Public School Employees' Retirement System

A Component Unit of the Commonwealth of Pennsylvania

Annual Comprehensive Financial Report

Fiscal Year Ended June 30, 2022 and 2021

Pennsylvania Public School Employees' Retirement System

A Component Unit of the Commonwealth of Pennsylvania

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for the
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Report prepared by the Public School Employees' Retirement System
Office of Financial Management Staff with support from many areas of PSERS

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COMMONWEALTH OF PENNSYLVANIA
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November 4, 2022

The Honorable Thomas W. Wolf, Governor of Pennsylvania
Members of the PA General Assembly
Members of the Retirement System
Members of the Boards of PSERS' Employers
Pennsylvania Public School Employees' Retirement System Board of Trustees

Dear Governor Wolf, Legislators, Members, Employers' Board Members, and PSERS Board of Trustees:

We are pleased to present the 103rd edition of the Annual Comprehensive Financial Report (ACFR) for the Pennsylvania Public School Employees' Retirement System (PSERS, System, or Fund) for the fiscal years ended June 30, 2022, (FY 2022) and 2021 (FY 2021). This report provides financial, investment, actuarial, and statistical information in a single publication in accordance with the Government Finance Officers Association standards.

This year's theme highlights PSERS efforts to move forward in a positive direction during challenging times. Fiscal years 2021 and 2022 were difficult as global financial markets remained volatile. FY 2022 was also a year of great organizational change and development at PSERS. The year included multiple executive staff retirements, the hiring of a new Executive Director in June, and the beginning of implementation of governance reforms from the Funston Governance Review report. FY 2022 also marked the conclusion of the internal investigation of the shared-risk calculation error and the purchase and valuation of certain directly-owned properties, and the closure of the U.S. Department of Justice investigation. There were no findings of criminal conduct and no civil or criminal charges from either investigation. PSERS Board and Staff have embraced a collaborative, positive approach to move the Agency forward to become a best-in-class system among its public pension peers.

The management of the System is solely responsible for the accuracy and completion of this report, pursuant to section 24 Pa.C.S. §8502(n) of the Public School Employees' Retirement Code (Retirement Code). The entire report can be downloaded from PSERS' website at www.psers.pa.gov.

The System was established on July 18, 1917, to provide retirement benefits to public school employees of the Commonwealth of Pennsylvania (PA). The members eligible to participate in the System include all full-time public school employees, part-time hourly public school employees who render at least 500 hours of service in the school year, and part-time per diem public school employees who render at least 80 days of service in the school year in any of the reporting entities in Pennsylvania. As of June 30, 2022, the System had over 248,000 active members with an estimated annual active payroll of $14.7 billion.

The annuitant membership at June 30, 2022 was comprised of approximately 247,000 retirees and beneficiaries who receive approximately $542 million in monthly pension and healthcare premium assistance benefits. The average yearly benefit paid to annuitants is $26,078. (The average benefit payment for each benefit type, grouped by years of credited service, is detailed in the Statistical Section of this report. See the Distribution of Annual Pension Amounts chart in the Introductory Section of this report.)

PSERS benefit payments provide a stable source of revenue for local economies throughout Pennsylvania. In FY 2022, PSERS distributed $6.6 billion or nearly 91% of total pension benefits to annuitants who reside in

Pennsylvania. These pension benefits are a significant economic driver that benefit the economy of the Commonwealth. (See the Pension Benefits by County Map in the Introductory Section of this report.)

In addition to retirement benefits, PSERS administers the Premium Assistance Program that provides a health insurance premium subsidy of up to $100 per month for those retirees who qualify. On June 30, 2022, there were approximately 94,000 members participating in the Premium Assistance Program. PSERS also manages a health insurance program, PSERS Health Options Program (HOP), that is entirely funded through participating member premiums. The HOP provides Medicare Supplemental, Medicare Advantage, Prescription Drug, Dental, and Vision plans to over 123,000 annuitants and their dependents.

The System is a governmental cost-sharing, multiple-employer defined benefit pension plan, to which most members and reporting units contribute. PSERS also administers a defined contribution plan to which all new members and reporting units contribute. PSERS is administered by a staff of 375 and has 770 reporting units as of June 30, 2022. The System is headquartered in Harrisburg, Pennsylvania, and has seven field offices in strategic areas of the Commonwealth to enable direct contact with the membership and the System's employers.

PSERS was established by law as an independent administrative board directed by a 15-member governing board of trustees (Board), which exercises control and management of the System, including the investment of its assets. PSERS is considered a component unit of the Commonwealth of Pennsylvania as defined by the Governmental Accounting Standards Board (GASB). An annual audit of the System by an independent certified public accounting firm is required by the Retirement Code. PSERS has contracted with CliftonLarsonAllen LLP for the fiscal year 2022 audit of its financial statements and has received an unmodified opinion as evidenced in the Report of Independent Auditors in the Financial Section of this ACFR. An unmodified opinion means that PSERS' financial statements fairly present, in all material respects, its financial condition. In addition, no significant findings were noted during the audit and, therefore, a management letter was not issued. This is the thirteenth consecutive year that a management letter was not issued by the independent auditors and is reflective of the hard work and dedication of PSERS' Board and staff to continue to improve the internal controls, operations, and efficiency of the System.

Economic Summary

The combined aggressive response from monetary policy (central banks) and fiscal policy (governments) to the COVID-19 pandemic successfully transitioned economies from collapse in fiscal year 2020, to lift off in fiscal year 2021, to a more uncertain state in fiscal year 2022. This heightened uncertainty in fiscal year 2022 was due to the emergence of three powerful forces: inflation, geopolitical instability from Russia's invasion of the Ukraine, and the continued mutation of COVID-19 into new variants. Each issue-on its own; would have been difficult for policymakers and investors to manage. Together, they made the cone of potential outcomes far wider than normal and the job of policymakers and investors that much more difficult to navigate.

Despite most every country and region of the world facing the same three powerful forces, specific conditions differed somewhat from country to country and region to region. The United States arguably had the largest monetary and fiscal response to COVID-19. The United States saw a significant rise in the level and stickiness of inflation and witnessed growing tightness in labor market conditions (where the demand for labor far exceeded the supply). As a result, the Federal Reserve (the U.S. central bank) increased its hawkish rhetoric and began to move to increase interest rates in an effort to subdue inflation. Nominal GDP growth remained healthy, giving the Federal Reserve some room to maneuver without inducing a recession.

Europe confronted a more dire set of conditions. It faced the same inflationary and labor market dynamics but saw nominal GDP growth worse than in the United States. Europe was also far closer, geographically, and economically, to the fallout of the Russia/Ukraine war than the United States. Europe's dependence on imports of oil and natural gas from Russia made it especially vulnerable to supply interruptions and spikes in energy prices. Finally, Europe's own political and economic heterogeneity among its constituent countries made a unified monetary and fiscal response very difficult to achieve, with the risk growing of the disintegration of the Eurozone.

China saw its "zero COVID" policy exact a material toll on economic growth, helping to keep China's inflation rate moored at relatively modest levels compared to the rest of the world. Coupled with a weakening commercial and residential real estate sector – a large sector in China's economy – China's policymakers were concerned with preventing deflation and maintaining economic growth, admittedly at a growth rate lower than the high growth rate of the past two decades. In addition, policymakers were focused on maintaining political stability leading up to China's party congress in late 2022.

Status of Pension Funding Initiatives

The ongoing budgetary commitment of Gov. Tom Wolf and the Legislature authorizing state and school employers to pay the full amount of the actuarially required contributions continues to help improve PSERS' funded status.

From FY 2017 to FY 2022, PSERS received full actuarial funding from school employers and the Commonwealth after 15 previous years of underfunding. Full actuarial funding from employers, along with member contributions and investment income, are all necessary sources of funds that will pay down the unfunded liability and return PSERS to fully funded status.

During FY 2022 investment markets were volatile and challenging. PSERS' fiscal year return of 2.23% was above its public pension peers but below the Fund's long-term earnings assumption of 7.00%. Pension plans like PSERS are well-diversified and built to generate long-term returns, so one negative year is not expected to have a significant impact on the System's funded status. On an actuarial basis, the funded ratio was 59.6% at June 30, 2021, the most recent actuarial valuation. Subject to future investment returns and continued commitment to making employer contributions, the actuarial funded ratio is expected to climb to near 80% by 2030.

The System's funded ratio on a market-value basis was 61.34% at June 30, 2022. The FY 2022 funded ratio decreased on a market-value basis due to lower investment returns in FY 2022. The longer-term trends remain positive. Since June 30, 2016, when full actuarial funding began, the System's market value unfunded ratio has increased from 50.14% to 61.34% at June 30, 2022.

Major Initiatives

Organizational Changes and Developments in 2022

FY 2022 was a year of great organizational change and development at PSERS. The year included multiple executive staff retirements, the hiring of a new Executive Director in June, the completion of an internal investigation, and the beginning of implementation of governance reforms.

Three top executives retired during fiscal year 2022 - Executive Director Glen Grell, Chief Investment Officer James Grossman Jr., and Chief Counsel Jackie Lutz. PSERS Board conducted executive searches for these positions and has filled two of the vacancies to date.

- Ms. Terrill (Terri) J. Sanchez was hired in June 2022 as PSERS Executive Director.
- In August 2022, PSERS Board hired Joseph J. Indelicato, Jr. as a Special Advisor to the Board. After Pennsylvania licensing requirements are completed, Mr. Indelicato will assume the position of Chief Counsel at PSERS.
- The Chief Investment Officer executive search is ongoing as of the date of this report. Robert Devine, PSERS Fixed Income Director, has been serving as Interim Chief Investment Officer since December 2021.

FY 2022 also marked the conclusion of the internal investigation of the shared-risk calculation error and the purchase and valuation of certain directly-owned properties and the closure of the U.S. Department of Justice investigation. There were no findings of criminal conduct and no civil or criminal charges from either investigation. The SEC investigation noted in last year's ACFR remains ongoing. PSERS continues to fully cooperate with the SEC.

