

As of and for the year ended December 31, 2024

DEFINED BENEFIT PLAN

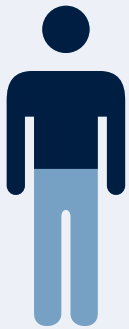
Traditional Pension

Defined Benefit Plan



\$43.2 million

FY 2025-26 Administrative Budget



In 2024 SERS retired **4,332** members and welcomed **13,282** new members

70.9% funded
\$16.5 billion unfunded liability

paid approximately **\$4 billion** in pension benefits

\$38.7 billion in assets

99 employers

63% of SERS active employees belong to post-Act 120 classes of service

SERS Fund 2024 Investment Return **9.8%**

137,620 retirees & beneficiaries

100,131 active members

73 years old average retired member receives **\$32,669** per year at full retirement

46 years old average active member **11** years of service

DEFINED CONTRIBUTION PLAN

Investment Option

Defined Contribution Plan



\$4.8 million

FY 2025-26 Administrative Budget

\$7.4 million distributions/withdrawals

\$291.7 million in assets

42,033 accounts

99 employers

Contributions participant \$50.1 million employer \$32 million

DEFERRED COMPENSATION PLAN

Supplemental Benefit

Deferred Compensation Plan



\$1.2 million

FY 2025-26 Administrative Budget (majority of plan costs paid by plan participants)

\$422.2 million distributions/withdrawals

\$5 billion in assets

56,831 accounts

76 eligible employers

Participant Contributions \$179.6 million

SERS 2025 Supplemental Budget Book



pennsylvania
STATE EMPLOYEES' RETIREMENT SYSTEM

SERS.pa.gov | 1.800.633.5461

Data throughout is estimated/unaudited

February 21, 2025

Honorable Jordan A. Harris
Democratic Chairman
House Appropriations Committee
512 E. Main Capitol
Harrisburg, PA 17120-2186

Honorable Scott Martin
Republican Chairman
Senate Appropriations Committee
281 Main Capitol
Harrisburg, PA 17120-3013

Honorable James B. Struzzi
Republican Chairman
House Appropriations Committee
245 Main Capitol
Harrisburg, PA 17120-2196

Honorable Vincent J. Hughes
Democratic Chairman
Senate Appropriations Committee
545 Main Capitol
Harrisburg, PA 17120-3007

Chairmen and Members of the Appropriations Committees:

I am pleased to present you with supplemental budget information for the Pennsylvania State Employees' Retirement System (SERS) for FY 2025-26. These materials provide an in-depth analysis and details regarding SERS' request for spending authority, its operations, and its investment portfolio. I trust this information will be useful in the deliberations related to the development and passage of the FY 2025-26 commonwealth budget.

Throughout the agency's history, SERS board members and staff have worked together – along with our colleagues in the legislature and various administrations – to help ensure the health and stability of the system so that the hundreds of thousands of members and participants we have served over the years could look forward to a financially secure retirement. At times the challenges have been significant – the Great Depression, World War II, the Energy Crisis of the mid-1970s, the Dot-Com Bubble of the late 1990s, the Great Recession of 2008, as well as the stock market decline of 2022, and continuing global unrest and persistent inflation.

Still, despite these challenges, SERS remains a strong and viable retirement system.

As we enter 2025, we remain committed to the legacy of those who came before us in providing high quality service in meeting the needs and expectations of our members and participants, who can be assured that their retirement system is administered well, and that staff carefully manages the funds entrusted to the board.

As of December 31, 2024, the value of the SERS fund was \$38.7 billion, with an estimated calendar year return of approximately 9.8%, net of fees.

For FY 2025-26, SERS proposes a \$43.2 million spending authority, which is drawn from SERS funds, not general government operating accounts, for administration of the Defined Benefit Plan, \$4.8 million for the Defined Contribution Plan, and \$1.2 million for the Deferred Compensation Plan.

SERS expects to receive nearly \$2.2 billion (33.65% of payroll) from commonwealth employers during this fiscal year. The largest component of that rate, 25.66%, was necessary to pay the unfunded liability.

This year SERS will serve approximately 246,000 members and participants, and administer nearly 57,000 Deferred Compensation Plan accounts. In 2024, the average retiree who worked to full retirement age was 73 years old and received an average pension annuity of \$32,669. The pension system paid out approximately \$4.0 billion in pension benefit payments in 2024, of which approximately \$3.6 billion was paid to members living in Pennsylvania.

Thanks to sound management, our continuing efforts to achieve greater efficiencies in both financial and administrative processes, and consistent full funding from the General Assembly in recent years, we continue to progress toward our long-term goal of eliminating our unfunded liability.

We are committed to doing our best and we thank you for your continued support.

Sincerely,



Gregory C. Thall
Chairman

SERS 2025 SUPPLEMENTAL BUDGET BOOK

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SERS Organization

SERS ORGANIZATION

Agency Description

Established in 1923, SERS is one of the nation's oldest and largest statewide retirement plans for public employees. SERS is responsible for administering approximately \$44 billion in assets held in trust for approximately 246,000 members and participants, as of December 31, 2024.

Most state employees are required to participate in a SERS-administered retirement plan, as directed by the State Employees' Retirement Code. SERS is responsible for administering the Retirement Code in accordance with the expressed intent of the General Assembly and bears a fiduciary obligation to plan beneficiaries, including state employees and retirees.

State law provides that the administration of the SERS benefit plans and the fiduciary responsibility for their management be vested in an 11-member board. The management of SERS is the responsibility of the executive director who employs the staff needed to administer all SERS retirement plans and, with the approval of the board, contracts for professional services.

SERS administers four retirement plans for state employees – three plans require mandatory employee and employer contributions and one plan involves only voluntary employee contributions:

- **Hybrid Plan** – is a combination of two Internal Revenue Code-defined plans – a traditional pension or IRC section 401(a) defined benefit plan with an IRC section 401(a) defined contribution investment plan. This plan requires mandatory contributions from both the employee and the employer. There are two classes of service within the Hybrid Plan, class A-5 and class A-6.
- **Defined Contribution Plan** – is an IRC section 401(a) investment plan. This plan requires mandatory contributions from both the employee and the employer.
- **Defined Benefit Plan** – is a traditional pension plan defined by IRC section 401(a). This plan requires mandatory contributions from both the employee and the employer.
- **Deferred Compensation Plan** – is a voluntary supplemental plan defined by IRC section 457(b). This plan involves only voluntary employee contributions.

Most new state employees are automatically enrolled in the Hybrid Plan A-5 class of service, with the right to opt out of that class of service into the A-6 class of service or the Defined Contribution Plan. The exceptions are hazardous-duty employees and those who contributed to the traditional defined benefit pension plan in the past. In those two cases, the employee is automatically enrolled in the traditional defined benefit pension plan.

Each plan is described in greater detail, including participation, asset value, and contribution rates, in the following sections.

Recent Changes

In 2024, the agency made the following changes:

- **New Board Members**
The SERS board welcomed the following new members to the board in 2024: W. Russell Faber, Former Chief Clerk of the Pennsylvania Senate, was appointed February 7, 2024, and John Galuska, of AFSCME District Council 13, was appointed November 13, 2024, by Governor Shapiro.

SERS ORGANIZATION

Agency Description

- **Preparation for SOC Audit**

In 2025, SERS will undergo a System and Organization Controls (SOC) 1, Type 2 audit, as required by Act 2020-128. To prepare for the SOC audit, SERS engaged Ernst & Young LLP (EY) to conduct a comprehensive review of SERS' existing policies, processes, and internal controls to detect gaps and suggest possible enhancements to aid SERS in achieving a successful SOC audit. SERS Business Units and EY collaborated to develop enhanced and additional controls that support our 14 control objectives. EY issued recommendations based on

industry leading practices; these recommendations included formally documenting existing procedures in written policies and processes, implementing efficiencies, risk mitigation measures, process improvements, and strengthening auditable evidence. We are pleased to report that, as of December 31, 2024, SERS Business Units evaluated all recommendations and incorporated numerous operational and internal control enhancements per EY specifications. We look forward to completing the SOC audit during 2025 as scheduled.

SERS ORGANIZATION

Mission, Vision, Core Values, and Strategic Priorities

In July, 2023, the SERS Board approved a new SERS Strategic Plan that is focused on a digital transformation of the agency. It is a four-year initiative, beginning on July 1, 2023, and extending through June 30, 2027. The focus of the Strategic Plan is to add digital options for members and employers and to introduce digital efficiencies to internal operations. The new plan charts a path to enhanced customer service and a better workplace experience. As part of this plan, the board adopted an updated mission, vision, core values and set of strategic priorities.

Mission

Prepare our members and participants to achieve financial security in retirement.

Vision

To be an employer of choice and an innovative leader among public pension organizations by providing best-in-class services and products to our members, participants, and stakeholders.

Core Values

- Champion the Mission
- Act Ethically and with Integrity
- Empower Members
- Embrace Innovation
- Foster Life Work Balance
- Model an Inclusive and Respectful Workplace
- Value & Develop Team Members
- Collaborate
- Find Joy

Strategic Priorities

Transforming the “SERS experience” through the expansion of digital options, while reducing dependence on paper processes will be achieved through a framework that is focused on specific, measurable, action-oriented, realistic, and timely goals. The following five strategic priorities will guide our digital transformation:

- **Member Experience:** Enhance the member and participant experience through automated and self-service opportunities while maintaining personalized service.
- **Operational Efficiencies:** Enhance efficiencies through streamlined processes and aligned content management practices.
- **Centralized Data:** Enhance efficiencies and collaboration through a centralized repository(ies) of searchable, shareable resources.
- **Workplace Experience:** Enhance the overall work experience for all employees while fulfilling the SERS mission.
- **Pension Administration System:** Determine the roadmap in light of digital transformation and modernization efforts to provide digital access to member accounts.

SERS ORGANIZATION

Services & Operations

The approximately 222 employees who currently work for SERS share a singular focus: serving SERS' members and participants. Some SERS employees serve members by investing and overseeing approximately \$44 billion in plan assets. Other SERS employees serve members by ensuring that every payment is made correctly and on time. Still others audit and account for plan assets, provide key membership data, or answer member and participant questions in person or over the phone.

Some work is behind-the-scenes, while other work touches members and participants more directly.

Examples of services offered to active and vested members and participants include:

- Issuing annual statements that present a snapshot of each of the member's and participant's SERS plans in one document
- Offering individual and group educational sessions about retirement benefits
- Helping with the purchase of service, change of beneficiaries, etc.
- Calculating retirement, disability, and vesting estimates
- Providing one-on-one counseling for those leaving state service
- Walking members step-by-step through their benefit application process

Examples of services offered to retired members include:

- Issuing annual statements and tax forms
- Providing income tax withholding, direct deposit, address change, and other forms, as requested, as well as assistance in filling out and submitting forms, as needed
- Processing changes to retiree health coverage
- Helping members understand the implications of pension changes related to marriage, divorce, or death
- Tracking and reissuing pension payments
- Assisting spouses, children, and other survivors upon the death of a SERS member or participant

SERS ORGANIZATION

Services & Operations

Approximately a fifth of SERS employees are wholly dedicated to providing services to members and participants through a network of regional offices statewide, including:

Bensalem Regional Office. Serving retired members who live and active members who work in Berks, Bucks, Chester, Delaware, Lancaster, Montgomery, and Philadelphia counties.

Harrisburg Regional Office. Serving retired members who live and active members who work in Adams, Cumberland, Dauphin, Lebanon, Perry, and York counties.

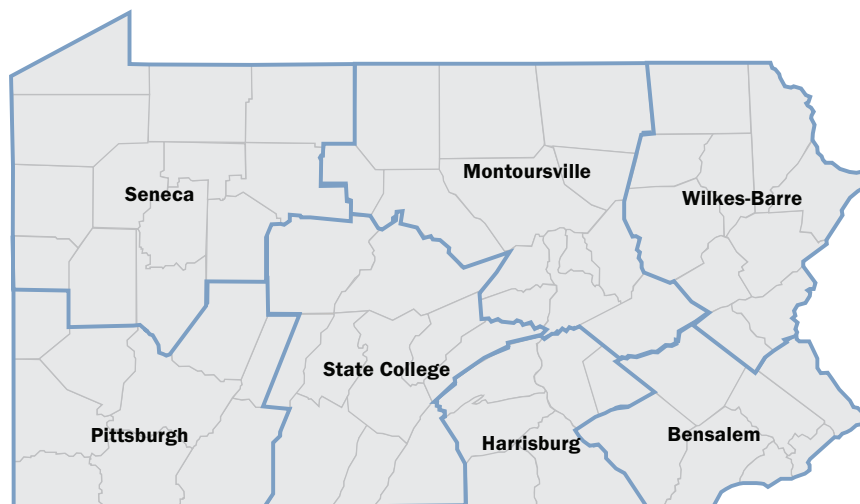
Montoursville Regional Office. Serving retired members who live and active members who work in Bradford, Cameron, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Schuylkill, Snyder, Sullivan, Tioga, and Union counties.

Pittsburgh Regional Office. Serving retired members who live and active members who work in Allegheny, Beaver, Western Cambria, Fayette, Greene, Indiana, Somerset, Washington, and Westmoreland counties.

Seneca Regional Office. Serving retired members who live and active members who work in Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, and Warren counties.

State College Regional Office. Serving retired members who live and active members who work in Bedford, Blair, Eastern Cambria, Centre, Clearfield, Franklin, Fulton, Huntingdon, Juniata, and Mifflin counties.

Wilkes-Barre Regional Office. Serving retired members who live and active members who work in Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Susquehanna, Wayne, and Wyoming counties.



SERS ORGANIZATION

Services & Operations

To achieve its mission overall, SERS is organized into the following business units.

The **Executive Office** directly serves the State Employees' Retirement Board with the Executive Director serving as Secretary to the Board. Other executive office duties include facilitating the board's strategic planning process and overseeing the implementation of the plan, overseeing board governance and board educational opportunities, facilitating board communications internally and externally, managing board and committee meetings, and maintaining all the business records of the board and committees.

The **Communications and Policy Office**, a component of the executive office, engages with the General Assembly and Administration, as well as other key stakeholders, on legislation and other policy-related matters; administers the agency's right-to-know program; serves as liaison to the media; develops educational materials in print and electronic format about SERS retirement plans and the agency; works with the third-party administrator to market the Deferred Compensation Plan; manages the agency's internet and intranet sites and social media accounts; administers two e-mail accounts to help members and participants who have questions and to help the public engage with agency leadership; works with industry and thought leaders at the state and national levels to share best practices, common concerns, developing issues, and new solutions; and provides an array of communications support to the agency.

The **Office of Member and Participant Services** provides direct assistance to SERS active, vested, and retired members and participants, as well as their families. It conducts individual and group educational sessions statewide. The office also supports SERS employers and processes member and participant enrollments, retirements, status changes, payments, and a host of other

transactions. This office is divided into two main bureaus, the **Bureau of Benefit Administration** and the **Bureau of Member and Participant Services**.

The **Investment Office** works closely with the State Employees' Retirement Board to oversee investments in SERS' retirement plans. The office recommends and implements investment policies; manages the strategic asset allocation; monitors fund cash flow, investment managers, fund risks, and performance; and researches and recommends investment opportunities. The office also maintains a high level of expertise related to the analysis of capital and global markets.

The **Office of Financial Management** is responsible for the accounting and financial reporting associated with SERS' retirement plans. It ensures the appropriate accounting controls exist and the financial statements for each plan are presented in accordance with generally accepted accounting principles. It administers all financial transactions, including member and participant payments; member, participant, and employer contributions; investment purchases, sales and other activity; and oversees the budgeting and expense monitoring for all funds.

The **Internal Audit Office** tests business processes and internal controls to confirm that they are adequate and operating properly to ensure vigilant stewardship of SERS funds. It performs on-site audits of investment consultants and managers, as deemed necessary. The office also coordinates independent, external audits of SERS on an annual basis and performs special projects at the direction of the State Employees' Retirement Board and the Audit, Risk, and Compliance Committee.

SERS ORGANIZATION

Services & Operations

The **Chief Counsel's Office** advises the State Employees' Retirement Board on matters related to member appeals and administrative hearings, securities actions and litigation matters, the administration of SERS' retirement plans, and other general legal issues for which the board requests advice. In addition, the office reviews, negotiates, assists in drafting, and finalizes all investment contracts, as well as other general business contracts. The office also provides legal support related to legislative drafting, right-to-know requests, and member transactions.

- The **Chief Compliance Officer** develops and directs SERS Compliance Program to ensure that the SERS Board, senior management, and SERS' employees follow governing laws and regulations, as well as board and SERS policies and processes. The Chief Compliance Officer also ensures that behavior throughout the agency meets the highest standards of ethics and integrity required by SERS and the Commonwealth of Pennsylvania.

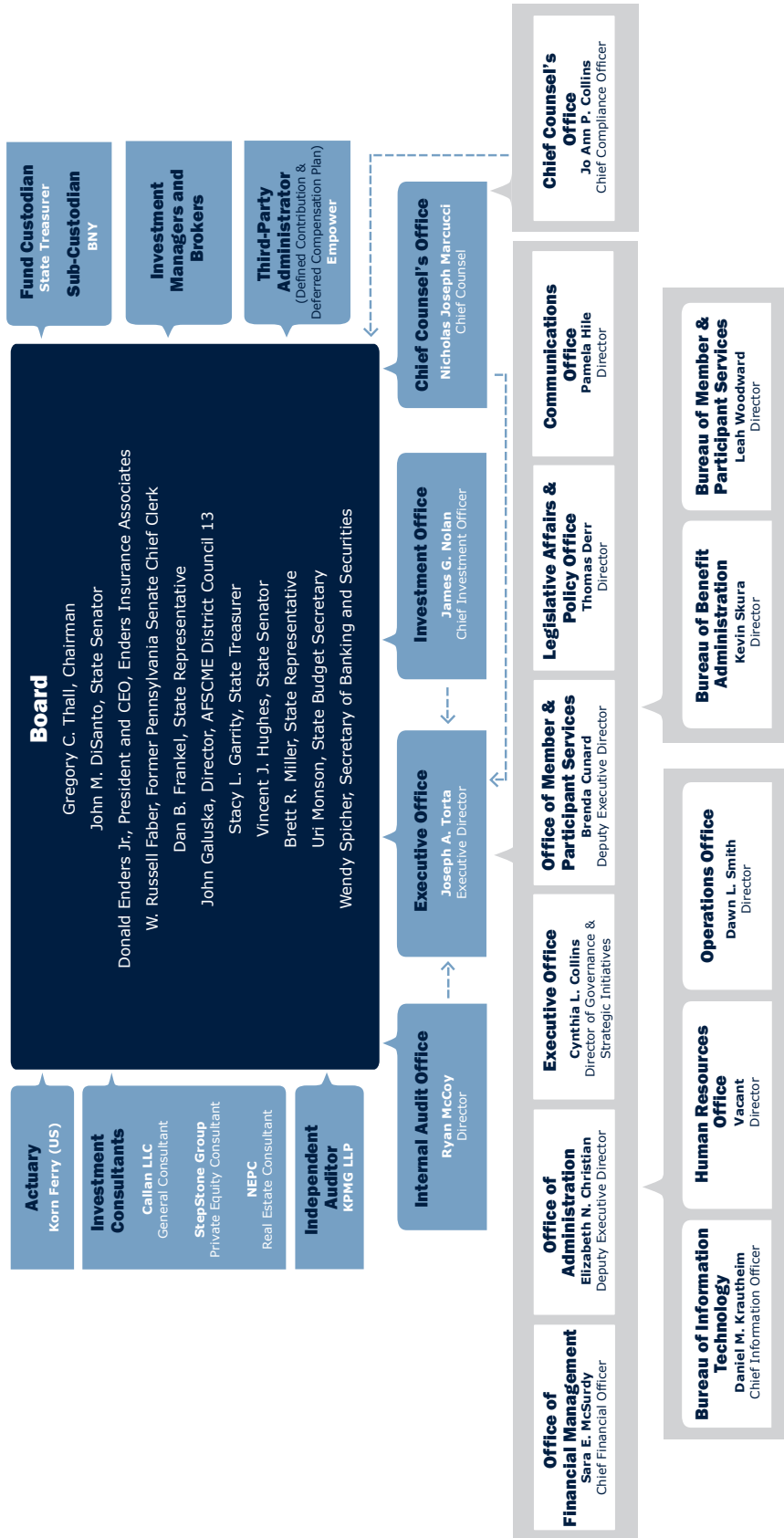
The **Office of Administration** is responsible for overseeing all administrative activities in support of SERS including strategic planning and project management, contract management, procurement, facilities management, safety and security, continuity of operations, print production, fleet management, records retention; information technology including application development, telecommunications, infrastructure, and cybersecurity; and human resources, including staffing, time administration, training, labor relations, talent management and equal opportunity.

The office is comprised of the following:

- The **Bureau of Information Technology** administers the agency's computing and telecommunications architecture. It ensures the performance and security of complex applications and databases, which contain sensitive personal and financial information and are relied upon to manage member and participant accounts, process payments, and account for funds. The bureau also links the regional offices, develops applications to provide members and participants with online access to SERS information, and provides user support.
- The **Human Resources Office** is responsible for all activities related to classification, compensation, staffing, time administration, training, disability services, labor relations, talent management, workplace safety and equal opportunity, the development, implementation, and the administration of agency personnel policies involving such areas.
- The **Operations Office** provides a variety of agency support functions including contracting, purchasing, leasing, facilities management, safety and security, continuity of operations, printing, mailing, fleet management, records retention, and surplus.

