

PSERS regularly measures the performance of active strategies relative to alternative passive strategies. In cases where PSERS is not receiving investment earnings from its active strategies in excess of alternative passive strategies, when all investment fees are taken into account, capital is redeployed either to other active strategies or to passive strategies. If PSERS determines that the active managers are not meeting expectations as a group, the Fund would endeavor to exit active strategies altogether and move to a purely passive implementation.

## Section 3 - Investment Information

### Investment Advisory Fees

As depicted in Table 13.2 “Total External Management” includes all fees paid to external investment managers as either a base fee or a share of profits earned (performance fee). “Total Internal Management” includes all staff salaries related to PSERS Investment Office as well as

costs needed to support their work (e.g., vendor services, hardware and software, office supplies). “Total Other Expenses” include fees paid to the custodian bank, consultants, and legal services providers.

**Table 13.2 summarizes total investment expenses for the fiscal year ended June 30, 2023.**

<b>Table 13.2</b>					
<b>Summary of Investment Advisory Fees</b>					
<b>Fiscal Year Ended June 30, 2023</b>					
<b>(Dollar Amounts in Thousands)</b>					
	<u>Base Fees</u>	<u>Performance Fees</u>	<u>Total Fees</u>	<u>Basis Points</u>	
<b>External Management</b>					
International Equity	\$ 21,245	\$ 5,498	\$ 26,743	63	
Fixed Income	22,687	5,300	27,987	98	
Real Estate	48,381	—	48,381	83	
Alternative Investments	107,516	—	107,516	90	
Absolute Return	41,353	30,146	71,499	274	
Commodities	6,162	—	6,162	72	
Infrastructure	16,328	—	16,328	145	
Private Credit	60,252	—	60,252	124	
Tail Risk	3,372	—	3,372	134	
Defined Contribution	274	—	274	18	
<b>Total External Management</b>	<b>\$ 327,570</b>	<b>\$ 40,944</b>	<b>\$ 368,514</b>	<b>87</b>	
<b>Total Internal Management</b>			<b>\$ 28,997</b>	<b>9</b>	
<b>Total Investment Management</b>			<b>\$ 397,511</b>	<b>53</b>	
<b>Custodian Fees</b>			<b>2,503</b>		
<b>Consultant &amp; Legal Fees</b>			<b>5,551</b>		
<b>Total Other Expenses</b>			<b>\$ 8,054</b>		
<b>Total Investment Expenses</b>			<b>\$ 405,565</b>	<b>54</b>	

## Section 3 - Investment Information

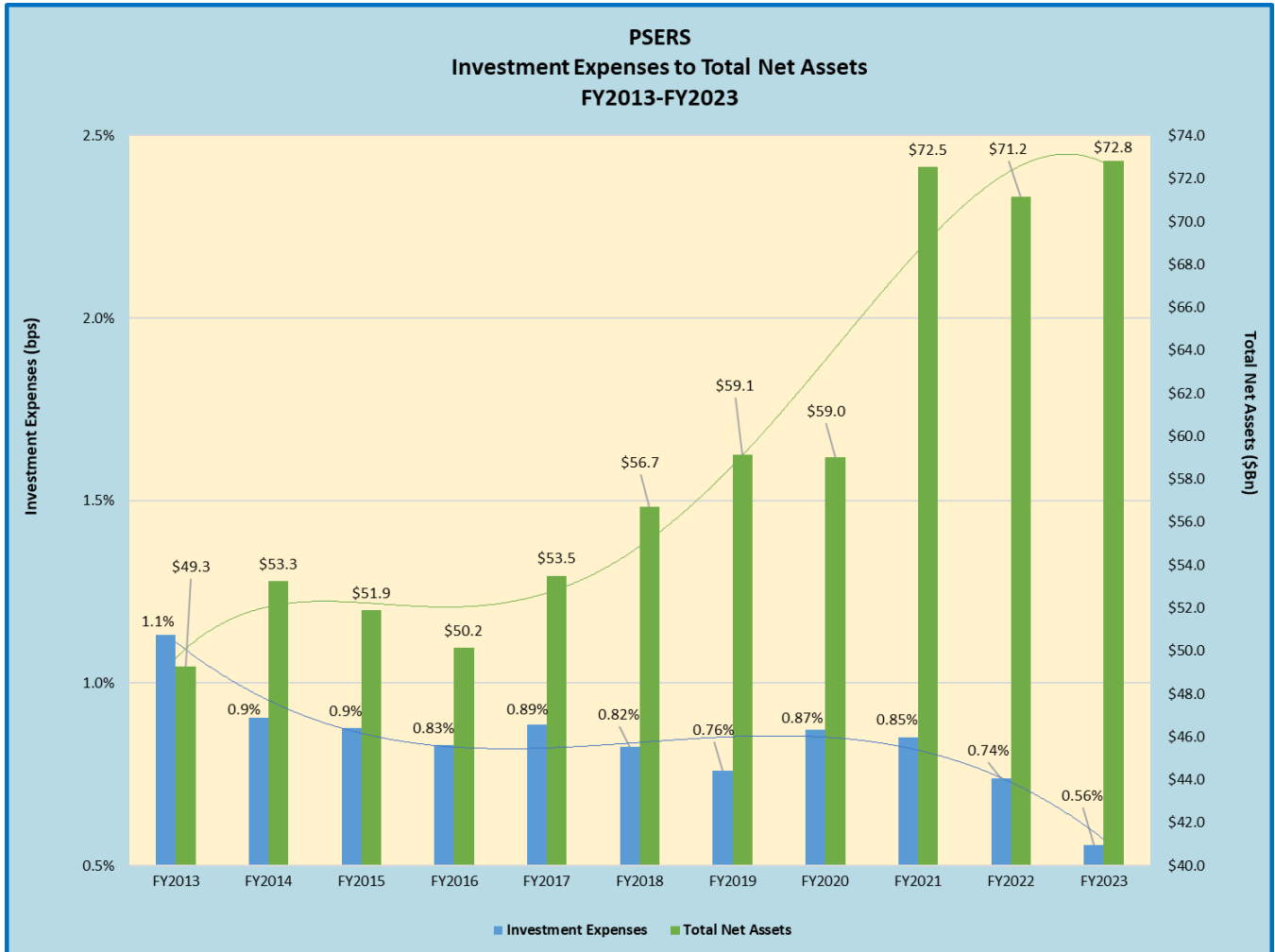
### Investment Advisory Fees (continued)

Increasing the number and size of portfolios managed internally has resulted in reducing PSERS Total Investment Expenses in recent years. As Chart 13.5 illustrates, Total Investment

Expenses have declined from Fiscal Year 2014 to Fiscal Year 2023, while Total Net Assets have increased significantly from \$49.3 billion to \$72.8 billion.

**Chart 13.5 shows the total investment expenses against total net assets from fiscal year ended June 30, 2013 to June 30, 2023.**

**Chart 13.5**



## Section 3 - Investment Information

### Investment Advisory Fees (continued)

The tables below summarize PSERS investment managers' most recent fees, total profits, and carried interest, if applicable. Carried interest is the profit that investment managers are allocated from the total profits on the investments made in

private-market asset classes. Accrued carried interest is an accounting accrual based on unrealized accounting gains. The manager does not receive this accrued carried interest unless those gains are realized.

External management fees are treated as a reduction of the investment revenue of the Fund rather than as a budgeted administrative expense.

<b>Table 13.3</b>			
<b>Investment Fees by Manager</b>			
<b>Fiscal Year ended June 30, 2023</b>			
<b>(Dollar amounts in Thousands)</b>			
<b>Manager</b>	<b>Base Fees</b>	<b>Profit Share</b>	<b>Total</b>
<b>International Equity</b>			
Acadian Asset Management, LLC	\$ 1,358	\$ —	\$ 1,358
Baillie Gifford Overseas LTD.	1,837	—	1,837
BlackRock (Emerging Mkts Alpha Adv Fund) Class D Shares	1,112	509	1,621
BlackRock (Emerging Mkts Alpha Adv Fund) Class P Shares	471	—	471
ECM Feeder Fund 2 LP	—	4,989	4,989
Insight Investment International Limited - Everest	452	—	452
Insight Investment International Limited - Nevada	396	—	396
Insight Investment International Limited - Oxygen	60	—	60
Insight Investment International Limited - Sierra	96	—	96
Insight Investment International Limited - Wilson	264	—	264
Insight Investment International Limited - Yellow	45	—	45
Marathon Asset Management, LLP	2,313	—	2,313
Oberweis Asset Management, INC.	1,928	—	1,928
Steadview Capital Partners LP	1,604	—	1,604
The Children's Investment Fund LP	6,715	—	6,715
Wasatch Advisors, Inc (Non-US Small Cap Equity Inv)	779	—	779
Wasatch Advisors, Inc. (Emerging Markets Small Cap)	1,815	—	1,815
<b>Total - International Equity</b>	<b>\$ 21,245</b>	<b>\$ 5,498</b>	<b>\$ 26,743</b>
<b>Fixed Income</b>			
Bain Capital Credit Managed Account (PSERS), L.P.	\$ 2,316	\$ —	\$ 2,316
BlackRock FIGA High Yield	4,199	3,574	7,773
Bridgewater Associates, LP	12,768	—	12,768
Caspian Select Credit International, Ltd.	986	1,281	2,267
Franklin Templeton Institutional, LLC	1,886	—	1,886
Radcliffe Capital Management, L.P.	532	445	977
<b>Total - Fixed Income</b>	<b>\$ 22,687</b>	<b>\$ 5,300</b>	<b>\$ 27,987</b>

## Section 3 - Investment Information

**Table 13.3**

### Investment Fees by Manager Fiscal Year ended June 30, 2023 (Dollar amounts in Thousands)

<u>Manager</u>	<u>Base Fees</u>	<u>Profit Share</u>	<u>Total</u>
<b><u>Absolute Return</u></b>			
Aeolus Property Catastrophe Fund I LP	\$ 103	\$ 423	\$ 526
Black River Fixed Income Relative Value Opportunity Fund Ltd.	8,361	14,102	22,463
Bridgewater Pure Alpha Fund II, Ltd.	9,737	—	9,737
Capula Global Relative Value Fund Limited	1,698	3,438	5,136
Capula Tail Risk Fund Limited	3,746	—	3,746
Caspian Select Credit International, Ltd.	1,205	—	1,205
DaVinci Reinsurance Ltd.	—	(80)	(80) @
Falko Regional Aircraft Opportunities Fund II L.P.	713	—	713
Fourier Fund Ltd.	2,484	4,024	6,508
HS Group Sponsor Fund II	909	—	909
OWS Credit Opportunity Offshore Fund III, Ltd.	5,259	294	5,553
Palmetto Fund, Ltd.	46	—	46
PIMCO Commodity Alpha Fund Ltd.	896	—	896
PIMCO Global Credit Opportunity Offshore Fund, Ltd.	1,444	8,308	9,752
RenaissanceRe Medici Fund Ltd.	7	—	7
RenaissanceRe Upsilon Diversified Fund	598	(479)	119
SASOF III, LP	126	—	126
SASOF IV, LP	989	—	989
SASOF V, L.P.	2,038	—	2,038
Venor Capital Offshore Ltd.	994	116	1,110
<b>Total - Absolute Return</b>	<b>\$ 41,353</b>	<b>\$ 30,146</b>	<b>\$ 71,499</b>
<i>@= Negative amount due to reversal of prior year accrual</i>			
<b><u>Commodities</u></b>			
Gresham Investment Management LLC	\$ 1,398	\$ —	\$ 1,398
Wellington Management Company LLP	365	—	365
<b>Total - Commodities</b>	<b>\$ 1,763</b>	<b>\$ —</b>	<b>\$ 1,763</b>
<b><u>Tail Risk Mitigation</u></b>			
Capstone Commonwealth Fund, LP	\$ 3,372	\$ —	\$ 3,372
<b>Total - Tail Risk Mitigation</b>	<b>\$ 3,372</b>	<b>\$ —</b>	<b>\$ 3,372</b>
<b><u>Real Estate</u></b>			
AG Core Plus Realty Fund III, L.P.	\$ 25	\$ —	\$ 25
AG Core Plus Realty Fund IV, L.P.	903	—	903
AG Europe Realty Fund II, L.P.	1,077	—	1,077
AG Europe Realty Fund III, L.P.	1,215	—	1,215
AG Realty Value Fund X, L.P.	1,650	—	1,650
Almanac Realty Securities VI, L.P.	147	—	147