Although there were no findings of criminal conduct, there are opportunities for improvement in every organization. Over the past fiscal year, several reviews were conducted to evaluate various governance controls, policies, and procedures, and provide insight and recommendations for improvement. The reviews include the following:

- **Funston Governance Report** - In December 2021, the PSERS Board accepted a governance review report it commissioned with Funston Advisory Services. Since then, the Board and staff have been working to evaluate and implement recommendations. In March 2022, the Board adopted a Model Governance Manual Framework ("Framework") to serve as the new supporting structure for the Board's governance documents. Along with adopting a new Framework, the Board repealed a few longstanding bylaws regarding Committees of the Board and replaced them with several of the Funston recommendations, including:
    - Reducing the number of committees from 10 to 7.
    - Providing for an election process for Committee Chair and Vice Chair.
    - Replacing descriptions of the Committees within the Bylaws with Committee Charters.
    - Reducing the composition of most committees to five members.
    - Creating a Chair/Vice Chair succession plan.
- The seven newly constructed committees have selected their respective chairs and vice chairs, and reviewed and updated their Committee Charters, creating clarity for each Committee's purpose, authority, and responsibilities.
- Position descriptions for Board members and Board and Committee Chairs and Vice Chairs were developed and adopted.
- The Board also adopted a Public Participation Policy and a Strategic Planning Policy – a first for the Agency. In support of the new Strategic Planning Policy, in October 2022, the Board hired Dering Consulting Group to assist PSERS with developing a Strategic Plan. PSERS Staff and the Board will work collaboratively to develop a strategic direction and prioritize initiatives.
- **Investment Office Operational Processes and Procedures Review Report -** The Board engaged Verus Advisory Inc. to provide an assessment of the operational policies, processes, and procedures followed by the Investment Office. In March 2022, Verus presented their findings and determined that the PSERS Investment Office had generally implemented solid processes and controls that aligned with industry best practices, but they did note areas for improvement that could further strengthen those operational policies, processes, and procedures.
- **Ernst & Young Assessment –** E&Y is working with PSERS staff to review the Fund's systems of internal controls, and provide recommendations to improve those controls, increase efficiencies, and reduce risk.
- PSERS has started the multi-year process to conduct a SOC 1/Type 2 Review and Audit, a rigorous review/ audit of operations and controls which was proposed by Vice Chairman and Audit Committee Chair Rep. Frank Ryan to comply with Act 128 of 2020 and is fully supported by the Board and Staff. The Act, which was also sponsored by Rep. Ryan, directs PSERS board to provide for an internal control audit at least once every five years.

Member Communication and Services

Member Customer Service

PSERS continues to make improvements to its member service offerings, its pension administration system, and the associated online functionality.

Throughout the year, PSERS completed many undertakings to improve communication with members. PSERS continued monthly targeted email messages to all members, including aspects unique to DC plan participants. Multiple surveys were conducted to acquire feedback on various topics, including the DC Plan experience and overall engagement and satisfaction. The results will assist in developing PSERS short-term and longer-term communication plans and the redesign of current communication materials and efforts.

New PSERS members have 90 days from notification of qualification to make an irrevocable membership class election decision which impacts their contribution amounts and their overall retirement benefit. To assist in making that decision, PSERS piloted large group and individual webinars to better educate new members on their options and assist them in making the choice that is best for their situation.

As PSERS and the rest of the Commonwealth continued to adjust to a post-pandemic world, PSERS restarted in-person retirement exit counseling sessions. These sessions are being offered both in-person and virtually. Additionally, school employers reopened their doors to allow PSERS to conduct on-site large group educational presentations, known as Foundations for Your Future sessions. After a two-year hiatus due to COVID-19, these sessions are drawing large crowds of interested members. A new, interactive map has been deployed to the PSERS website to make it easier for members to identify opportunities to attend these sessions in their local areas. Another major undertaking has been incorporating the IRS' revisions to the W-4P form for federal tax withholding. The changes remove the incorporation of allowances and set forth a new default standard deduction. Members on payroll as of December 31, 2022, will have their current withholding amounts converted to corresponding values within the new guidelines. Members receiving new payments after this date will need to select federal tax withholding using the new withholding options.

Member Self-Service

The PSERS Member Self-Service (MSS) Portal has continued to be a tremendous success. Since being implemented in April 2018, more than 225,000 members have created their online account and conducted nearly 400,000 transactions for themselves. The most common actions taken are to create their own retirement estimates, update their beneficiaries, update their address, and generate their own income verification. MSS also allows members to "Go Green" and as a result, nearly 94% of all MSS accounts have opted to go paperless and receive information from PSERS electronically. This paperless opportunity has exceeded $1,000,000 in cumulative savings since inception in FY 2018.

A redesigned MSS platform has been deployed, making it easier for members to navigate from PCs and mobile devices. New customer service features were added giving members the ability to track the status of their requests for an estimate, the processing of a refund, and the processing of a retirement benefit. Work is currently underway to enable members to submit a refund application online, expediting the process and reducing the need for manual intervention, and to allow members to update their online banking with PSERS.

PSERS Health Options Program Update

The PSERS Health Options Program (HOP) continued to see steady growth in enrollment and had more than 123,000 PSERS retirees, spouses, and dependents enrolled as of June 30, 2022. Within the plan, there is a Dental Program offering and a Vision Program offering, each of which had over 32,000 enrollees as of June 30, 2022. An open enrollment was held during the 2021-22 plan year which also contributed to the growth of the HOP membership. In addition, PSERS' HOP Plan received two awards including:

- **PSERS HOP CMS Medicare 2022 Star Rating -** PSERS HOP Employer Group waiver Plan received a 4.5 Star Rating for the upcoming 2023 plan year. CMS' Medicare Star rating program evaluates Medicare Advantage (MA) and Prescription Drug Programs (PDP) based on a number of metrics around quality and performance. Rating criteria is based on a 1 to 5 point system. The ratings help members select the best plans for themselves or their families. PSERS PDP is among only six other plans in the United States to receive a 4.5 Star Rating and only two plans received the 5 Star Rating. The HOP PDP program has a history of earning high ratings annually since 2019 for overall service and quality of the prescription drug plan that retirees voluntarily pay for through monthly premiums. PSERS' latest CMS Star rating was based in part on how members rate the plan's services and care, and how well the plan helps members use recommended and safe prescription medications.

- **PSERS Prescription Drug Plan Earned National Award in May 2022 -** PSERS HOP Prescription Drug Plan earned the Pharmacy Quality Alliance's (PQA) Laura Cranston Excellence in Quality Award. The alliance, founded in 2006 and based in Alexandria, VA, seeks to set national prescription medication safety and use standards in partnership with the federal CMS. For a dozen years, PQA has issued the award which is named after the alliance's former Chief Executive Officer and is based on CMS' quality control healthcare rating system. The alliance bestowed this year's honor on 25 (2.9%) of the 850 Medicare Part D plan contracts in the CMS system.

Investment Office Developments

FY 2021 and FY 2022 was a time of great change and development in the Investment Office. In addition to the ongoing executive search for a new Chief Investment Officer noted above, PSERS continues to enhance internal controls and grow in-house Investment Staff which allows the Agency to manage more investments internally and save on external investment management fees.

PSERS Increased Internal Management

PSERS Investment Office continued the process of filling vacant positions with very capable investment professionals which will allow PSERS to continue its efforts to bring additional assets in-house, provide additional depth to the investment team, and/or enhance risk management, compliance, and operational practices. The expansion of professional staff allows the Investment Office to support the large amount of assets managed in-house at a significantly lower cost than if those assets were managed externally. The Investment Office managed approximately 54%, or $42.1 billion, of the gross assets (inclusive of leverage), in-house as of June 30, 2022. The estimated savings from managing those assets in-house is $50 million per year.

PSERS is in the process of hiring 10 additional staff to continue its efforts toward enhanced risk and compliance management, meeting various legislative initiatives such as an internal control audit, and on-going support for increased internal investment portfolio management.

Investment Book of Record (IBOR)

Phase 2 of the IBOR project was launched during FY 2022 and is currently scheduled to be completed in 2023. Building on the foundations of Phase 1, the completion of Phase 2 should bring enhanced productivity in the areas of performance reporting, compliance, derivatives collateral management, and private asset tracking.

The IBOR is a technological platform designed to deliver the current best available view of investment data suitable for investment decision-making, incorporating the current status and forward projections of portfolio investment holdings and cash position, as well as reference data and derived analytics supporting the investment decision-making process. Benefits sought from the IBOR include, among other things, modernization of processes, increased transparency, and increased functionality.

Divestiture of Russian and Belarus Investments

At the start of the Russian invasion of Ukraine in late February 2022, PSERS estimated the Fund held under $300 million (less than ½ of 1% of PSERS total assets of $72.5 billion) in Russian and Belarusian investments.

On March 3, 2022, PSERS Board of Trustees passed a Resolution to divest PSERS from investments in Russia and Belarus as expeditiously as possible, consistent with the Board's fiduciary duty of prudence. In addition, future investments involving Russia or Belarus were prohibited until directed otherwise by the Board. Since that time, the amount of PSERS investment holdings in Russia and Belarus has steadily declined.

PSERS conservatively estimates as of July 31, 2022, PSERS direct Russian holdings had a market value of approximately $1.4 million according to its custodian bank, BNY Mellon. Liquidation has not yet been achieved due to the Russian market's illiquidity. PSERS had indirect Russian holdings and alternative investments of approximately $500,000. This is a long put position that is contractually set to expire at the end of calendar year 2022. PSERS does not have any indirect or direct holdings in Belarus.

In addition, Gov. Tom Wolf on November 3, 2022, signed into law Act 132 (House Bill 2447) directing PSERS, as well as the State Treasury, State Employees; Retirement System, and the Pennsylvania Municipal Retirement System to divest from Russian and Belarusian assets.

Asset Allocation Changes
The Board reviews the long-term asset allocation targets of the System annually and consults with its actuary, consultants, Investment Office professionals, and others in formulating the asset allocation plan.

In December 2021, the Board adopted an updated Strategic Asset Allocation. The Board's strategic asset allocation approval establishes the guidelines for how PSERS' investment professionals and external managers invest assets of the fund to meet its long-term retirement obligations to the System's members. The Board's allocation changes, including an increase in public equities and the elimination of its absolute return holdings, are expected to be implemented prudently over time.

PSERS Remains Committed to Transparency
PSERS has a long history of providing extensive investment records to the public, press, and policymakers in accordance with existing state laws, Commonwealth directives, and best practices in government finance. PSERS abides by its legal and fiduciary obligations when using the agency's website and other means to release investment returns, fee data, and budgetary and actuarial data. PSERS provides extensive investment information on its website www.psers.pa.gov. For example, detailed reports providing investment performance by manager and detailed fee reports, including carried interest, have been added to PSERS' website.

In July 2021, the PSERS Board adopted a new travel policy providing for the formal review, written approval, and disclosure of all System-related travel and travel expenses. Throughout the year in the course of fulfilling their fiduciary duties, Board and staff of the Fund may occasionally be required to travel on behalf of the System to attend meetings, educational seminars, due diligence reviews, and satisfy such other fiduciary oversight and public outreach responsibilities. In accordance with the travel policy, travel reports have been posted on PSERS' website. These reports allow PSERS members and the public to view staff and board member travel expenses.

Financial Highlights

The fair value of the System's fiduciary net position decreased by $1.3 billion during FY 2022 to $71.2 billion as of June 30, 2022. The System is the 16th largest state-sponsored public defined benefit pension fund in the nation and the 37th largest among public and corporate pension funds in the nation. (More specific information on the System's net position is detailed in the Statements of Fiduciary Net Position and Management's Discussion and Analysis included in the Financial Section of this report.)