SERS ORGANIZATION

Services & Operations



As of 12.31.24

SERS ORGANIZATION

Proposed FY 2025-26 Budget

The budget includes the costs to administer SERS' defined benefit pension plan. The plan receives revenue from employee contributions, employer contributions, and income derived from its investment portfolio. Funds in the plan

are used to pay retirement, disability, and death benefits to members and their beneficiaries, as well as the associated costs of administration. These funds are appropriated annually by the general assembly.

Proposed FY 2025-26 Administrative Budget

	Rebudget FY 2021-22	Rebudget FY 2022-23	Rebudget FY 2023-24	Rebudget FY 2024-25	Budget Request
Personnel Services	\$20,529,514	\$19,828,000	\$22,532,000	\$23,856,000	\$26,242,000
Operational					
Travel	122,350	128,651	163,100	158,450	145,400
Training	216,350	320,368	244,640	419,900	434,150
Communication Services	518,985	505,125	486,636	526,345	599,000
Consultants - Non EDP	1,090,000	995,000	925,000	1,460,000	1,345,500
Legal Services/Fees	280,500	255,500	200,500	270,500	205,500
Specialized Services	1,118,165	1,774,422	1,890,550	1,341,500	924,239
Advertising	5,000	5,000	8,000	8,000	8,000
IT Consulting	4,046,674	3,770,499	4,239,800	5,550,650	6,949,800
Contracted Maintenance Non-IT	60,500	60,500	72,100	672,600	73,350
Hardware/Software and Maintenance	1,792,838	2,257,920	2,093,883	1,886,578	2,304,244
Real Estate	1,994,500	2,358,580	1,513,625	1,904,016	2,219,600
Vehicles	30,400	30,400	60,500	72,600	81,200
Office Equipment	170,950	149,000	171,200	153,700	98,500
Other Rentals/Leases	10,000	10,050	10,050	6,250	6,650
Office Supplies	81,400	119,900	75,435	71,300	71,100
Educational Supplies	3,000	3,600	4,175	3,825	3,825
Motorized Equipment Maintenance	10,100	10,600	10,000	5,000	5,000
Postage	718,391	587,150	468,292	380,847	353,743
Freight	2,750	4,000	4,000	4,200	4,200
Printing	142,050	131,150	137,610	131,730	147,280
Subscriptions & Licensing	179,250	117,547	84,500	104,410	168,687
Membership Dues	74,713	90,305	89,525	87,975	115,525
Conference Expenses	15,320	12,320	44,625	37,425	48,100
Insurance, Surety, & Fidelity Bonds	13,000	5,000	5,000	5,000	5,000
Other Operational	972,300	1,647,413	1,275,254	1,926,199	1,939,407
Total Operational	13,669,486	15,350,000	14,278,000	17,189,000	18,257,000
Fixed Assets	370,000	370,000	650,000	250,000	250,000
Less Directed Commissions	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Total Annual Budget	\$33,069,000	\$34,048,000	\$35,960,000	\$39,795,000	\$43,249,000

SERS ORGANIZATION

Proposed FY 2025-26 Budget

Directed commissions are reimbursements to SERS for a portion of the fee paid to a broker for executing a trade on behalf of SERS.

Directed commissions are included as part of the administrative budget as augmenting revenue and are not appropriated.

Directed Commission Revenue & Expense

	FY 2024-25 Budget	FY 2025-26 Budget
Beginning Balance	\$3,818,188	\$2,338,188
Directed Commission Revenue	20,000	35,000
Total Available	3,838,188	2,373,188
Directed Commission Expense	1,500,000	1,500,000
Ending Balance	\$2,338,188	\$873,188

SERS ORGANIZATION

Proposed FY 2025-26 Budget

This budget includes the investment related expenses associated with the defined benefit pension plan's investment portfolio.

These expenses are netted from investment earnings and are not appropriated.

Proposed FY 2025-26 Investment Budget

	Rebudget FY 2021-22	Rebudget FY 2022-23	Rebudget FY 2023-24	Rebudget FY 2024-25	Budget Request
Personnel Services	\$5,176,919	\$5,381,000	\$6,476,000	\$6,939,000	\$7,022,000
Operational					
Travel	156,400	150,228	81,700	141,100	148,100
Training	64,060	65,800	62,500	73,000	73,000
Consultants - Non EDP	3,890,000	4,300,400	3,704,374	3,286,500	3,456,100
Legal Services/Fees	80,000	120,000	120,000	120,000	120,000
Specialized Services	93,600	254,467	395,476	410,176	216,107
Advertising	15,000	10,000	15,000	12,500	11,250
IT Consulting	135,607	98,767	150,000	157,700	231,700
Hardware/Software and Maintenance	189,081	313,000	154,000	152,000	151,000
Real Estate	31,000	177,920	179,000	179,000	179,000
Vehicles	1,000	0	1,000	500	500
Office Equipment	5,500	2,500	3,000	2,700	2,700
Office Supplies	1,800	800	800	400	200
Printing	600	400	400	200	200
Subscriptions & Licensing	1,632,480	637,780	553,310	466,800	514,200
Membership Dues	57,052	59,950	23,840	72,340	74,640
Conference Expenses	3,100	3,100	3,100	3,100	3,100
Other Operational Expenses	79,500	53,888	54,500	24,984	26,203
Total Operational	6,435,780	6,249,000	5,502,000	5,103,000	5,208,000
Total Annual Budget	\$11,612,699	\$11,630,000	\$11,978,000	\$12,042,000	\$12,230,000

SERS ORGANIZATION

Proposed FY 2025-26 Budget

This budget includes the costs to administer SERS' Defined Contribution Plan, which opened for enrollment on January 1, 2019. The Defined Contribution Plan receives revenue from employee contributions, employer contributions, employer funding, and income derived from its investment portfolio. Funds in this plan are used to pay benefits to participants and their beneficiaries, as well as administrative costs.

All fees, costs, and expenses of administering the plan were paid by commonwealth appropriations until FY 2020-21. At that time, a per-participant assessment was implemented and charged to employers to cover these administrative costs. Additionally, Act 2020-94, which was passed in fall 2020, allows the plan to retain all unvested employer contributions after June 30, 2020, and use them to help pay administrative costs.

Proposed FY 2025-26 Defined Contribution Plan Budget

	Rebudget FY 2021-22	Rebudget FY 2022-23	Rebudget FY 2023-24	Rebudget FY 2024-25	Budget Request
Personnel Services	\$2,256,000	\$2,417,000	\$3,032,000	\$3,076,000	\$2,416,000
Operational					
Travel	8,000	4,391	4,000	0	0
Training	12,500	1,200	1,200	0	0
Communication Services	1,015	375	48,864	5,655	6,000
Consultants - Non EDP	96,500	98,384	97,000	102,700	102,529
Legal Services/Fees	100,000	100,000	75,000	100,000	25,000
Specialized Services	1,290,000	1,385,000	1,679,000	2,497,026	1,980,597
IT Consulting	357,513	56,000	37,000	0	0
Hardware/Software and Maintenance	32,162	108,080	102,116	15,672	15,556
Real Estate	78,000	133,920	133,847	20,284	20,400
Office Equipment	3,250	0	0	0	0
Office Supplies	3,250	9,600	4,365	0	0
Postage	30,000	13,350	19,708	20,153	22,757
Printing	25,000	2,800	10,000	13,780	18,200
Membership Dues	4,810	900	900	0	0
Insurance, Surety, & Fidelity Bonds	100,000	100,000	100,000	100,000	100,000
Other Operational	0	0	0	27,730	128,961
Total Operational	2,142,000	2,014,000	2,313,000	2,903,000	2,420,000
Total Annual Budget	\$4,398,000	\$4,431,000	\$5,345,000	\$5,979,000	\$4,836,000

SERS ORGANIZATION

Proposed FY 2025-26 Budget

This budget includes the administrative costs to administer SERS' Deferred Compensation Plan. The Deferred Compensation Plan enables eligible employees to voluntarily defer a portion

of their compensation into a supplementary retirement savings plan. Administrative costs are primarily covered by participants through a fee assessment on their account.

Proposed FY 2025-26 Deferred Compensation Plan Budget

	Rebudget FY 2022-23	Rebudget FY 2023-24	Rebudget FY 2024-25	Budget Request
Personnel Services	\$1,190,000	\$1,543,400	\$1,586,000	\$952,000
Operational				
Travel	2,058	2,000	0	0
Training	600	600	0	0
Consultants - Non EDP	155,342	155,000	160,400	160,400
Legal Services/Fees	15,000	15,000	0	25,000
Specialized Services	25,000	25,000	23,000	26,731
Printing	20,000	10,000	10,000	15,030
Other Operational	45,000	40,000	54,600	27,839
Total Operational	263,000	247,600	248,000	255,000
Total Annual Budget	\$1,453,000	\$1,791,000	\$1,834,000	\$ 1,207,000

SERS ORGANIZATION

Legislation

Legislation Enacted During 2024

There was no significant legislation enacted in 2024 that directly impacted SERS.



Hybrid Plan



27,727
hybrid members

26,730
Class A-5

997
Class A-6

99
employers

HYBRID PLAN

Plan Description

The default retirement plan for most new state employees is the Hybrid Plan A-5 class of service that launched January 1, 2019, as established by Act 2017-5.

In this plan, a portion of the employee's retirement benefit comes from a defined benefit pension plan, which provides guaranteed monthly payments for life based on a calculation, and a portion comes from a defined contribution investment plan, which provides income in retirement based on the balance in the employee's individual investment account. Employers and employees both contribute to this plan.

The SERS Board administers the SERS pension fund, that provides the guaranteed monthly payments in retirement. The board also selects the investment options and contracts through a competitive bid with a third-party administrator of the defined contribution investment plan, currently Empower. For more information on the individual investment plan portion of the benefit, its investment options, or the third-party administrator, see the [Defined Contribution Plan section](#).

There are two classes of service in this plan, the A-5 and A-6 classes of service. The class of service defines the mandatory employee and employer contribution rates and how quickly the pension portion of the retirement benefit grows each year. For more information on the pension plan, including the benefit calculation, see the [Defined Benefit Plan section](#).

The pension portion of the hybrid benefit grows at a slower rate than the traditional pension-only plan - at either 1.25% or 1% of the employee's final average salary for each year they work, compared to between 2% and 4% in the traditional pension-only plan. The growth or "accrual" rate is determined by the employee's class of service in the pension system:

A-5 Class of Service

Participants in the Hybrid Plan A-5 class

of service contribute a total of 8.25% of their pay toward their retirement benefit, which is split between the two plans, with 5% going toward the traditional pension plan and 3.25% going toward the investment plan. Participants may make additional voluntary contributions toward the investment plan.

The amount employers contribute toward the pension portion of the benefit is actuarially calculated each year based on the assets and liabilities of the SERS pension fund. Employers also contribute an amount equal to 2.25% of the employee's pay toward the investment plan portion of the retirement benefit.

The pension portion of the benefit is guaranteed to grow by 1.25% of the employee's final average salary for each year they work.

A-6 Class of Service

Participants in the Hybrid Plan A-6 class of service contribute a total of 7.5% of their pay toward their retirement benefit, which is split between the two plans, with 4% going toward the traditional pension plan and 3.5% going toward the investment plan. Participants may make additional voluntary contributions toward the investment plan.

The amount employers contribute toward the pension portion of the benefit is actuarially calculated each year based on the assets and liabilities of the SERS pension fund. Employers also contribute an amount equal to 2% of the employee's pay toward the investment plan portion of the retirement benefit.

The pension portion of the benefit is guaranteed to grow by 1% of the employee's final average salary for each year they work.

HYBRID PLAN

Plan Description

The employee is eligible for monthly pension payments, or “vested” in the pension system, after working 10 years and they are eligible for distribution of the employer contributions toward their investment account after working three years. Employee contributions are immediately vested and eligible for distribution upon retirement.

While new employees are automatically enrolled in the Hybrid Plan, A-5 class of service, they have the option to elect either the A-6 class of service or to forgo the traditional pension component altogether and participate exclusively in the Defined Contribution Plan.

Hybrid Plan Statistics

as of December 31, 2024

Participants	27,727 total 26,730 A-5 Class of Service 997 A-6 Class of Service
Assets	see the <i>Defined Contribution Plan</i> and <i>Defined Benefit Plan</i> sections for the assets in each plan.
Number of Employers	99



Defined Contribution Plan

As of and for the year ended December 31, 2024

\$7.4 million
distributions/withdrawals
in 2024

\$291.7
million in
assets

 **42,033**
accounts

99
employers

Contributions participant \$50.1 million
employer \$32 million

Total FY 2025-26 Planned Budget

 **\$4.8 million**

\$2.4 million
personnel

\$2.4 million
operations

Excerpts from operations =

specialized services **\$2 million**

other operational **\$128,961**

consultants - non EDP **\$102,529**

insurance, surety, & fidelity bonds **\$100,000**

DEFINED CONTRIBUTION PLAN

Plan Description

While the Hybrid Plan A-5 class of service is the default plan for most new state employees, they have the option to forgo the traditional pension component of those plan options and participate exclusively in the Defined Contribution Plan.

Employees in the Defined Contribution Plan contribute 7.5% of their pay and their employer contributes an amount equal to 3.5% of the employee's pay toward the employee's investment account.

The employee is eligible for distribution of the employer contributions, or is "vested" in this plan, after working three years. Employee contributions are immediately vested and eligible for distribution upon retirement.

In this plan, the amount of money an employee has for retirement is based on the balance in the employee's individual investment account.

The SERS Board selects the investment options offered through this plan, contracts with investment managers, and contracts through a competitive bid with a third-party administrator of the plan, currently Empower. Empower maintains participant records, carries out investment transactions on behalf of the participants, and counsels participants.

Investment options comprise a series of target date funds that include a post-retirement date fund, equity funds, fixed income funds, a money market fund, and a self-directed brokerage option.

On December 31, 2024, participant accounts totaled \$291.7 million.

Plan administrative costs during 2024 were funded using unvested employer contributions from terminated employees and a per-participant assessment of \$98.08 charged to employers.

In 2024, the SERS Board awarded a new contract for third-party administrator services that restructured the flow of money through the plan and the Deferred Compensation Plan beginning Jan. 1, 2025. As a result, a cross-agency team worked to build out the new administrative structure during the latter half of 2024 to benefit participants and employers, as described in the following section.

Recent Changes

In 2024, the plan experienced the following changes:

- **Board Awarded New Contract for Third-Party Administrator**

In May 2024, the board authorized staff to award a new contract to Empower for third-party administration services for the defined contribution and deferred compensation plans. The contract wrapped up a year-long competitive request for proposal (RFP) process that not only ensured services after the prior contract expired, but in coordination with state Treasury staff, changed the scope of services by modernizing the flow of money directly through the third-party administrator, as is an industry standard. The new structure results in enhanced services for both the Defined Contribution Plan and the Deferred Compensation Plan and approximately \$1.4 million in savings each year to benefit participants and employers. The new contract began Jan. 1, 2025.

- **Staff Coordinated Cross-Agency Team to Support Plan Enhancements**

SERS-Office of Financial Management led a cross-agency team of SERS-participating employers, the State Treasury, and the plan's contracted third-party administrator, Empower, in a project to streamline the flow of money through both the defined contribution and deferred compensation plans. That work

DEFINED CONTRIBUTION PLAN

Plan Description

reduced the recordkeeping fee by nearly 35% and provides participants with quicker access to their money in the plans -- within an average of 48 hours. In the past, payments were issued three days each month. In addition, participants will now see their contributions deposited into their accounts from five-to-seven days sooner.

- **Target Retirement Date Funds Updated**

Target-date funds have a set lifespan – they operate until shortly before their target retirement date or year. As a result, the target-date funds offered in a plan naturally age-out and close over time leaving the option for new funds with later dates to be offered. On Dec. 18, 2024, a new 2070 Retirement Date

Fund was added to the investment options. In addition, assets in the 2025 Retirement Date Fund converted to the Post Retirement Date Fund.

- **Two Managers Decrease Maximum Investment Expenses**

On July 1, 2024, two managers decreased the maximum possible expense to be charged for assets in their funds. BlackRock decreased the maximum expense for their target date funds from 0.0775% to 0.0700% of assets, and Mellon decreased the maximum expense for their index funds (minus the U.S. All Company Stock Index Fund) by 0.0025% - 0.0100%, depending on the fund.

Defined Contribution Plan Statistics

as of December 31, 2024

Participants	42,033 total accounts 28,763 participants contributing to the plan Hybrid Plan participants 27,727 Defined Contribution Plan participants 1,036 13,270 inactive accounts
Assets	\$291.7 million
Number of Employers	99
Total Participant Mandatory Contributions	\$47.9 million
Total Voluntary After-Tax Contributions	\$2.2 million
Total Employer Contributions	\$32.0 million
Total Rollovers into the Plan	192 totaling \$5.2 million
Total Rollovers Out of the Plan	334 totaling \$3.0 million
Total Distributions/Withdrawals	1,706 totaling \$7.4 million

DEFINED CONTRIBUTION PLAN

Participation, Assets, Performance, and Fund Expense

Defined Contribution Plan Investment Options

Participation, Assets, Performance, and Fund Expense
as of December 31, 2024

Fund Name	Participants	Fund Balance	Inception Date	Estimated Calendar Year, Net-of-Fees Returns					Max Total Investment Fund Expense ^{1/}
				1 Year	3 Year	5 Year	10 Year		
Post Retirement Date Fund	2,020	\$12,129,311	08-2005	7.08%	0.54%	4.01%	4.62%	0.0700%	
2030 Retirement Date Fund	2,750	20,992,783	08-2005	9.12	1.57	5.68	6.33	0.0700	
2035 Retirement Date Fund	3,610	25,274,151	07-2006	10.89	2.43	6.80	7.18	0.0700	
2040 Retirement Date Fund	3,818	29,779,440	08-2005	12.62	3.27	7.83	7.95	0.0700	
2045 Retirement Date Fund	3,986	31,647,579	07-2006	14.27	4.08	8.79	8.59	0.0700	
2050 Retirement Date Fund	4,331	33,751,918	09-2007	15.57	4.66	9.40	8.95	0.0700	
2055 Retirement Date Fund	4,963	35,410,958	05-2010	16.21	4.91	9.62	9.05	0.0700	
2060 Retirement Date Fund	5,615	33,826,105	11-2014	16.23	4.92	9.61	9.05	0.0700	
2065 Retirement Date Fund	7,489	30,291,355	09-2019	16.27	4.93	9.58	NA	0.0700	
2070 Retirement Date Fund	1,937	1,836,592	09-2024	NA	NA	NA	NA	0.0700	
U.S. Large Company Stock Index Fund	1,970	12,637,129	12-1994	25.00	8.93	14.53	13.11	0.0100	
U.S. Small/Mid Company Stock Index Fund	1,616	4,020,367	08-1998	17.10	2.75	10.09	9.57	0.0150	
U.S. All Company Stock Index Fund	1,583	3,791,318	01-2011	23.49	7.90	13.85	12.48	0.0250	
Global Non-U.S. Stock Index Fund	1,519	7,094,077	03-2009	5.53	0.99	4.33	5.08	0.0350	
U.S. Bond Index Fund	1,391	2,243,942	02-1995	1.25	(2.38)	(0.32)	1.33	0.0125	
U.S. Short-Term Bond Index Fund	724	800,367	12-2017	4.39	1.69	1.58	NA	0.0175	
U.S. Treasury Inflation Protected Security Index Fund ^{2/}	1,301	650,360	07-2007	1.84	(2.26)	1.87	NA	0.0125	
Short-Term Investment Fund ^{3/}	351	4,090,062	10-1988	5.20	3.92	2.48	1.86	0.0000	
Charles Schwab Self-Directed Brokerage ^{4/}	49	1,427,757	NA	NA	NA	NA	NA	NA	

^{1/}Maximum possible expense that can be charged.

^{2/}There was a break in the return history of the TIPS fund between 2010 and 2017, since there were no participants during that time.

^{3/}Short-Term Investment Fund balance includes \$3.3 million in unvested employer contributions forfeited to the Plan.

^{4/}For those in the Self-Directed Brokerage Option (SDB), the asset fee is assessed against the balance in the SDB but the actual deduction is prorated against the core investment options separately.

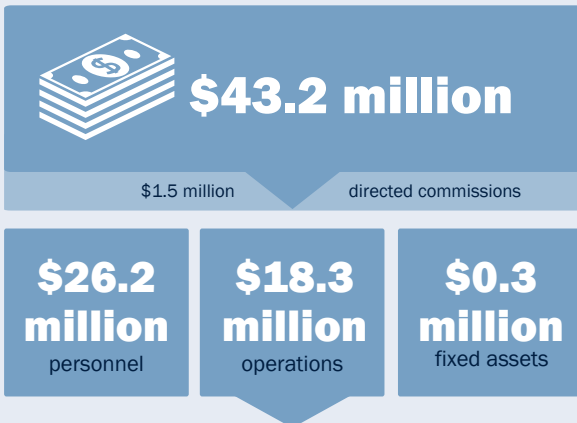
The Plan's monthly recordkeeping fee is \$4.55 per participant and is paid by plan employers in the form of an annual per-participant charge.