## Section 3 - Investment Information

**Table 13.3**

### Investment Fees by Manager Fiscal Year ended June 30, 2023 (Dollar amounts in Thousands)

<u>Manager</u>	<u>Base Fees</u>	<u>Profit Share</u>	<u>Total</u>
<b>Real Estate * (continued)</b>			
Almanac Realty Securities VII, L.P.	\$ 750	\$ —	\$ 750
Almanac Realty Securities VIII, L.P.	1,031	—	1,031
Ares European Real Estate Fund IV, L.P.	335	—	335
Ares U.S. Real Estate Fund IX, L.P.	664	—	664
Ares U.S. Real Estate Fund VIII, L.P.	150	—	150
GF Management, LLC	131	—	131
Avenue Real Estate Fund (Parallel) L.P.	294	—	294
Bell Institutional Fund VI, L.P.	888	—	888
Bell Institutional Fund VII, L.P.	1,100	—	1,100
Bell Value-Add Fund VIII, L.P.	657	—	657
Blackstone Real Estate Debt Strategies III, L.P.	373	—	373
Blackstone Real Estate Partners Europe IV, L.P.	290	—	290
Blackstone Real Estate Partners VIII, L.P.	2,055	—	2,055
Brookfield Strategic Real Estate Partners II, L.P.	1,499	—	1,499
Brookfield Strategic Real Estate Partners III-A, L.P.	2,239	—	2,239
Brookfield Strategic Real Estate Partners IV, L.P.	3,666	—	3,666
Brookfield Strategic Real Estate Partners, L.P.	546	—	546
Cabot Industrial Core Fund II, L.P.	991	—	991
Cabot Industrial Value Fund VI, L.P.	1,500	—	1,500
Carlyle Realty Partners IX, L.P.	1,988	—	1,988
Carlyle Realty Partners VI, L.P.	49	—	49
Carlyle Realty Partners VII, L.P.	229	—	229
Carlyle Realty Partners VIII, L.P.	1,196	—	1,196
DRA Growth and Income Fund IX, LLC	1,447	—	1,447
DRA Growth and Income Fund VII, L.P.	68	—	68
DRA Growth and Income Fund VIII, LLC	846	—	846
DRA Growth and Income Master Fund X, LLC	1,786	—	1,786
EQT Exeter Industrial Core-Plus Fund IV, L.P.	65	—	65
Exeter Core Industrial Club Fund II, L.P.	754	—	754
Exeter Industrial Core Fund III, L.P.	884	—	884
Exeter Industrial Value Fund IV, L.P.	56	—	56
Exeter Industrial Value Fund V, L.P.	1,180	—	1,180
Property Management, Inc	93	—	93



## Section 3 - Investment Information

**Table 13.3**

### Investment Fees by Manager Fiscal Year ended June 30, 2023 (Dollar amounts in Thousands)

<u>Manager</u>	<u>Base Fees</u>	<u>Profit Share</u>	<u>Total</u>
<b>Real Estate * (continued)</b>			
Bell Partners Inc.	\$ 428	\$ —	\$ 428
Latitude Management Real Estate Capital III, Inc.	12	—	12
LEM Multifamily Fund V, L.P.	883	—	883
LEM Multifamily Fund VI, L.P.	900	—	900
LEM Multifamily Senior Equity Fund IV, L.P.	13	—	13
PGIM Agricultural Separate Account	939	—	939
Pramerica Real Estate Capital VI, L.P.	408	—	408
RCG Longview Debt Fund VI, L.P.	362	—	362
L&B Realty Advisors	64	—	64
Security Capital Preferred Growth (Public)	1,667	—	1,667
Senior Housing Partnership Fund V, L.P.	700	—	700
Stockbridge Real Estate Fund III, LP	298	—	298
Stockbridge Real Estate Fund, L.P.	5,790	—	5,790
O'Connor Real Estate Advisors, LLC	900	—	900
UBS (US) Trumbull Property Fund, L.P.	200	—	200
<b>Total - Real Estate</b>	<b>\$ 48,381</b>	<b>\$ —</b>	<b>\$ 48,381</b>
<b>Private Equity *</b>			
Actis Global 4, L.P.	\$ 1,062	\$ —	1,062
Aisling Capital IV, L.P.	913	—	913
Apax Digital II, L.P.	1,772	—	1,772
Apax Digital, L.P.	1,081	—	1,081
Apax X USD, L.P.	1,472	—	1,472
Apollo Investment Fund IX, L.P.	1,852	—	1,852
Apollo Investment Fund VIII, L.P.	390	—	390
Bain Capital Asia Fund II, L.P.	453	—	453
Bain Capital Asia Fund III-A, L.P.	904	—	904
Bain Capital Asia Fund IV-B, L.P.	1,345	—	1,345
Bain Capital Fund XI-A, L.P.	301	—	301
Bain Capital Fund XII, L.P.	999	—	999
Blue Point Capital Partners III (B), L.P.	276	—	276
Blue Point Capital Partners IV, L.P.	728	—	728
Bridgepoint Development Capital III, L.P.	(603)	—	(603) @
Bridgepoint Development Capital IV, L.P.	2,248	—	2,248
Bridgepoint Europe IV, L.P.	461	—	461
Bridgepoint Europe V, L.P.	(1,361)	—	(1,361) @
Bridgepoint Europe VI, L.P.	992	—	992

## Section 3 - Investment Information

**Table 13.3**

### Investment Fees by Manager Fiscal Year ended June 30, 2023 (Dollar amounts in Thousands)

<u>Manager</u>	<u>Base Fees</u>	<u>Profit Share</u>	<u>Total</u>
<b>Private Equity* (continued)</b>			
Capital International Private Equity Fund VI, L.P.	\$ 305	\$ —	\$ 305
Catterton Growth Partners II, L.P.	838	—	838
Catterton Growth Partners III, L.P.	1,316	—	1,316
Catterton Growth Partners, L.P.	48	—	48
Catterton Partners VI, L.P.	463	—	463
Catterton Partners VII, L.P.	1,019	—	1,019
Catterton VIII, L.P.	1,376	—	1,376
Cerberus Institutional Partners V, L.P.	141	—	141
Cerberus Institutional Partners VI, L.P.	2,163	—	2,163
Clearlake Capital Partners IV, L.P.	336	—	336
Clearlake Capital Partners V, L.P.	688	—	688
Clearlake Capital Partners VI, L.P.	848	—	848
Clearlake Capital Partners VII, L.P.	882	—	882
Coller International Partners VI, L.P.	503	—	503
Coller International Partners VII, L.P.	842	—	842
Crestview Partners II, L.P.	655	—	655
Crestview Partners III, L.P.	1,405	—	1,405
Crestview Partners, L.P.	250	—	250
Crown CG Private Equity Fund 2019, L.P.	1,226	—	1,226
DCPF VI Oil and Gas Co-Investment Fund, L.P.	12	—	12
Denham Commodity Partners Fund VI, L.P.	462	—	462
Energy & Minerals Group Fund III, L.P., The	802	—	802
Equistone Partners Europe Fund V E, L.P.	606	—	606
Equistone Partners Europe Fund VI E, SCSp	1,291	—	1,291
GoldPoint Partners Co-Investment V, L.P.	142	—	142
Greenoaks Capital Opportunities Fund III	2,000	—	2,000
Greenoaks Capital Opportunities Fund V LP	1,886	—	1,886
Hahn & Company III L.P.	2,250	—	2,250
Hahn & Company III-S L.P.	477	—	477
Hg Genesis 9 A, L.P.	1,413	—	1,413
Hg Saturn 2 A L.P.	641	—	641
HgCapital 7 A, L.P.	83	—	83
HgCapital 8 D, L.P.	1,116	—	1,116
HGGC Fund II, L.P.	245	—	245
HGGC Fund III, L.P.	1,331	—	1,331
Incline Elevate Fund II, L.P.	635	—	635
Incline Elevate Fund, L.P.	877	—	877
Incline Equity Partners IV, L.P.	566	—	566
Insight Opportunities Fund I, L.P.	657	—	657
Insight Partners XI, L.P.	2,248	—	2,248

## Section 3 - Investment Information

**Table 13.3**

### Investment Fees by Manager Fiscal Year ended June 30, 2023 (Dollar amounts in Thousands)

<u>Manager</u>	<u>Base Fees</u>	<u>Profit Share</u>	<u>Total</u>
<b>Private Equity* (continued)</b>			
Insight Partners XII Buyout Annex Fund, L.P.	\$ 409	\$ —	\$ 409
Insight Partners XII, L.P.	1,231	—	1,231
Insight Venture Partners X, L.P.	1,497	—	1,497
Interactions Corporation	100	—	100
K4 Private Investors, L.P.	1,871	—	1,871
Landmark Equity Partners XIV, L.P.	148	—	148
Lindsay Goldberg V, L.P.	2,398	—	2,398
LLR Equity Partners IV, L.P.	739	—	739
LLR Equity Partners V, L.P.	2,803	—	2,803
LLR Equity Partners VI, L.P.	3,480	—	3,480
Milestone Partners FS 2, L.P.	80	—	80
Milestone Partners III, L.P.	564	—	564
Milestone Partners IV, L.P.	248	—	248
New Mountain Partners IV, L.P.	145	—	145
New Mountain Partners V, L.P.	1,042	—	1,042
New Mountain Partners VI, L.P.	1,239	—	1,239
NGP Natural Resources X, L.P.	241	—	241
NGP Natural Resources XI, L.P.	919	—	919
North Haven Private Equity Asia IV, L.P.	886	—	886
Oak HC/FT Partners IV, L.P.	1,867	—	1,867
Oak HC/FT Partners V, L.P.	2,163	—	2,163
Odyssey Investment Partners Fund V, L.P.	856	—	856
Orchid Asia V, L.P.	104	—	104
Orchid Asia VI, L.P.	765	—	765
Orchid Asia VII, L.P.	1,046	—	1,046
Palladium Equity Partners IV, L.P.	390	—	390
Partners Group Secondary 2011 (USD), L.P. Inc.	701	—	701
Partners Group Secondary 2015 (USD) A, L.P.	987	—	987
Platinum Equity Small Cap Fund, L.P.	1,488	—	1,488
Portfolio Advisors Secondary Fund III, L.P.	1,642	—	1,642
Portfolio Advisors Secondary Fund IV, L.P.	1,675	—	1,675
Portfolio Advisors Secondary Fund, L.P., PA	536	—	536
Sante Health Ventures III	2,050	—	2,050
Sante Health Ventures IV	1,811	—	1,811
Searchlight Capital II, L.P.	482	—	482
Searchlight Capital III, L.P.	2,775	—	2,775
StarVest Partners II (Parallel), L.P.	244	—	244
Strategic Partners Fund VI, L.P.	187	—	187
Strategic Partners Fund VII, L.P.	1,247	—	1,247
Summit Partners Growth Equity Fund IX, L.P.	1,083	—	1,083

## Section 3 - Investment Information

**Table 13.3**

### Investment Fees by Manager Fiscal Year ended June 30, 2023 (Dollar amounts in Thousands)

<u>Manager</u>	<u>Base Fees</u>	<u>Profit Share</u>	<u>Total</u>
<b>Private Equity* (continued)</b>			
Summit Partners Growth Equity Fund X, L.P.	\$ 2,700	\$ —	\$ 2,700
Summit Partners Growth Equity Fund XI-A, L.P.	2,446	—	2,446
Summit Partners Venture Capital Fund IV, L.P.	610	—	610
Tenaya Capital VI, L.P.	422	—	422
Tenaya Capital VII, L.P.	1,297	—	1,297
Trilantic Capital Partners V (North America), L.P.	371	—	371
Trilantic Capital Partners VI (North America), L.P.	2,245	—	2,245
Venor Special Situations Fund II, L.P.	364	—	364
Versa Capital Fund II, L.P.	776	—	776
Versa Capital Fund III, L.P.	1,367	—	1,367
Webster Capital IV, L.P.	450	—	450
<b>Total - Private Equity</b>	<b>\$ 107,516</b>	<b>\$ —</b>	<b>\$ 107,516</b>
<i>@= Negative amount due to reversal of prior year accrual</i>			
<b>Infrastructure and Commodities *</b>			
Blackstone Infrastructure Partners L.P.	\$ 6,358	\$ —	\$ 6,358
Brookfield Global Transition Fund, L.P.	2,322	—	2,322
CIM Infrastructure Fund III, L.P.	673	—	673
GCM Grosvenor Customized Infrastructure Strategies II, LP	281	—	281
GCM US Partnership Opportunities, L.P.	198	—	198
International Infrastructure Finance Company II, L.P.	696	—	696
ISQ Global Infrastructure Fund III, L.P.	4,750	—	4,750
ISQ KIO Co-Invest Fund, L.P.	6	—	6
Strategic Partners Real Assets II, L.P.	1,044	—	1,044
# Denham Mining Fund, L.P.	1,421	—	1,421
# NGP Natural Resources XII, L.P.	2,978	—	2,978
<b>Total - Infrastructure and Commodities</b>	<b>\$ 20,727</b>	<b>\$ —</b>	<b>\$ 20,727</b>
<i># -Commodities</i>			
<b>Private Credit *</b>			
Apollo European Principal Finance Fund II (Dollar A), L.P.	\$ 87	\$ —	\$ 87
Apollo European Principal Finance Fund III (Dollar A), LP	1,696	—	1,696
Avenue Energy Opportunities Fund II, L.P.	146	—	146
Avenue Energy Opportunities Fund, L.P.	182	—	182
Avenue Europe Special Situations Fund III (U.S.), L.P.	508	—	508
Bain Capital Distressed and Special Situations 2016 (A), L.P.	1,876	—	1,876
Bain Capital Distressed and Special Situations 2019 (A), L.P.	2,398	—	2,398
Bain Capital Middle Market Credit 2014, LP	407	—	407
Bain Capital Special Situations Asia II, LP	218	—	218
Carlyle Energy Mezzanine Opportunities Fund II, L.P.	619	—	619
Cerberus PSERS Levered Loan Opportunities Fund, L.P.	10,170	—	10,170