One of PSERS' mission critical objectives is the timely and accurate payment of benefits. In FY 2022, PSERS provided approximately $7.8 billion in pension and healthcare benefits to its members.

Budgetary and Financial Governance

PSERS manages multiple budget appropriations which support its ongoing operations. Each October, the agency submits its budget requests to the Governor's Office of the Budget. PSERS' Administrative, Defined Contribution, and Directed Commissions Recapture Program Budgets each require legislative approval. None of PSERS' budgets are funded from the Commonwealth's General Fund, but rather from the earnings of the Fund itself or participant charges. For FY 2022, the budgets for the System's two largest appropriations, the Administrative and the Investment Related Expenses, were $52.3 million and $34.8 million, respectively. Historically, PSERS has underspent its approved budgets, keeping more funds available to invest for PSERS' members.

PSERS continues to be a leader among large U.S. public pension funds of similar size and complexity in its effective control of expenses while providing necessary services to its membership. During the last several years, the number of active and retired members electing to receive newsletters, statement of accounts, 1099-Rs, and other publications electronically has continued to grow, which saves the agency over $275,000 per year in postage, printing, and paper costs.

During FY 2022 specifically, the agency lowered its postage costs, reduced contracted maintenance and repair services, decreased rental of equipment and software, and achieved significant savings in subscriptions, all of which keep more of PSERS assets available for the benefit of the Fund and its members. In addition to these savings, PSERS reduced costs by eliminating unnecessary parking leases at its headquarters location due to the adoption of an Agency-wide telework policy.

PSERS participates in an independent, international benchmarking survey evaluating its costs and service performance in comparison to other similar public pension funds. Based on the most recent survey, PSERS had a 7% lower pension administration cost per member than the average cost for its peer group. By running a lean and efficient operation, PSERS saves the Commonwealth and school employers approximately $3.4 million annually in administrative expenses compared to its peers.

Funding

Funding is the process of specifically setting aside money for current and future use. Proper funding for a defined benefit pension plan entails an actuarial examination of the fund balances and liabilities to ensure money will be available for current and future benefit payments. The actuarial valuation measures the progress toward funding pension obligations of the System by comparing the actuarial assets to the actuarial liabilities of the System.

The results of PSERS' latest published actuarial valuation (as of June 30, 2021) indicated that the rates of contribution payable by the members and employers, when taken together with the current assets of the System, are adequate to fund the actuarial liabilities for all benefits payable under the System at that date. The total funded status as of the latest actuarial valuation was 59.6%. Updated actuarial information will be presented at PSERS December 2022 Board meeting. (Additional comparative information on the funded status of PSERS can be found in the Financial Section and in the Actuarial Section of this report.)

Investments

In the years following the Great Recession of 2008-2009, PSERS' Board and investment professionals made significant changes to the Fund's investment asset allocation, including further refining its investment strategy and increasing the diversification of assets. The purpose of this was to increase the Fund's resilience to economic and market uncertainty. Diversification continues to be the primary means by which the Fund addresses uncertainty.

Income from the investment portfolio represents the major source of revenue to the System, accounting for 57% of total revenues over the 25-year period from, FY 1998 to FY 2022. The investment portfolio, which is one part of the System's net position, totaled $70.9 billion, at fair value, as of June 30, 2022. For FY 2022, the time-weighted net rate of return on the System's investments was 2.23%. While the FY 2022 return was positive, the net investment income (loss) was $(282.4) million. (Please see the section titled *Investment Return Reporting vs. Financial Statement Reporting* on page 39 of Management's Discussion and Analysis in the Financial Section for an explanation of why the FY 2022 financial statements contain a net investment loss while the FY 2022 investment return was positive.)

The Board has continued to fulfill its mission to maintain stability and the long-term optimum value of the Fund. This is evidenced in the long-term growth of the System's assets and the actuarial soundness of the Fund. The annualized time-weighted rate of return for the 25-year period ended June 30, 2022, was 7.05% and exceeded the Fund's current long-term investment rate of return assumption (7.00%). Of utmost importance to the Board is the assurance that the required reserves are available for payment of retirement benefits.

The Board is responsible for the formulation of investment policies for the System. Professional Staff and consultants are responsible for the implementation of those investment policies. The overall investment objectives of the System are as follows:

- to generate returns to support the System's actuarial soundness so it may provide its members with benefits as required by law;
- to earn a long-term total return, net of fees, investment, and administrative expenses, that equals or exceeds the Actuarial Assumed Rate approved by the Board;
- to earn a long-term total return, net of fees, and investment expenses, that equals or exceeds the Policy Index approved by the Board; and
- to prudently manage investment risks that are related to the achievement of investment goals.

(Additional information on the System's investments is contained in the Investment Section of this report.)

Defined Contribution Plan

The Defined Contribution (DC) Plan has continued to rapidly grow. As of June 30, 2022, there were approximately 47,000 participants with a total DC Plan balance nearing $99 million. The Retirement Code requires the DC Plan to provide no less than 10 investment options offered by three or more investment providers. Currently, the DC Plan lineup includes eight providers offering six asset classes and a portfolio of target funds, totaling 20 investment options among which participants in the DC Plan can diversify their portfolio. If a participant does not select individual investment options for themselves, they automatically default into a T. Rowe Price target date investment based on their date of birth.

In building upon the communication efforts within the relatively new defined contribution program, PSERS created multiple new education pieces on topics varying from general plan overviews, diversification, data security, maximizing savings and retirement readiness. PSERS also continued its efforts to acquire feedback and conducted specialized surveys to understand participant's feelings regarding their financial wellness and investment preferences.

Federal and State Tax Status

The System's defined benefit and defined contribution plans are qualified trust funds under Section 401(a) of the Internal Revenue Code (IRC). As a result of the qualified status, the trust funds are entitled to an exemption, under Section 501(a) of the IRC, from federal income taxation on their investment earnings. Additionally, contributions made on behalf of the active members are tax deferred under Section 414(h) of the IRC. The trust funds and any benefits accruing to the members of PSERS are exempt from Pennsylvania state and municipal taxes. The Internal Revenue Service (IRS) issued a determination letter dated March 16, 2017, which stated that the defined benefit plan and its underlying trust qualify under the provisions of Section 501(a) of the IRC and therefore are exempt from federal income taxes. A similar letter from the IRS dated April 3, 2019, was received for the defined contribution plan.

Internal Controls and Reporting

PSERS' management is responsible for and has implemented internal controls designed to provide reasonable assurances for the safeguarding of assets and the reliability of financial records. This report has been prepared in accordance with accounting principles generally accepted in the United States of America. The System maintains a full accrual accounting system. (More specific accounting information is detailed in the Summary of Significant Accounting Policies (Note 2) in the notes to the financial statements found in the Financial Section of this report.)

A system of internal controls provides reasonable, but not absolute, assurance that assets are properly safeguarded and that financial statements are reliable. The concept of reasonable assurance recognizes that first, the cost of a control should not exceed the benefits likely to be derived, and second, the valuation of the cost and benefits requires estimates and judgments by management.

PSERS' management believes the internal accounting controls currently in place are adequate to meet the purpose for which they were intended and also believes the financial statements, supporting schedules, and statistical tables are fairly presented.

In addition, each year PSERS undergoes a very thorough internal controls assessment. This year, the in-depth assessment is focused on eight areas of PSERS operations: Actuarial Reporting, Actuarial Valuation, Financial Reporting, Human Resources, Information Technology, Investments, DC Plan, and Governance. Each internal control assessment is based on five major components. The five components include - Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring.

As required by the Commonwealth, PSERS will submit the assessment and monitoring plan to the Commonwealth's Office of Budget by December 2022. No significant deficiencies have been identified in past internal control assessments.

As noted above PSERS has started a multi-year plan to conduct a SOC 1/Type 2 Review and Audit, a rigorous review/audit of operations and controls.

Professional Services

Professional consultants are appointed by the Board of Trustees to perform services essential to the efficient operation of the System. An annual audit by an independent certified public accounting firm and an annual valuation by an actuarial consultant attest to the financial and actuarial soundness of PSERS. The investment performance of the System is calculated by an investment evaluation firm on a quarterly basis. (The consultants providing services to the System are listed in the Financial Section and Investment Section of this report.)

Litigation and Contingencies

In 2021, the System received subpoenas from two federal agencies regarding the certification of the shared risk member contribution rate in December 2020, as well as the purchase and valuation of certain directly-owned properties. In August 2022, PSERS was informed by the U.S. Department of Justice that it has closed its investigation of PSERS. In 2021, PSERS Board also retained outside counsel to conduct an independent internal investigation of the shared risk calculation and the purchase and valuation of certain directly-owned properties. PSERS' internal investigation concluded in January 2022 with no findings of criminal conduct. PSERS is cooperating fully with the remaining federal investigation which is ongoing. The System is subject to various threatened and pending lawsuits. The System had a lawsuit filed by a board member regarding access to various documents and communications related to investments. It is the opinion of management that the ultimate liability arising from such threatened, pending litigation and investigations will not have a material effect on the financial position of the System.

Other Information

In compliance with the Retirement Code, actuarial tables and the computational procedures used by the System in calculating annuities and other benefits were published in the Pennsylvania Bulletin (Vol. 52, No. 26). This information can be found at: http://pacodeandbulletin.gov/Display/pabull?file=/secure/pabulletin/data/vol52/52-26/967.html.

System Awards

Government Finance Officers Association of the United States and Canada Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to PSERS for its Annual Comprehensive Financial Report for the fiscal year ended June 30, 2021. The Certificate of Achievement is a prestigious national award recognizing conformance with the highest standards for preparation of state and local government financial reports. To be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized annual comprehensive financial report whose contents conform to program standards. Such an annual comprehensive financial report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year. PSERS has received a Certificate of Achievement for 39 consecutive years, from FY 1983 to FY 2021. A photograph of this award appears in the Introductory Section of this report. Its attainment represents a significant accomplishment by the System, whose Office of Financial Management holds general responsibility for the compilation and validity of the financial data presented in the Annual Comprehensive Financial Report.

The System believes the current report continues to conform to the Certificate of Achievement program requirements and will be submitting this report to GFOA to determine eligibility for the 2022 certificate.

GFOA Popular Annual Financial Reporting Award

The Government Finance Officers Association of the United States and Canada (GFOA) has given an Award for Outstanding Achievement in Popular Annual Financial Reporting to PSERS for its Popular Annual Financial Report for the fiscal year ended June 30, 2021, which PSERS refers to as its Summary Annual Financial Report. The Award for Outstanding Achievement in Popular Annual Financial Reporting is a prestigious national award recognizing conformance with the highest standards for preparation of state and local government popular reports.