**DEFINED
BENEFIT
PLAN**

Traditional Pension

Defined Benefit Plan

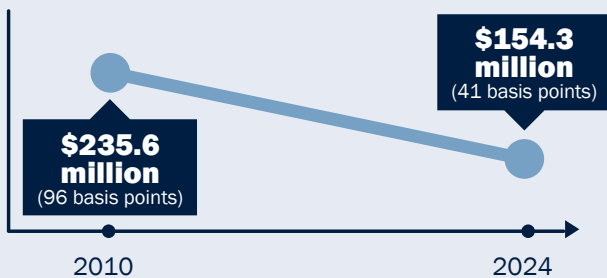
Total FY 2025-26 Planned Budget



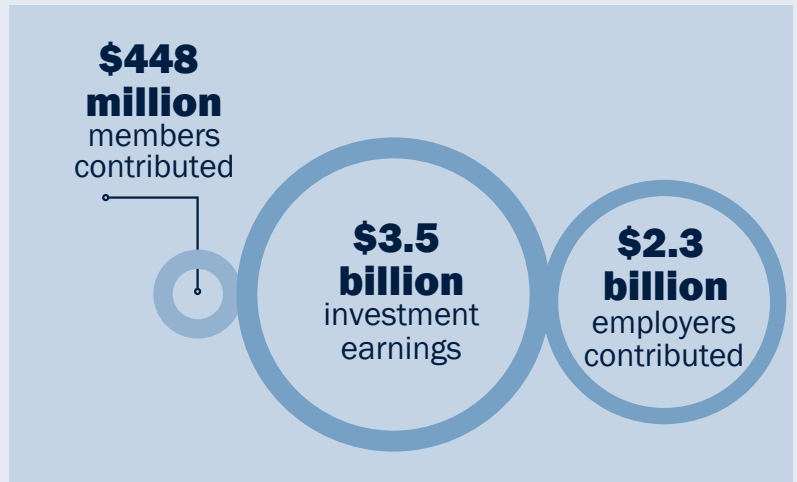
Excerpts from operations =

- IT consulting-system upgrade **\$6.9 million**
- hardware/software maintenance **\$2.3 million**
- real estate **\$2.2 million**
- postage **\$0.4 million**
- legal services **\$0.2 million**
- office equipment **\$0.1 million**

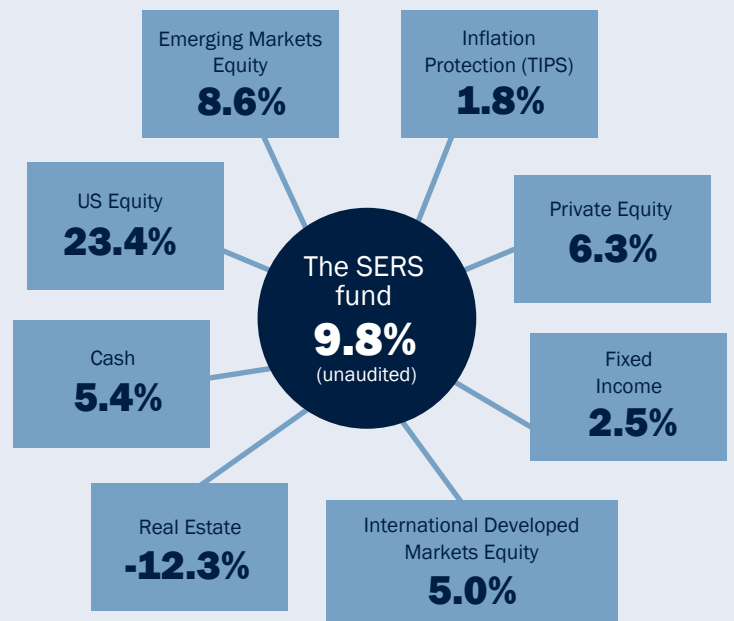
SERS decreased manager fees and expenses



2024 Contributions to the SERS Fund



2024 Investment Performance

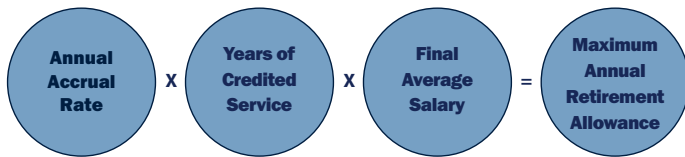


DEFINED BENEFIT PLAN

Plan Description

Employees initially hired before January 1, 2019, or into certain law enforcement and security positions after that date, are enrolled in the Defined Benefit Plan, which is a traditional pension plan.

This plan features guaranteed monthly payments for life based on a calculation that considers the employee's years of service and salary:



The economic engine of the Defined Benefit Plan is the SERS Fund, which is professionally managed by SERS and detailed in this section.

Both the employee and their employer contribute toward the Defined Benefit Plan.

The employee contributes a certain percentage of their pay, determined by their class of service in the pension system. The percentages are set by law in the State Employees' Retirement Code and are generally fixed except for a shared-risk/shared-gain provision. For employees hired after December 31, 2010, if SERS investments fail to achieve the assumed rate of return over a number of years; or conversely, if SERS investments outperform the assumed rate of return over a number of years, the employee's contribution rate could change by no more than 3% over/under the base rate for their class of service in the pension system. While contribution rates vary with the vast majority contributing between 5% and 9.3%, most employees contribute 6.25% of their pay toward their pension.

Employers contribute a percentage of their payroll as actuarially calculated each year based on the assets and liabilities of the SERS Fund.

For FY 2024-25, employers on average are contributing 33.65% of payroll toward their employees' pensions.

SERS invests the contributions to achieve returns to help ensure sufficient funds are available to make required payments to current and future retirees.

Most employees hired after December 31, 2010, are eligible for monthly pension payments, or "vested" in the pension system, after working 10 years.

If employees retire before they reach their full SERS retirement age – either age 50, 55, 60, 65, or 67 depending on their class of service in the system – their pension is reduced for early retirement.

The Defined Benefit Plan also features a disability benefit for employees who become unable to perform their job because of injury or illness and qualify, based on years of service and a review by an independent medical examiner.

Recent Changes

In 2024, the plan experienced the following changes:

- **Certified Lower Employer Contribution Rate**
On May 7, 2024, the SERS Board certified a composite employer contribution rate of 33.65% of payroll for pension benefits for commonwealth fiscal year 2024-25. The rate was a decrease from the 35.32% of payroll employers were paying in FY 2023-24.
- **Enhanced Online Member Services**
On October 30, 2024, SERS released three updated services in members' online accounts:
 - Current commonwealth employees can now calculate pension estimates considering a partial withdrawal of the contributions they made to their pension and the interest they earned on those contributions

DEFINED BENEFIT PLAN

Plan Description

- during their commonwealth career. Prior to this enhancement, SERS members could calculate estimates considering a full withdrawal of their contributions and interest or no withdrawal of their contributions and interest, but no partial withdrawals.
- Retired commonwealth employees and others receiving payments from the pension system (beneficiaries and survivors of deceased SERS members) can now produce a pension verification reflecting their payment data pulled from their member record. This new service allows members to produce pension verification documentation when they need it day or night, seven days a week. Members need pension verification when applying for loans and mortgages, for housing rental agreements, government assistance, insurance, and financial aid applications, and other time-sensitive reasons.
- Retired commonwealth employees and others receiving payments from the pension system (beneficiaries and survivors of deceased SERS members) can now compare how changes to various fields on the recently redesigned IRS *Form W-4P* will impact the amount of money withheld from their monthly pension payments for federal income tax purposes. While SERS offered a federal income tax calculator in the past, the tool became obsolete when the IRS redesigned its *Form W-4P* and no longer allowed taxpayers to withhold a flat amount on the form beginning in tax year 2023.

Defined Benefit Plan Statistics

as of December 31, 2024

Members	244,746 total
	100,131 active contributing members
	Hybrid Plan 27,727
	Defined Benefit Plan only 72,404
	6,995 inactive members not receiving benefits
	137,620 retired members and beneficiaries
Assets	\$38.7 billion
Number of Employers	99
Total Employee Contributions	\$448.1 million
Total Employer Contributions	\$2.3 billion
Total Benefit Payments	\$4.0 billion



Members

DEFINED BENEFIT PLAN

Members

Year Ending December 31	Total Members			
	Total Members	Active Members	Inactive Members	Annuitants & Beneficiaries
2024	244,746	100,131	6,995	137,620
2023	242,164	98,115	7,077	136,972
2022	239,230	96,395	7,188	135,647
2021	239,454	97,857	7,237	134,360
2020	241,152	100,962	6,856	133,334
2019	242,333	102,850	6,752	132,731
2018	241,044	103,007	7,030	131,007
2017	239,266	102,978	6,815	129,473
2016	239,104	104,632	7,134	127,338
2015	236,632	105,025	6,918	124,689

Active Members: Age & Service

Average Age	46.1
Average Years of Service	11.2

Total Annuitants & Beneficiaries: By Category

	2021	2022	2023	2024
Normal	69,231	70,485	71,741	72,602
Early	43,762	43,497	43,251	42,824
Disability	8,443	8,338	8,244	8,103
Beneficiary/Survivor	12,924	13,327	13,736	14,091

Annuitants & Beneficiaries: Average Age

	2021	2022	2023	2024
Normal	72.7	72.8	72.9	73.1
Early	66.5	66.9	67.4	67.8
Disability	65.3	65.6	65.9	66.3
Beneficiary/Survivor	74.7	74.7	74.9	75.1

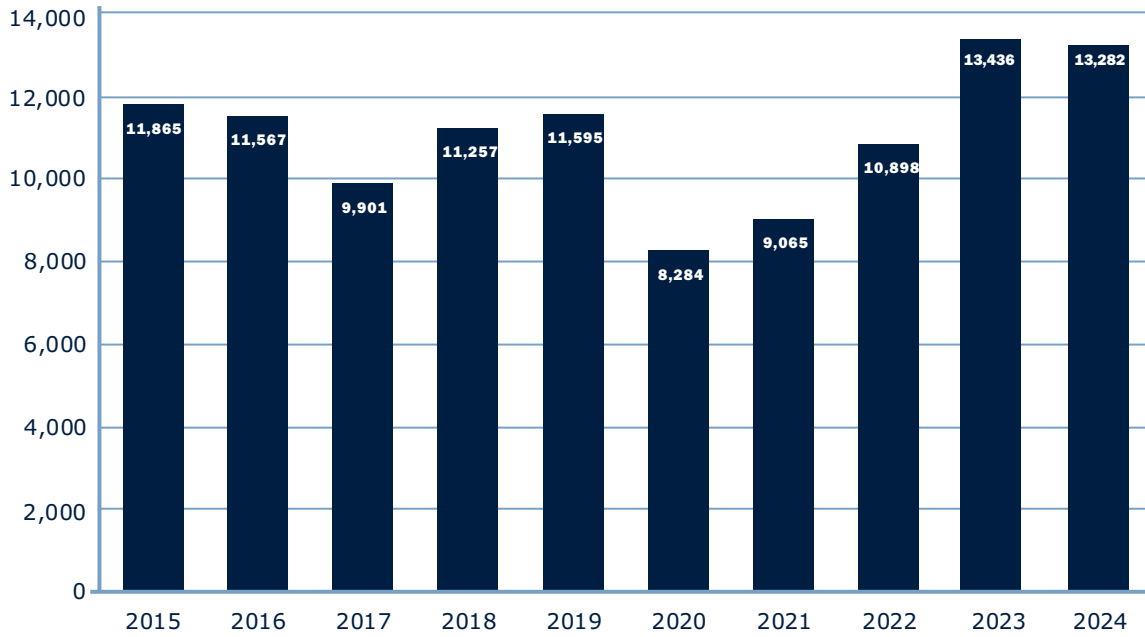
Annuitants & Beneficiaries: Average Annual Pension

	2021	2022	2023	2024
Normal	\$30,712	\$31,331	\$31,944	\$32,669
Early	19,090	19,334	19,597	19,876
Disability	16,489	16,780	17,132	17,462
Beneficiary/Survivor	14,905	15,323	15,894	16,331

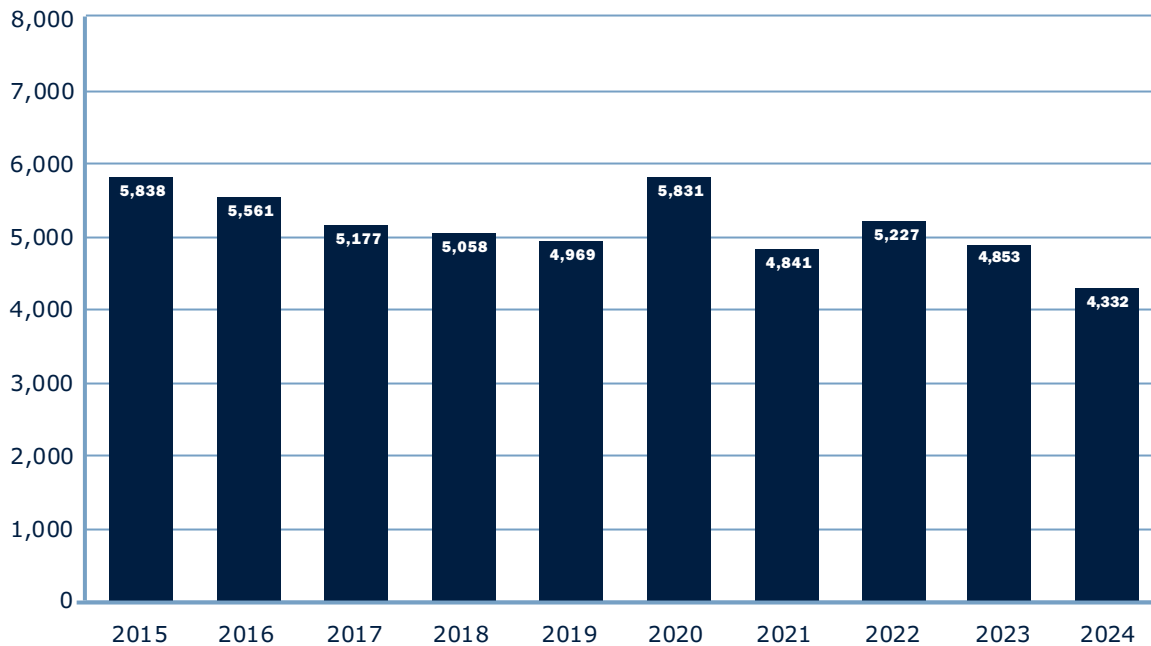
DEFINED BENEFIT PLAN

Members

New Member Enrollments



Normal, Early, & Disability Retirements





SERS Fund

DEFINED BENEFIT PLAN

SERS Fund | Funding Process

Defined Benefit Plan

The Pennsylvania State Employees' Retirement System currently administers four retirement plans that contribute to the financial security of the commonwealth's public workforce following retirement. Most state employees are required to participate in Pennsylvania's Defined Benefit Plan, although nearly all employees hired after January 1, 2019 may elect to choose a defined contribution only option.

Employees who are eligible to participate in the Defined Benefit Plan may choose to supplement their retirement savings by also voluntarily participating in the Deferred Compensation Plan. The economic engine of the Defined Benefit Plan is the SERS Fund, which is reviewed in depth in this section. Details about the [Deferred Compensation Plan](#) are provided in the last section of this book.

In the Defined Benefit Plan, both the employer and the member pay a certain percentage of the member's salary to the SERS Fund for as long as the member works for the commonwealth. For FY 2024-25, employers are contributing 33.65% of payroll and most members are paying 6.25%. SERS invests this money to achieve returns to ensure sufficient funds are available to make payments to current and future retirees.

When members meet certain milestones, such as working a specific number of years or reaching a certain age, they become eligible to receive monthly retirement payments for the rest of their lives. The payment amount is based on a formula that includes the member's length of service, age, compensation over a period of time, and an accrual rate, or multiplier that is determined by the General Assembly.

2024 Overview

In 2024, SERS paid close to \$4.0 billion in benefit payments, approximately \$3.6 billion of which stayed in Pennsylvania. The average

annual pension paid to a retired member who worked to full retirement age was \$32,669.

Determining Adequate Funding for a Defined Benefit Plan

Defined benefit plans are long-term propositions. When underlying principles remain intact, defined benefit plans offer efficient, stable, and sustainable models for growing assets and delivering benefits through complete economic cycles. A common element of these plans is that employee and employer contributions invested throughout the member's working career provide sufficient funding to pay for that member's expected lifetime retirement benefit.

Because a defined benefit plan guarantees a monthly payment to every retiree for life, it is impossible to develop precise, before-the-fact costs and cash flows for the plan. The number of people paying into the plan, the amount they earn, how long they work, the number of people retiring, the age at which each person retires, and how long each retiree lives are among the myriad factors that vary from day-to-day, month-to-month, and year-to-year.

Funding Process

Actuarial science is used to develop predictions. It applies available data to a number of interrelated mathematical and statistical methods and uses investment and financial practices to forecast uncertain future events.

SERS' actuary conducts an in-depth investigation and analysis - known as an experience study - every five years. The actuary uses actual and expected experience and data to set economic and demographic assumptions.

Economic assumptions include rates of investment return, salary growth, and inflation.

Demographic assumptions include workforce, disability, and mortality trends. SERS' actuary

DEFINED BENEFIT PLAN

SERS Fund | Funding Process

delivered its most recent experience study in 2020. It is available at [SERS.pa.gov](https://www.sers.pa.gov). In addition to the five-year experience study, the investment rate of return assumption is reviewed every year.

The selection of economic and demographic assumptions used is generally guided by the Actuarial Standards Board. In SERS' case, some very important funding method requirements – such as the length of time over which investment gains and losses are recognized – are set by Pennsylvania law. SERS' actuary recommends and SERS Board approves all assumptions.

Each year, SERS' actuarial firm uses the most recent active member and retiree demographic data to determine total expected future obligations. The actuary then compares those obligations to the expected value of the fund's assets, based on current audited financial statements and future economic assumptions.

This calculation is factored in with the statutorily set member contribution rate and the assumed investment rate of return as the basis for calculating how much employers need to contribute in order to fully fund their employees' retirement benefits.

Current Key Actuarial Assumptions	
long-term investment return	6.875%
rate of inflation	2.5%
average salary growth	4.6%

Defined benefit plans are designed to remain stable by receiving three regular funding streams – member contributions, investment earnings, and employer contributions.

What is an unfunded liability?

An unfunded liability – also commonly called an unfunded actuarial liability or UAL – is the degree to which the current and projected liabilities exceed the current and projected assets of a defined benefit plan.

In other words, it is the difference between what the commonwealth's defined benefit plan is legally obligated to pay and what assets have been set aside to make those payments.

Member Contributions

Active members pay a certain percentage of their pay toward their retirement benefit. While different classes of membership pay different rates, most members currently pay 6.25% of their pay. The percentage is set by statute and the rate typically does not change from year to year. Members' contributions are withheld from their paychecks and sent directly from their employer to SERS. In 2024, member contributions to SERS totaled an estimated \$448 million.

Courts have ruled that public retirement benefits may not be changed retroactively or prospectively in any way that may be a "net detriment" to current employees. "Net detriment" has been interpreted as a reduction in benefits already earned, and/or as an increase in member contributions required to maintain such benefits.

There are some instances, however, in which member contributions can increase. For example, most members hired since 2011 are subject to shared-risk and shared-gain adjustments to their contributions, though none have been triggered to date.

DEFINED BENEFIT PLAN

SERS Fund | Funding Process

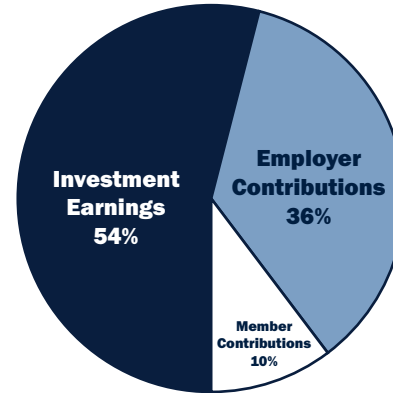
According to Section 5501.1 of the Retirement Code, the testing is broken into two steps. The initial step determines if SERS' investments performed more than 1% above or below the assumed rate of return during the measurement period. If so, the second step is to determine the actual impact of the investment gains or losses on the employer contribution rate, for each of the next three fiscal years. The increase or decrease in the member contribution rate cannot be greater than the resulting increase or decrease in the employer contribution rate. To date, the shared risk provision has not been triggered.

The most recent test was conducted in 2023. At that time, the testing period for most members hired in 2011 through 2018 (A-3 and A-4 classes of service created by Act 2010-120), was a 10-year look back. Over the ten-year period, SERS' annualized return was only 0.4974% below the annualized assumed rate of return, resulting in no shared risk/shared gain change for the A-3 and A-4 classes of service.

The testing period for most members hired since 2019 (A-5 and A-6 classes of service created by Act 2017-5) was a three-year look back. Over the three-year period, SERS' annualized return was 2.4433% below the annualized assumed rate of return resulting in the potential for a shared-risk increase in contributions. The net effect of the investment experience during the testing period; however, did not result in an increase in employer contributions for the years beginning July 1, 2023, or July 1, 2024. Therefore, there were no changes to the member contribution rates in those respective years. A similar calculation will be completed to determine if there will be any increase effective for the year beginning July 1, 2025. Currently, it is expected that the actual impact of the gains and losses during the 3-year period will increase the employer cost for FY 2025-26, likely triggering the shared-risk provision in FY 2025-26.