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**Table 13.3**

### Investment Fees by Manager Fiscal Year ended June 30, 2023 (Dollar amounts in Thousands)

<u>Manager</u>	<u>Base Fees</u>	<u>Profit Share</u>	<u>Total</u>
<b>Private Credit * (continued)</b>			
Clearlake Opportunities Partners II, L.P.	\$ 438	\$ —	\$ 438
Clearlake Opportunity Partners III, L.P.	503	—	503
Galton Onshore Mortgage Recovery Fund IV, L.P.	382	—	382
Hayfin SOF II USD Co-Invest, L.P.	74	—	74
Hayfin SOF II USD, L.P.	1,835	—	1,835
ICG Europe Fund V, L.P.	113	—	113
ICG Europe Fund VI, L.P.	343	—	343
ICG Europe Fund VII Feeder SCSp	1,345	—	1,345
ICG Europe Fund VIII SCSp	3,029	—	3,029
International Infrastructure Finance Company Fund, L.P.	303	—	303
Keystone Partners, L.P. Series A	975	—	975
Latitude Management Real Estate Capital IV, Inc.	927	—	927
LBC Credit Partners III, L.P.	114	—	114
LBC-P Credit Fund, L.P.	7,983	—	7,983
Park Square - PSERS Credit Opportunities Fund, L.P.	5,818	—	5,818
PIMCO BRAVO Fund III Onshore Feeder, LP	1,544	—	1,544
PSERS TAO Partners Parallel Fund, L.P. - (TAO 2.0)	1,834	—	1,834
PSERS TAO Partners Parallel Fund, L.P. - (TAO 3.0)	1,860	—	1,860
PSERS TAO Partners Parallel Fund, L.P. - (TAO Contingent)	1,205	—	1,205
Sixth Street Fundamental Strategies Partners (A), L.P.	974	—	974
Sixth Street Opportunities Partners V (A), L.P.	2,512	—	2,512
Sixth Street Specialty Lending Europe II, L.P.	537	—	537
SSG Capital Partners V Sidecar, L.P.	731	—	731
SSG Capital Partners V, L.P.	1,721	—	1,721
TPG Opportunities Partners III (A), L.P. (Sixth Street Opportunities Partners III (A), L.P.)	359	—	359
TSSP Opportunities Partners IV (A), L.P. Sixth street	1,430	—	1,430
Varde Scratch and Dent Feeder I-A, L.P., The	257	—	257
Whitehorse Liquidity Partners (Independence), L.P.	2,800	—	2,800
<b>Total - Private Credit*</b>	<b>\$ 60,253</b>	<b>\$ —</b>	<b>\$ 60,253</b>
<b>Defined Contribution</b>			
Defined Contribution	\$ 274	\$ —	\$ 274
<b>Total - Defined Contribution</b>	<b>\$ 274</b>	<b>\$ —</b>	<b>\$ 274</b>
<b>Total External Management</b>	<b>\$ 327,570</b>	<b>\$ 40,944</b>	<b>\$ 368,514</b>

\*Detailed manager fee data can be found in the Private Market Fee Schedule

## Section 3 - Investment Information

### Private Market Analysis

**Table 13.5 Summarizes fees, operating expenses, and profits for PSERS Private Markets assets for calendar year ended December 31, 2022.**

<b>Table 13.5</b>								
<b>Private Market Fees and Profits</b>								
<b>Calendar Year December 31, 2022</b>								
(\$ amounts in millions)								
<u>External Private Markets</u>	<u>Managers Fees</u>	<u>Manager Operating Expenses</u>	<u>Total Managers Fees and Operating Expenses</u>	<u>Total Profits Including Carried Interest</u>	<u>PSERS Share of Profits</u>	<u>PSERS Percent of Profits</u>	<u>Paid Carried Interest</u>	<u>Accrued Carried Interest*</u>
Private Equity	\$111	\$54	\$165	\$1,313	\$1,202	92%	\$111	\$(16)
Private Fixed Income	67	32	99	808	756	94%	52	(23)
Private Real Estate	51	24	75	653	586	90%	67	(45)
Private Infrastructure**	20	18	38	86	85	99%	1	39
External Private Markets Total	\$249	\$128	\$377	\$2,860	\$2,629	92%	\$231	\$(45)

\* Represents an accounting accrual based on unrealized accounting gains. The manager does not receive this accrued carry unless the gains are realized.

\*\* Infrastructure includes both Private Infrastructure (\$1.4B NAV) and Private Commodities (\$0.4B NAV).

As shown in Table 13.5 above, PSERS share of profits was \$2.6 billion for the calendar year ending December 31, 2022. The percentage of profits PSERS earned over this time period from Private Markets was 92%.

**Table 13.6 Summarizes fees, operating expenses, and profits for PSERS Private Markets for the preceding five calendar years.**

<b>Table 13.6</b>								
<b>Private Market Fees and Profits</b>								
<b>Calendar Year End</b>								
(\$ amounts in millions)								
<u>External Private Markets</u>	<u>Managers Fees</u>	<u>Manager Operating Expenses</u>	<u>Total Managers Fees and Operating Expenses</u>	<u>Total Profits Including Carried Interest</u>	<u>PSERS Share of Profits</u>	<u>PSERS Percent of Profits</u>	<u>Paid Carried Interest</u>	<u>Accrued Carried Interest*</u>
2022	\$249	\$128	\$377	\$2,860	\$2,629	92%	\$231	\$(45)
2021	238	95	333	4,008	3,426	85%	582	776
2020	238	77	315	1,892	1,641	87%	252	128
2019	229	74	303	2,033	1,707	84%	325	55
2018	227	79	306	2,398	2,033	85%	365	(124)
5-Year Total	\$1,181	\$453	\$1,634	\$13,191	\$11,436	87%	\$1,755	\$790

As Table 13.6 details the preceding five calendar years of expenses and profits for PSERS Private Markets. PSERS share of profits over this five-year period was \$11.4 billion, representing 87% of the

total profits earned by the Private Market asset classes. PSERS earned approximately 6.5x for every profit dollar earned by a General Partners.

## Section 3 - Investment Information

### Private Market Analysis (continued)

PSERS has utilized three methodologies to assess the relative performance of PSERS private markets asset classes compared to public market equivalents (PME) for the 10-year period ending December 31, 2022: (1) Direct Alpha; (2) KS PME; and (3) the Excess Value Method (EVM).

Direct Alpha (% rate) – Annualized excess return / loss achieved by an investor compared to an investment in the equivalent public index (>0.0% = Good)

KS PME (multiple) – Ratio which represents how many dollars an investor has earned compared to an investment in the equivalent public index (>1.0x = Good)

Excess Value Method “EVM” (\$ value) – How many more / less dollars will an investor have compared to an investment in the equivalent public index, expressed in dollars (Positive \$ = Good)

For the 10-year period ending December 31, 2022, all three measures are in the “Good” range for PSERS private markets asset classes, demonstrating that value has been added above the respective PME benchmarks.

**Table 13.7 Private Market versus Public Markets analysis for year ending December 31, 2022.**

<b>Table 13.7</b>					
<b>Private Market versus Public Markets Analysis</b>					
<b>Calendar Year December 31, 2022</b>					
<u>10-Year Performance (as of 12/31/22)</u>	<u>Total Private Markets</u>	<u>Private Equity</u>	<u>Private Credit</u>	<u>Real Estate</u>	<u>Infrastructure</u>
<u>PME Benchmark*</u>	<u>60/40</u>	<u>PSERS Index</u>	<u>LLI + 200</u>	<u>FTSE NAREIT</u>	<u>FTSE Developed Core 50/50</u>
NAV (\$B)	\$25	\$12	\$5	\$6	\$1
Direct Alpha (%)	3%	1%	2%	4%	10%
KS PME	1.11X	1.05X	1.04X	1.16X	1.19X
EVM (\$M)	\$9,674	\$3,962	\$768	\$2,073	\$298
<u>NAV Sensitivities</u>	<u>Resulting EVM (\$M)</u>	<u>Resulting EVM</u>	<u>Resulting EVM</u>	<u>Resulting EVM</u>	<u>Resulting EVM</u>
1.10X	12,100	5,168	1,276	2,640	442
1.00X	9,674	3,962	768	2,073	298
0.90X	7,249	2,756	261	1,506	154

**\*\*PME Benchmarks: Total Private Markets – 60% S&P 500, 40% Bloomberg US Aggregate; Private Equity - 1/1/1999 to 12/31/2018: 70% Russell 3000 Total Return Index and 30% MSCI ACWI ex USA Net Total Return USD Index, 1/1/2019 to 9/30/2022: 65% MSCI USA Small Cap Net Total Return USD Index and 35% MSCI ACWI ex USA Small Cap Net Total Return USD Index, 10/1/2022 to-date: 70% MSCI USA Small Cap Net Total Return USD Index and 30% MSCI ACWI ex USA Small Cap Net Total Return USD Index; Private Credit - Morningstar LSTA Leveraged Loan Index + 200 basis points; Real Estate - FTSE NAREIT REIT TR Index; Infrastructure - FTSE Developed Core Infrastructure 50/50 Net Index (Hedged to USD).**



## Section 3 - Investment Information

### Private Market Analysis (continued)

As of December 31, 2022, PSERS Total Private Markets portfolio generated a 10-year net IRR of 11.6% (net of all fees and expenses). As can be observed in the middle section of the above table, over same time period (assuming the same timing of cash flows in and out of the PME benchmark as PSERS portfolio), PSERS Total Private Markets portfolio generated Direct Alpha of 3.4%, a KS PME ratio of 1.11x, and excess value (EVM) of approximately \$9.6 billion compared to a US 60/40 portfolio (S&P 500 / Barclays Agg). It is important to note that individual asset class EVM's do not sum to Total Private Markets since each sub-asset class is being presented against their unique PME benchmark.

The next section of the table presents a new financial metric (EVM in NAV) that measures how much alpha (i.e., relative over/underperformance versus the respective PME benchmark) was still at risk (i.e., unrealized) as of December 31, 2022. More specifically, the metric seeks to quantify how much excess value would be lost if both portfolio NAV and the PME benchmark went to zero, and this highlights how reliant we are on marked performance today versus realized returns in the past.

Employing this methodology, PSERS Total Private Markets EVM in NAV was ~ 54% (or \$5.3B) of the total \$9.6B as of December 31, 2022. Said differently, if both PSERS Total Private Markets NAV and its PME benchmark went to zero, PSERS Total Private Markets portfolio would lose an estimated \$5.3 billion (or 54%) of excess value, with ~\$4.4B remaining at that point in time.

Looking across the columns, you can see this metric for the various underlying asset classes against their respective PME benchmarks. We highlight Real Estate, with 103.3% or ~\$2.1B EVM in NAV, since its total EVM over this period (~\$2.1B) would be negative if both the NAV and PME benchmark went to zero. This is the result of poor relative performance earlier in the measurement period being offset by strong relative performance more recently.

The bottom section of the table presents resulting excess value, based on modeled changes in net asset value (NAV) over this same 10-year period. PSERS actual excess value is highlighted in blue based on the 10-year ending NAV of \$24.6 billion. However, for illustrative purposes, also displayed is resulting excess value assuming both a plus/minus 10% change in PSERS December 31, 2022, ending NAV. As you can see, excess value is positive under both scenarios.



## Section 3 - Investment Information

**Table 13.4**

Calendar Year 2022		Paid or Accrued to Manager				Distribution of Profits		
Manager (\$ in Millions)	Mgmt Fees	Expenses	Total Carried Interest	Accrued Carried Interest	Paid Carried Interest	Total Profits Paid Out	Retain by GP	Retain by PSERS
<b>Private Equity:</b>								
Actis GP LP	\$ 1.10	\$ —	\$ —	\$ —	\$ —	\$ 4.90	\$ —	\$ 4.90
Adams Capital Management Inc	—	—	—	—	—	—	—	—
Aisling Capital Management LP	0.90	0.30	—	—	—	7.40	—	7.40
Apax Partners	5.60	4.30	(3.00)	(3.00)	—	5.80	—	5.80
Apogem Capital LLC	0.20	0.20	—	(0.80)	0.80	11.10	0.80	10.30
Apollo Global Management Inc.	2.10	2.00	2.80	0.40	2.40	22.20	2.40	19.80
Ares Management LLC	0.20	—	—	(0.40)	0.40	4.80	0.40	4.40
Arrowhead Investment Management LLC	—	—	(0.20)	(0.60)	0.40	1.10	0.40	0.70
Avenue Capital Group	—	—	—	—	—	—	—	—
Bain Capital LLC	4.50	1.40	10.00	8.70	1.30	50.00	1.40	48.60
Black Diamond Capital Management LLC	—	—	—	—	—	—	—	—
Blackstone Group LP	1.70	1.80	(2.90)	(5.70)	2.80	143.40	2.70	140.70
Blue Point Capital Partners LLC	0.90	0.30	0.50	(1.90)	2.40	8.90	2.40	6.50
BPEA EQT Asia	—	0.20	(0.10)	(0.10)	—	1.70	—	1.70
Bridgepoint Advisers Ltd	1.80	1.60	18.80	(5.20)	24.00	170.40	24.00	146.40
Bryn Mawr Capital Management Inc	—	—	—	—	—	—	—	—
Capital International	0.40	0.10	—	—	—	0.50	—	0.50
Cerberus Capital Management LP	2.30	1.70	7.60	4.70	2.90	28.00	2.90	25.10
Cinven	—	0.10	—	—	—	0.50	—	0.50
Clearlake Capital Group LP	1.50	3.20	(8.00)	(11.40)	3.40	30.50	3.50	27.00
Coller Capital Limited	1.40	0.80	(0.40)	(1.10)	0.70	6.80	0.70	6.10
Crestview Partners	2.20	1.80	8.40	2.50	5.90	35.00	5.90	29.10
Cross Atlantic Capital Partners	—	0.10	—	—	—	58.80	—	58.80
CVC Capital Partners	—	0.10	1.10	(1.50)	2.60	18.90	2.60	16.30
Denham Capital Management LP	0.50	0.10	1.20	1.20	—	—	—	—
Energy & Minerals Group	0.80	—	—	—	—	3.20	—	3.20
Equistone Partners Europe Limited	2.10	0.70	12.10	12.10	—	23.00	—	23.00
First Reserve	—	0.30	—	—	—	—	—	—