In order to receive an Award for Outstanding Achievement in Popular Annual Financial Reporting, a government unit must publish a Popular Annual Financial Report, whose contents conform to program standards of creativity, presentation, understandability, and reader appeal.

A Certificate of Achievement is valid for a period of one year. PSERS has received a Certificate of Achievement for six consecutive years, from FY 2016 to FY 2021. Its attainment represents an important accomplishment by the System.

Public Pension Coordinating Council Public Pension Standards Award

The Public Pension Coordinating Council has awarded its Public Pension Standards Award for Funding and Administration to PSERS for 2021. This award is in recognition of meeting professional standards for plan design and administration as set forth in the Public Pension Standards. Achievement of the Funding portion of this award is in recognition of the commitment of the Governor and General Assembly to fund 100% of the actuarially required contributions.

The Public Pension Coordinating Council was formed in 1990 to assist the public employee retirement community. The Council is composed of representatives from three national associations whose members are directly involved in the administration of public employee retirement systems: the National Association of State Retirement Administrators (NASRA); the National Conference on Public Employee Retirement Systems (NCPERS); and the National Council on Teacher Retirement (NCTR). A reproduction of this award appears in the Introductory Section.

Acknowledgments

The preparation of this report reflects the combined efforts of PSERS' staff under the direction of the PSERS Board. Our sincere appreciation is extended to all who assisted in and contributed to the completion of this document. This report is intended to provide complete and reliable information in conformance with accepted standards and to document responsible stewardship of the System's assets.

We embrace our responsibilities of being prudent stewards and to proactively prepare for the future. We will continue to work closely with our Board, members, employers and stakeholders and are committed to a collaborative, positive approach to move the Agency forward for the benefit of our members.

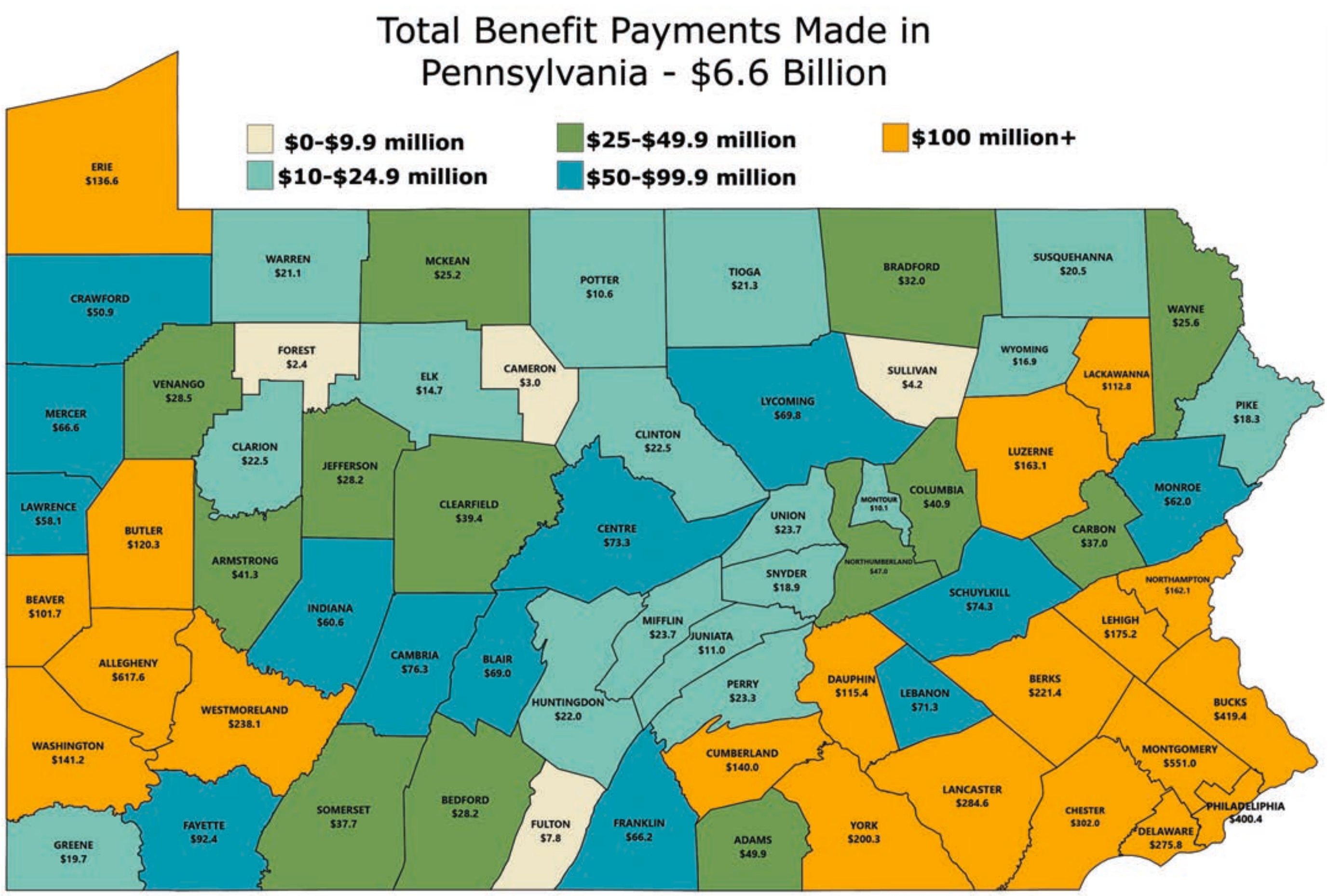
Respectfully submitted,

Terrill J. Sanchez	Brian S. Carl, CPA, CTP
Executive Director	Chief Financial Officer

Pension Benefits by County
Fiscal Year 2022
(Dollar Amounts in Millions)

PSERS provides a stable source of revenue for local economies throughout Pennsylvania. Each year, PSERS pays out billions in pension benefits to retired members who reside in Pennsylvania. In fiscal year 2022, PSERS pension benefits to retirees totaled approximately $7.25 billion. Of this amount, nearly 91%, or $6.6 billion, went directly into state and local economies. These pension benefits are a significant economic driver that benefit the economy of the Commonwealth.

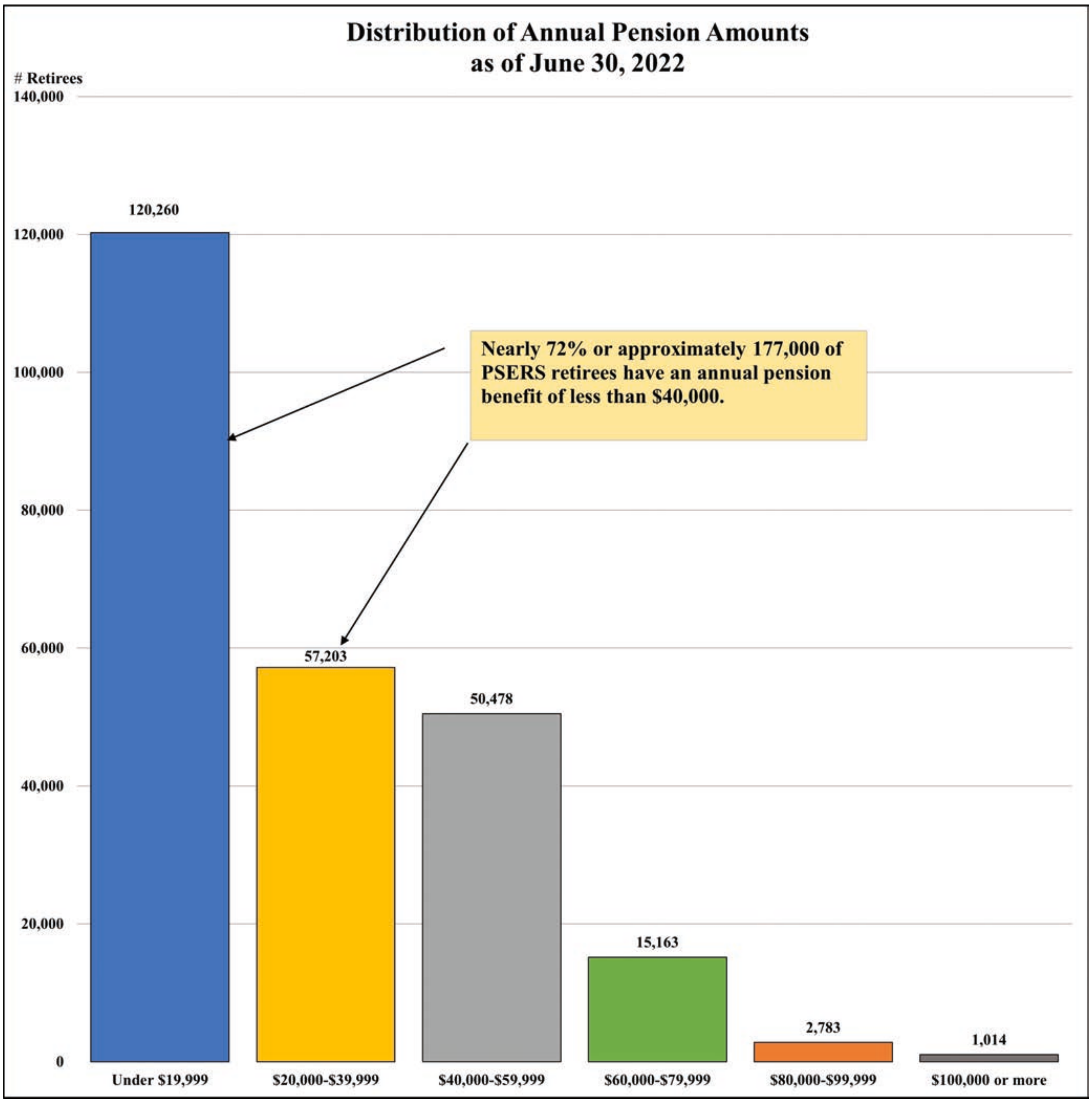
Top 10 Counties Based on Pension Benefits (Dollars in Millions)	
Allegheny	$617.6
Montgomery	$551.0
Bucks	$419.4
Philadelphia	$400.4
Chester	$302.0
Lancaster	$284.6
Delaware	$275.8
Westmoreland	$238.1
Berks	$221.4
York	$200.3