SERS Funding Sources

(20-Year Cumulative History)



Investment Earnings

SERS' overall investment objective is to assure adequate fund reserves at the least cost to commonwealth citizens and to protect against the erosion of principal by inflation. SERS seeks to provide investment earnings that meet, or preferably exceed, the assumed rate of return over complete economic cycles.

SERS strives to meet this objective by applying acceptable risk parameters and allocations to investments that are diversified by type, industry, quality, and geography.

Investment earnings can vary widely from year to year; the SERS Fund, for example, produced an approximate 25% return in 2003 and experienced more than a 28% loss in 2008's worldwide downturn.

For funding valuation purposes in order to minimize volatility, Pennsylvania law requires that the differences between actual performance and the assumed rate of return be recognized over a five-year period at a rate of 20% per year—a concept often referred to as "smoothing." SERS examines and sets its assumed rate of return each year based on global market dynamics, investment performance, and other considerations. For example, in 2009, SERS reduced its assumed rate of return from 8.5% to 8%, largely as a result of 2008's global economic collapse.

DEFINED BENEFIT PLAN

SERS Fund | Funding Process

As a result of SERS' 100+ years of operation and the trend of people living longer, the system consistently has more retired members than active members. In 2025, SERS is projected to pay out approximately \$112 million more each month than it takes in through member and employer contributions.

As a normal outcome of a maturing pension system, the liquidity needs of its fund increase requiring ongoing rebalancing of assets. In recognition of a changing market environment and a desire to provide an opportunity to reduce risk while maintaining the potential for achieving a reasonable long-term rate of investment return, the SERS Board, in June 2022, reduced the assumed rate of return from 7.0% to 6.875% effective with the December 31, 2022 actuarial valuation. In June 2023 and June 2024, the board left the rate unchanged. Lowering the assumed rate of return has implications for the employer contribution rate, as discussed below. For 13 of the last 20 years, SERS has exceeded its assumed rate of return.

Factoring in the unprecedented market volatility and the precipitous market decline of 2008, the fund has achieved a 20-year rate of return of 6.8%, a 25-year rate of return of 6.2%, and an inception to date return of 9.3%. SERS reports its returns net-of-fees. This demonstrates that the long-horizon approach to investing members' money continues to provide the fund with stable returns over time.

The "shared risk" provision, as previously discussed, is designed to moderate the need for future employer rate increases that may be prompted by investment underperformance.

Employer Contributions

Employer contributions make up the final portion of SERS' overall funding. The employer contribution rate is calculated by an independent actuary, taking into account member contributions, demographic activity, investment earnings, and future liabilities.

Because it is highly unlikely that every assumption could be correct, the Pennsylvania State Employees' Retirement Code requires SERS to adjust the employer contribution rate each year based on actual experience and investment performance.

Based on the actuary's recommendation, the SERS Board annually certifies an employer contribution rate. The rate has fluctuated dramatically over the years: in 1981 the rate was approximately 18%, but from 2001 to 2003 it was 0%. The rate for the current fiscal year is 33.65%.

The total dollars contributed by employers has grown significantly in recent years. In 1994, employer contributions totaled \$343 million. In 2024, that figure was approximately \$2.3 billion.

FY 2017-18 was the first year since contribution rates were mandated through Act 2010-120 that rate collars were no longer needed and the commonwealth paid the full actuarially required contribution. Since then (and in keeping with pension and actuarial best practices) the commonwealth has paid the full actuarially required contributions on a regular basis.

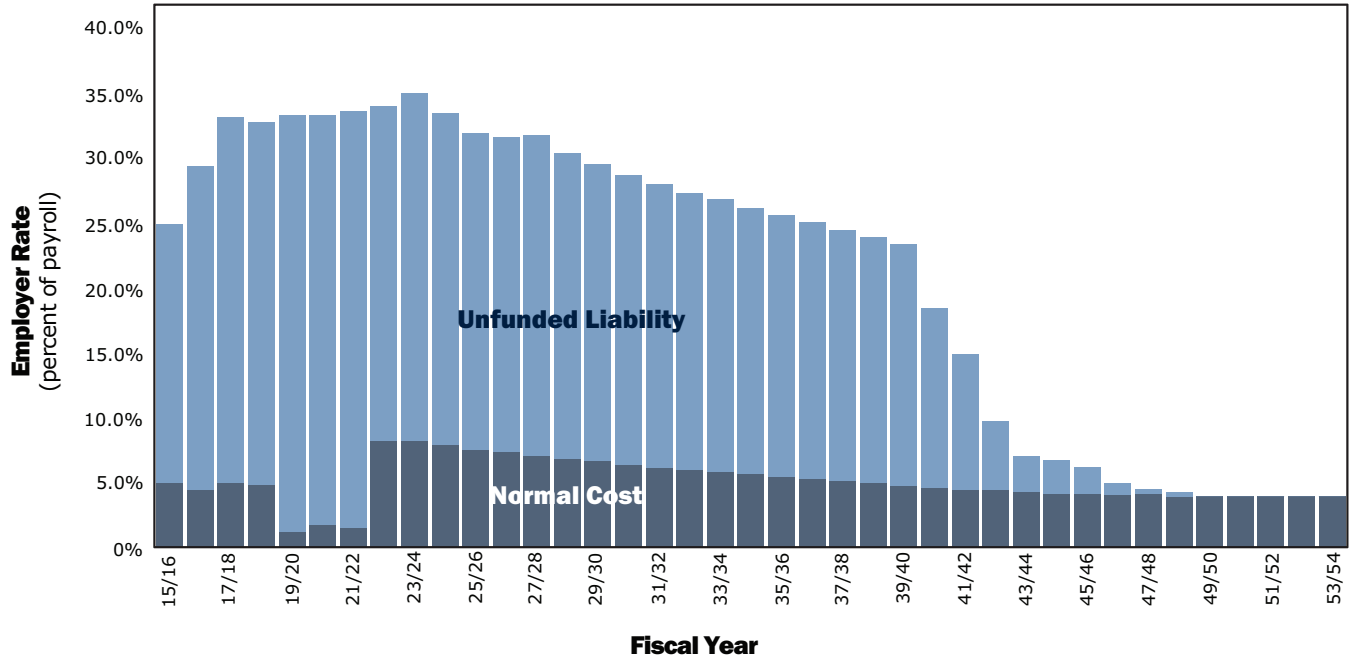
According to the Governor's Budget Office, SERS' employers under the Governor's jurisdiction paid less than half of the employers' total—about 40%—from the general fund. About 52% was paid from special and federal funds, and about 8% was provided from non-state agency employers.

The employer contribution rate has two major parts: the cost of the benefit earned by all active SERS members in the current year (referred to as the employer normal cost), and a contribution toward the unfunded liability. In FY 2024-25 the largest component of the 33.65% employer contribution rate is the 25.66% contribution necessary to pay this unfunded liability.

DEFINED BENEFIT PLAN

SERS Fund | Funding Process

SERS Employer Rate as a Percent of Payroll



The employer normal cost is expressed as a percentage of payroll and is the amount employers would contribute to fully fund benefits if all actuarial assumptions were precisely met, including the fund earning its assumed rate of return. The normal cost of benefits from the 2023 Actuarial Valuation was 7.94%.

It should be noted that Act 2017-5 included a savings “plow-back” provision requiring that the

annual savings achieved through SERS’ benefit changes flow back into the system rather than to other non-pension obligations. The 32.16% projected employer contribution rate for FY 2025-26 does not include any projected plow-back savings. However, plow-back contributions, currently calculated to range from 0.10% to 0.93% of payroll, are expected in 10 of the next 20 fiscal years and will work to accelerate the system's return to fully funded status.

DEFINED BENEFIT PLAN

SERS Fund | Funding Process

Projected Payout, Funding Status & Employer Contributions

Valuation Year Ended Dec 31	CY Payout		CY Funding Status		FY Employer Contribution		
	Benefits & Expenses (\$ billions)	Funded Ratio	Unfunded Liability (\$ billions)	Fiscal Year	Expected FY Payroll (\$ millions)	Employer Contribution Rate	Expected FY Contribution (\$ millions)
2024	\$4.0	70.9%	\$16.47	2025/26	\$7,492.7	32.16%	\$2,235.8
2025	4.0	71.7	16.25	2026/27	7,657.0	31.71	2,253.8
2026	4.1	71.3	16.66	2027/28	7,821.6	31.94	2,324.1
2027	4.2	73.7	15.47	2028/29	7,987.6	30.62	2,271.2
2028	4.2	75.4	14.58	2029/30	8,167.2	29.63	2,245.4
2029	4.3	76.9	13.83	2030/31	8,354.2	28.84	2,234.3
2030	4.4	78.5	13.02	2031/32	8,525.3	28.10	2,231.0
2031	4.5	80.1	12.15	2032/33	8,673.1	27.55	2,224.8
2032	4.5	81.8	11.23	2033/34	8,853.0	26.98	2,224.2
2033	4.6	83.5	10.25	2034/35	9,067.1	26.35	2,224.8
2034	4.7	85.3	9.19	2035/36	9,269.0	25.77	2,223.5
2035	4.7	87.2	8.06	2036/37	9,476.4	25.19	2,222.1
2036	4.8	89.2	6.85	2037/38	9,692.1	24.61	2,237.5
2037	4.8	91.3	5.52	2038/39	9,917.6	24.03	2,235.0
2038	4.8	93.6	4.10	2039/40	10,150.6	23.45	2,232.4
2039	4.9	96.0	2.60	2040/41	10,375.0	18.54	1,796.4
2040	4.9	97.8	1.42	2041/42	10,592.6	14.90	1,496.0
2041	5.0	99.4	0.42	2042/43	10,821.1	9.77	1,003.4
2042	5.1	100.3	(0.20)	2043/44	11,060.8	7.09	742.1
2043	5.1	100.8	(0.54)	2044/45	11,312.5	6.65	712.5
2044	5.1	101.3	(0.86)	2045/46	11,576.4	6.17	676.9
2045	5.1	101.7	(1.16)	2046/47	11,848.6	5.02	568.2
2046	5.1	102.0	(1.35)	2047/48	12,125.2	4.45	518.1
2047	5.1	102.2	(1.50)	2048/49	12,405.7	4.37	520.5
2048	5.2	102.4	(1.65)	2049/50	12,693.5	4.02	500.9
2049	5.2	102.6	(1.77)	2050/51	12,987.4	4.01	514.2
2050	5.2	102.8	(1.91)	2051/52	13,287.7	4.01	528.7
2051	5.2	103.0	(2.04)	2052/53	13,598.3	4.02	541.6
2052	5.3	103.1	(2.18)	2053/54	13,920.2	4.03	555.4
2053	5.3	103.3	(2.33)	2054/55	14,083.8	4.03	562.6

Data calculated assuming: a traditional entry-age funding method, level-dollar amortization, five-year smoothing of assets, 4.6% salary growth, 2.5% inflation, actual investment return in CY 2024 with 6.875% assumed return thereafter, 6.25% pre Act 2017-5 employee contribution, 8.25% Act 2017-5 employee contribution for hybrid class A-5, and 7.5% Act 2017-5 employee contribution for hybrid class A-6.

DEFINED BENEFIT PLAN

SERS Fund | Actuarial Status

Restoring SERS Defined Benefit Plan Funding

The SERS funded ratio is expected to improve as those who entered SERS membership before January 2011 retire and post-January 2011 members continue to grow in number. In 2024, SERS retired 4,332 members and added 13,282 new members. Currently, approximately 63.5% of SERS' active members belong to the post Act 2010-120 classes of service.

Act 2010-120 projected savings of approximately \$1.5 billion over 30 years by reducing the retirement benefit accrual rate, increasing the normal retirement age, eliminating the lump sum withdrawal option, extending the vesting period from five years to 10 years and including other provisions for those who entered SERS membership on or after January 1, 2011. One aspect of Act 2010-120 is that retirement provisions for legislators elected after December 1, 2010, were reduced and made consistent with those of most rank-and-file employees. Act 2010-120 also recognized the need to steadily increase employer contributions to fully fund their obligations. To ensure predictability and to moderate overall budget impacts, the general assembly set rate collars for increased employer contribution rates.

Now that SERS employers are paying the full "uncollared" contribution amount, plus making extra "plowback" contributions to return Act 2017-5 savings, the impact on paying down the liability is dramatic. This funding is crucial for the overall long-term health of the pension system.

On November 27, 2019, Governor Wolf signed Act 2019-105, which allows eligible employers to enter into an agreement with the SERS Board to make a one-time, lump-sum payment of between 75% to 100% of their unfunded liability.

Penn State University was the first eligible employer to take advantage of the legislation.

Following a successful bond issuance, Penn State submitted a payment of \$1.06 billion that was received by SERS on April 30, 2020. In return, the university will receive an annual credit against their contributions for 30 years, beginning with FY 2020-21. The credit totals nearly \$93 million for twenty years and then decreases over the final 10 years beginning at nearly \$73 million and ending at approximately \$2 million in FY 2049-50.

In April 2021, the Pennsylvania State System of Higher Education (PASSHE) submitted a payment of \$825 million toward its unfunded liability. In return, the education system will receive an annual credit against its contributions for 30 years, beginning with FY 2021-22. The credit totals nearly \$80 million for 10 years, more than \$69 million for six years, more than \$52 million for four years and then decreases over the remaining 10 years beginning at more than \$22 million in 2041 and ending at approximately \$3 million in FY 2050-51.

Both Penn State and PASSHE are expected to experience significant cost savings as a result of their lump-sum payments. SERS benefited from these lump-sum payments by experiencing an immediate reduction in its unfunded liability and an increase in its funded ratio. The long-term impacts on the system, however, are dependent on how future actual investment returns compare to the assumed rate of returns in effect at the time of each agreement. The lump-sum payments exclusively benefit Penn State and PASSHE and do not directly impact the contributions paid by other employers in the pension plan.

Act 2019-105 has a built-in time limit which expires in 2025. By law, agreements had to be entered into by December 31, 2024, and lump sum payments must be made by May 1, 2025.

The past year, 2024, saw continued improvements in many areas of the economy, including a rebounding stock market, some welcome interest rate cuts by the Fed, and a moderating but still persistent rate of inflation.

DEFINED BENEFIT PLAN

SERS Fund | Actuarial Status

During 2024, SERS saw investment gains of approximately 9.8% for our Defined Benefit Plan, which was higher than the fund’s annual assumed rate of return of 6.875%, that was in place during the year. In 2025 we look to continue to make progress toward our long-term goal of eliminating our unfunded liability, thanks to an investment policy that allows us to adjust for unusual economic circumstances that may occur, ongoing efforts to implement efficiencies across SERS, and continued payment of the full annual actuarially required funding amount by the General Assembly.

Current Funded Position of SERS Defined Benefit Plan

The funded position of a defined benefit plan is measured by its funded ratio, which is the actuarially calculated value of assets divided by the actuarially calculated sum of retirement benefits earned by all existing SERS members – 244,746 active, vested, and retired, as of December 31, 2024.

Many pension experts consider a funding ratio of 80% or better to be “healthy” for a pension system. Per a 2024 Wilshire report, Pennsylvania is among 57% of other state retirement systems that are currently below the 80% threshold. At the close of 2024, SERS’ estimated funded ratio was 70.9% (actuarial value) or 69.8% (market value). SERS projects reaching the 80% funded threshold in 2031.

SERS funded ratio has varied significantly over time. In 1984, it dipped below 60%. By 2001, however, it had climbed back to well over 100%. Recent funded ratios include:

SERS Funded Status

Year	Funded Ratio		Unfunded Actuarial Liability (\$ billions)
	Actuarial Value	Market Value	
2024	70.9%	69.8%	\$16.5
2023	69.6%	65.3%	\$17.0

The 2024 estimated unfunded liability is \$16.5 billion, which is expected to decline as the required contribution payments are maintained.

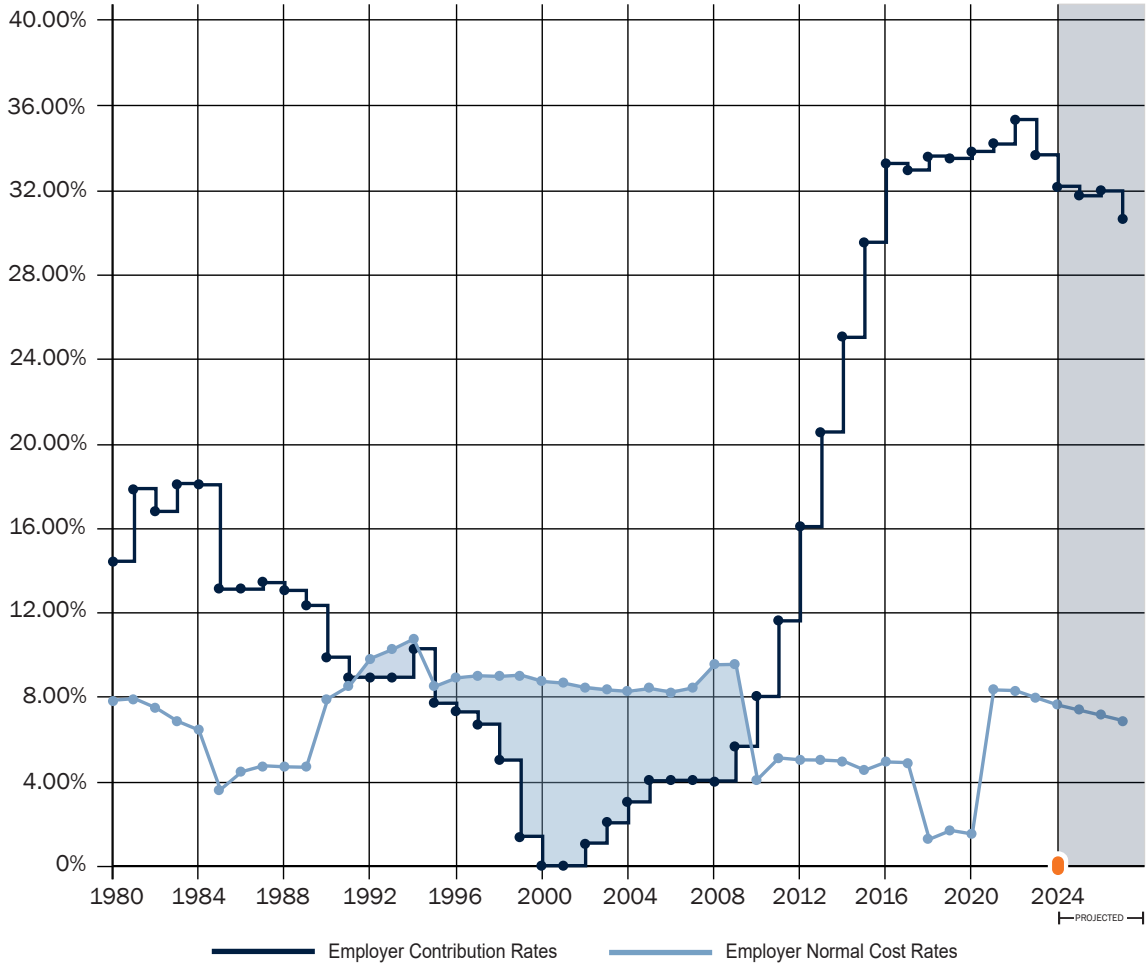
Factors influencing the unfunded liability have been building over time, including but not limited to:

- Sustained periods of employer contributions below normal costs: 1992 through 2009
- Losses that neutralized past investment gains used to justify the low employer contributions: -10.9% in 2002 and -28.7% in 2008
- Benefit increases – including cost of living adjustments and increased accrual rates – without providing sufficiently off-setting funding streams: Act 2001-9 and Act 2002-38
- Legislatively mandated actuarial changes that extended the time over which liabilities be paid or artificially suppressed employer contribution rates: Act 2003-40 and Act 2010-120
- Gradual reductions in assumed rates of return over the past several years, from 8.5% in 2008 to 6.875% effective in the 2022 actuarial valuation to reflect changing market conditions
- Cumulative negative impact of the above on the overall size of the fund and its ability to realize the full actuarial effect of investment returns in positive-earning years

DEFINED BENEFIT PLAN

SERS Fund | Actuarial Status

History of SERS Employer Contribution Rates as a Percent of Payroll



DEFINED BENEFIT PLAN

SERS Fund | Actuarial Status

Additions and Deductions to Fiduciary Net Position^{1/}

(\$ millions)

Calendar Year	Member Contributions	Investment Earnings	Employer Contributions	Benefits & Expenses	Fair (Market) Value
2015	\$372	\$88	\$1,360	(\$3,103)	\$26,055
2016	375	1,587	1,622	(3,251)	26,388
2017	383	4,066	1,898	(3,330)	29,405
2018 ^{2/}	394	(1,442)	2,049	(3,421)	26,937
2019	405	5,175	2,115	(3,536)	31,096
2020	410	3,920	3,186	(3,584)	35,028
2021	405	5,682	2,871	(3,755)	40,231
2022	419	(5,214)	2,075	(3,904)	33,607
2023	427	4,128	2,198	(3,935)	36,425
2024 ^{3/}	448	3,529 ^{4/}	2,309	(4,028)	38,683
10-Year Total	\$4,038	\$21,519	\$21,683	(\$35,847)	

^{1/}10-year net additions and deductions were \$11,393.