### Section 3 - Investment Information

Calendar Year 2022	Paid or Accrued to Manager			Distribution of Profits				
Manager (\$ in Millions)	Mgmt Fees	Expenses	Total Carried Interest	Accrued Carried Interest	Paid Carried Interest	Total Profits Paid Out	Retain by GP	Retain by PSERS
Gold Hill Capital Management LLC	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Greenoaks Capital Partners	2.00	0.20	(5.70)	(5.70)	—	—	—	—
Hahn & Company	2.60	1.90	7.80	7.80	—	—	—	—
Hamilton Lane	0.10	—	—	—	—	1.10	—	1.10
HgCapital	2.80	7.50	35.70	29.00	6.70	78.30	6.70	71.60
HGGC	1.50	0.60	1.70	(0.70)	2.40	12.80	2.40	10.40
Incline Equity Partners	5.00	1.80	8.40	8.40	—	9.30	—	9.30
Insight Venture Management LLC	5.90	1.70	(16.60)	(19.20)	2.60	13.00	2.60	10.40
Irving Place Capital Management LP	—	0.10	(0.20)	(2.00)	1.80	1.80	1.80	—
K1 Investment Management	1.90	0.30	1.10	1.10	—	—	—	—
L Catterton	4.80	1.20	(7.30)	(22.40)	15.10	65.80	15.20	50.60
Lindsay Goldberg	2.40	2.40	2.30	2.20	0.10	12.50	0.10	12.40
LLR Partners	7.20	1.70	11.00	4.10	6.90	39.90	6.90	33.00
Mid-Atlantic Venture Funds	—	0.10	0.10	—	0.10	0.10	0.10	—
Milestone Partners	(0.20)	0.20	(12.20)	(12.20)	—	—	—	—
Morgan Stanley	0.90	0.20	—	—	—	5.70	—	5.70
New Mountain Capital LLC	5.40	3.00	6.00	(0.80)	6.80	72.60	6.80	65.80
NGP Energy Capital Management LLC	1.20	0.20	15.00	15.00	—	28.40	—	28.40
Oak HC/FT	3.30	0.50	3.20	3.20	—	—	—	—
Oaktree Capital Management LP	—	—	—	—	—	0.30	—	0.30
Odyssey Investment Partners LLC	0.90	0.10	—	—	—	—	—	—
Orchid Asia Group Management Limited	—	—	—	—	—	3.70	—	3.70
PAI Partners	2.20	0.60	(18.90)	(18.90)	—	54.10	—	54.10
Palladium Equity Partners LLC	0.40	—	6.20	1.10	5.10	11.70	5.10	6.60
Partners Group	1.80	0.30	0.10	(0.70)	0.80	15.40	0.70	14.70
Platinum Equity Advisors LLC	0.80	1.00	28.80	15.70	13.10	64.10	13.10	51.00
Polaris Capital Group Co Ltd	1.30	0.30	3.50	3.50	—	—	—	—
Portfolio Advisors LLC	3.80	—	(2.40)	(2.40)	—	19.40	—	19.40
Sante Ventures	3.40	0.20	—	—	—	—	—	—

### Section 3 - Investment Information

Calendar Year 2022	Paid or Accrued to Manager				Distribution of Profits			
Manager (\$ in Millions)	Mgmt Fees	Expenses	Total Carried Interest	Accrued Carried Interest	Paid Carried Interest	Total Profits Paid Out	Retain by GP	Retain by PSERS
SCP Private Equity Management Company LLC	\$ —	\$ 0.10	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Searchlight Capital Partners	3.20	0.70	4.60	4.60	—	22.10	—	22.10
StarVest Partners	0.20	0.20	—	—	—	—	—	—
StepStone Group LP	—	0.10	—	—	—	—	—	—
Sterling Partners	—	0.10	—	—	—	—	—	—
Summit Partners	7.10	2.10	(14.00)	(11.40)	(2.60)	3.30	(2.60)	5.90
TDR Capital	—	—	—	—	—	—	—	—
Tenaya Capital	1.80	0.20	(5.30)	(5.20)	(0.10)	3.30	(0.10)	3.40
Trilantic Capital Partners	2.70	1.90	8.10	6.10	2.00	16.00	2.10	13.90
Tulco LLC	—	—	—	—	—	112.70	—	112.70
Valar Ventures	—	—	(11.80)	(11.80)	—	—	—	—
Venor Capital Management LP	0.40	0.30	(0.90)	(1.10)	0.20	0.20	0.20	—
Versa Capital Management LP	1.90	1.10	—	—	—	0.70	—	0.70
Webster Equity Partners LLC	0.30	0.10	(0.70)	(0.70)	—	8.40	—	8.40
<b>Private Credit:</b>								
Apollo Global Management Inc.	\$ 1.50	\$ 1.20	\$ 0.60	\$ (1.80)	\$ 2.40	\$ 8.90	\$ 2.40	\$ 6.50
Ares Asia	2.60	3.30	0.60	(0.90)	1.50	22.00	1.50	20.50
Avenue Capital Group	1.80	1.20	4.10	3.20	0.90	0.90	0.90	—
Bain Capital LLC	6.30	6.80	6.50	6.50	—	300.90	—	300.90
Brigade Capital Management LLC	0.10	—	—	—	—	45.10	—	45.10
Bright Meadow	0.40	1.00	—	—	—	3.70	—	3.70
Carlyle	1.00	0.50	—	—	—	13.10	—	13.10
Cerberus Capital Management LP	9.40	35.30	6.50	(3.40)	9.90	32.10	9.90	22.20
Clearlake Capital Group LP	0.20	2.10	(2.00)	(2.00)	—	13.70	—	13.70
Hayfin Management Limited (Cayman)	2.10	0.30	4.60	0.30	4.30	18.60	4.30	14.30
Intermediate Capital Group PLC	6.90	1.90	5.30	(17.10)	22.40	108.70	22.40	86.30
LaSalle Investment Management	1.10	2.00	—	—	—	5.90	—	5.90
LBC Credit Management LP	7.80	21.50	(0.80)	(3.80)	3.00	3.60	3.00	0.60
NewMarket Investment Management LP	1.10	2.20	(1.10)	(1.10)	—	38.20	—	38.20

### Section 3 - Investment Information

Calendar Year 2022	Paid or Accrued to Manager				Distribution of Profits			
Manager (\$ in Millions)	Mgmt Fees	Expenses	Total Carried Interest	Accrued Carried Interest	Paid Carried Interest	Total Profits Paid Out	Retain by GP	Retain by PSERS
Pacific Investment Management Company	\$ 1.80	\$ 20.20	\$ 3.40	\$ 2.30	\$ 1.10	\$ 1.10	\$ 1.10	\$ —
Park Square Capital LLP	6.10	38.20	2.50	2.50	—	38.50	—	38.50
Sixth Street Advisers LLC	9.90	6.10	1.40	(5.00)	6.40	120.70	6.40	114.30
Summit Partners	3.80	0.10	(2.70)	(2.70)	—	10.70	—	10.70
TCI Fund Management Limited	—	0.10	1.00	1.00	—	7.20	—	7.20
Varde Management LP	0.30	0.40	(0.20)	(0.20)	—	9.40	—	9.40
Whitehorse Liquidity Partners	3.20	2.10	(0.40)	(0.40)	—	5.20	—	5.20
<b>Real Estate:</b>								
Angelo Gordon & Co LP	\$ 4.90	\$ 2.30	\$ 1.40	\$ (1.70)	\$ 3.10	\$ 38.40	\$ 3.10	\$ 35.30
Ares Management LLC	1.30	0.70	1.60	(7.80)	9.40	52.10	9.40	42.70
Avenue Capital Group	0.30	0.20	—	—	—	—	—	—
Bell Partners Inc	2.50	3.80	(0.70)	(4.20)	3.50	111.80	3.50	108.30
BlackRock Inc	—	—	—	—	—	—	—	—
Blackstone Group LP	3.20	1.70	4.70	(25.00)	29.70	162.40	29.70	132.70
Brookfield Asset Management	8.50	1.50	9.60	4.10	5.50	89.80	5.50	84.30
Cabot Properties LP	4.30	1.60	3.50	3.00	0.50	6.30	0.50	5.80
Carlyle	3.60	4.40	7.70	1.20	6.50	36.60	6.50	30.10
CenterSquare Investment Management	0.50	1.00	0.20	0.20	—	5.80	—	5.80
Credit Suisse Asset Management LLC	—	—	—	—	—	0.10	—	0.10
DRA Advisors LLC	4.10	1.20	0.40	—	0.40	18.00	0.30	17.70
EQT Partners AB	2.90	—	(7.70)	(8.30)	0.60	20.10	0.60	19.50
Fortress Investment Group LLC	—	0.30	—	—	—	1.60	—	1.60
GF Management LLC	0.30	—	—	—	—	0.60	—	0.60
JP Morgan Asset Management	—	—	—	—	—	—	—	—
L&B Realty Advisors LLP	0.10	1.00	—	—	—	2.30	—	2.30
LaSalle Investment Management	—	0.10	—	—	—	0.10	—	0.10
Lazard Asset Management LLC	—	—	—	—	—	—	—	—
LEM Capital LP	2.40	1.80	1.90	(5.60)	7.50	47.00	7.50	39.50
Neuberger Berman	1.80	0.20	3.20	2.70	0.50	13.60	0.50	13.10
O'Connor Capital Partners	—	—	—	—	—	—	—	—
O'Connor Real Estate Advisors LLC	0.90	—	—	—	—	—	—	—

### Section 3 - Investment Information

Calendar Year 2022	Paid or Accrued to Manager				Distribution of Profits			
Manager (\$ in Millions)	Mgmt Fees	Expenses	Total Carried Interest	Accrued Carried Interest	Paid Carried Interest	Total Profits Paid Out	Retain by GP	Retain by PSERS
Orix Advisers LLC	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 1.80	\$ —	\$ 1.80
Paramount Group Inc	—	—	—	—	—	—	—	—
PGIM Real Estate	2.50	1.10	(0.50)	(0.50)	—	9.70	—	9.70
Property Management Inc	—	—	—	—	—	—	—	—
Silverpeak Real Estate Partners LP	—	—	—	—	—	—	—	—
Stockbridge Capital Group LLC	6.10	0.90	(3.30)	(3.30)	—	34.20	—	34.20
UBS	0.20	—	—	—	—	0.60	—	0.60
<b><u>Infrastructure:</u></b>								
Blackstone Group LP	<b>\$ 7.20</b>	<b>\$ 6.80</b>	<b>\$ 16.30</b>	<b>\$ 15.80</b>	<b>\$ 0.50</b>	<b>\$ 25.70</b>	<b>\$ 0.50</b>	<b>\$ 25.20</b>
Brookfield Asset Management	3.10	1.20	—	—	—	0.90	—	0.90
CIM Group LLC	0.30	1.70	2.30	2.30	—	—	—	—
Grosvenor Capital Management LP	0.30	0.20	1.00	0.50	0.50	17.10	0.50	16.60
I Squared Capital Advisors (US) LLC	4.00	2.30	0.90	0.90	—	—	—	—
NewMarket Investment Management LP	0.70	0.30	0.40	0.40	—	6.90	—	6.90
<b><u>Commodities:</u></b>								
Denham Capital Management LP	<b>\$ 1.50</b>	<b>\$ 5.60</b>	<b>\$ (3.60)</b>	<b>\$ (3.60)</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ —</b>
NGP Energy Capital Management LLC	3.10	0.20	23.10	23.10	—	35.80	—	35.80

**Commitment to  
Pennsylvania-Based  
Investments and DC Investment  
Options and Expenses**

## Section 3 - Investment Information

### Commitment to Pennsylvania Financial Services Firms

(as of June 30, 2023)

PSERS has shown a strong commitment to Pennsylvania’s financial services industry by having assets managed by firms based in Pennsylvania or by firms with offices in Pennsylvania. In FY2022-23,

investment management fees paid to external firms managing PSERS assets from offices located in Pennsylvania amounted to \$28.4 million, or 7.7% of the total external investment manager fees.