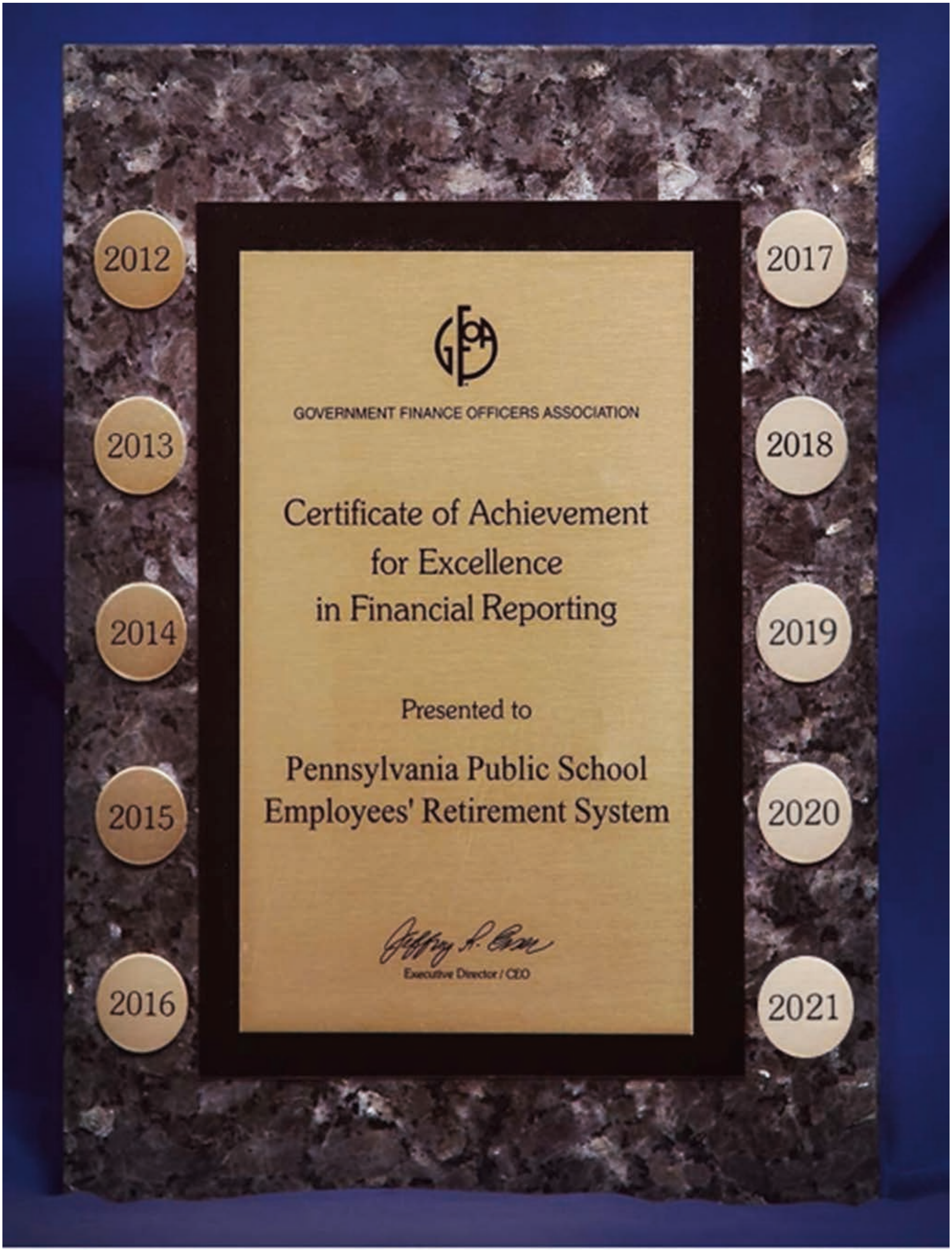


Pension Benefit Amounts
Fiscal Year 2022
(Dollar Amounts in Millions)

The average PSERS retiree receives a modest pension of $26,078 on an annual basis, a benefit earned through a lengthy career averaging 23 years in public education. During their career, members make mandatory contributions, most of which are between 7.50% and 10.80% of their pay, depending on their class of membership to help fund their own retirement benefit. In accordance with Act 120, new members as of July 1, 2011, and thereafter are funding the majority of the cost of their benefit. This is in contrast to many non-public (private) pension plans. In over 90% of such plans, members do not contribute and the employers bear 100% of the cost of the benefit.

Six-figure pensions are rare. At June 30, 2022, there were 1,014 retired members receiving an annual benefit over $100,000 out of approximately 247,000 PSERS retirees. These six-figure pension retirees spent an average of 38 years working in their public education careers and contributing to their benefit.




2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
GOVERNMENT FINANCE OFFICERS ASSOCIATION
Certificate of Achievement
for Excellence
in Financial Reporting
Presented to
Pennsylvania Public School
Employees' Retirement System
Executive Director / CEO

Public Pension Coordinating Council

Public Pension Standards Award
For Funding and Administration

2021

Presented to

Pennsylvania Public School Employees' Retirement System

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator

Mission Statement

The Board of Trustees and the employees of the Public School Employees' Retirement System (System) serve the members and stakeholders of the System by:

- *Providing timely and accurate payment of benefits,*
- *Maintaining a financially sound System,*
- *Prudently investing the assets of the System,*
- *Clearly communicating members' and employers' rights and responsibilities, and*
- *Effectively managing the resources of the System.*

updated October 28, 2008

Administrative Organization

PSERS Board of Trustees

Seated, front row (left to right): Melva S. Vogler; Ann Monaghan; Stacey Connors, designee for Honorable Patrick M. Browne; Treasurer Stacy Garrity; and Susan C. Lemmo

Standing, back row (left to right): PSERS Board Vice-Chair Honorable Francis X. Ryan; Secretary Richard Vague; Jason M. Davis, PSERS Executive Director and Board Secretary Terrill J. Sanchez; Eric DiTullio; John Callahan, designee for Nathan G. Mains; Patrick Shaughnessy, designee for Honorable Matthew Bradford; and PSERS Board Chair Christopher Santa Maria

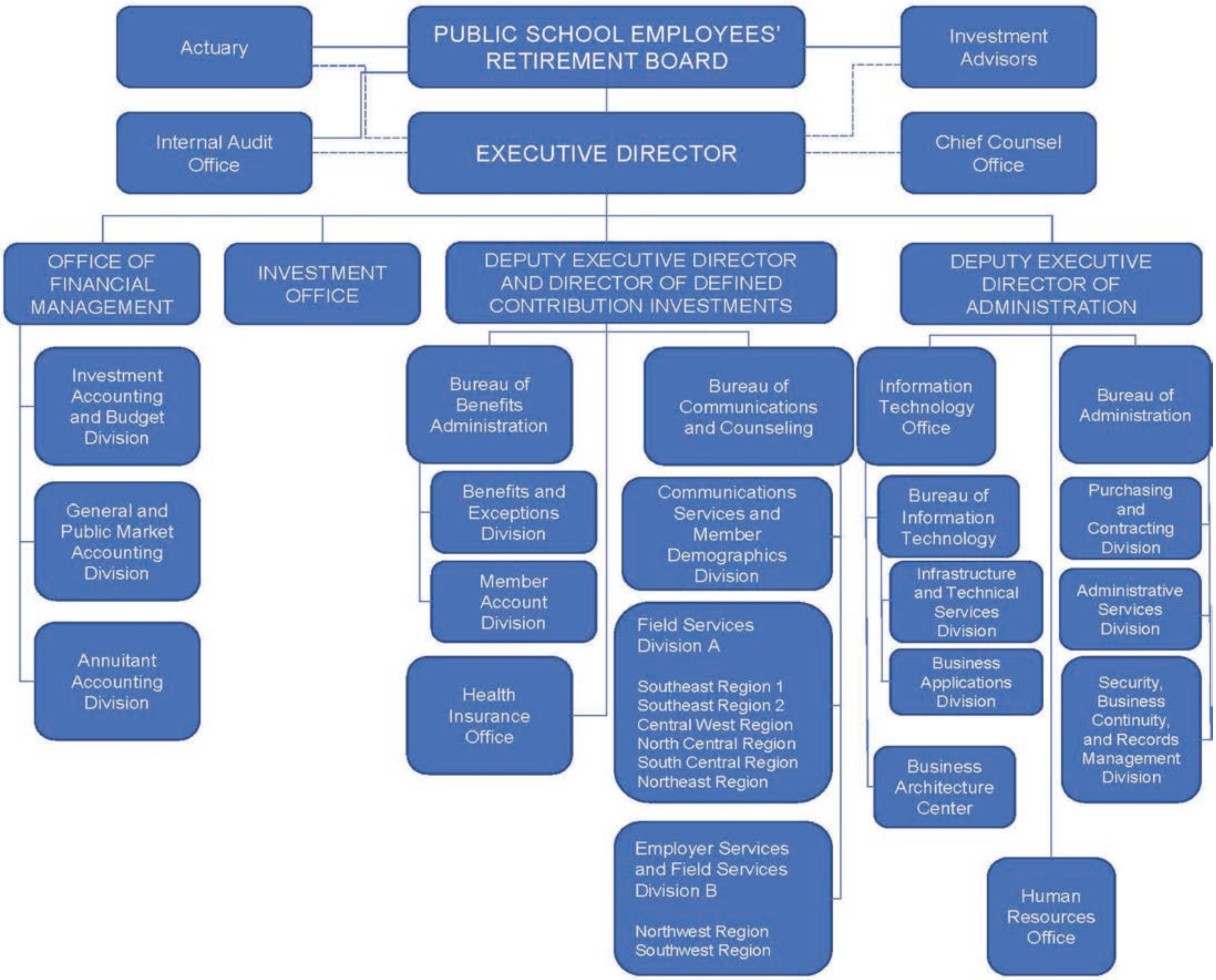
Not pictured: Acting Secretary of Education, Eric Hagarty, Honorable Katie J. Muth, and Joseph M. Torsella

PSERS Board of Trustees
as of June 30, 2022

2022 Board Committees

Audit, Compliance & Risk	Benefits & Appeals	Board Governance & Administration
Representative Ryan, Chair Treasurer Garrity, Vice Chair Mr. Davis Mr. Mains Secretary Vague	Ms. Vogler, Chair Ms. Monaghan, Vice Chair Mr. DiTullio Ms. Lemmo Senator Muth	Representative Bradford, Chair Secretary Vague, Vice Chair Mr. Mains Mr. Torsella Ms. Vogler
Defined Contribution	**Finance & Actuarial**	**Health Care**
Representative Ryan, Chair Secretary Vague, Vice Chair Senator Browne Mr. Mains Senator Muth	Senator Browne, Chair Mr. DiTullio, Vice Chair Acting Secretary Hagarty Mr. Torsella Ms. Vogler	Ms. Lemmo, Chair Mr. Davis - Vice Chair Representative Bradford Ms. Monaghan Acting Secretary Hagarty
	Investment	
	Secretary Vague, Chair Mr. Davis, Vice Chair Committee is comprised of all Board Members	

Organizational Chart of the
Public School Employees' Retirement System



For Schedules of Fees and Commissions please refer to the Financial section page 96 and Investment section page 111.