^{2/}The Governmental Accounting Standards Board (GASB) issued GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (OPEB) (GASB 75). This required SERS to record its proportionate share of net OPEB liability, (\$48), resulting in restated beginning balance of \$29,357.

^{3/}2024 figures are estimated and unaudited.

^{4/}Figure does not include 4th quarter earnings for all Private Equity, Legacy Private Credit, and Real Estate. Data not yet available.

Investment Overview

DEFINED BENEFIT PLAN

Investment Overview

Investment Policy

The SERS Board originally adopted a formal *Statement of Investment Policy* in 1979. It has been revised periodically to reflect and incorporate legislative changes governing investments and amendments to policies and procedures guiding the investment of the defined benefit portfolio. On December 10, 2024, the SERS Board adopted the amended ***SERS' Defined Benefit Plan Investment Policy Statement (IPS)***.

The purpose of the IPS is to formalize the board's investment objectives and policies, and to define the duties and responsibilities of the various individuals and entities involved in the investment process.

The major elements of the IPS are:

- The assets of the SERS Fund will be managed with the primary objectives of the payment of benefit obligations to participants in the plans as well as to maximize return with acceptable risk considerations and sufficient liquidity so that employer contributions can be minimized.
- The SERS Fund's overall investment objective is to provide a total rate of return, over full economic cycles, which achieves SERS' long-term actuarially assumed rate of return consistent with the board's tolerance for risk.
- The board's investment authority is governed by the prudent expert standard as set forth in Title 71, Pennsylvania Consolidated Statutes, Section 5931(a).
- The members of the board, employees of SERS, and agents thereof shall stand in a fiduciary relationship to the members of the system regarding the investments and disbursements of any of the moneys of the fund and shall not profit either directly or indirectly with respect thereto.
- The board employs an investment staff which is responsible to the board to review and analyze the current investment climate, and to recommend adjustments with respect to the policy that are appropriate to take optimum advantage of new conditions and strategies as they arise in the market place. The staff also reviews and analyzes the philosophies, policies, and strategies employed by the investment managers, evaluating the appropriateness of their decision-making processes and their investment styles in relation to present and projected investment horizons.
- The board continually seeks to employ investment managers that possess superior capabilities in the management of assets of public retirement systems. Each manager has full discretion to carry out its investment mandate subject to the investment strategy statement contained in the investment management agreement and will be expected to conduct business on behalf of SERS in accordance with the mandate for which they were retained.
- SERS will employ investment consultants, who act as fiduciaries to the fund, and who will provide investment consulting services in their respective areas of expertise.
- Where investment characteristics are equivalent, the policy will favor investments that will have a positive impact on the economy of the Commonwealth of Pennsylvania.
- A 10-year asset allocation strategy is designed to achieve or exceed the expected return, maintain exposure to less liquid non-traditional strategies, and continue the plan's commitment to liquidity through the allocation to capital preservation assets.

DEFINED BENEFIT PLAN

Investment Overview

Investment Objectives

As indicated in SERS' IPS, the objectives of the SERS Fund are to provide benefit payments to participants and beneficiaries at the lowest cost to the commonwealth and to fund the program through a carefully planned and executed investment program.

Consistent with achieving these objectives, the board has established the following goals relative to investment performance:

- Achieve SERS' actuarial assumed rate of return over the long-term, net of fees.
- Achieve SERS' total fund policy benchmark return over 10-year periods, net of fees. The fund policy benchmark index will be based on the asset allocation set forth in the IPS approved by the board.

SERS' investment process requires a thorough analysis of the plan liabilities, liquidity requirements, and market opportunities. The board, in collaboration with the Chief Investment Officer, actuarial consultant, and investment consultants, establishes the actuarial assumed rate of return. Achieving, or exceeding this actuarial assumed rate of return is the primary investment performance objective of SERS' Investment Office to help meet the desired funded status.

Asset Allocation Trend

Prudent Expert Investment Standards

The board's investment authority is governed by the prudent expert standard as set forth in Title 71, Pennsylvania Consolidated Statutes, Section 5931(a). Enactment of the prudent expert standard in Act 1994-29 and subsequent asset/liability studies completed by SERS' general investment consultant and the SERS

investment staff are the foundation of SERS' investment strategy. With prudent expert investment authority, SERS is able to pursue a broader array of investment opportunities that enhance the ability to achieve reasonable rates of return while maintaining risk at acceptable levels.

Total Fund Asset Allocation

The board accepts asset allocation as the primary determinant of the system's long-term contributor to investment return and risk. Asset allocation is substantially more influential than individual mandates deployed within asset classes, managers selected to implement the mandates, or tactical asset allocation decisions. Among the factors that the board considers in developing the policy target asset allocation are the following:

- Achieve SERS' actuarial rate of return over the long-term, net of fees, within risk and investment management fee levels deemed prudent by the board.
- Maintain a level of liquid assets with a low correlation to the U.S. equity markets to pay retirement benefits and covenants during prolonged periods of market decline and potential state budgetary constraints.

In addition, SERS' asset allocation structure was developed by considering the Fund's liabilities, benefits policy, funding policy, and each asset class's expected return, volatility, and correlation with other asset classes. Investment Office Staff, in consultation with the board and general investment consultant, combined asset classes in the most optimal structure to provide the highest expected return for a given level of risk, subject to implementation, liquidity, diversification, and cost constraints.

DEFINED BENEFIT PLAN

Investment Overview

Investment Program Summary

The assets of SERS are administered by the board. The board adopted an investment policy that incorporates the provisions of the Retirement Code, which governs the investment

of SERS' assets. SERS' investment plan is reviewed and updated regularly for strategic asset allocation purposes, as well as for diversification needs within each asset class.

Asset Allocation

(\$ millions as of December 31, 2024)

Asset Class	Fair Value	% of Total Fund	10-Year Strategic Targets
Private Equity	\$6,724.2	17.4%	16.0%
Real Estate	2,219.6	5.7	7.0
U.S. Equity	14,450.0	37.4	37.0
International Developed Markets Equity	4,463.5	11.5	14.0
Emerging Markets Equity	467.6	1.2	2.0
Fixed Income	7,004.9	18.1	19.0
Inflation Protection (TIPS)	948.9	2.5	3.0
Cash	2,046.4	5.3	2.0
Legacy Private Credit	344.0	0.9	— ^{1\}
Legacy Hedge Funds	14.2	—	— ^{2\}
Total Fund	\$38,683.3	100.0%	100.0%

^{1\}SERS no longer has an asset allocation targeting this strategy as a stand-alone asset class.

^{2\}Legacy Hedge Funds asset class is in liquidation.

DEFINED BENEFIT PLAN

Investment Overview

Number of Investment Managers by Asset Class

Asset Class	Investment Managers
Private Equity	66
Real Estate	25
U.S. Equity	2
International Developed Markets Equity	9
Emerging Markets Equity	2
Fixed Income	4
Inflation Protection (TIPS)	2
Cash	1
Legacy Private Credit	6
Legacy Hedge Funds	2
Total	119

Number of Investment Portfolios

Asset Class	Investment Portfolios
Private Equity	181
Real Estate	46
U.S. Equity	4
International Developed Markets Equity	9
Emerging Markets Equity	2
Fixed Income	5
Inflation Protection (TIPS)	2
Cash	1
Legacy Private Credit	7
Legacy Hedge Funds	2
Total Portfolios	259



Performance

DEFINED BENEFIT PLAN

Performance

Estimated Calendar Year, Net-of-Fees Returns^{1/}

For the period ending December 31, 2024

Asset Class	1-Year Total Return	3-Year Total Return	5-Year Total Return	10-Year Total Return
Private Equity ^{2/,5/}	6.3%	2.5%	14.2%	11.8%
<i>Burgiss All Private Equity Custom Index^{3/,5/}</i>	0.1	-0.6	9.0	10.1
<i>Global Equity +3%^{4/,5/}</i>	35.9	12.8	17.3	15.5
Real Estate ^{5/}	-12.3	-6.4	-0.2	2.2
<i>Real Estate Custom Benchmark^{5/,6/}</i>	-8.4	-2.2	1.9	4.9
<i>Consumer Price Index +3%^{5/}</i>	5.4	7.8	7.2	5.9
U.S. Equity	23.4	7.8	13.6	11.8
<i>Russell 3000 Index</i>	23.8	8.0	13.9	12.6
<i>S&P 1500 Index</i>	24.0	8.5	14.1	12.8
International Developed Markets Equity	5.0	2.0	5.9	6.1
<i>MSCI World ex U.S. IMI</i>	4.2	1.1	4.7	5.3
Emerging Markets Equity	8.6	-2.3	3.0	4.9
<i>MSCI Emerging Markets IMI</i>	7.4	-1.3	2.6	3.9
Fixed Income	2.5	-1.8	-0.1	1.5
<i>Bloomberg U.S. Aggregate Bond Index</i>	1.3	-2.4	-0.3	1.4
Inflation Protection (TIPS)	1.8	-2.7	1.4	2.0
<i>Bloomberg U.S. TIPS Index</i>	1.8	-2.3	1.9	2.2
Cash	5.4	4.1	2.6	2.0
<i>ICE BofAML U.S. 3-Month Treasury Bill Index</i>	5.3	3.9	2.5	1.8
Legacy Private Credit ^{5/,8/}	10.5	9.8	10.6	NA
<i>S&P/LSTA Leveraged Loan Index +1%^{5/}</i>	10.6	7.5	6.8	NA
Total Fund^{7/}	9.8%	2.7%	7.1%	7.0%
Total Fund Custom Benchmark	9.9%	3.0%	7.8%	7.7%
Total Fund Custom Public Market Equivalent Benchmark	15.2%	5.2%	8.4%	8.1%
Total Fund 60/40 Index	10.1%	2.1%	5.9%	6.1%

^{1/}Returns for periods greater than one year are annualized. Performance was calculated using the Modified Dietz return methodology, which is considered a time-weighted rate of return.

^{2/}Historical Private Equity performance includes Buyouts, Special Situations, and Growth Equity.

^{3/}Intended to compare the program's performance to its peers.

^{4/}Long-term benchmark by which SERS measures its private market performance. Shorter term variances (1-year and 3-year) can be pronounced due to the nature of private assets and are not as relevant for benchmark purposes.

^{5/}Private Equity, Legacy Private Credit, Real Estate and the corresponding benchmarks are reported on a quarter-lagged basis.

^{6/}Calculated monthly using beginning of the month asset class weights applied to each corresponding primary benchmark return. The real estate custom benchmark consists of 100% NCREIF NFI -ODCE (Qtr lag).

^{7/}Legacy Hedge Funds are in liquidation, values and performance are no longer reported. However, all performance activity continues to be reflected in SERS' Total Fund return.

^{8/}Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.

DEFINED BENEFIT PLAN

Performance

Fiscal Year, Net-of-Fees Returns^{1/}

For the period ending June 30, 2024

Asset Class	1-Year Total Return	3-Year Total Return	5-Year Total Return	10-Year Total Return
Private Equity ^{2/,5/}	6.5%	8.3%	14.4%	11.9%
<i>Burgiss All Private Equity Custom Index^{3/,5/}</i>	0.1	3.6	9.9	10.7
<i>Global Equity +3%^{4/,5/}</i>	29.1	12.2	16.5	15.1
Real Estate ^{5/}	-15.1	-2.2	1.2	3.1
<i>Real Estate Custom Benchmark^{5/,6/}</i>	-12.3	1.8	2.7	5.6
<i>Consumer Price Index +3%^{5/}</i>	6.5	8.7	7.2	5.8
U.S. Equity	22.4	7.5	13.7	11.3
<i>Russell 3000 Index</i>	23.1	8.1	14.1	12.2
<i>S&P 1500 Index</i>	23.5	9.4	14.6	12.5
International Developed Markets Equity	11.3	3.2	7.4	5.2
<i>MSCI World ex U.S. IMI</i>	10.8	2.0	6.3	4.2
Emerging Markets Equity	13.0	-5.2	4.8	3.8
<i>MSCI Emerging Markets IMI</i>	13.6	-4.1	3.9	3.1
Fixed Income	3.2	-2.4	-0.1	1.3
<i>Bloomberg U.S. Aggregate Bond Index</i>	2.6	-3.0	-0.2	1.4
Inflation Protection (TIPS)	2.4	-2.0	1.6	1.7
<i>Bloomberg U.S. TIPS Index</i>	2.7	-1.3	2.1	1.9
Cash	5.5	3.2	2.2	1.8
<i>ICE BofAML U.S. 3-Month Treasury Bill Index</i>	5.4	3.0	2.2	1.5
Legacy Private Credit ^{5/,8/}	11.7	10.7	9.8	N/A
<i>S&P/LSTA Leveraged Loan Index +1%^{5/}</i>	13.5	7.0	6.5	N/A
Total Fund^{7/}	9.8%	3.5%	7.5%	6.6%
Total Fund Custom Benchmark	10.6%	3.9%	8.1%	7.4%
Total Fund Custom Public Market Equivalent Benchmark	15.5%	4.9%	8.6%	7.6%
Total Fund 60/40 Index	11.9%	1.7%	6.3%	5.6%

^{1/}Returns for periods greater than one year are annualized. Performance was calculated using the Modified Dietz return methodology, which is considered a time-weighted rate of return.

^{2/}Historical Private Equity performance includes Buyouts, Special Situations, and Growth Equity.

^{3/}Intended to compare the program's performance to its peers.

^{4/}Long-term benchmark by which SERS measures its private market performance. Shorter term variances (1-year and 3-year) can be pronounced due to the nature of private assets and are not as relevant for benchmark purposes.

^{5/}Private Equity, Legacy Private Credit, Real Estate and the corresponding benchmarks are reported on a quarter-lagged basis.

^{6/}Calculated monthly using beginning of the month asset class weights applied to each corresponding primary benchmark return. The real estate custom benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag).

^{7/}Legacy Hedge Funds are in liquidation, values and performance are no longer reported. However, all performance activity continues to be reflected in SERS' Total Fund return.

^{8/}Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.

DEFINED BENEFIT PLAN

Performance

Pension Fund Values and Annual Return

(\$ millions)

Year Ended	Pension Fund Fair Value	Annual Total Pension Fund Rate of Return ^{1/}
1995	\$16,343	25.2%
1996	18,492	15.4
1997	21,312	18.5
1998	24,123	16.3
1999	28,093	19.9
2000	27,880	2.2
2001	24,706	-7.9
2002	20,880	-10.9
2003	24,536	24.3
2004	26,641	15.1
2005	28,752	14.5
2006	32,053	16.4
2007	35,516	17.2
2008	22,796	-28.7
2009	24,662	9.1
2010	25,886	11.9
2011	24,377	2.7
2012	25,389	12.0
2013	27,394	13.6
2014	27,338	6.4
2015	26,055	0.4
2016	26,388	6.5
2017	29,405	15.1
2018	26,937	-4.6
2019	31,096	18.8
2020	35,028	11.1
2021	40,231	17.2
2022	33,607	-12.2
2023	36,425	12.2
2024 ^{2/}	38,683	9.8

^{1/}Returns were calculated using the Modified Dietz return methodology, which is considered a time-weighted rate of return.

^{2/}2024 values are estimated and unaudited. Fund fair values for all Private Equity, Real Estate, and Legacy Private Credit investments are reported on a quarter-lagged, cash-flow adjusted basis.



Fees & Expenses

DEFINED BENEFIT PLAN

Fees & Expenses

Investment Expense Overview

SERS' assets are managed by external investment managers hired by the SERS Board. SERS incurs various investment expenses associated with operating the defined benefit pension plan's investment portfolio. These costs include manager fees and manager expenses, as well as consultant, personnel, custodian, subscription, membership, and operational expenses not attributable to a specific asset class.

The manager fees cover the basic costs of running and administering a fund. Many of the investment managers are paid fees based on the amount of assets under management. For private market investments, the industry practice is for the limited partners to pay fees to the general partner based on commitments to the partnership during the investment period. Manager fees are inclusive of any incentive fees paid to a manager for exceeding certain performance thresholds.

Manager expenses include, but are not limited to, operating and other recurring expenses such as legal expenses, office expenses, audit fees, accounting fees, custodial fees, and third-party vendor fees.

The managers of the SERS investment portfolio are paid from investment earnings. Their fees and expenses are treated as a reduction of the investment revenue of the SERS Fund, rather than as a direct administrative expense. Thus, when investment performance is reported, numbers are reported net-of-fees – that is, performance after all investment manager fees have been incurred.

The 2024 information in all tables below is estimated due to SERS' year-end occurring on December 31, 2024. This, along with the fact that private market investments report on a quarter-lagged basis, limits the information available as of the time this publication was prepared.

Investment Expenses

(\$ thousands for the year ended December 31, 2024)

Expense Category	Expenses
Manager Fees and Expenses	\$154,287
Investment professional personnel	6,470
Investment consultants	2,870
Custodian	973
Subscriptions and memberships	416
Operational	167
Total Investment Expenses	\$165,183

Consultant Expenses

(\$ thousands for the year ended December 31, 2024)

Firm	Service Type	Expenses
StepStone Group	Private equity investments	\$1,677
Callan	General investments	433
NEPC	Real estate investments	425
Fairview Capital Partners	Investment portfolio management	229
Other	Other	106
Total Consultant Expenses		\$2,870

DEFINED BENEFIT PLAN

Fees & Expenses

Cost Savings Initiatives

Since 2010, SERS has worked to reduce investment manager fees by approximately 58% from 95.9 basis points in 2010 to 40.7 basis points in 2024. Additionally, over the past several years, SERS has reduced its active

exposure across multiple asset classes and increased commitments to side-car and co-investments in the private market asset classes, which contributed to the trend of lowering investment costs. SERS continues to focus on negotiating lower fees with managers.

Manager Fees and Expenses

(\$ thousands for the year ended December 31, 2024)

Asset Class	Fees/Expenses	Fees/Expenses ^{1/} (in basis points)
Private Equity	\$85,941	126.4
Real Estate	34,281	148.8
U.S. Equity	2,776	2.1
International Developed Markets Equity	7,174	15.3
Emerging Markets Equity	4,369	38.0
Fixed Income	11,071	16.0
Inflation Protection (TIPS)	1,057	10.2
Legacy Private Credit	7,618	202.4
Total Manager Fees and Expenses	\$154,287	40.7

^{1/}The fees/expenses were divided by SERS total fund and asset class quarterly average values during calendar year 2024 to arrive at the basis point calculations.

History of Manager Fees and Expenses

Calendar Year	Fees/Expenses ^{1/}	Fees/Expenses (in basis points)
2020	140,038,195	45.3
2021	163,242,575	43.6
2022	147,696,760	41.2
2023	169,731,607	48.6
2024	154,287,387	40.7

^{1/}The current year manager fees/expenses total is an unaudited estimate based on the best data available at the time of publication of the Budget Book. The prior year totals were restated from estimates to actual amounts based upon finalization of the figures for SERS audited financial statements.

DEFINED BENEFIT PLAN

Fees & Expenses

Annual Investment Managers Fees and Expenses Report

The Public Pension Management and Asset Investment Review Commission (PPMAIRC) was created as part of Act 2017-5. The PPMAIRC issued a report in December 2018, which outlined over 100 recommendations designed to achieve cost savings, streamline operations, and increase transparency at SERS. One recommendation was to publish investment management fees, costs and expenses by manager and aggregated by asset class. Because SERS has an ongoing commitment to demonstrate transparency, while working within its legal and fiduciary framework, the SERS Board adopted this recommendation. The inaugural annual report was prepared for the period ending December 31, 2019. Each report is presented to the SERS Board and is posted for all stakeholders to see on the SERS website.

The following table is a summary of SERS' most current Annual Investment Managers Fees and

Expenses Report which shows managers' fees, expenses, gross distributions, return of capital to SERS, and carried interest paid to General Partners. Carried Interest is the profit that investment managers, also known as general partners, are allocated from the total profits on the investments made in private market investment vehicles. SERS' share of profit in the private market investments (Real Estate, Legacy Private Credit, and Private Equity) are also included in the table.

Starting with the December 31, 2021 report, SERS began submitting the report to the General Assembly as a supplement to this publication.

It is important to note that SERS voluntarily produces this report. However, there have been several proposals offered during recent legislative sessions that would make providing this information mandatory.