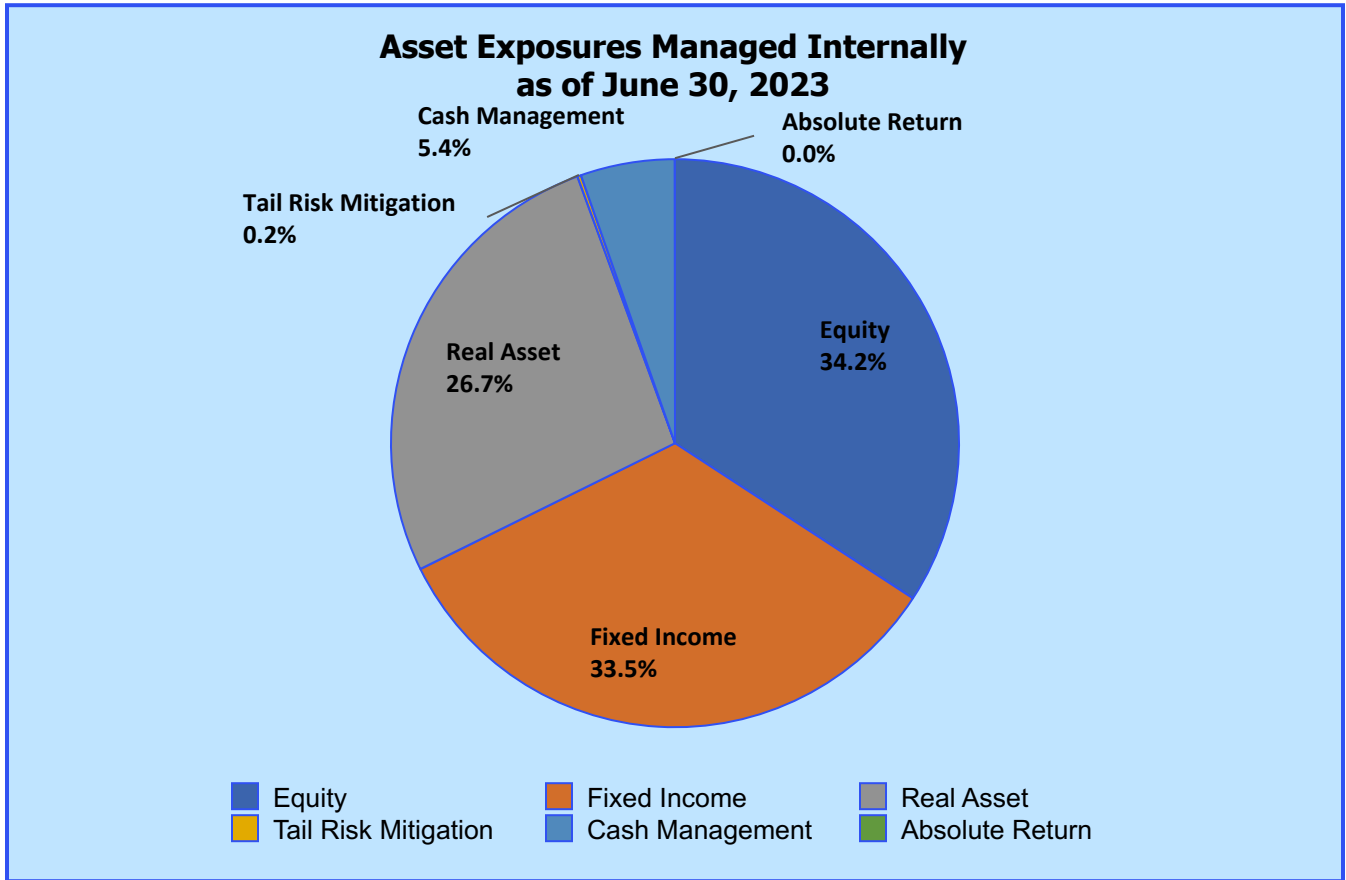
**Table 14.1 lists the asset exposures managed internally by PSERS, as of June 30, 2023.**

<b>Table 14.1</b>			
<b>Asset Exposures Managed Internally</b>			
<b>as of June 30, 2023</b>			
<b>(\$ in millions)</b>			
<u>Asset Class</u>		<u>Market Value</u>	<u>% of Total</u>
Public Equity	\$	13,609.0	31.3%
Private Equity		1,262.1	2.9%
Public Fixed Income		14,395.9	33.1%
Private Credit		177.7	0.4%
Public Real Asset		10,757.1	24.7%
Private Real Asset		865.8	2.0%
Tail Risk Mitigation		0.3	—%
Absolute Return		87.3	0.2%
Cash Management		2,336.1	5.4%
<b>Totals</b>	<b>\$</b>	<b>43,491.2</b>	<b>100.0%</b>

## Section 3 - Investment Information

### Commitment to Pennsylvania Financial Services Firms (continued)

Chart 14.1 displays the distribution of exposures managed internally as of June 30, 2023.





## Section 3 - Investment Information

Table 14.2 is a list of assets managed by external managers with headquarters or offices located in Pennsylvania, as of June 30, 2023.

<b>Table 14.2</b>	
<b>Pennsylvania-Based External Managers</b>	
<b>Public Fixed Income:</b>	<b>Private Equity:</b>
Radcliffe Capital Management, L.P.	Adams Capital Management, L.P.
	Co-Investment 2000 Fund, L.P.
<b>Private Credit:</b>	Co-Investment Fund II, L.P.
International Infrastructure Finance Co Fund, L.P.	Cross Atlantic Technology Fund II
Keystone Partners, L.P. Series A	Cross Atlantic Technology Fund, L.P.
Keystone Partners, L.P. Series B	Incline Elevate Fund II, L.P.
LBC Credit Partners III, LP	Incline Elevate Fund, L.P.
LBC-P Credit Fund, LP	Incline Equity Partners III (PSERS), L.P.
	Incline Equity Partners IV, L.P.
<b>Private Real Estate:</b>	Incline Equity Partners V, L.P.
EQT Exeter Industrial Core-Plus Fund IV, L.P.	Incline Equity Partners VI, L.P.
EQT Exeter Industrial Core-Lus Fund VI, L.P.	LLR Equity Partners III, L.P.
Exeter Industrial Core Fund III, L.P.	LLR Equity Partners IV, L.P.
Exeter Industrial Value Fund III, L.P.	LLR Equity Partners V, L.P.
Exeter Industrial Value Fund IV, L.P.	LLR Equity Partners VI, L.P.
Exeter Industrial Value Fund V, L.P.	Milestone Partners FS 2, L.P.
GF Management	Milestone Partners III, L.P.
LEM Multifamily Fund V, L.P.	Milestone Partners IV, L.P.
LEM Multifamily Fund VI, L.P.	SCP Private Equity Partners II, L.P.
LEM Multifamily Senior Equity Fund IV, L.P.	Versa Capital Fund II, L.P.
Property Management, Inc.	Versa Capital Fund III, L.P.
<b>Private Infrastructure:</b>	
International Infrastructure Finance Co Fund II, L.P.	

## Section 3 - Investment Information

### Investments in Pennsylvania-Based Companies

Pennsylvania Private Equity and Private Equity Co-Investments are sourced from funds where PSERS or its consultant is an investor. The Board, in managing the investment portfolio, will also be cognizant of concentration risk to any one region, including Pennsylvania. The Fund will continue to seek investments in Pennsylvania-based companies when the investment characteristics are equivalent to other favorable investments, subject to diversification considerations.

#### U.S. Equities

PSERS invests in the stock of Pennsylvania-based companies through the various U.S. Equity portfolios managed by internal portfolio managers. PSERS has always had investments in large national firms located in Pennsylvania.

#### Fixed Income Securities

PSERS invests in the debt of Pennsylvania-based companies through the various Fixed Income portfolios managed by external and internal portfolio managers. PSERS has always had investments in large national firms located in Pennsylvania.

#### Private Infrastructure

From the program inception to June 30, 2023, PSERS has committed capital to 1 partnership headquartered in Pennsylvania totaling \$100 million in commitment.

#### Private Real Estate

From the program inception to June 30, 2023, PSERS has committed capital to 25 investments headquartered in Pennsylvania totaling \$2.1 billion in commitments.

#### Private Equity

From the program inception to June 30, 2023, PSERS has committed capital to 49 investments headquartered in Pennsylvania totaling \$3.2 billion in commitments.

#### Private Markets Pennsylvania In-House Co-Investment Program

In April 2015, PSERS Board approved a \$250 million commitment for PSERS to co-investment in portfolio companies based in Pennsylvania. The portfolio companies are sourced from funds where PSERS or its consultant is an investor. As of June 30, 2023, PSERS has invested \$59.8 million and has a total value of \$125.6 million, resulting from \$102.2 million in distributions and \$23.6 million of net assets. The number of employees, payroll, and market value are included within their respective asset class in Table 14.3.

#### Private Credit

From the program inception to June 30, 2023, PSERS has committed capital to 7 investments headquartered in Pennsylvania totaling \$1.3 billion in commitments.

## Section 3 - Investment Information

Table 14.3 displays Pennsylvania-based investments and other statistics as of December 31, 2022 (\$'s in millions):

**Table 14.3**  
**Statistics of Pennsylvania-Based Investments**

<u>Asset Class</u>	<u>Total PA</u> <u>Market Value</u> <u>(PSERS Portion)</u>	<u>Total PA Market</u> <u>Value</u> <u>(Total Invested)</u>	<u># of People</u> <u>Employed</u>	<u>Payroll</u>
U.S. Equities	\$ 296.1	\$ 296.1	*	\$ *
Fixed Income	73.3	73.3	*	*
Private Real Estate	107.3	1,787.9	966	31.7
Private Equity	1,177.0	38,499.0	75,998	10,079
Private Infrastructure	40.8	1,134.0	1,801	16.9
<b>Total</b>	<b>\$ 1,694.5</b>	<b>\$ 41,790.3</b>	<b>78,765</b>	<b>\$ 10,127.6</b>
* Statistics for publicly traded companies not included due to the difficulty in obtaining the information.				

## Section 3 - Investment Information

### DC Investment Options and Expenses as of June 30, 2023

The Board is responsible for overseeing the administration of the DC Plan, including establishing investment guidelines and limits on the types of investments that participants may make, consistent with the Board's fiduciary obligations. The Board adopted an Investment Policy Statement for the DC Plan that provides guidance on the selection and monitoring of investment offerings and identifies areas and scope of delegation. The Board may also establish standards and criteria for providing not less than ten options which are offered by three or more providers of investment options. Such standards and criteria must provide for a variety of investment options.

Peer group/ Investment Name	Ticker	Current Expense Ratio	Expense Ratio at Inception
<b>Target Date</b>			
T.Rowe Price Target Dates		0.20%	0.29%
<b>Stable Value</b>			
MissionSquare PLUS Fund R10		0.52%	0.57%
<b>Bonds</b>			
BlackRock High Yield Bond K	BRHYX	0.51%	0.50%
PIMCO Total Return Instl	PTRX	0.46% (0.46%)*	0.55%
PIMCO Real Return Instl	PRRIX	0.47% (0.45%)*	0.88%
<b>Large Cap</b>			
Fidelity® 500 Index	FXAIX	0.015%	0.02%
<b>Small/Mid/Specialty</b>			
Fidelity® Extended Market Index	FSMAX	0.035%	0.05%
Fidelity® Real Estate Index	FSRX	0.070%	0.07%
<b>Global/International</b>			
American Funds Europacific Growth	REGX	0.47%	0.49%
<b>Balanced</b>			
Calvert Balanced R6	CBARX	0.61%	0.64%

Investment	Investment Balance	Number of Participants	Average Balance	Average Age	Percentage of Plan Assets
PIMCO Total Return Instl	\$40,694.86	69	\$589.78	31.34	0.02%
BlackRock High Yield Bond K	\$62,248.71	103	\$604.36	34.14	0.03%
Fidelity 500 Index	\$2,285,108.82	494	\$4,625.76	38.18	1.19%
Fidelity Extended Market Index	\$416,872.29	229	\$1,820.40	36.70	0.22%
PIMCO Real Return Instl	\$35,602.61	68	\$523.57	32.73	0.02%
American Funds Europacific Gro	\$278,002.55	176	\$1,579.56	35.77	0.15%
Fidelity Real Estate Index	\$97,544.98	84	\$1,161.25	38.71	0.05%
Calvert Balanced R6	\$137,432.45	59	\$2,329.36	43.13	0.07%
MissionSquare PLUS Fund R10	\$148,073.33	64	\$2,313.99	44.59	0.08%
T Rowe Price Target Date 2065	\$28,318,278.67	14,297	\$1,980.94	23.89	14.79%
T Rowe Price Target Date 2020	\$1,895,435.93	1,336	\$1,418.78	70.78	0.99%
T Rowe Price Target Date 2025	\$3,801,699.70	1,768	\$2,150.40	64.19	1.98%
T Rowe Price Target Date 2030	\$7,635,071.09	2,914	\$2,620.36	59.37	3.99%
T Rowe Price Target Date 2035	\$10,811,054.41	3,922	\$2,756.68	54.34	5.64%
T Rowe Price Target Date 2040	\$13,024,099.88	4,855	\$2,682.80	49.45	6.80%
T Rowe Price Target Date 2045	\$16,075,123.34	6,144	\$2,616.55	44.40	8.39%
T Rowe Price Target Date 2050	\$19,401,528.90	6,689	\$2,900.64	39.57	10.13%
T Rowe Price Target Date 2055	\$25,514,502.62	7,399	\$3,448.56	34.46	13.32%
T Rowe Price Target Date 2060	\$61,543,534.35	13,326	\$4,618.61	28.34	32.13%

**Total Investment Balance: \$191,521,909.49**

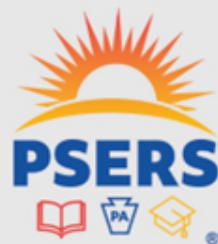
# SECTION 4 POSTEMPLOYMENT HEALTHCARE PROGRAMS

Health Options Program

Tab 15

Premium Assistance Program

Tab 16



# Health Options Program

## Section 4 - Other PSERS Programs

### Health Options Program

PSERS sponsors a group health insurance program called the Health Options Program (HOP) for individuals who are annuitants or survivor annuitants or the spouse or dependents of an annuitant or survivor annuitant. The HOP commenced on January 1, 1994. As of January 1, 2024 there are 123,859 participants (103,284 retirees plus their dependents) in the HOP. The HOP is funded solely by and for eligible participants. The following is a summary of HOP initiatives during the period January 1, 2023 to January 1, 2024. The Retirement Board issued an Invitation for Application (IFA) to allow qualified insurance carriers to apply to PSERS to offer a fully insured Medicare Advantage Prescription Drug (MAPD) group insurance plan and accompanying Pre-65 group insurance plan to PSERS retirees who participate in the HOP. The effective date of the insurance is January 1, 2024. As a result of the IFA, PSERS is expecting the following carriers to participate in HOP:

- Aetna
- Capital Blue Cross (CBC)/Keystone Health Plan Central
- Highmark
- Independence Blue Cross (IBC)/Keystone Health Plan East
- UPMC

The Retirement Board issued an RFP for a CMS Medicare Part D PDP Compliance Consultant PSERS RFP 2023-2. Based on the total scores for all bid proposal categories Gallagher Benefit Services (BluePeak) was determined to be the successful bidder. The Retirement Board accepted the results of the RFP process and awarded BluePeak the contract with the initial term of two (2) years beginning February 1, 2024, with options to renew the contract, upon mutual consent of the parties, annually for three (3) additional years.