As of June 30, 2022

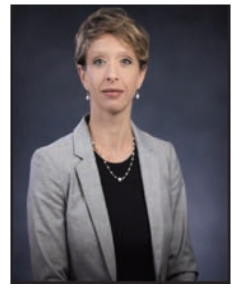
As of June 30, 2022

Administrative Staff

Terrill J. Sanchez
Executive Director

Robert J. Devine
Interim Chief Investment Officer

Beverly Hudson
Deputy Executive Director of Administration



Jennifer A. Mills
Deputy Executive Director and Director of Defined Contribution Investments

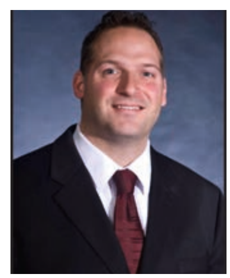
Letitia Schubauer
Acting Chief Counsel

Brian S. Carl
Chief Financial Officer

Steven C. Goldstein
Chief Technology Officer

Patricia Dence
Director of Administration

Mei Gentry
Chief Audit Officer



Eugene W. Robison
Director of Communications and Counseling

Caitlin Witmer
Director of Human Resources

Todd Fulton
Director of Benefits Administration

Peter Camacci
Director of Health Insurance

Evelyn M. Williams
Communications Director

PSERS REGIONAL OFFICES

Northwest

Franklin Penn Wood Center
464 Allegheny Boulevard, Suite C
Franklin, PA 16323-6210
Local: 1.814.437.9845
FAX: 1.814.437.5826
Toll-Free: 1.888.773.7748
Donald Gregory, Administrator

Northcentral

300 Bellefonte Avenue
Suite 201
Lock Haven, PA 17745-1903
Local: 1.570.893.4410
FAX: 1.570.893.4414
Toll-Free: 1.888.773.7748
Jeremy Wible, Administrator

Northeast

417 Lackawanna Avenue, Suite 201
Scranton, PA 18503-2013
Local: 1.570.614.0269
FAX: 1.570.614.0278
Toll-Free: 1.888.773.7748
John Kanvy, Administrator

Southwest

300 Cedar Ridge Drive
Suite 301
Pittsburgh, PA 15205-1159
Local: 1.412.920.2014
FAX: 1.412.920.2015
Toll-Free: 1.888.773.7748
Russell Miller, Administrator

Centralwest

219 West High Street
Ebensburg, PA 15931-1540
Local: 1.814.419.1180
FAX: 1.814.419.1189
Toll-Free: 1.888.773.7748
Brian Farester, Administrator

Southcentral

5 North 5th Street
Harrisburg, PA 17101-1905
Local: 1.717.720.6335
FAX: 1.717.783.9606
Toll-Free: 1.888.773.7748
John Tucker, Administrator

Southeast

605 Louis Drive, Suite 500
Warminster, PA 18974-2830
Local: 1.215.443.3495
FAX: 1.215.443.3487
Toll-Free: 1.888.773.7748
Joshua Catalfu, Administrator
Linda Visco, Administrator

As of June 30, 2022

PSERS Headquarters Building

The administrative headquarters of the Public School Employees' Retirement System (PSERS) is located at 5 North Fifth Street in downtown Harrisburg, Pennsylvania, within the State Capitol complex. Regional field offices are also maintained in Ebensburg, Franklin, Lock Haven, Harrisburg, Pittsburgh, Warminster, and Scranton.

The headquarters building was constructed and first occupied by the Retirement System in 1987. It is the first time a building was constructed for PSERS' use. It is owned by the Five North Fifth Street Corporation, a holding entity formed by PSERS, and is managed by Property Management, Inc.

Financial Section

CliftonLarsonAllen LLP
CLAconnect.com

INDEPENDENT AUDITORS' REPORT

The Board of Trustees of
Commonwealth of Pennsylvania Public School Employees' Retirement System
Harrisburg, Pennsylvania

Report on the Audit of the Financial Statements

Opinions

We have audited the accompanying financial statements of the Commonwealth of Pennsylvania Public School Employees' Retirement System (PSERS), a component unit of the Commonwealth of Pennsylvania, as of and for the years ended June 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise PSERS' basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of PSERS as of June 30, 2022 and 2021, and the respective changes in its financial position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of PSERS and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about PSERS's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

The Board of Trustees of
Commonwealth of Pennsylvania Public School Employees' Retirement System
Harrisburg, Pennsylvania

Auditors' Responsibilities for the Audit of the Financial Statements
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and Government Auditing Standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and Government Auditing Standards, we:

a. Exercise professional judgment and maintain professional skepticism throughout the audit.

b. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.

c. Obtain an understanding of internal controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of PSERS's internal controls. Accordingly, no such opinion is expressed.

d. Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.

e. Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about PSERS's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Required Supplementary Information
Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and the Schedules of Changes in the Employer Net Pension Liability, Employer Net Pension Liability, Employer Pension Contributions, Changes in the Employer Net OPEB (Premium Assistance) Liability, Employer Net OPEB (Premium Assistance) Liability, Employer OPEB (Premium Assistance) Contributions, Investment Returns – Pension and OPEB, and related Notes, as listed in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with GAAS, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

The Board of Trustees of
Commonwealth of Pennsylvania Public School Employees' Retirement System
Harrisburg, Pennsylvania

Supplementary Information
Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise PSERS's basic financial statements. The Schedule of Administrative and Investment Expenses, Summary of Investment Expenses, and the Schedule of Payments to Non-Investment Consultants (collectively, the supplementary information), as listed in the table of contents, for the year ended June 30, 2022 are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with GAAS. In our opinion, the accompanying supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information
Management is responsible for the other information included in the annual report. The other information comprises the introductory, investment, actuarial, and statistical sections, as listed in the table of contents, but does not include the basic financial statements and our auditors' report thereon. Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
October 4, 2022

Management's Discussion and Analysis

Management's Discussion and Analysis (MD&A) of the Commonwealth of Pennsylvania Public School Employees' Retirement System (PSERS, System, Fund) for the fiscal year ended June 30, 2022 (FY 2022) provides a narrative summary of PSERS' financial position and performance, including highlights and comparative data. The MD&A is presented as required supplementary information to the financial statements and should be read in conjunction with the financial statements, the notes to financial statements, and the supplementary schedules.

Overview of Financial Statements

PSERS is primarily responsible for administering a defined benefit pension plan for public school employees in the Commonwealth of Pennsylvania. PSERS also administers a Defined Contribution (DC) plan and two voluntary postemployment healthcare programs, the Health Insurance Premium Assistance Program (Premium Assistance) and the Health Options Program (HOP), for its annuitants. As part of the HOP, PSERS has an Employer/Union Direct Contract with the Centers for Medicare and Medicaid Services (CMS) to provide a Medicare Part D Prescription Drug Plan to participants. The financial statements present the financial position and activities for the pension plan, the DC plan and the two postemployment healthcare programs.

The ***Statements of Fiduciary Net Position*** provide a snapshot of the financial position of PSERS at June 30, 2022 and 2021. Amounts are shown for the most recent and previous fiscal years for comparison and analysis of changes in individual line items.

The ***Statements of Changes in Fiduciary Net Position*** summarize PSERS' financial activities that occurred during the fiscal period from July 1, 2021 to June 30, 2022 and from July 1, 2020 to June 30, 2021. Amounts are shown for the most recent and previous fiscal years for comparison and analysis of changes in individual line items.

The ***Notes to Financial Statements*** provide additional information that is essential for a full understanding of the financial statements. The notes are an integral part of the financial statements and include detailed information not readily evident in the basic financial statements such as accounting policies, plan membership and benefits, and summary disclosures of selected financial data.

The ***Required Supplementary Information*** immediately following the notes to financial statements provide seven schedules illustrating the Changes in the Employer Net Pension Liability; Employer Net Pension Liability; Employer Pension Contributions; Changes in the Employer Net OPEB (Premium Assistance) Liability; Employer Net OPEB (Premium Assistance) Liability; Employer OPEB (Premium Assistance) Contributions; and Investment Returns - Pension and OPEB. The remaining supplementary schedules provide additional detailed information concerning the administrative expenses, investment expenses, and payments to non-investment consultants. These schedules emphasize the long-term nature of the pension and premium assistance plans and show the progress of PSERS in accumulating assets sufficient to pay benefits when due. All of this supplementary information is considered useful in understanding and evaluating the financial activities of PSERS.

Financial Highlights

- The time-weighted rate of return on investments was 2.23% for FY 2022, 24.58% for the fiscal year ended June 30, 2021 (FY 2021), and 1.12% for the fiscal year ended June 30, 2020 (FY 2020). FY 2022 investment rate of return of 2.23% is in the top percentile of investment performance for PSERS public pension peer group. PSERS investment rate of return is well above Aon's public pension peer group median investment rate of return of (7.21)%. The return for the ten-year period ended June 30, 2022 was 7.91%, which exceeded the 7.00% actuarial investment rate of return assumption. Unless otherwise noted, all rates of return are net of fees.
- PSERS' total net position decreased $1.3 billion from $72.5 billion at June 30, 2021 to $71.2 billion at June 30, 2022. The decrease at June 30, 2022 was due mostly to deductions for benefits, administrative expenses and net investment loss exceeding member and employer contributions. The 2.23% investment return for fiscal year 2022 was well below the Fund's 7.00% actuarial investment rate of return assumption due to a challenging environment for financial markets from growing inflation concerns, tighter monetary policy, the Russian invasion of Ukraine and the associated uncertain economic implications. The change in total net position from June 30, 2020 to June 30, 2021 was an increase by an all time high of $13.5 billion from $59.0 billion at June 30, 2020 to $72.5 billion at June 30, 2021. The increase at June 30, 2021 was due mostly to record net investment income plus member and employer contributions exceeding deductions for benefit and administrative expenses.
- PSERS' Plan fiduciary net position as a percentage of the total pension liability (market value funded ratio) decreased from 63.67% at June 30, 2021 to 61.34% at June 30, 2022 due to investment returns below the actuarial investment return assumption. Over the past six years, the longer term trend of the market value funded ratio has increased from 50.14% at June 30, 2016 to 61.34% at June 30, 2022 due primarily to PSERS receiving the full actuarially required

Management's Discussion and Analysis (continued)

contributions in each of the past six years and strong positive investment performance.

- Total employer contributions increased from $4.9 billion in FY 2021 to $5.1 billion in FY 2022. This increase was primarily attributable to employer payroll growth and a small increase in the total employer contribution rate from 34.51% in FY 2021 to 34.94% in FY 2022.
- PSERS' employers fully funded the actuarially required contributions from FY 2016 to FY 2022. These contributions continue to make a positive difference in PSERS' longer term funding trends as PSERS Net Pension Liability has declined more than 10% from $49.6 billion at June 30, 2016 to $44.5 billion at June 30, 2022.
- PSERS' total benefit expense increased from $7.6 billion in FY 2021 to $7.8 billion in FY 2022. The average monthly pension benefit and the number of members receiving benefits increased in FY 2022.