DEFINED BENEFIT PLAN

Fees & Expenses

Investment Managers Fees and Expenses Summary

For the year ended December 31, 2023

Asset Class	Managers Fees	Managers Operating Expenses	Total Managers Fees and Operating Expenses	Gross Distributions	Return of Capital to SERS	Pro-Rata Partnership Profit	GP Portion (Carried Interest Paid to GP's)	SERS Portion (Net Profit Paid to SERS)
Private Equity	\$63,044,320	\$28,894,651	\$91,938,970	\$828,579,420	\$380,745,573	\$447,833,847	\$74,439,752	\$373,394,095
Legacy Private Credit	5,122,314	5,892,233	11,014,547	80,512,597	26,228,867	54,283,730	3,051,741	51,231,989
Real Estate	29,796,275	10,098,396	39,894,670	308,155,940	243,809,428	64,346,513	3,262,242	61,084,271
Sub Total	97,962,909	44,885,280	142,848,188	1,217,247,957	650,783,868	566,464,090	80,753,735	485,710,354
U.S. Equity	2,454,232	0	2,454,232	N/A	N/A	N/A	N/A	N/A
International Developed Markets Equity	5,846,339	729,430	6,575,769	N/A	N/A	N/A	N/A	N/A
Emerging Markets Equity	6,391,247	670,110	7,061,357	N/A	N/A	N/A	N/A	N/A
Fixed Income	9,646,303	63,455	9,709,758	N/A	N/A	N/A	N/A	N/A
Inflation Protection (TIPS)	1,082,301	0	1,082,301	N/A	N/A	N/A	N/A	N/A
Sub Total	25,420,424	1,462,995	26,883,419	N/A	N/A	N/A	N/A	N/A
Total	\$123,383,332	\$46,348,275	\$169,731,607	\$1,217,247,957	\$650,783,868	\$566,464,090	\$80,753,735	\$485,710,354

Assets

DEFINED BENEFIT PLAN

Assets | Private Equity

Objective

The objective of Private Equity is to achieve a return in excess of its public equity benchmark (75% Russell 3000 Index / 25% MSCI World ex U.S. Index plus a 300 basis point premium) over 10-year periods (annualized, net of fees).

Structure

Private Equity investments are non-traditional investments made in the form of closed-end limited partnership structures organized to make domestic and international private investments such as buyouts, special situations, and growth equity.

Private Equity

as of December 31, 2024

(\$ millions)

	Unfunded Commitments	Fair Value	% of Total Fund
Core Sub-Asset Classes			
Buyouts	\$1,244.5	\$3,641.6	9.4%
Special Situations	873.4	1,768.6	4.6
Growth Equity	233.3	1,142.1	3.0
Total Core Sub-Asset Classes	2,351.2	6,552.3	17.0
Non-Core Holdings			
Keystone Legacy Fund ^{1/}	31.1	171.9	0.4
Total Private Equity	\$2,382.3	\$6,724.2	17.4%

^{1/}As of December 31, 2024 a total of 35 legacy holdings from the Private Equity core sub-asset classes (Buyouts, Special Situations, and Growth Equity) make up the Keystone Legacy Fund, a special purpose vehicle which is managed by a third-party.

DEFINED BENEFIT PLAN

Assets | Private Equity

Portfolio Exposure

The Private Equity program is well diversified by sub-sector, geography, and industry focus.

As of September 30, 2024, based on fair value, the program's exposure was:

By Fund Sub-Sector		By Geography ^{2/}		By Industry ^{2/}	
U.S. Buyout	35.3%	United States	66.4%	Information Technology	39.1%
Non-U.S. ^{1/}	25.6	United Kingdom	6.6	Consumer Discretionary	12.5
U.S. Distressed/ Opportunistic	19.2	Germany	4.7	Health Care	12.0
U.S. Growth Equity	17.7	South Korea	2.1	Industrials	11.9
Pennsylvania-Related	2.2	France	2.0	Financials	10.5
		China	1.7	Energy	4.5
		India	1.6	Telecommunication Services	4.4
		Rest of World	14.9	Consumer Staples	2.1
				Materials	1.6
				Real Estate	1.0
				Utilities	0.4

^{1/}Some managers with a domestic investment focus may invest globally. Thus, non-U.S. exposure measured on a portfolio company basis will be greater.

^{2/}Geography and industry are determined by the portfolio company.

DEFINED BENEFIT PLAN

Assets | Private Equity

The Capital Committed column represents total dollars allocated from SERS to each limited partnership. Accumulated Capital Drawn is the portion of SERS' capital commitments drawn by the general partner to be invested with

underlying portfolio companies along with any reinvested capital. The Accumulated Distributions column shows the value of capital and profits returned to SERS.

Buyouts Committed, Drawn, and Distributed

Active Buyout Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
ABRY Partners VI	Middle	3/26/2008	\$50,000,000	\$60,116,575	\$108,246,667
ABRY Partners VII	Middle	8/10/2011	30,000,000	38,501,818	55,561,088
ABRY Partners VIII	Middle	5/5/2015	25,000,000	30,265,978	37,301,187
Advent Latin American Private Equity Fund IV	Small	8/2/2007	30,000,000	30,797,073	43,955,921
Advent International GPE VI-A	Middle	7/7/2008	35,000,000	35,146,325	70,431,146
Advent Latin American Private Equity Fund V	Small	7/5/2011	15,000,000	14,430,000	13,049,997
Advent International GPE VII-B	Global	12/6/2012	40,000,000	38,400,000	65,125,466
Advent Latin American Private Equity Fund VI	Small	8/13/2015	25,000,000	23,250,000	21,597,440
Advent International GPE VIII-B	Global	9/26/2016	50,000,000	50,000,000	61,176,048
Altaris Health Partners V	Middle	4/22/2021	50,000,000	36,143,648	812,015
Apollo Investment Fund IV	Large	9/30/1998	75,000,000	74,838,620	124,814,033
Apollo Investment Fund VI	Global	7/19/2006	40,000,000	38,911,805	64,467,407
Apollo Investment Fund IX	Global	3/15/2019	85,400,000	82,963,711	44,396,362
Asia Alternatives Capital Partners	Fund of Funds	6/26/2007	25,000,000	25,218,098	44,512,180
Asia Alternatives Capital Partners II	Fund of Funds	3/7/2008	29,949,500	29,132,586	72,682,147
Asia Alternatives Korea Buyout Investors (Hahn & Co)	Fund of Funds	7/22/2011	7,000,000	8,945,759	12,677,843
Asia Alternatives Capital Partners III	Fund of Funds	8/3/2012	50,000,000	55,759,777	78,129,162
Penn Asia Investors	Fund of Funds	9/28/2012	133,000,000	129,213,778	118,021,721
Asia Alternatives Capital Partners V	Fund of Funds	10/5/2017	50,000,000	55,416,385	15,175,121
Audax Private Equity Fund	Small	5/25/2000	35,000,000	36,839,098	56,057,910
Audax Private Equity Fund III	Small	11/7/2007	37,000,000	42,498,691	82,716,671
Audax Private Equity Fund V	Small	1/25/2016	50,000,000	46,368,950	73,942,216
Audax Private Equity Fund VI	Small	8/29/2019	75,000,000	77,381,515	47,087,455
Berkshire Fund VI	Middle	7/11/2002	20,000,000	18,819,615	58,474,990
Berkshire Fund VII	Middle	11/15/2006	32,000,000	32,613,937	68,596,870
Blackstone Communications Partners I	Global	8/29/2000	25,000,000	25,114,042	31,146,773
Blackstone Capital IV	Global	2/26/2003	69,379,875	69,119,097	194,169,774
Blackstone Capital Partners V	Global	5/30/2006	150,000,000	150,135,084	250,462,149
Blackstone Capital Partners VII	Global	10/21/2016	50,000,000	55,130,071	47,672,432
Blackstone Capital Partners VIII	Global	2/22/2021	70,000,000	59,206,539	8,678,916
Capvis Equity IV	Small	1/30/2014	43,314,183	47,453,485	41,736,092
Horizon Strategic Fund - Carlyle Group	Global	1/23/2014	100,000,000	107,823,037	163,262,160

DEFINED BENEFIT PLAN

Assets | Private Equity

Buyouts Committed, Drawn, and Distributed (continued)

Active Buyout Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
CVC Capital Partners VII	Global	12/3/2018	\$91,700,423	\$96,750,745	\$77,704,857
CVC Capital Partners VIII	Global	12/13/2021	53,548,618	51,682,612	748,403
Eureka II	Small	1/30/2006	20,000,000	21,906,935	24,443,442
Eureka Growth Capital III	Small	10/21/2013	20,000,000	17,210,666	40,332,770
Francisco Partners II	Global	7/10/2006	30,000,000	29,383,916	48,734,237
Francisco Partners III	Global	10/17/2011	20,000,000	20,514,684	58,501,352
Francisco Partners IV	Global	4/15/2015	25,000,000	24,656,280	58,359,629
Francisco Partners VII PA Co-Invest	Co-Investment	11/6/2023	50,000,000	13,547,979	0
Francisco Partners VII	Global	7/10/2024	100,000,000	16,950,000	0
Francisco Partners Agility III	Middle	*	30,000,000	0	0
FSN Capital IV	Small	12/19/2013	38,055,178	38,520,666	82,280,821
FSN Capital V	Small	1/4/2017	80,927,203	88,636,034	43,650,176
Great Hill Equity Partners IV	Middle	9/8/2008	25,000,000	25,125,662	72,240,642
GTCR Fund XI	Middle	9/2/2014	25,000,000	24,919,191	60,794,883
GTCR Fund XII	Middle	5/4/2018	32,500,000	33,975,114	22,353,038
H.I.G. Growth Buyouts & Equity Fund II	Small	7/20/2011	15,000,000	17,306,615	27,735,025
H.I.G. Europe Capital Partners II	Middle	1/10/2014	24,419,320	23,274,353	21,893,469
H.I.G. Brazil and Latin America Partners	Middle	8/12/2015	50,000,000	55,950,865	21,462,108
Hahn & Company II	Small	5/29/2015	50,000,000	57,873,825	61,468,266
Hahn & Company III	Middle	12/20/2018	56,250,000	63,905,621	14,192,472
Hahn & Company III - Supplemental Fund	Middle	12/20/2018	18,750,000	18,943,542	2,567,505
Horizon Impact Fund	Fund of Funds	10/24/2014	50,000,000	42,649,604	71,955,149
Horizon Impact Fund B	Fund of Funds	5/31/2017	100,000,000	90,500,000	39,105,000
HarbourVest PA Co-Investment Fund	Co-Investment	5/14/2020	200,000,000	179,775,000	9,487,500
HarbourVest PA Co-Investment Fund II	Co-Investment	*	200,000,000	0	0
Hellman & Friedman Capital Partners VIII	Global	9/1/2016	50,000,000	51,784,225	33,572,585
Hellman & Friedman Capital Partners IX	Global	4/7/2020	90,000,000	95,585,042	12,691,491
Hellman & Friedman Capital Partners X	Global	11/24/2021	100,000,000	85,593,175	9,875,395
Hellman & Friedman Capital Partners XI	Global	*	100,000,000	0	0
Incline Equity Partners III	Small	1/14/2013	15,000,000	16,025,410	42,017,594
Kelso VII	Global	10/18/2004	40,000,000	41,169,937	65,821,118
Kelso VIII	Global	11/29/2007	150,000,000	147,077,801	212,472,060
LLR Equity Partners III	Small	7/24/2008	30,000,000	29,108,722	65,340,347
LLR Equity Partners IV	Small	3/14/2014	50,000,000	45,485,764	108,147,756
LLR Equity Partners V	Small	3/21/2018	75,000,000	73,590,002	41,866,004

DEFINED BENEFIT PLAN

Assets | Private Equity

Buyouts Committed, Drawn, and Distributed (continued)

Active Buyout Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
LLR Equity Partners VI	Small	5/13/2021	\$50,000,000	\$44,583,127	\$9,583,333
LLR Equity Partners VII	Small	*	75,000,000	0	0
Madison Dearborn Capital Partners VI	Middle	5/27/2008	50,000,000	53,296,374	120,202,206
Neuberger Berman PA Co-Investment Fund	Co-Investment	1/6/2021	200,000,000	171,108,736	20,742,740
NGP XII	Middle	11/14/2018	75,000,000	65,128,140	64,271,818
Oaktree Power Opportunities Fund III	Large	10/18/2010	25,000,000	19,267,532	29,286,578
Permira European Fund II	Large	6/7/2000	45,672,612	45,672,612	91,781,334
Permira European Fund III	Large	1/12/2004	127,062,518	127,340,454	218,410,198
Permira VI	Global	1/10/2017	56,322,822	52,579,759	52,682,632
Permira VII	Global	2/4/2020	75,812,782	74,429,300	8,040,052
Permira Susquehanna Opportunities - Buyout	Co-Investment	1/26/2021	40,000,000	20,875,338	99,900
Primavera Capital Fund II	Global	11/17/2015	50,000,000	59,587,059	31,669,144
Primavera Capital Fund III	Global	4/12/2019	75,000,000	81,491,052	16,599,130
Providence Equity Partners VI	Large	3/16/2007	49,976,748	54,530,937	78,181,543
Ridgemont Equity Partners II	Small	11/30/2015	50,000,000	54,598,252	80,733,212
Sentinel Capital Partners V	Middle	7/15/2014	10,000,000	9,987,204	19,289,471
Sentinel Capital Partners VII	Large	7/14/2023	100,000,000	34,715,771	31,770
Silver Lake Partners V	Global	6/12/2018	78,000,000	79,562,874	47,900,549
Sterling Group Partners IV	Small	6/15/2016	20,000,000	20,690,393	32,316,620
TDR Capital IV	Middle	11/16/2018	86,593,673	74,944,642	23,812,536
Thoma Bravo Fund XIII	Global	2/14/2019	75,000,000	92,242,744	85,031,730
Thoma Bravo Fund XIV	Global	4/15/2021	50,000,000	53,618,032	11,410,314
Thoma Bravo Discover Fund III	Middle	6/11/2021	20,000,000	20,136,476	915,833
Thoma Bravo Fund XV	Global	6/10/2022	100,000,000	79,965,247	21,669
Thoma Bravo Discover Fund IV	Middle	12/8/2022	50,000,000	36,132,616	0
Thoma Bravo Co-Invest Opportunities XV-5	Co-Investment	2/27/2023	50,000,000	20,352,148	0
TPG Partners IV	Global	12/29/2003	27,907,484	27,981,463	58,314,713
TPG Asia V	Global	2/19/2008	22,500,000	21,964,311	30,504,180
TPG Partners VI	Global	5/22/2008	44,294,641	50,576,261	74,164,934
TSG8	Large	1/3/2020	100,000,000	96,730,190	3,332,350
TSG9	Large	1/24/2023	100,000,000	35,839,857	386,165
Veritas Capital Fund VIII	Global	12/5/2022	100,000,000	83,046,378	26,715
Keystone Co-Investors Veritas VIII	Co-Investment	4/25/2024	25,000,000	7,485,030	0
Vista Equity Partners Fund VI	Global	12/29/2016	150,000,000	190,492,800	232,994,470
Vista Equity Partners Fund VII	Global	2/13/2019	75,000,000	72,157,567	7,315,154
Total Active Buyouts			\$6,037,337,580	\$5,298,445,760	\$5,078,005,446

*Not funded as of December 31, 2024.

^{1/}Distributions include stock distributions. Distributions may include fees that are recorded as negative distributions to be offset against future distributions of the underlying limited partnership investment.

DEFINED BENEFIT PLAN

Assets | Private Equity

The Capital Committed column represents total dollars allocated from SERS to each limited partnership. Accumulated Capital Drawn is the portion of SERS' capital commitments drawn by the general partner to be invested with

underlying portfolio companies along with any reinvested capital. The Accumulated Distributions column shows the value of capital and profits returned to SERS.

Special Situations Committed, Drawn, and Distributed

Active Special Situations Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
ABRY Advanced Securities Fund	Mezzanine	8/1/2008	\$7,262,950	\$23,529,104	\$38,786,236
ADV Opportunities Fund I	Distressed/ Turnaround	10/5/2015	50,000,000	64,045,299	47,167,822
AXA Secondary Fund V B	Secondaries	6/19/2012	75,000,000	61,682,742	97,954,290
ASF VII B	Secondaries	2/19/2016	100,000,000	76,026,654	78,341,091
ASF VII PA Co-Invest	Secondaries	5/18/2016	50,000,000	36,903,205	36,981,039
ASF VIII B	Secondaries	6/13/2019	100,000,000	79,751,113	24,631,926
ASF VIII PA Co-Invest	Secondaries	3/12/2020	50,000,000	28,213,583	4,521,017
ASF IX B	Secondaries	10/13/2022	100,000,000	16,384,927	2,032,811
ASF IX PA Co-Invest	Secondaries	4/20/2023	50,000,000	19,765,481	0
Ares PA Opportunities Fund - Distressed Debt	Distressed/ Turnaround	12/20/2019	200,000,000	159,125,542	60,030,907
Ares PA Opportunities Fund - Diversified Credit	Distressed/ Turnaround	12/15/2020	70,000,000	60,461,601	10,643,904
Ares PA Opportunities Fund - Special Situations	Distressed/ Turnaround	2/22/2021	130,000,000	136,759,654	22,667,102
Avenue Special Situations Fund VI	Distressed/ Turnaround	11/2/2010	20,000,000	20,068,464	21,075,410
Centerbridge Capital Partners III	Distressed/ Turnaround	5/21/2015	30,000,000	40,444,666	44,350,393
Clearlake Capital Partners IV	Distressed/ Turnaround	9/1/2015	15,000,000	23,504,759	38,348,669
Clearlake Capital Partners V	Distressed/ Turnaround	2/1/2018	55,000,000	82,533,455	113,954,992
Clearlake Opportunities Partners II	Distressed/ Turnaround	8/30/2019	75,000,000	61,573,235	29,031,273
Clearlake Capital Partners VI	Distressed/ Turnaround	5/22/2020	60,000,000	62,654,403	9,575,200
Clearlake Capital Partners VII	Distressed/ Turnaround	4/26/2022	100,000,000	66,620,260	268,947
Clearlake Opportunities Partners III	Distressed/ Turnaround	12/28/2022	75,000,000	17,245,610	284,018
Clearlake Capital Partners VIII	Distressed/ Turnaround	12/5/2024	100,000,000	4,959,743	0
Clearlake Capital Partners VIII PA Co-Invest	Distressed/ Turnaround	6/12/2024	20,000,000	2,441,876	0
Glendon Opportunities Fund II	Distressed/ Turnaround	10/18/2019	150,000,000	135,000,000	99,882,084
H.I.G. Bayside Debt & LBO Fund II	Distressed/ Turnaround	6/17/2008	30,000,000	31,448,253	51,691,289

DEFINED BENEFIT PLAN

Assets | Private Equity

Special Situations Committed, Drawn, and Distributed (continued)

Active Special Situations Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
H.I.G. Bayside Loan Opp. Fund III	Distressed/ Turnaround	6/12/2013	\$50,000,000	\$42,696,553	\$49,904,323
H.I.G. Bayside Loan Opp. Fund IV	Distressed/ Turnaround	1/16/2015	25,000,000	22,626,299	20,452,258
Dover Street VII	Secondaries	7/2/2008	30,000,000	28,696,128	41,139,248
HPS Mezzanine Partners 2019	Mezzanine	11/16/2020	75,000,000	79,441,873	43,316,046
ICG Europe Fund VII	Mezzanine	8/24/2018	90,058,854	87,923,880	60,500,131
ICG Europe Mid-Market Fund	Mezzanine	4/8/2020	72,993,681	60,221,005	32,943,133
KPS Special Situations Fund IV	Distressed/ Turnaround	5/8/2014	25,000,000	23,898,648	37,254,717
KPS Special Situations Mid-Cap Fund	Distressed/ Turnaround	11/25/2019	25,000,000	21,753,815	6,784,727
KPS Special Situations Fund V	Distressed/ Turnaround	7/13/2020	75,000,000	58,123,735	26,650,450
KPS Special Situations Fund VI	Distressed/ Turnaround	9/20/2024	75,000,000	9,315,490	8,266
KPS Special Situations Mid-Cap Fund II	Distressed/ Turnaround	*	25,000,000	0	0
LBC Credit Partners III	Mezzanine	3/4/2013	50,000,000	46,696,243	54,487,095
Lexington Capital Partners V	Secondaries	1/17/2002	75,000,000	74,623,418	125,170,164
Lexington Capital Partners VI	Secondaries	10/21/2005	50,000,000	53,066,325	73,905,823
OCM Opportunities Fund VIII	Distressed/ Turnaround	9/20/2010	12,500,000	12,583,425	18,205,746
OCM Opportunities Fund VIII b	Distressed/ Turnaround	8/22/2011	12,500,000	12,500,000	20,342,134
Oaktree Opportunities Fund IX	Distressed/ Turnaround	3/26/2013	50,000,000	50,000,000	60,958,027
Platinum Equity Capital Partners III	Distressed/ Turnaround	8/5/2013	50,000,000	46,886,064	95,125,700
RRJ Capital Master Fund III	Mezzanine	12/10/2015	50,000,000	51,245,605	45,702,378
Sentinel Junior Capital II	Middle	8/9/2023	25,000,000	6,158,665	0
Sixth Street TAO 4.0 (B)	Distressed/ Turnaround	11/9/2017	100,000,000	116,173,124	55,627,119
Sixth Street Opportunities Partners IV (A)	Distressed/ Turnaround	1/25/2019	50,000,000	40,355,923	23,159,830
Sixth Street TAO Contingent (D)	Distressed/ Turnaround	4/16/2020	150,000,000	90,946,319	39,800,038
Sixth Street Opportunities Partners V	Distressed/ Turnaround	6/7/2022	50,000,000	38,734,093	474,914
Total Active Special Situations			\$3,005,315,485	\$2,385,810,259	\$1,764,132,687

*Not funded as of December 31, 2024.