The HOP offers PSERS annuitants a variety of health benefits and insurance plans. Annuitants and their dependents may select among plans supplementing original Medicare, Medicare prescription drug plans, and dental insurance. Annuitants also may select a Medicare Advantage plan that provides prescription drug coverage and may include a dental and vision benefit. All plans offered through the HOP provide a Pre-65 plan for individuals not yet eligible for Medicare. Each year participants of the HOP may change their health benefit coverage to meet changing needs. The following is a summary of the standard Medicare Part D benefits for the prescription drug plans:

Standard Benefit	2023	2024
Deductible	\$ 505	\$ 545
Initial Coverage Limit	\$ 4,660	\$ 5,030
Out of Pocket Threshold	\$ 7,400	\$ 8,000
<b>Minimum Cost sharing in Catastrophic Coverage Portion of the Benefit*</b>		
Generic	\$ 4.15	\$ —
Other	\$ 10.35	\$ —

**\*Beginning January 1, 2024, once an annuitant's out-of-pocket spending reaches \$8,000 (including certain payments made by other people or entities), the annuitant will get "catastrophic coverage." This means the annuitant will not have any co-payment or coinsurance for covered Part D drugs for the remainder of the calendar year.**

These plan design limits and thresholds are tied to specific indices, including the average per capita Part D spending and the annual percentage increase in the Consumer Price Index.

## Section 4 - Other PSERS Programs

### Health Options Program (continued)

Medicare prescription drug plans are required to provide 75% coverage for generic drugs in the Coverage Gap. There is effectively no additional funding from CMS; accordingly, the cost of the mandated benefit increase is paid by participants

not receiving low-income subsidies. Medicare prescription drug plans pay 5% of the cost of brand drugs in the Coverage Gap, with the manufacturer discount covering the remaining 70%. The following table shows how much members pay for drugs in the Coverage Gap.

<b>The Member Pays in Coverage Gap:</b>	<b>Medicare Rx Discount</b>
Generic Drugs	25%
Brand Drugs	25% (after 70% manufacturer discount and 5% plan benefit)
Non-preferred Brand Rx	25% (after 70% manufacturer discount and 5% plan benefit)

### Plans Available Through the Health Options Program

The HOP offers participants a choice among supplements to Medicare, various Medicare prescription drug plans, and Medicare Advantage plans. Participants under age 65 and not eligible for Medicare may elect to enroll in a high deductible health insurance plan with or without prescription

drug coverage or a managed care plan. These options were available to new enrollees or HOP participants electing to change coverage during the 2024 option selection period conducted in the fall of 2023. The following is a list of HOP plans as of January 1, 2024.

<b>For Individuals Eligible for Medicare:</b>	<b>For Individuals Not Eligible for Medicare:</b>
HOP Value Medical Plan (Medicare supplement)	HOP Pre-65 Medical Plan
HOP Medical Plan (Medicare supplement)	
Value Medicare Rx Option (Medicare Part D)	HOP Pre-65 Medical Plan w/ Rx coverage
Basic Medicare Rx Option (Medicare Part D)	
Enhanced Medicare Rx Option (Medicare Part D)	
<b>Medicare Advantage Plans</b>	<b>Companion Pre-65 Managed Care Plans</b>
Aetna Medicare P01 PPO	Aetna Premier Open Choice PPO
CBC PPO	CBC PPO
Highmark FreedomBlue PPO	Highmark PPO Blue (80-70 Plan)
Independence Blue Cross Personal Choice 65 PPO	Independence Blue Cross POS (\$20-\$40/\$250)
UPMC PSERS HOP Custom PPO	UPMC Business Advantage



## Section 4 - Other PSERS Programs

### Health Options Program (continued)

#### HOP Program Plan Premiums

##### Paid By Individuals ELIGIBLE for Medicare

The premiums paid by participants eligible for Medicare generally vary by geographical area. The exceptions are the premiums for the HOP Medicare Rx Options. The following tables show the standard monthly premium rates for 2024 compared to the

2023 rates in Pennsylvania for single coverage. These rates do not reflect the \$100 Premium Assistance benefit provided to eligible retirees or discounts available to individuals enrolling at age 65.

Southeastern Region: Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties	2024	2023	Increase/ (Decrease)
<b>Medicare Supplement Plans</b>			
Value Medical Plan	\$117	\$117	0%
Value Medical Plan w/ Value Medicare Rx Option	\$142	\$142	0%
Value Medical Plan w/ Basic Medicare Rx Option	\$184	\$184	0%
Value Medical Plan w/ Enhanced Medicare Rx Option	\$243	\$243	0%
HOP Medical Plan	\$219	\$209	5%
HOP Medical Plan w/ Value Medicare Rx Option	\$244	\$234	4%
HOP Medical Plan w/ Basic Medicare Rx Option	\$286	\$276	4%
HOP Medical Plan w/ Enhanced Medicare Rx Option	\$345	\$335	3%
<b>Medicare Advantage Plans</b>			
Aetna Medicare P01 PPO	\$482	\$466	3%
CBC PPO	\$257	\$258	0%
Highmark FreedomBlue PPO	\$335	\$336	0%
IBC Personal Choice 65 PPO	\$307	\$429	(28)%
UPMC PSERS HOP Custom PPO	\$247	N/A	N/A
<b>Legacy Medicare Advantage Plans (no new enrollment)</b>			
Aetna Medicare P02 HMO	\$588	\$569	3%
IBC Keystone 65 Select HMO High Option	\$361	\$369	(2)%
UPMC PSERS HOP Custom PPO	\$242	\$243	0%

## Section 4 - Other PSERS Programs

### Health Options Program (continued)

Southwestern Region: Allegheny, Fayette, Greene, Indiana, Washington, and Westmoreland Counties	2024	2023	Increase/ (Decrease)
<b>Medicare Supplement Plans</b>			
Value Medical Plan	\$115	\$115	0%
Value Medical Plan w/ Value Medicare Rx Option	\$140	\$140	0%
Value Medical Plan w/ Basic Medicare Rx Option	\$182	\$182	0%
Value Medical Plan w/ Enhanced Medicare Rx Option	\$241	\$241	0%
HOP Medical Plan	\$210	\$200	5%
HOP Medical Plan w/ Value Medicare Rx Option	\$235	\$225	4%
HOP Medical Plan w/ Basic Medicare Rx Option	\$277	\$267	4%
HOP Medical Plan w/ Enhanced Medicare Rx Option	\$336	\$326	3%
<b>Medicare Advantage Plans</b>			
Aetna Medicare P01 PPO	\$433	\$418	4%
CBC PPO	\$257	\$258	0%
Highmark Freedom Blue PPO	\$241	\$242	0%
UPMC PSERS HOP Custom PPO	\$247	n/a	n/a
<b>Legacy Medicare Advantage Plans (no new enrollment)</b>			
Aetna Medicare P02 HMO	\$370	\$356	4%
Highmark Legacy Freedom Blue PPO	\$322	\$323	0%
Highmark Security Blue HMO	\$252	\$253	0%
UPMC PSERS HOP Custom PPO	\$242	\$243	0%

North & Central Region: (All Other Counties in Pennsylvania)	2024	2023	Increase/ (Decrease)
<b>Medicare Supplement Plans</b>			
Value Medical Plan	\$102	\$102	0%
Value Medical Plan w/ Value Medicare Rx Option	\$127	\$127	0%
Value Medical Plan w/ Basic Medicare Rx Option	\$169	\$169	0%
Value Medical Plan w/ Enhanced Medicare Rx Option	\$228	\$228	0%
HOP Medical Plan	\$194	\$183	6%
HOP Medical Plan w/ Value Medicare Rx Option	\$219	\$208	5%
HOP Medical Plan w/ Basic Medicare Rx Option	\$261	\$250	4%
HOP Medical Plan w/ Enhanced Medicare Rx Option	\$320	\$309	4%
<b>Medicare Advantage Plans</b>			
Aetna Medicare P01 PPO	\$309	\$296	4%
CBC PPO	\$257	\$258	0%
Highmark FreedomBlue PPO	\$241	\$242	0%
UPMC PSERS HOP Custom HMO*	\$247	\$243	2%
<b>Legacy Medicare Advantage Plans (no new enrollment)</b>			
Aetna Medicare P02 HMO	\$370	\$356	4%
CBC Custom HMO	\$206	\$207	0%
Highmark SecurityBlue HMO	\$302	\$303	0%
UPMC PSERS HOP Custom PPO*	\$242	\$243	0%

\*Not available in all North & Central Region counties.

## Section 4 - Other PSERS Programs

### Health Options Program (continued)

HOP participants may select Enhanced, Basic, or Value Medicare Rx Option coverage without enrolling in the HOP Medical Plan or Value Medical Plan. The monthly premium rates for the Medicare

Rx Options do not vary by region. Stand-alone prescription drug coverage does not qualify for Premium Assistance.

Medicare Prescription Drug Plans All Regions	2024	2023	Increase
Enhanced Medicare Rx Only	\$126	\$126	0%
Basic Medicare Rx Only	\$67	\$67	0%
Value Medicare Rx Only	\$25	\$25	0%

### HOP Options Program Premiums Paid By Individuals NOT ELIGIBLE for Medicare

The premiums paid by participants not eligible for Medicare generally do not vary by geographical area. The exceptions are the regional managed care plans. The following tables show the monthly

premium rates for 2024 compared to the 2023 rates in Pennsylvania for single coverage. These rates do not reflect the \$100 Premium Assistance benefit provided to eligible retirees.

All Regions	2024	2023	Increase/ (Decrease)
<b>HOP Pre-65 Medical Plan</b>			
HOP Pre-65 Medical Plan (Single Coverage)	\$990	\$990	0%
Pre-65 Medical Plan w/ Prescription Drugs	\$1,115	\$1,115	0%

Southeastern Region: Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties	2024	2023	Increase/ (Decrease)
<b>Managed Care Plans</b>			
Aetna Premier Open Choice PPO	\$2,112	\$2,113	0%
CBC PPO	\$1,697	\$1,698	0%
Highmark PPOBlue (80-70 Plan)	\$2,017	\$1,385	46%
IBC POS (\$20-\$40/\$250)	\$3,153	\$2,894	9%
UPMC Business Advantage	\$1,823	\$1,581	15%
<b>Legacy Managed Care Plans (no new enrollments)</b>			
Aetna Value Open Choice PPO	\$1,827	\$1,828	0%
IBC Personal Choice PPO	\$3,117	\$2,852	9%

## Section 4 - Other PSERS Programs

### Health Options Program (continued)

<b>Southwestern Region: Allegheny, Fayette, Greene, Indiana, Washington, and Westmoreland Counties</b>	<b>2024</b>	<b>2023</b>	<b>Increase/ (Decrease)</b>
<b>Managed Care Plans</b>			
Aetna Premier Open Choice PPO	\$2,112	\$2,113	0%
CBC PPO	\$1,697	\$1,698	0%
Highmark PPOBlue (80-70 Plan)	\$2,017	\$1,385	46%
UPMC Business Advantage	\$1,823	\$1,581	15%
<b>Legacy Managed Care Plans (no new enrollments)</b>			
Aetna Value Open Choice PPO	\$1,827	\$1,828	0%
Highmark PPOBlue (High Option)	\$2,597	\$1,745	49%

<b>North &amp; Central Region: (All other counties in Pennsylvania)</b>	<b>2024</b>	<b>2023</b>	<b>Increase/ (Decrease)</b>
<b>Managed Care Plans</b>			
Aetna Premier Open Choice PPO	\$2,112	\$2,113	0%
CBC PPO	\$1,697	\$1,698	0%
Highmark PPOBlue (80-70 Plan)	\$2,017	\$1,385	46%
UPMC Business Advantage*	\$1,823	\$1,581	15%
<b>Legacy Managed Care Plans (no new participants)</b>			
Aetna Value Open Choice PPO	\$1,827	\$1,828	0%
CBC HMO	\$2,375	\$2,376	0%
Highmark PPOBlue (High Option)	\$2,597	\$1,784	46%

\*Not available in all North & Central Region counties.