Progress of Act 120 on PSERS' Funding

On November 23, 2010, the Governor signed HB 2497 into law. The legislation is now known as Act 120 of 2010. Act 120 preserved the benefits of existing members and included a series of actuarial and funding changes to PSERS and benefit reductions for individuals who became new members of PSERS on or after July 1, 2011 to June 30, 2019.

The Act created two new membership classes, T-E and T-F. T-E and T-F members are "shared-risk," meaning that their employee contributions can increase or decrease due to investment performance. Act 120 addressed the pending employer contribution rate spike projected for FY 2013 by smoothing the projected rate increases over a five- to nine-year time period using rate collars. Instead of a large rate spike in one year, under Act 120, the employer contribution rate increased steadily each year from the 5.64% in effect when Act 120 became law to the 34.94% rate in FY 2022. Prior to Act 120, PSERS' Annual Required Contribution (ARC) percentage of contributions received under Governmental Accounting Standards Board (GASB) standards was only 27%. As a result of the Act 120 funding increases, on July 1, 2016, PSERS began receiving 100% of actuarially required contributions based on sound actuarial practices and principles for the first time in 15 years. This marked a significant milestone in PSERS' contribution history and established a path to full funding. PSERS received the actuarially required contributions from FY 2016 to FY 2022, and the large annual employer contribution rate increases that occurred from FY 2012 to FY 2018 are now complete. Employer contribution rate increases in the future are expected to be in line with or less than inflation.

Analysis of Fiduciary Net Position

(Dollar Amounts in Thousands)

Summary of Fiduciary Net Position	FY 2022	Increase (Decrease)	FY 2021	Increase (Decrease)	FY 2020
Assets:					
Receivables	$ **2,472,480**	$ (73,438)	$ 2,545,918	$ (48,628)	$ 2,594,546
Investments	**70,904,736**	(1,256,048)	72,160,784	14,387,083	57,773,701
Securities lending collateral pool	**9,828,590**	1,966,303	7,862,287	3,371,050	4,491,237
Capital assets	**14,886**	(2,135)	17,021	(2,162)	19,183
Miscellaneous	**31,559**	(5,156)	36,715	13,719	22,996
Total Assets	**83,252,251**	629,526	82,622,725	17,721,062	64,901,663
Liabilities:					
Payables and other liabilities	**2,271,183**	43,564	2,227,619	846,979	1,380,640
Obligations under securities lending	**9,828,590**	1,966,303	7,862,287	3,371,050	4,491,237
Total Liabilities	**12,099,773**	2,009,867	10,089,906	4,218,029	5,871,877
Net Position	$ **71,152,478**	$ (1,380,341)	$ 72,532,819	$ 13,503,033	$ 59,029,786
Summary of Changes in Fiduciary Net Position					
Additions:					
Contributions	$ **6,307,440**	$ 316,803	$ 5,990,637	$ 113,431	$ 5,877,206
Participant premiums and CMS	**480,843**	10,086	470,757	(1,374)	472,131
Net investment income (loss)	**(282,401)**	(15,046,813)	14,764,412	13,757,695	1,006,717
Total Additions	**6,505,882**	(14,719,924)	21,225,806	13,869,752	7,356,054
Deductions:					
Benefit expense	**7,794,495**	163,119	7,631,376	260,034	7,371,342
Administrative expenses	**91,728**	331	91,397	1,254	90,143
Total Deductions	**7,886,223**	163,450	7,722,773	261,288	7,461,485
Changes in Net Position	$ **(1,380,341)**	$ (14,883,374)	$ 13,503,033	$ 13,608,464	$ (105,431)

Management's Discussion and Analysis (continued)

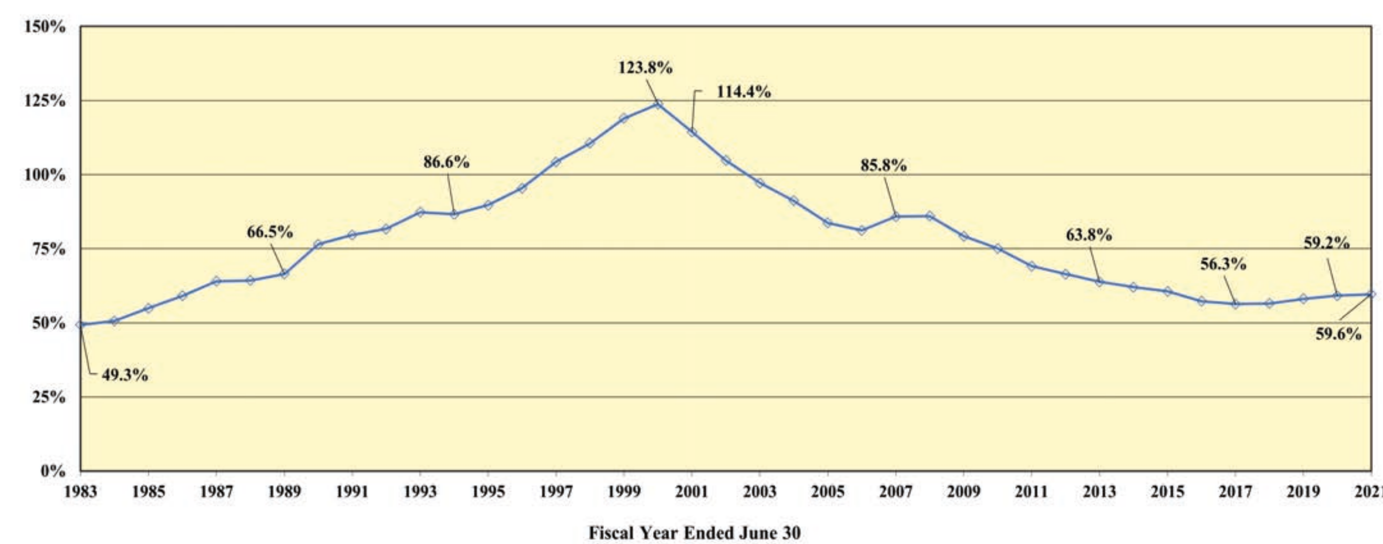
Act 5 of 2017 (Act 5) introduced a hybrid benefit with two membership classes and a separate defined contribution plan for individuals who become new members on or after July 1, 2019. Act 5 maintained the Act 120 employer contribution payment schedule and expanded shared risk.

Funded Status and State Accumulation Account

PSERS uses an actuarial reserve type of funding that is financed by member contributions, employer contributions, and earnings from invested assets. Figure 1 illustrates a thirty eight-year history of PSERS' funded status. An independent actuarial valuation of PSERS' actuarial assets and liabilities is performed annually. As part of this valuation, the progress toward funding pension obligations of PSERS is measured by comparing the actuarial value of assets to the actuarial accrued liability. This measurement is referred to as the funded ratio or funded status. PSERS' funded ratio increased from 59.2% at June 30, 2020 to 59.6% as of June 30, 2021, the most recent actuarial valuation, due to fully funded employer contributions, favorable demographic experience, and positive investment returns. These factors were offset by the impact of the adoption of new actuarial assumptions that included lowering the investment return assumption from 7.25% to 7.00% at June 30, 2021. The actuarial funded ratio improved to 59.6% as of June 30, 2021 after reaching a significant turning point at June 30, 2017 when it fell to a low of 56.3%. After years of decline since the 123.8% peak at June 30, 2000, the funded ratio is now improving and is projected to continue to rise in the future.

The results of operations for FY 2022 will be reflected in the actuarial valuation for the year ended June 30, 2022. Due to the normal lag time for completion of the actuarial valuation, the resulting funded status will be available at the end of the 2022 calendar year and will be reported in the financial statements for the fiscal year ending June 30, 2023 (FY 23). Based on the investment performance for the ten-year period ended June 30, 2022, which is above the investment rate of return assumption during that time period, and due to receiving the full actuarially required contributions the funded ratio at June 30, 2022 is expected to improve. Under GASB 67, the market value funded ratio, which is referred to as the plan fiduciary net position as a percentage of total pension liability, decreased from 63.67% at June 30, 2021 to 61.34% at June 30, 2022 due to investment returns trailing the actuarial investment return assumption. Unlike the actuarial funded ratio which recognizes the investment performance over 10 years, the market value funded ratio is expected to fluctuate more every year due to the immediate recognition of the fund's fiscal year investment performance. Over the past six years, the longer term trend of the market value funded ratio increased from 50.14% at June 30, 2016 to 61.34% at June 30, 2022 due primarily to PSERS receiving the full actuarially required contributions for all six years and strong positive investment returns. All the ingredients are in place and, based on the current actuarial assumptions, PSERS remains on a longer term path to full funding.

Figure 1 - PSERS' Funded Ratio*
Funded Ratio = Actuarial Value of Assets / Actuarial Accrued Liability



*2021 is most recent actuarial valuation available

Management's Discussion and Analysis (continued)

PSERS' State Accumulation Account declined from $(7.4) billion at June 30, 2021 to $(10.5) billion at June 30, 2022 due to benefit payments, administrative expenses and net investment loss exceeding employer contributions. Investment earnings and actuarially required employer contributions will reduce the deficit in this account in the future (See Note 3).

Investments

The combined aggressive response from monetary policy (central banks) and fiscal policy (governments) to the COVID-19 pandemic successfully transitioned economies from collapse in fiscal year 2020, to lift off in fiscal year 2021, to a more uncertain state in fiscal year 2022. This heightened uncertainty in fiscal year 2022 was due to the emergence of three powerful forces: inflation, geopolitical instability from Russia's invasion of the Ukraine, and the continued mutation of COVID-19 into new variants. Each, on its own, would have been plenty for policy makers and investors to deal with. Together, they made the cone of potential outcomes far wider than normal and the job of policy makers and investors that much harder.

Despite most every country and region of the world facing the same three powerful forces, specific conditions differed somewhat from country to country and region to region. The United States arguably had the largest monetary and fiscal response to COVID-19. The United States saw a significant rise in the level and stickiness of inflation and witnessed growing tightness in labor market conditions (where the demand for labor far exceeded the supply). As a result, the Federal Reserve (the U.S. central bank) increased its hawkish rhetoric and began to move to increase interest rates in an effort to subdue inflation. Nominal GDP growth remained healthy, giving the Federal Reserve some room to maneuver without inducing a recession.

Europe confronted a more dire set of conditions. It faced the same inflationary and labor market dynamics, but saw nominal GDP growth nowhere near as healthy as in the United States Europe was also far closer, geographically and economically, to the fallout of the Russia/Ukraine war, than the United States was. Europe's dependence on imports of oil and natural gas from Russia made it especially vulnerable to supply interruptions and spikes in energy prices. Finally, Europe's own political and economic heterogeneity among its constituent countries made a unified monetary and fiscal response very difficult to achieve, with the risk growing of the disintegration of the Eurozone.