^{1/}Distributions include stock distributions. Distributions may include fees that are recorded as negative distributions to be offset against future distributions of the underlying limited partnership investment.

DEFINED BENEFIT PLAN

Assets | Private Equity

The Capital Committed column represents total dollars allocated from SERS to each limited partnership. Accumulated Capital Drawn is the portion of SERS' capital commitments drawn by the general partner to be invested with

underlying portfolio companies along with any reinvested capital. The Accumulated Distributions column shows the value of capital and profits returned to SERS.

Growth Equity Committed, Drawn, and Distributed

Active Growth Equity Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
Battery Ventures VIII	Venture Capital	8/13/2007	\$25,000,000	\$25,050,751	\$62,968,130
Battery Ventures VIII Side Car Fund	Venture Capital	8/29/2008	6,768,000	6,803,790	18,828,496
HarbourVest Partners VII	Fund of Funds	3/24/2003	75,000,000	73,687,500	117,909,290
HarbourVest Partners VIII	Fund of Funds	10/5/2006	100,000,000	98,000,000	189,531,643
Insight Venture Partners VII	Large	4/27/2011	20,000,000	22,129,992	54,891,374
Insight Venture Partners VIII	Large	7/10/2013	50,000,000	54,916,419	124,845,449
Insight Venture Partners IX	Large	3/24/2015	50,000,000	52,784,788	109,687,987
Insight Venture Partners X	Large	4/17/2018	100,000,000	104,723,487	96,635,638
Insight Partners XI	Large	3/25/2020	75,000,000	72,975,000	6,409,603
Insight Partners XII	Large	8/27/2021	50,000,000	43,489,234	13,065
JMI Equity Fund VIII	Medium	10/1/2015	25,000,000	27,840,904	53,373,469
Lightspeed Venture Partners VII	Venture Capital	2/27/2006	18,000,000	18,000,000	55,192,795
Lightspeed Venture Partners VIII	Venture Capital	6/27/2008	15,000,000	15,000,000	39,915,887
Lightspeed India Partners I	Venture Capital	8/14/2015	15,000,000	14,572,500	4,922,264
Meritech Capital Partners IV	Venture Capital	2/10/2011	20,000,000	20,000,000	47,596,799
Meritech Capital Partners V	Venture Capital	9/3/2014	23,000,000	22,540,000	158,728,663
New Enterprise Associates X	Venture Capital	12/11/2000	35,000,000	35,028,000	39,412,034
New Enterprise Associates 11	Venture Capital	3/1/2004	25,000,000	25,000,000	64,095,694
New Enterprise Associates 12	Venture Capital	6/26/2006	35,000,000	35,631,130	48,996,151
NewSpring Growth Capital II	Small	4/20/2007	10,000,000	9,850,000	19,617,977
Providence Strategic Growth II	Small	12/7/2016	60,000,000	79,552,074	131,081,157
Providence Strategic Growth III	Small	7/26/2018	75,000,000	92,812,329	81,065,147
Providence Strategic Growth IV	Small	3/27/2020	75,000,000	86,800,202	40,149,664
Providence Strategic Growth Europe	Small	5/7/2021	72,221,900	80,164,897	24,101,318
PSG V	Small	12/23/2021	50,000,000	49,291,089	4,659,172
PSG Europe II	Small	12/12/2023	67,972,834	16,212,353	1,154,323
PSG VI	Small	*	75,000,000	0	0

DEFINED BENEFIT PLAN

Assets | Private Equity

Growth Equity Committed, Drawn, and Distributed (continued)

Active Growth Equity Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
SERS In-Kind Distributions ^{2/}	Various	1/3/2005	\$0	\$1,450,480,381	\$1,600,063,943
TCV X	Large	5/17/2019	75,000,000	56,289,972	29,366,737
Weathergage Venture Capital	Fund of Funds	6/26/2007	25,000,000	22,875,000	47,477,572
Weathergage Venture Capital II	Fund of Funds	6/29/2010	25,000,000	23,250,000	65,237,432
Total Active Growth Equity			\$1,372,962,734	\$2,735,751,792	\$3,337,928,873

*Not funded as of December 31, 2024.

^{1/}Distributions include stock distributions. Distributions may include fees that are recorded as negative distributions to be offset against future distributions of the underlying limited partnership investment.

^{2/}SERS In-Kind Distributions acts as a stock liquidation account. All cash and stock distributions are reflected in the corresponding distributions.

DEFINED BENEFIT PLAN

Assets | Private Equity

The Capital Committed column represents total dollars allocated from SERS to each limited partnership. Accumulated Capital Drawn is the portion of SERS’ capital commitments drawn by the general partner to be invested with

underlying portfolio companies along with any reinvested capital. The Accumulated Distributions column shows the value of capital and profits returned to SERS.

Legacy Private Equity Committed, Drawn, and Distributed

Legacy Private Equity Funds Limited Partnership	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
Keystone Legacy Non-Core Fund ^{2/}	Various	7/1/2018	\$1,042,928,144	\$1,049,565,957	\$1,333,426,710
Total Legacy Private Equity			\$1,042,928,144	\$1,049,565,957	\$1,333,426,710

^{1/}Distributions include stock distributions. Distributions may include fees that are recorded as negative distributions to be offset against future distributions of the underlying limited partnership investment.

^{2/}As of December 31, 2024 a total of 35 legacy holdings from the Private Equity core sub-asset classes (Buyouts, Special Situations, and Growth Equity) make up the Keystone Legacy Fund, a special purpose vehicle which is managed by a third-party.

DEFINED BENEFIT PLAN

Assets | Real Estate

Objective

The objective of Real Estate is to generate returns through capital appreciation and current income to achieve a return in excess of its benchmark (NCREIF Fund Index – Open End Diversified Core Equity (“NFI-ODCE”)) over 5-year periods (annualized, net of fees). Real Estate investments may also lower overall fund volatility and provide a moderate hedge against inflation.

Structure

Real Estate investments are non-traditional investments made in the form of individually managed accounts and pooled investment vehicles organized to invest in private market equity and debt investments in real estate and real estate related companies and public market investments in real estate investment trusts (REITs) and real estate operating companies.

Real Estate

as of December 31, 2024
(\$ millions)

Sub-Asset Class	Unfunded Commitments	Fair Value	% of Total Fund
Core/Core Plus	\$14.1	\$1,063.2	2.7%
Value Add/Oppportunistic Funds	346.8	767.2	2.0
Value Add/Oppportunistic SMA	NA	243.5	0.6
Real Estate Securities	NA	145.7	0.4
Total Real Estate	\$360.9	\$2,219.6	5.7%

DEFINED BENEFIT PLAN

Assets | Real Estate

The Capital Committed column represents total dollars allocated from SERS to each fund/manager. Accumulated Capital Drawn is the portion of SERS' capital commitments drawn by the fund/manager to be invested. This amount may also include recycled capital (capital that

was distributed and later recalled by the manager to be reinvested) as well as manager fees paid outside of the fund. The Accumulated Distributions column shows the value of capital and profits returned to SERS.

Real Estate

Active Fund/Manager	Asset Type	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions
Core/Core Plus Real Estate					
Blackstone Property Partners	Diversified	1/23/2018	\$300,000,000	\$321,598,146	\$46,131,783
Blue Owl Real Estate Net Lease Property Fund	Diversified	2/8/2019	300,000,000	321,175,543	101,977,144
Heitman America Real Estate Trust	Diversified	3/29/2007	122,326,626	158,865,245	162,901,938
Henderson Park Enhanced Income Fund	Diversified	6/12/2019	310,896,738	305,517,212	64,579,673
UBS Trumbull Property Fund	Diversified	1/1/1988	32,876,856	32,876,856	135,975,683
Total Core/Core Plus Real Estate			1,066,100,220	1,140,033,002	511,566,221
Value Add/Oppportunistic Funds					
Activum SG Fund VI	Diversified	12/10/2019	57,593,853	69,101,092	24,855,498
Activum SG Fund VI Pennsylvania Side-Car	Diversified	6/17/2021	54,924,317	34,723,116	915,709
AG Asia Realty Fund	Diversified	4/27/2007	20,625,000	23,500,000	27,487,500
Ares PA Opportunities Fund - Opportunistic Real Estate	Diversified	10/23/2024	100,000,000	6,957,199	0
Berwind Investment Partnership VI	Diversified	9/10/2002	25,000,000	24,543,712	44,921,380
Berwind Investment Partnership VII	Diversified	9/12/2005	25,000,000	25,549,693	18,834,244
Berwind Investment Partnership IX	Diversified	2/24/2012	25,000,000	32,233,168	48,305,881
Blackstone Real Estate Partners V	Diversified	1/24/2006	50,000,000	59,262,214	111,660,565
Blackstone Real Estate Partners VI	Diversified	3/28/2007	75,000,000	84,137,677	167,316,261
Blackstone Real Estate Partners VII	Diversified	12/12/2011	75,000,000	100,083,240	151,514,921
Blackstone Real Estate Partners X	Diversified	3/24/2023	75,000,000	22,870,915	1,521,415
Blue Moon Senior Housing II	Senior Housing	1/27/2020	50,000,000	50,355,581	2,584,213
Blue Moon Senior Housing II Sidecar	Senior Housing	5/19/2020	50,000,000	48,021,589	2,084,178
Blue Owl Real Estate Fund IV	Diversified	11/20/2017	100,000,000	103,260,289	122,483,121
Blue Owl Real Estate Fund V	Diversified	11/16/2020	50,000,000	50,000,000	19,550,277
Blue Owl Real Estate Fund VI	Diversified	1/31/2023	75,000,000	50,559,264	20,896,449
C-III Recovery Fund III	Diversified	9/24/2018	100,000,000	97,139,053	10,585,614
Hawkeye Scout Fund II	Diversified	9/28/2016	30,000,000	30,000,000	3,238,651
LEM Multifamily Fund VI	Multifamily	9/16/2022	75,000,000	39,758,152	0
Lubert Adler Fund VII	Diversified	7/15/2014	25,000,000	24,375,000	15,311,744
Mesirow Financial Real Estate Value Fund III	Multifamily	5/18/2018	25,000,000	26,607,694	11,348,879

DEFINED BENEFIT PLAN

Assets | Real Estate

Real Estate (continued)

Active Fund/Manager	Asset Type	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions
Value Add/Oppportunistic Funds (continued)					
Prudential Senior Housing Fund V	Senior Housing	5/15/2015	\$45,727,881	\$41,332,672	\$6,212,622
Prudential Senior Housing Fund VI	Senior Housing	8/6/2019	100,000,000	90,235,343	3,268,989
Rockpoint Real Estate Fund III	Diversified	12/21/2007	50,000,000	48,568,034	66,044,031
Rockpoint Real Estate Fund V	Diversified	1/11/2016	50,000,000	52,296,389	29,383,262
Rubicon First Ascent	Office	6/28/2021	30,000,000	21,574,740	0
Rubicon First Ascent Sidecar	Office	4/4/2022	20,000,000	16,094,555	0
SRE Opportunity Fund III	Diversified	6/20/2018	50,000,000	52,339,825	22,050,000
SRE Opportunity Fund III Select	Diversified	7/25/2019	50,000,000	29,897,486	19,579,003
Starwood Fund VI	Diversified	12/30/2002	50,000,000	50,153,838	52,008,516
Starwood Fund VII	Diversified	1/10/2006	35,000,000	35,000,000	27,427,647
Starwood Fund VIII	Diversified	10/14/2009	50,000,000	45,356,281	74,097,675
ValStone Opportunity Fund V	Diversified	8/27/2014	14,663,402	18,446,426	13,947,482
Westbrook Fund VI	Diversified	5/10/2006	35,000,000	43,409,843	43,591,504
Westbrook Fund VII	Diversified	12/3/2007	50,000,000	56,376,719	56,575,755
Westbrook Fund VIII	Diversified	6/2/2010	50,000,000	59,812,883	68,911,236
Total Value Add/Oppportunistic Funds			1,843,534,453	1,663,933,682	1,288,514,222
Value Add/Oppportunistic SMA^{1/}					
Heitman I.M.A.	Diversified	1/1/1988	NA	956,142,254	1,360,984,010
hotelAVE I.M.A.	Hotel	9/30/2018	NA	96,318,281	58,015,245
LaSalle I.M.A.	Diversified	1/1/1994	NA	1,082,377,647	1,351,056,328
LaSalle Takeover I.M.A.	Diversified	9/30/2018	NA	335,112,756	189,461,692
Total Value Add/Oppportunistic SMA			NA	2,469,950,938	2,959,517,275
Real Estate Securities^{1/}					
CenterSquare Real Estate Securities	Diversified	5/14/2002	NA	191,678,947	210,000,000
Total Real Estate Securities			NA	191,678,947	210,000,000
Total Active Real Estate			\$2,909,634,673	\$5,465,596,569	\$4,969,597,718

^{1/}Due to the nature of the investments, there are no capital commitments for value add/opportunistic SMA, legacy real assets, and real estate securities managers.

DEFINED BENEFIT PLAN

Assets | U.S. Equity

Objective

The objective of U.S. Equity is to generate returns through capital appreciation, income from dividend payments and to generate returns comparable to its public equity benchmark (Russell 3000 Index) over 5-year periods (annualized, net of fees).

Structure

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

U.S. Equity

as of December 31, 2024
(\$ millions)

Manager	Investment Style	Fair Value ^{1/}
U.S. Large/Mid Cap		
Mellon Investments Corporation Russell 1000	U.S. Large Cap Equity	\$13,627.7
Total U.S. Large/Mid Cap		13,627.7
U.S. Small Cap		
Emerald Asset Management	U.S. Small Cap Growth Equity	397.5
Mellon Investments Corporation Russell 2000 Core	U.S. Small Cap Equity	101.1
Mellon Investments Corporation Russell 2000 Value	U.S. Small Cap Value Equity	323.7
Total U.S. Small Cap		822.3
Total U.S. Equity		\$14,450.0

^{1/}Includes securities and cash, which the manager had available for investment.

DEFINED BENEFIT PLAN

Assets | International Developed Markets Equity

Objective

The objective of International Developed Markets Equity is to generate returns through capital appreciation and income from dividend payments that meet or exceed the MSCI World ex U.S. Index over 5-year periods (annualized, net of fees).

Structure

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

International Developed Markets Equity

as of December 31, 2024

(\$ millions)

Manager	Investment Style	Fair Value ^{1/}
Artisan Partners - Global ex U.S.	Global ex-U.S. growth	\$0.3
BlackRock MSCI World ex U.S. Index	World ex-U.S. Equity	3,234.7
Harris Associates	World ex-U.S. Small Cap Equity	148.0
Mellon Investments Corporation MSCI World ex U.S. Index	MSCI World ex-U.S. Index	1.8
Morgan Stanley Investment Management Limited-developed ex U.S.	EAFE value	0.3
Northern Trust - Equity	Transition	0.9
Templeton Investment Counsel - Global ex U.S.	Global ex-U.S. value	0.6
Walter Scott & Partners Limited	Global Equity	831.0
Xponance	International Small Cap Equity	245.9
Total International Developed Markets Equity		\$4,463.5

^{1/}Includes securities and cash, which the manager had available for investment.

DEFINED BENEFIT PLAN

Assets | Emerging Markets Equity

Objective

The objective of Emerging Markets Equity is to generate returns through capital appreciation and income from dividend payments that exceed the MSCI Emerging Markets Index over 5-year periods (annualized, net of fees).

Structure

Emerging Markets Equity investments are traditional equity investments generally made in the form of commingled funds since there are legal challenges for SERS to use separate accounts to open sub-custodial trading accounts in certain emerging market countries. Emerging Markets Equity contributes to a higher expected long-term return to the fund and is also a material contributor to volatility.

Emerging markets are generally regarded as less efficient than developed markets and historically have been more volatile than developed markets. Returns have been influenced by capital flows into and out of these markets; however, longer term, emerging markets can be attractive to those investors seeking to access the financial returns derived from rapidly expanding economies. Due to the high return volatility associated with emerging markets, the SERS Fund takes a diversified approach using a variety of investment strategies. The SERS Fund employs a structure diversified by investment advisor, style, and type.

Emerging Markets Equity

as of December 31, 2024
(\$ millions)

Manager	Investment Style	Fair Value ^{1/}
BlackRock MSCI Emerging Markets Index	Emerging Markets Equity	\$466.6
Leading Edge Investment Advisors	Emerging Markets Equity	1.0
Total Emerging Markets Equity		\$467.6

^{1/}Includes securities and cash, which the manager had available for investment.

DEFINED BENEFIT PLAN

Assets | Fixed Income

Objective

The objective of the Fixed Income allocation is to provide liquidity to minimize capital impairment risk, diversify investment risk, and enhance return to meet the fund's obligations. It is expected that the returns from the Fixed Income allocation will meet or exceed its benchmark (Bloomberg U.S. Aggregate Bond Index) performance over 5-year periods (annualized, net of fees).

Structure

Fixed Income investments are traditional investments made in the form of separate accounts and commingled funds. They include investments in publicly-traded debt obligations of sovereign, quasi-sovereign and corporate entities and securitized assets.

Fixed Income

as of December 31, 2024
(\$ millions)

Manager	Investment Style	Fair Value ^{1/}
Core Fixed Income		
Mellon Investments Corporation Bond Index	U.S. Aggregate Bond	\$4,031.8
PIMCO Core	U.S. Aggregate Bond	559.6
Total Core Fixed Income		4,591.4
Nominal US Treasuries		
Mellon Investments Corporation U.S. Treasury Index	U.S. Treasuries	1,581.4
Total Nominal US Treasuries		1,581.4
Opportunistic Fixed Income		
Blackstone Keystone	Fund-of-Funds	802.8
Total Opportunistic Fixed Income		802.8
Legacy Fixed Income		
Fidelity Institutional Asset Management	Commercial Mortgage-Backed Securities	29.3
Total Legacy Fixed Income		29.3
Total Fixed Income		\$7,004.9

^{1/}Includes securities and cash, which the manager had available for investment.

DEFINED BENEFIT PLAN

Assets | Inflation Protection (TIPS)

Objective

The objective of Inflation Protection is to protect against both expected and unexpected higher inflation, provide liquidity to minimize capital impairment risk, reduce volatility of the total fund, and contribute total return to the fund that meet or exceed its benchmark (Bloomberg U.S. TIPS Index) over 5-year periods (annualized, net of fees).

Structure

Treasury Inflation-Protected Securities (TIPS) are traditional investments made in the form of separate accounts and commingled funds. The primary advantage of TIPS is that their return offers protection against both expected and

unexpected higher inflation, as the securities' coupon payments are directly tied to the rate of inflation. TIPS, therefore, maintain the purchasing power of the investor. The coupon payments of TIPS have two components: a real coupon rate that is established at the issuance of the bond, and an accrual equal to the rate of inflation which adds to the principal balance of the security. TIPS are also useful for hedging liabilities which are affected by inflation and for hedging a cash flow stream against the need to liquidate equities and conventional bonds at depressed prices, in order to meet pension obligations during periods of unexpected inflation.

Inflation Protection (TIPS)

as of December 31, 2024
(\$ millions)

Manager	Investment Style	Fair Value ^{1/}
Brown Brothers Harriman	U.S. TIPS	\$485.0
NISA Investment Advisors	U.S. TIPS	463.9
Total Inflation Protection (TIPS)		\$948.9

^{1/}Includes securities and cash, which the manager had available for investment.

DEFINED BENEFIT PLAN

Assets | Cash

Objective

The objective of Cash is to serve as the primary source of liquidity and generate returns that meet or exceed its benchmark (ICE BofAML U.S. 3-Month Treasury Bill Index) over a three-year period.

Structure

Cash investments emphasize the use of higher credit quality debt instruments that are liquid and have short maturities and durations, or have floating rates and have historically been invested in the Pennsylvania Treasury Group Investment Fund, a short-term investment fund.

Cash

as of December 31, 2024
(\$ millions)

Manager	Investment Style	Fair Value ^{1/}
PA State Treasury (STIF)	Cash	\$2,046.4
Total Cash		\$2,046.4

^{1/}Includes securities and cash, which the manager had available for investment.

DEFINED BENEFIT PLAN

Assets | Legacy Private Credit

Objective

SERS will continue to work with existing Legacy Private Credit managers to actively achieve a return in excess of the S&P/LSTA Leveraged Loan Index plus 100 basis points for the duration of the investments.

limited partnership structures. The current structure of this portfolio consists of legacy investments that will continue to decrease over time as investments are realized, liquidated, and redeemed.

Structure

Private Credit investments are non-traditional investments made in the form of closed-end

Status

SERS no longer has an asset allocation targeting this strategy as a stand-alone asset class.

Legacy Private Credit

as of December 31, 2024
(\$ millions)

Sub-Asset Class	Unfunded Commitments	Fair Value	% of Total Fund
Total Legacy Private Credit	\$176.2	\$344.0	0.9%

The Capital Committed column represents total dollars allocated from SERS to each limited partnership. Accumulated Capital Drawn is the portion of SERS' capital commitments drawn by the general partner to be invested with

underlying portfolio companies along with any reinvested capital. The Accumulated Distributions column shows the value of capital and profits returned to SERS.