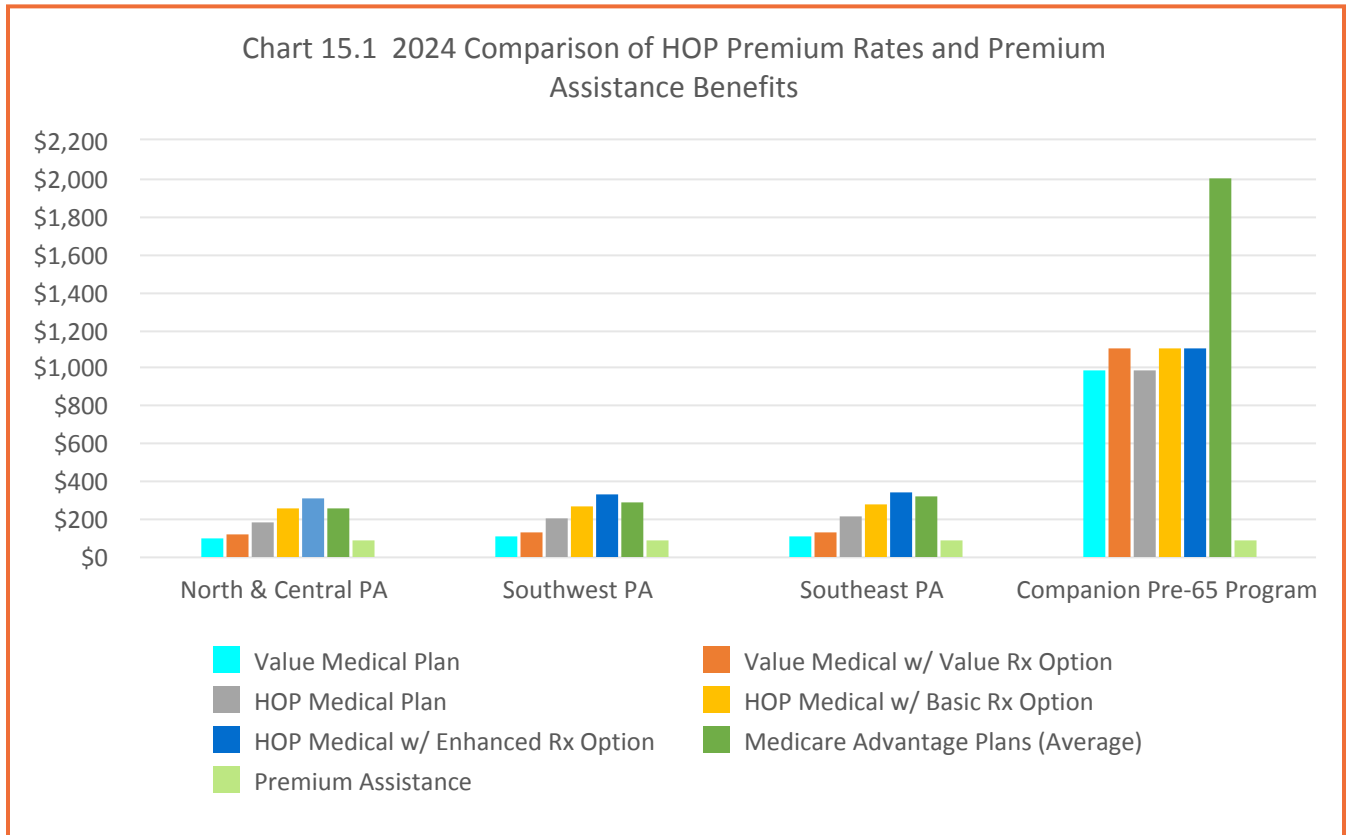
## Section 4 - Other PSERS Programs

### Health Options Program (continued)

#### HOP Premiums Compared to the PSERS Premium Assistance Benefit

Chart 15.1 displays the HOP monthly premiums paid by PSERS retirees for single coverage compared with the PSERS Premium Assistance benefit. Participating eligible annuitants are entitled to receive Premium Assistance payment of

\$100 per month or their out-of-pocket monthly health insurance premium, whichever is less. The premiums for 2-person and family coverage would be at least twice the cost of single coverage. Premium Assistance is an offset for the PSERS retiree's premium only.



As shown in the table below, the percentage of Premium Assistance benefit coverage varies by region and plan.

2024	North & Central PA	Southwest PA	Southeast PA	Companion Pre-65 Program
Value Medical Plan	\$102	\$115	\$117	\$990
Value Medical w/ Value Rx Option	\$127	\$140	\$142	\$1,115
HOP Medical Plan	\$194	\$210	\$219	\$990
HOP Medical w/ Basic Rx Option	\$261	\$277	\$286	\$1,115
HOP Medical w/ Enhanced Rx Option	\$320	\$336	\$345	\$1,115
Medicare Advantage Plans (Average)	\$264	\$295	\$326	\$2,008
Premium Assistance	\$100	\$100	\$100	\$100

## Section 4 - Other PSERS Programs

### Health Options Program (continued)

#### HOP Enrollment

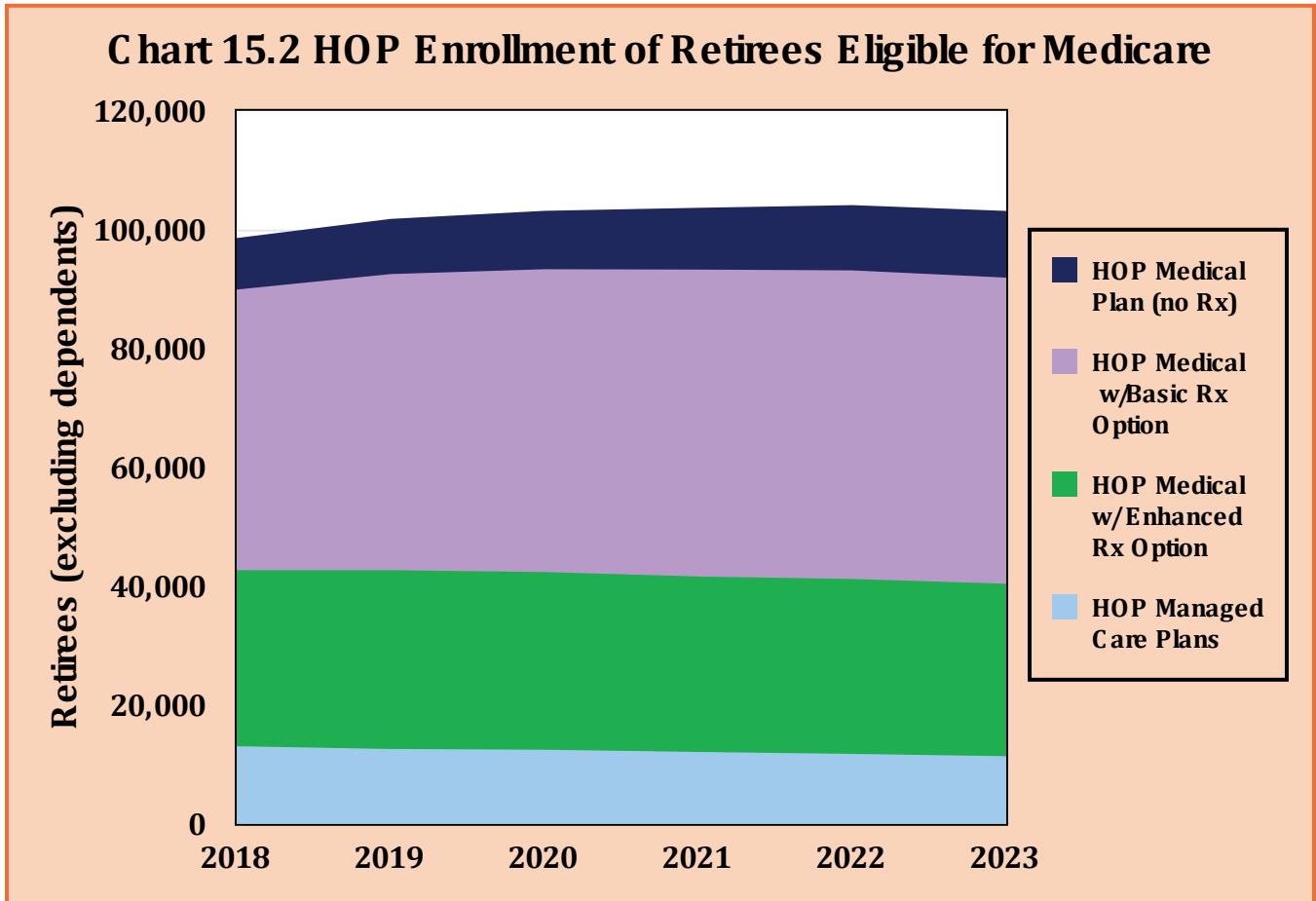
As of January 1, 2024 there are 123,859 participants (103,284 retirees plus their dependents) in the HOP. The total numbers of retirees by Option are:

Individuals Eligible for Medicare	Retirees	Participants
HOP Medical w/ Basic Medicare Rx Option	48,123	58,719
HOP Medical w/ Enhanced Medicare Rx Option	29,029	34,341
HOP Medical w/ Value Medicare Rx Option	2,970	3,420
HOP Medical Plan (no Rx)	10,894	12,124
HOP Enhanced Rx Only	77	97
HOP Basic Rx Only	163	209
HOP Value Rx Only	20	23
HOP Value Medical Only	74	91
HOP Value Medical w/ Enhanced Medicare Rx Option	11	16
HOP Value Medical w/ Basic Medicare Rx Option	63	87
HOP Value Medical w/ Value Medicare Rx Option	348	460
Highmark PPO/Legacy HMO	9,114	11,327
Keystone East HMO/IBC Legacy PPO	470	542
CBC PPO/Keystone Central Legacy HMO	681	860
UPMC PPO/Legacy HMO	863	1,114
Aetna PPO/Legacy HMO	256	294
<b>Total Medicare Eligible</b>	<b>103,156</b>	<b>123,724</b>
<b>Individuals Not Eligible for Medicare</b>		
HOP Pre-65 Medical Plan w/ Rx Coverage	82	87
HOP Pre-65 Medical Plan	21	21
Highmark PPO	14	15
CBC PPO/Keystone Central Legacy HMO	8	9
Keystone East HMO/IBC Legacy PPO	1	1
Aetna PPO/Legacy HMO	1	1
UPMC Business Advantage	1	1
<b>Total Not Eligible for Medicare</b>	<b>128</b>	<b>135</b>
<b>Total in HOP</b>	<b>103,284</b>	<b>123,859</b>

## Section 4 - Other PSERS Programs

### Health Options Program (continued)

Enrollment in the PSERS HOP continues to increase. As illustrated by Chart 15.2, the number of retirees participating in the HOP has increased 1.4% over the past 5 years.



## Section 4 - Other PSERS Programs

### Health Options Program (continued)

#### HOP Voluntary Dental and Vision Programs

Beginning January 1, 2016, HOP offered a voluntary MetLife Dental Plan to members and dependents enrolled in the HOP Medical Plan or the Value Medical Plan (those enrolled in a Medicare Advantage Plan are not eligible for this program as most of these plans have dental coverage). Beginning January 1, 2021, HOP began offering the MetLife Dental and EyeMed Vision Option. As with the previous dental program, dental and vision coverage is not available on a stand alone basis and participants must be enrolled in either the HOP Medical Plan or the Value Medical Plan.

Enrollment is limited to the initial offering or upon a qualifying event.

As of January 1, 2024 there are 36,126 participants (30,946 retirees plus their dependents) in the HOP voluntary dental and vision program. The total numbers of retirees by year since program inception:

Dental and Vision Enrollment Per Year (As of January 1)	Retirees	Participants	Increase (Participants)
2024**	30,946	36,126	7%
2023**	28,973	33,614	16%
2022**	25,249	28,927	27%
2021*	17,456	22,829	21%
2020*	16,729	18,864	15%
2019*	14,482	16,436	25%
2018*	11,535	13,099	35%
2017*	8,497	9,701	

\*Includes Dental Enrollment

\*\*Includes Dental & Vision Enrollment

#### Health Options Program Funding

A majority of the premium income is deducted from the retiree's monthly retirement benefit and transferred to the plan (claims administrator for the self-funded Options). Approximately 4,562 retirees submit monthly premium payments to the HOP Administration Unit, as their monthly retirement benefits, if any, are insufficient to cover the premium cost.

HOP income is projected to be \$542.2 million during the 2024 Plan (calendar) Year. A majority of this income comes from premium payments from participants. Other sources of funding are Medicare prescription drug payments (for participants enrolled in a Medicare prescription drug plan) from CMS and interest income. Table 15.1 displays the breakdown of these sources of income (Dollar amounts in millions):

Table 15.1 Income	Calendar Year 2024
Participant Contributions	\$432.5
CMS - Medicare Prescription Drug Payments	\$102.7
Performance Guarantee Receipts	\$0.5
Interest Income	\$6.5
<b>Total</b>	<b>\$542.2</b>



## Section 4 - Other PSERS Programs

### Health Options Program (continued)

PSERS retirees enrolled in the HOP, who meet the eligibility requirements for Premium Assistance, receive up to \$100 per month as a partial reimbursement for the out-of-pocket premium expense. Approximately 85,334 of the 103,284 HOP retirees receive Premium Assistance while an additional 7,166 retirees are enrolled in coverage through a Commonwealth public school employer or district health plan and also receive Premium Assistance. This accounts for approximately \$103

million of the \$114 million annual benefit expense of the Premium Assistance Program. The following Premium Assistance Program section provides additional information.

Contributions and interest income pay for the benefits provided to HOP participants plus administrative expenses. Table 15.2 displays the breakdown of benefit expenses (Dollar amounts in millions):

<b>Table 15.2 Benefit Expense</b>	<b>Calendar Year 2024</b>
Self-funded Hospital, Medical & Major Medical Benefits	\$261.4
Self-funded Prescription Drug Benefits	\$213.4
Insured Managed Care and Dental Premiums	\$61.8
<b>Total</b>	<b>\$536.6</b>

In addition to the benefit expenses identified above, the HOP will pay \$11.9 million in enrollment and administrative expenses including reimbursing PSERS for its expenses.