Legacy Private Credit Committed, Drawn, and Distributed

Active Legacy Private Credit Funds	Strategy/ Stage	SERS Initial Funding	Capital Committed	Accumulated Capital Drawn	Accumulated Distributions ^{1/}
Apollo Hybrid Value Fund	Diversified Credit	12/24/2018	\$100,000,000	\$136,130,196	\$140,023,052
Ares PA Opportunities Fund - Direct Lending	Direct Lending	10/12/2021	100,000,000	77,679,270	15,447,295
Audax Direct Lending Solutions Fund-A	Direct Lending	10/26/2018	100,000,000	123,209,521	89,676,629
Brightwood Capital Fund IV	Direct Lending	4/24/2018	100,000,000	100,000,000	61,859,412
ICG North American Private Debt Fund II	Direct Lending	2/27/2019	50,000,000	47,255,975	37,236,114
Permira Credit Solutions IV Master (Feeder) SCSp	Direct Lending	9/26/2019	75,000,000	62,933,547	37,411,501
Permira Susquehanna Opportunities - Credit	Direct Lending	4/7/2021	60,000,000	12,287,712	11,786,987
Total Active Legacy Private Credit Funds			\$585,000,000	\$559,496,221	\$393,440,990

^{1/}Distributions include stock distributions. Distributions may include fees that are recorded as negative distributions to be offset against future distributions of the underlying limited partnership investment.

DEFINED BENEFIT PLAN

Assets | Legacy Hedge Funds

Objective

SERS will continue to work with existing legacy managers as well as explore options to work with strategic partners to expedite the redemption process in a thoughtful and cost-effective way.

Structure

The current structure of this portfolio consists of legacy investments that will continue to

decrease over time as investments are realized, liquidated, and redeemed.

Status

SERS is no longer actively investing in this strategy; legacy hedge fund portfolios are currently in liquidation. The remaining balance has continued to decrease as SERS has successfully redeemed assets from legacy managers.

Legacy Hedge Funds

as of December 31, 2024
(\$ millions)

Manager	Investment Style	Fair Value ^{1/}
Legacy Hedge Funds	Fund-of-Funds	\$12.2
Luxor Capital Partners	Direct Hedge Fund	2.0
Total Legacy Hedge Funds		\$14.2

^{1/}Includes securities and cash, which the manager had available for investment.



Pennsylvania Investments

DEFINED BENEFIT PLAN

Pennsylvania Investments

Pennsylvania Investments

The board, employees of SERS, and agents of the board stand in a fiduciary relationship to the members and beneficiaries of the system regarding the investments and disbursements of the SERS Fund. Subject to prudent expert investment responsibilities contained in the Retirement Code and the Fiscal Code, the board has exclusive control and management of the SERS Fund and full power to invest the assets of the SERS Fund (the board adopted a formal *Statement of Investment Policy* in 1979).

Where investment characteristics are equivalent, the Retirement Code and the board’s current policy favor investments that have a positive impact on the economy of Pennsylvania.

Although the board’s fiduciary duty is to SERS members and beneficiaries, investments in Pennsylvania provide an ancillary and subordinate benefit to the state’s economy. The investment policy acknowledges that such benefit, derived from investments in Pennsylvania-based companies or firms employing Pennsylvanians, should be considered after other primary fiduciary investment characteristics are satisfied.

Fair value of Pennsylvania investments as of December 31, 2024, was approximately \$577.4 million.

Pennsylvania Investments by Asset Class

(\$ millions)

Asset Class	Total PA Fair Value
Private Equity ^{1/}	\$50.1
U.S. Equity	287.4
Real Estate ^{1/}	211.0
Fixed Income	28.9
Total Pennsylvania Investments	\$577.4

^{1/}Private Equity and Real Estate are valued as of September 30, 2024.

Private Equity

SERS’ Private Equity program dates back to 1985. Initially the program targeted a 1% allocation to growth equity with a focus to invest with managers located in Pennsylvania or with managers who had Pennsylvania investment mandates. Over its life, the program has grown to include national and international based private equity, special situation, and growth equity managers. Since inception, SERS’ Private Equity program has made commitments of approximately \$1.3 billion to 66 limited partnerships based in Pennsylvania. In addition, the number of non-Pennsylvania based managers investing in companies that impact the state comprises a meaningful portion of the program.

As of September 30, 2024, SERS’ active Private Equity managers held investments in 21 Pennsylvania-based companies. SERS’ pro-rata investment value in these companies is approximately \$50.1 million. This equates to 0.7% of the Private Equity program fair value and does not include investments headquartered outside of Pennsylvania that may have impactful operations within the state.

U.S. Equity and Fixed Income

SERS maintains a universe of institutionally investable Pennsylvania-based companies. The PA-based company universe is comprised of 152 institutionally investable publicly traded corporations which:

- Name their headquarters as Pennsylvania and have Pennsylvania employees or operations
- Have Pennsylvania-based employment exceeding 25% of total corporate employment

DEFINED BENEFIT PLAN

Pennsylvania Investments

SERS had approximately \$287 million invested in stocks of Pennsylvania-based companies, as of December 31, 2024. These securities are held in SERS' various externally managed global public equity portfolios.

Pennsylvania Investments - U.S. Equity

(\$ millions)

Manager	Fair Value
Emerald Advisers	\$25.5
Mellon Investments Corporation	244.6
Walter Scott	17.3
Total Pennsylvania Investments - U.S. Equity	\$287.4

SERS had approximately \$29 million invested in fixed income securities issued by Pennsylvania-based companies, as of December 31, 2024. These securities are held in SERS' various externally managed bond portfolios.

Pennsylvania Investments - Fixed Income

(\$ millions)

Manager	Fair Value
Mellon Investments Corporation	\$27.9
PIMCO	\$1.0
Total Pennsylvania Investments - Fixed Income	\$28.9

SERS had approximately \$2,046 million invested in the Pennsylvania Treasury Department's short-term investment pool.

Real Estate

In 1987, SERS began investing directly in the Pennsylvania commercial real estate market and subsequently established two separate account real estate portfolios managed by Heitman Capital Management and Grosvenor Investment Management, whose portfolio is now managed by LaSalle Investment Management and reported as a part of the LaSalle Takeover Account. In addition, SERS has invested as a limited partner in several real estate funds, which have acquired, and currently hold, numerous properties in Pennsylvania. All of the above noted investments are reflected in the data below.

As of September 30, 2024, the SERS real estate portfolio contained approximately 80 private real estate investments located in Pennsylvania, totaling 10.9 million square feet of office, retail, warehouse, and mixed-use space, 3,504 apartment, hotel, and senior housing units, and 2,342 self-storage units.

The gross fair value of the real estate assets located in Pennsylvania totaled approximately \$2.6 billion, of which SERS ownership share was approximately \$205 million.

In addition to the above, SERS owned approximately \$6.0 million worth of PA-based assets in publicly traded real estate investment trusts.

Diverse-Owned Firms

DEFINED BENEFIT PLAN

Diverse-Owned Firms

Diverse Investment Managers

The board defines a “diverse investment manager” as an investment management firm owned and/or controlled by a majority of persons who are women and/or minorities.

The board encourages the use of diverse investment managers in managing SERS' assets, encompassing all asset classes, within the bounds of financial and fiduciary prudence, and to take affirmative steps to remove any barriers to the full participation in investment opportunities. SERS believes that professionals and decision-makers who come from diverse backgrounds contribute different points of view that enhance organizational quality and economic performance.

The firm listed in Table 1 classifies itself as a diverse-owned firm and was under contract with SERS to provide investment management services within SERS' Equity portfolio as of December 31, 2024.

The firms listed in Table 2 were recognized by SERS' consultants or self-reported as diverse-owned firms and were under contract with SERS to provide investment management services within SERS' Private Equity, Real Estate or Legacy Private Credit portfolio as of December 31, 2024.

Table 1
Diverse Firm Within SERS Equity Portfolio

(\$ millions)

Firm	SERS Assets Under Management
Xponance	\$245.9

Table 2
Diverse Firms Within SERS Private Equity, Real Estate & Legacy Private Credit Portfolios

(\$ millions)

Firm	SERS Committed Capital
Asia Alternatives Capital Partners	\$295.0
Brightwood Capital	\$100.0
Blue Moon Capital Partners	\$100.0
Clearlake Capital Partners	\$500.0
Fairview Capital Partners	*
hotelAVE	NA
Hawkeye Partners ^{1/}	\$30.0
Rubicon Point Partners	\$50.0
Thoma Bravo ^{1/}	\$345.0
TSG Consumer Partners ^{1/}	\$200.0
Veritas Capital Partners ^{1/}	\$125.0
Vista Equity Partners ^{1/}	\$225.0
Weathergage Capital ^{1/}	\$50.0

^{1/}Diverse-owned firm identified by SERS' consultants or self-reported by manager with less than a majority of minority/woman ownership.

*The Keystone Legacy Fund is a special purpose vehicle to manage SERS' remaining 35 non-core funds as of December 31, 2024, which includes Buyouts, Special Situations, and Growth Equity.

DEFINED BENEFIT PLAN

Diverse-Owned Firms

Diverse-Owned Brokers Brokerage Commissions

The table below lists the diverse-owned brokerage firms utilized by SERS' external investment managers during calendar year 2024, as reported to SERS by SERS' external investment managers.

The board seeks to have managers direct trades through diverse-owned firms and reserves the right to establish proposed

trading targets. However, the responsibility for the selection and use of diverse brokerage firms is delegated to the investment managers. Diverse-owned brokerage firms' commissions totaled \$132,096 for the year. It is estimated this year that SERS' Equity managers directed approximately 1% of their trades through diverse-owned brokerage firms. Fixed Income managers traded a combined \$2.2 million of securities through diverse-owned brokerage firms.

Firm	Diverse-Owned Commissions
Castleoak Securities	\$6,160
Guzman & Company	51,200
Loop Capital	12,530
North South Capital	780
Pennserra	558
Sturdivant & Co	55,336
Telsey Advisory	5,532
Total Diverse-Owned Commissions	\$132,096

**DEFERRED
COMPENSATION
PLAN**

Supplemental Benefit

Deferred Compensation Plan

As of and for the year ended December 31, 2024

\$422.2 million

distributions/withdrawals
in 2024

\$5

billion in
assets



56,831

accounts

76

eligible employers

Participant Contributions

\$179.6 million

Total FY 2025-26 Planned Budget



\$1.2 million

**\$0.9
million**

personnel

**\$0.3
million**

operations

Excerpts from operations =

consultants - non EDP **\$160,400**

specialized services **\$26,731**

other operational **\$27,839**

legal services/fees **\$25,000**

DEFERRED COMPENSATION PLAN

Plan Description

Most state employees are eligible to participate in the voluntary Deferred Compensation Plan, commonly referred to as “deferred comp.” The plan allows participants to have some of their pay automatically deducted on a before- and/or after-tax basis and invested for retirement.

Participants can contribute as little as \$5 or 0.5% of pay each pay period and as much as the annual IRS contribution limits.

Participants are eligible for withdrawals or distribution of their deferred comp account when they retire, leave state employment, die, suffer an unforeseeable emergency as defined by the Internal Revenue Code, or to purchase service credit in the SERS Defined Benefit Plan.

Established by Act 1987-81, this voluntary supplemental investment plan was established as a trust and is administered in accordance with Internal Revenue Code 457(b). The plan allows participants the flexibility to make traditional before-tax and Roth after-tax contributions.

The SERS Board selects the investment options offered through this plan, contracts with investment managers, and contracts through a competitive bid with a third-party administrator of the plan, currently Empower. Empower maintains participant records, carries out investment transactions on behalf of the participants, counsels participants, and markets the plan.

Investment options comprise a series of target date funds that include a post-retirement date fund, equity funds, fixed income funds, a money market fund, and a self-directed brokerage option.

A majority of the cost of administering the deferred comp plan is borne by participants. In 2024, the SERS Board awarded a new contract for third-party administrator services that restructured the flow of money through

the plan and the Defined Contribution Plan beginning Jan. 1, 2025. As a result, a cross-agency team worked to build out the new administrative structure during the latter half of 2024 to benefit participants and employers, as described in the following section.

Recent Changes

In 2024, the plan experienced the following changes:

- **Board Awarded New Contract for Third-Party Administrator**

In May 2024, the board authorized staff to award a new contract to Empower for third-party administration services for the deferred compensation and defined contribution plans. The contract wrapped up a year-long competitive request for proposal (RFP) process that not only ensured services after the prior contract expired, but in coordination with state Treasury staff, changed the scope of services by modernizing the flow of money directly through the third-party administrator, as is an industry standard. The new structure results in enhanced services for both the Deferred Compensation Plan and the Defined Contribution Plan and approximately \$1.4 million in savings each year to benefit participants and employers. The new contract began Jan. 1, 2025.

- **Staff Coordinated Cross-Agency Team to Support Plan Enhancements**

SERS-Office of Financial Management led a cross-agency team of SERS-participating employers, the State Treasury, and the plan’s contracted third-party administrator, Empower, in a project to streamline the flow of money through both the defined contribution and deferred compensation plans. That work reduced the recordkeeping fee by nearly 35% and provides participants with quicker access to their money in the

DEFERRED COMPENSATION PLAN

Plan Description

plans -- within an average of 48 hours. In the past, payments were issued three days each month. In addition, participants will now see their contributions deposited into their accounts from five-to-seven days sooner.

- Target Retirement Date Funds Updated**

Target-date funds have a set lifespan – they operate until shortly before their target retirement date or year. As a result, the target-date funds offered in a plan naturally age-out and close over time leaving the option for new funds with later dates to be offered. On Dec. 18, 2024, a new 2070 Retirement Date Fund was added to the investment options. In addition, assets in the 2025 Retirement Date Fund converted to the Post Retirement Date Fund.

- Two Managers Decreased Maximum Investment Expenses**

On July 1, 2024, two managers decreased the maximum possible expense to be charged for assets in their funds. BlackRock decreased the maximum expense for their target date funds (Post Retirement Date Fund – 2070 Retirement Date Fund) from 0.0775% to 0.0700% of assets, and Mellon decreased the maximum expense for their index funds by 0.0050% - 0.0100%, depending on the fund.

Deferred Compensation Plan Statistics

as of December 31, 2024

Participants	56,831 total accounts 32,320 actively contributing participants
Assets	\$5.0 billion
Eligible Employers	76
Total Participant Contributions	\$179.6 million
Total Rollovers Into the Plan	804 totaling \$66.1 million
Total Rollovers Out of the Plan	1,977 totaling \$276.2 million
Total Distributions/Withdrawals	29,629 totaling \$422.2 million

DEFERRED COMPENSATION PLAN

Plan Description

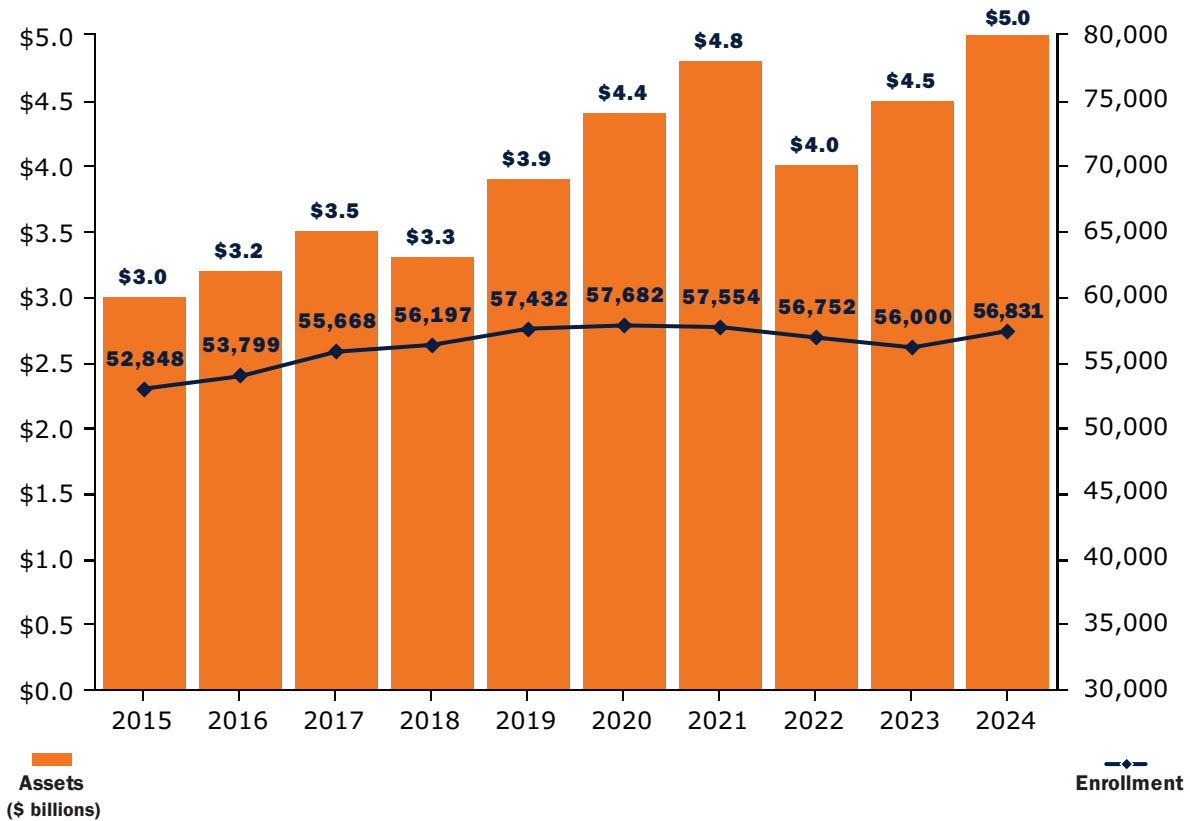
Plan Assets and Enrollment

In 2024, approximately 57,000 participants had a total of approximately \$5.0 billion invested in deferred comp.

As of December 31, 2024, there were 32,320 active and 24,511 inactive participants in

deferred comp. From 2015 to 2024, annual deferrals have ranged from \$135 million to \$180 million per year and the total fund value grew from approximately \$3.0 billion to approximately \$5.0 billion.

Deferred Comp Assets & Enrollment



DEFERRED COMPENSATION PLAN

Participation, Assets, Performance, and Fund Expense

Deferred Compensation Plan Investment Options

Participation, Assets, Performance, and Fund Expense
as of December 31, 2024

Fund Name	Participants	Fund Balance	Inception Date	Estimated Calendar Year, Net-of-Fees Returns					Max Total Investment Fund Expense
				1 Year	3 Year	5 Year	10 Year		
Stable Value Fund	34,530	\$1,015,313,513	12-2003	2.94%	2.44%	2.25%	2.22%	0.2520% ^{1/}	
Post Retirement Date Fund	5,228	331,972,246	08-2005	7.08	0.54	4.01	4.62	0.0700 ^{2/}	
2030 Retirement Date Fund	2,650	144,071,196	08-2005	9.12	1.57	5.68	6.33	0.0700 ^{2/}	
2035 Retirement Date Fund	3,123	139,869,064	07-2006	10.89	2.43	6.80	7.18	0.0700 ^{2/}	
2040 Retirement Date Fund	2,596	98,962,860	08-2005	12.62	3.27	7.83	7.95	0.0700 ^{2/}	
2045 Retirement Date Fund	2,582	86,413,244	07-2006	14.27	4.08	8.79	8.59	0.0700 ^{2/}	
2050 Retirement Date Fund	2,220	63,294,908	09-2007	15.57	4.66	9.40	8.95	0.0700 ^{2/}	
2055 Retirement Date Fund	1,421	25,392,063	05-2010	16.21	4.91	9.62	9.05	0.0700 ^{2/}	
2060 Retirement Date Fund	867	11,417,924	11-2014	16.23	4.92	9.61	9.05	0.0700 ^{2/}	
2065 Retirement Date Fund	530	7,218,089	09-2019	16.27	4.93	9.58	NA	0.0700 ^{2/}	
2070 Retirement Date Fund	14	18,365	09-2024	NA	NA	NA	NA	0.0700 ^{2/}	
U.S. Large Company Stock Index Fund	36,353	1,697,504,850	12-1994	25.00	8.93	14.53	13.11	0.0100 ^{2/}	
U.S. Small/Mid Company Stock Index Fund	29,913	488,721,611	08-1998	17.10	2.75	10.09	9.57	0.0150 ^{2/}	
Global Non-U.S. Stock Index Fund	21,848	273,760,307	03-2009	5.53	0.99	4.33	5.08	0.0350 ^{2/}	
U.S. Bond Index Fund	19,348	243,463,525	02-1995	1.25	(2.38)	(0.32)	1.33	0.0125 ^{2/}	
Short-Term Investment Fund	16,258	127,303,836	10-1988	5.20	3.92	2.48	1.86	0.0000	
Charles Schwab Self-Directed Brokerage ^{3/}	3,690	195,747,930	NA	NA	NA	NA	NA	NA	

^{1/}The Stable Value Fund expense will fluctuate very little based on the balance of the fund.

^{2/}Maximum possible expense that can be charged.

^{3/}For those in the Self-Directed Brokerage Option (SDB), the asset fee is assessed against the balance in the SDB but the actual deduction is prorated against the core investment options separately.

The Plan's monthly recordkeeping fee is \$4.55 per participant.

In addition, the Plan charges an admin fee for accounts with a balance greater than \$5,000:

- \$1.00 flat fee per month; plus
- 0.02% of account value annually, to be withheld on a monthly basis, not to exceed \$50 annually