As of September 30, 2023, HOP had net assets of \$389 million held in trust to pay the expenses of HOP for the exclusive benefit of participants.

# Premium Assistance Program

### Premium Assistance Program

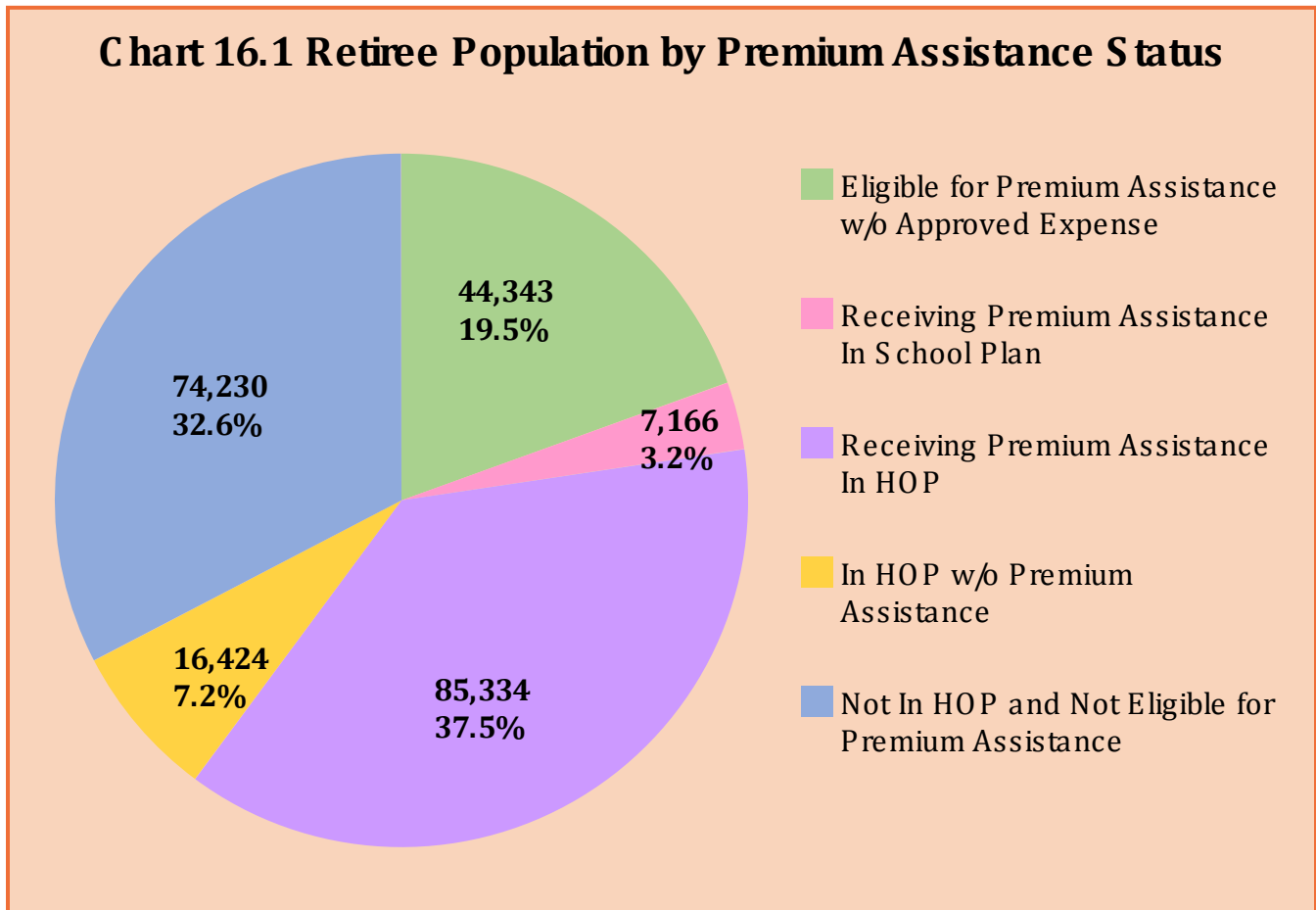
By law, PSERS provides up to \$100 per month in Premium Assistance to eligible retirees to help cover the cost of their health insurance. The Premium Assistance program began on July 1, 1992. The eligibility requirements for premium assistance are as follows:

- 24.5 years of credited service (for Class DC members, Medicare eligibility with at least 24.5 eligibility points), or
- 15 years of credited service if termination of employment and retirement occurred after superannuation age , or
- Receiving a disability annuity from PSERS; and
- Have an out-of-pocket premium expense from their former school employer’s health plan or the PSERS sponsored HOP.

### Enrollment

As of June 30, 2023, PSERS had 227,497 retirees receiving a monthly benefit. Of these retirees 153,267 meet the service, service and age at termination of school service, or retirement type (disability) eligibility requirements for the premium assistance program. Of the retirees meeting these requirements, 60,767 are not receiving premium assistance payments because they do not have an out-of-pocket premium expense from an approved plan. Of the 92,500 retirees receiving premium assistance benefits, 85,334 are enrolled in HOP and 7,166 are participating in their former school employer’s health plan and have an out-of-pocket premium expense.

A breakdown of retirees by their premium assistance status is displayed in Chart 16.1



## Section 4 - Premium Assistance Programs

### Premium Assistance Program (continued)

June 30, 2023	Number	Percentage
Eligible for Premium Assistance w/o Approved Expense	44,343	19.5%
Receiving Premium Assistance In School Plan	7,166	3.2%
Receiving Premium Assistance In HOP	85,334	37.5%
In HOP w/o Premium Assistance	16,424	7.2%
Not in HOP and Not Eligible for Premium Assistance	74,230	32.6%
<b>Total Retiree Population</b>	<b>227,497</b>	<b>100.0%</b>

### Funding

The Premium Assistance Program is funded by employer contributions. The contribution rate is calculated by PSERS actuary in accordance with the formula set forth in the Retirement Code<sup>2</sup>. The contribution needed during FY2024-25 is 0.75% of payroll.

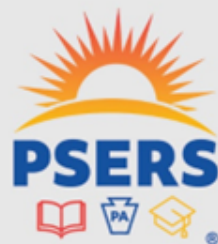
For the year ended June 30, 2023, employer contributions equaled \$116.5 million and net investment income totaled \$0.3 million. During this period, PSERS paid Premium Assistance benefits equaling \$113.5 million and incurred administrative expenses of \$1.1 million. As of September 30, 2023, the Premium Assistance Program had net assets of \$129.6 million.

<sup>2</sup>§8509. Health insurance premium assistance program: (a) Contribution rate.-- For each fiscal year beginning after July 1, 1991, the premium assistance contribution rate shall be established to provide reserves sufficient, when combined with unexpended amounts from the reserves set aside the previous fiscal year for health insurance assistance payments, to provide premium assistance payments in the subsequent fiscal year for all participating eligible annuitants. The Board is authorized to expend an amount not to exceed 2% of the health insurance account each year to pay for the direct expense of administering the health insurance premium assistance program, which expenditure may be included in the Board's consideration when it establishes the premium assistance contribution rate each year.

# SECTION 5 DB MEMBER SERVICES AND STATISTICS

DB Member Services and Statistics

Tab 17



**DB Member Services and Statistics**

PSERS has 382 staff serving the needs of over 500,000 members of PSERS and 770 employers. PSERS professionals are dedicated to fulfilling PSERS’ mission to serve our members. To improve their experience with PSERS, we’ve identified several key initiatives to enhance customer satisfaction.

Notably, we plan to significantly invest in staffing our call center and regional offices to reduce call wait times, increase the quality and timeliness of communications, and provide more personalized attention to each member. Below are highlights of some of the more common DB benefit services that PSERS provides to its members.

**Table 17.1**

<b>Retired Benefits Processed</b>	<b>Fiscal Year</b>	
	<b>2022-23</b>	<b>2021-22</b>
Initial Retirements (1-Step)	7,779	7,363
Initial Retirements (2-Step)	1,879	2,290
Final Retirements (2nd Step of 2-Step)	2,566	1,238
Purchases of Service and Corrections for Previously Unreported Service and/or Contributions not Withheld	8,779	6,416
Refunds	6,120	4,608
Death Benefits Processed	2,461	3,016
Account Verification - non retirements	13,935	16,156
<b>TOTAL</b>	<b>43,519</b>	<b>41,087</b>
Percent of Retirement Paid as 1 Step	80%	76%

**Table 17.2**

<b>Other Member Services (Major)</b>	<b>Fiscal Year</b>	
	<b>2022-23</b>	<b>2021-22</b>
Retirement Estimates	14,683	17,944
Phone Calls Answered	140,038	148,440
E-mails Received	80,272	111,176
E-mails Sent	76,614	104,750
General Information Sessions	203	40
General Information Attendees	10,225	3,259
Counseling Sessions	1,184	1,389
Counseling Attendees	6,552	6,971

## Section 5 - DB Member Services and Statistics

### DB Member Services and Statistics Program (continued)

**Table 17.3**

<b>Member Payment Services for Retirees and Beneficiaries</b>	<b>Calendar Year</b>	
	<b>2023</b>	<b>2022</b>
Monthly Benefit Payments by EFT	2,870,441	2,822,394
Monthly Benefit Payments by Check	75,871	83,310
<b>Total Monthly Payments to Members</b>	<b>2,946,312</b>	<b>2,905,704</b>
Non-recurring Payments to Members	48,104	45,531
W4-P Tax Withholding Forms Processed	3,396	3,092
EFT Forms Processed - Direct Deposit	9,331	9,387
ACH Rejects Researched and Reviewed (Direct Deposit Failures)	8,349	5,886
Member Payment Changes Processed	1,164	1,825
1099R-Paperless Delivery	85,658	78,428
1099R-Printed and Mailed	191,361	193,756
<b>Total Forms 1099-R Produced</b>	<b>277,019</b>	<b>272,184</b>

PSERS had nearly 250,000 members sign up for the MSS account. Of those, over 91% are receiving paperless delivery. This paperless opportunity has generated more than \$2,000,000 in cumulative savings since its inception in April 2018.

**Table 17.4**

<b>Member by Type</b>						
<b>Fiscal Year Ended June 30</b>	<b>Active Members</b>	<b>Annuitants, Beneficiaries, and Survivor Annuitants</b>	<b>Total Active/Retired Members</b>	<b>Ratio of Active/Retired</b>	<b>Vestees</b>	<b>Total Membership</b>
2023	251,732	249,724	501,456	1.01 to 1	26,776	528,232
2022	248,393	246,901	495,294	1.01	26,836	522,130
2021	248,410	242,839	491,249	1.02	26,892	518,141
2020	256,306	239,614	495,920	1.07	25,903	521,823
2019	255,749	237,339	493,088	1.07	25,514	518,602
Average ratio of active members to annuitants (Public Funds)				1.25*		

\*Based on the November 2023 Public Fund Survey prepared by the National Association of State Retirement Administrators (NASRA)

## Section 5 - DB Member Services and Statistics

### DB Member Services and Statistics Program (continued)

**Table 17.5**

#### Profile of PSERS Annuitants, Beneficiaries, and Survivor Annuitants

Type of Member	Number of Members		Average Annual Benefit	
	<u>6/30/2023</u>	<u>6/30/2022</u>	<u>6/30/2023</u>	<u>6/30/2022</u>
Normal/Early Retirees	227,671	225,081	\$26,934	\$26,842
Survivor Annuitants	13,438	13,100	\$16,429	\$15,982
Disability Retirees	8,615	8,720	\$21,957	\$21,526
Total/Average Yearly Benefit	249,724	246,901	\$26,197	\$26,078

Age and Service Profile of All Active Members		
	<u>6/30/2023</u>	<u>6/30/2022</u>
Average Age	45.4	45.4
Average Years of PSERS Service	11.9	12.1
Average Annual Compensation	\$59,709	\$58,082

	Class T-C Members		Class T-D Members	
	<u>6/30/2023</u>	<u>6/30/2022</u>	<u>6/30/2023</u>	<u>6/30/2022</u>
Number of Members	2,128	2,391	131,841	139,161
Average Age	55.2	54.8	49.9	49.5
Average Years of PSERS Service	24.6	23.2	18.7	18.1
Average Annual Compensation	\$68,122	\$63,170	\$75,054	\$71,767

	Class T-E Members		Class T-F Members	
	<u>6/30/2023</u>	<u>6/30/2022</u>	<u>6/30/2023</u>	<u>6/30/2022</u>
Number of Members	49,771	53,374	12,528	13,082
Average Age	42.7	42	41.4	40.6
Average Years of PSERS Service	6.4	5.5	7	6.1
Average Annual Compensation	\$46,931	\$42,727	\$58,282	\$54,275

	Class T-G Members		Class T-H Members	
	<u>6/30/2023</u>	<u>6/30/2022</u>	<u>6/30/2023</u>	<u>6/30/2022</u>
Number of Members	54,281	39,655	271	210
Average Age	37.6	37.1	37.1	36.8
Average Years of PSERS Service	1.4	1.1	2.8	2.1
Average Annual Compensation	\$34,606	\$31,778	\$41,550	\$38,452

Class DC		
	<u>6/30/2023</u>	<u>6/30/2022</u>
Number of Members	912	520
Average Age	42.1	42.2
Average Years of PSERS Service	2.1	1.9
Average Annual Compensation	\$38,246	\$36,140