China saw its "zero COVID" policy exact a material toll on economic growth, helping to keep China's inflation rate moored at relatively modest levels compared to the rest of the world. Coupled with a weakening commercial and residential real estate sector – a large sector in China's economy – China's policymakers were concerned with preventing deflation and maintaining economic growth, admittedly at a growth rate lower than the high growth rate of the past two decades. In addition, leading up to the party congress in late 2022, policymakers were focused on maintaining political stability.

Reflecting the turbulent macroeconomic picture, the return picture for investors was a tale of two halves for fiscal year 2022. Returns for the first half were markedly different from returns for the second half. In the first half, nearly all asset classes had positive returns. In the second half, nearly all asset classes had negative returns. See the table below for the public market returns of some common benchmarks.

ASSET CLASS	1H FY 2022	2H FY 2022
U.S. Large Cap Stocks	11.7%	(20.0%)
U.S. Mid Cap Stocks	6.1%	(19.5%)
U.S. Small Cap Stocks	2.6%	(18.9%)
Non-U.S. Developed Markets Stocks	(0.4%)	(16.5%)
Emerging Markets Stocks	(8.3%)	(17.9%)
U.S. Investment Grade Bonds	0.1%	(10.3%)
U.S. Long Maturity Treasury Bonds	3.6%	(21.3%)
Emerging Markets Bonds	(1.9%)	(15.6%)
U.S. High Yield Bonds	1.6%	(14.2%)
U.S. Inflation Linked Bonds	4.4%	(9.7%)
Non-U.S. Inflation Linked Bonds	6.0%	(14.7%)
Infrastructure Stocks	9.9%	(0.7%)
Commodities	4.9%	18.4%
Gold	2.9%	(1.5%)
REITS Stocks	12.1%	(16.2%)

The sharp dichotomy in performance between the first half of the fiscal year and the second half of the fiscal year was evidence of the difficulty in navigating a world driven by the three powerful forces mentioned above. In the second half, there was no place to hide and it was hard to make money. In the first half, there was no need to hide and it was hard not to make money.

We expect these quick and large shifts in performance to continue for the foreseeable future. They will be hard to anticipate and hard to manage. Heightened volatility is likely to be a persistent feature of the investing landscape.

It warrants highlighting that PSERS is a long-term investor and manages the pension fund with long-term objectives in mind. A primary element of PSERS' investment philosophy is diversification among various asset classes, which is the best way to achieve its goals and deal with the macroeconomic, geopolitical, and other forces that may come along. PSERS makes estimates of future long-term market returns and establishes an asset allocation plan taking into account the risk associated with each asset class as well as the financial objectives of the Fund.

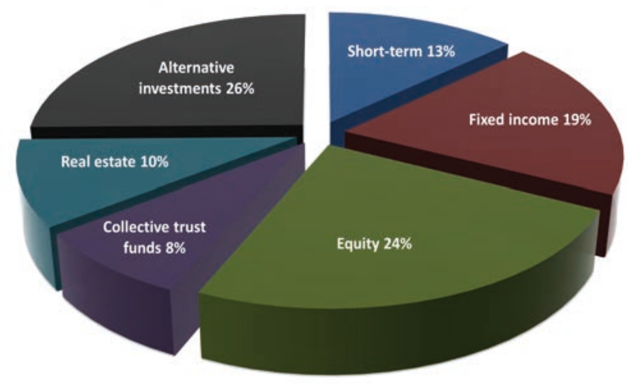
The 2.23% investment return for FY 2022, was well below the Fund's 7.00% actuarial investment rate of return assumption due to a challenging environment for financial markets from growing inflation concerns, tighter monetary policy, the Russian invasion of Ukraine and the associated uncertain economic implications. PSERS' FY 2022, time-weighted rate of return on investments was 2.23%; however, it was above PSERS' total fund Policy Index of (0.19)% for the same time period as PSERS active managers out-performed their benchmarks. A time-weighted rate of return considers investment performance of a hypothetical dollar invested from the beginning of an investment period to the period's end. The Policy Index is a custom benchmark, based on the Board-established asset allocation structure, that seeks to generate a return that meets the actuarial rate of return assumption. Net investment loss of $(282.4) million in FY 2022 decreased significantly from a net investment income of $14.8 billion in FY 2021. FY 2022 return of 2.23% was substantially below the FY 2021 return of 24.58%.

Investment Return Reporting vs. Financial Statement Reporting

The FY 2022 time-weighted investment rate of return is a positive 2.28% in contrast to the FY 2022 net investment (loss) of $(282.4) million. This difference is due to the Pension industry's use of quarter lag reporting for certain asset classes for investment return reporting. For financial statement reporting purposes, nearly all Real estate and Alternative investments are valued based on June 30, 2022 valuations. For investment return reporting, the Real estate and Alternative investments are based on quarter lag valuations as of March 31, 2022. As a result, the financial statements include a net valuation decrease of $(317) million at June 30, 2022 that will not be recognized in the investment returns for FY 2022. In FY 2021, the financial statements included a June 30, 2021 Real estate and Alternative investment valuation increase of $1.9 billion which was not recognized in the investment returns until FY 2022. The combined impact of the FY 2021 and FY 2022 quarter lag valuation adjustments is $2.2 billion. As a result, the FY 2022 investment returns are higher than the net investment loss recognized in the financial statements. This combined impact is the reason why the financial statements have a Net Investment Loss of $(282.4) million and FY 2022 investment returns are a positive 2.28%.

The time-weighted annualized rate of return over the past three- and five-year periods ended June 30, 2022 was 8.80% and 8.46%, respectively. The time-weighted return for the three-year period and five-year period exceeded the total fund Policy Index return by 137 basis points and 80 basis points, respectively. The annualized time-weighted rates of return for the ten- and twenty five-year periods ended June 30, 2022 were 7.91% and 7.05%, respectively.

Figure 2 - Asset Distribution June 30, 2022



The asset distribution of PSERS' investment portfolio at June 30, 2022, including defined contribution and postemployment healthcare assets, is presented in Figure 2 and Table 1. For comparison purposes, the prior two fiscal years are also presented in Table 1.

FY 2022

- ***Short-term investments*** (cash and cash equivalents) slightly decreased by $0.1 billion from $9.5 billion at June 30, 2021 to $9.4 billion June 30, 2022.
- ***Fixed income investments*** increased by $0.5 billion from $13.3 billion at June 30, 2021 to $13.8 billion at June 30, 2022 mainly due to a reallocation of exposure from other asset classes which was offset by negative investment performance.
- ***Equity investments*** decreased by $1.3 billion from $18.4 billion at June 30, 2021 to $17.1 billion at June 30, 2022 mainly due to negative investment performance which was offset by reallocation of exposure from other asset classes.
- ***Collective trust funds*** decreased by $1.8 billion from $7.4 billion at June 30, 2021 to $5.6 billion at June 30, 2022 due to the unwinding of the absolute return program.
- ***Real estate investments*** increased by $1.1 billion from $6.0 billion at June 30, 2021 to $7.1 billion at June 30, 2022 due to contributions to new and existing partnerships combined with valuation increases in partnership portfolio holdings which exceeded significant distributions. After the conclusion of the audit, the Board accepted the appraisals for certain directly-owned properties. The difference between the valuations in the appraisals and the valuations included in the financial statements was determined to be immaterial, so no adjustments were made to the financial statements.

Management's Discussion and Analysis (continued)

Table 1 - Investment Balances by Asset Class

(Dollar Amount in Thousands)

Asset Class	2022	%	2021	%	2020	%
Short-term	**$ 9,420,478**	**13.3**	$ 9,479,700	13.1	$ 6,239,539	10.8
Fixed income	**13,752,793**	**19.4**	13,253,332	18.4	11,719,860	20.3
Equity	**17,136,393**	**24.2**	18,437,873	25.6	11,024,133	19.1
Collective trust funds	**5,571,997**	**7.9**	7,377,281	10.2	9,863,496	17.0
Real estate	**7,122,100**	**10.0**	5,986,463	8.3	5,478,122	9.5
Alternative investments	**17,900,975**	**25.2**	17,626,135	24.4	13,448,551	23.3
Total	**$ 70,904,736**	**100.0**	$ 72,160,784	100.0	$ 57,773,701	100.0

- ***Alternative investments*** increased by $0.3 billion from $17.6 billion at June 30, 2021 to $17.9 billion at June 30, 2022 due to contributions to new and existing partnerships combined with valuation increases in partnership portfolio holdings which exceeded significant distributions.

FY 2021

- ***Short-term investments*** (cash and cash equivalents) increased by $3.3 billion from $6.2 billion at June 30, 2020 to $9.5 billion June 30, 2021 mainly due to a reallocation of exposure from other asset classes.
- ***Fixed income investments*** increased by $1.6 billion from $11.7 billion at June 30, 2020 to $13.3 billion at June 30, 2021 mainly due to a reallocation of exposure from other asset classes and positive investment performance.
- ***Equity investments*** increased by $7.4 billion from $11.0 billion at June 30, 2020 to $18.4 billion at June 30, 2021. Due to a reallocation of exposure from other asset classes and strong investment performance, PSERS equity investments significantly increased during FY 2021.
- ***Collective trust funds*** decreased by $2.5 billion from $9.9 billion at June 30, 2020 to $7.4 billion at June 30, 2021 due to the elimination of the risk parity allocation program which was partially offset by positive investment performance.
- ***Real estate investments*** increased by $0.5 billion from $5.5 billion at June 30, 2020 to $6.0 billion at June 30, 2021 due to contributions to new and existing partnerships combined with valuation increases in partnership portfolio holdings which exceeded significant distributions.
- ***Alternative investments*** increased by $4.2 billion from $13.4 billion at June 30, 2020 to $17.6 billion at June 30, 2021 due to contributions to new and existing partnerships combined with valuation increases in partnership portfolio holdings which exceeded significant distributions.

Securities Lending

The System's net income from securities lending activities increased from $19.8 million in FY 2021 to $25.7 million in FY 2022. Lending income and expense both increased significantly as the economy in general moved from a lower to higher interest rate environment. The spread increased from FY 2021 to FY 2022 as gross earnings on the borrowers' collateral outpaced the amounts rebated to the borrowers.

Contributions

Employer contributions increased from $4.9 billion in FY 2021 to $5.1 billion in FY 2022. This increase was primarily attributable to employer payroll growth and a small increase in the total employer contribution rate from 34.51% in FY 2021 to 34.94% in FY 2022. Total employer contributions increased from $4.8 billion in FY 2020 to $4.9 billion in FY 2021 due primarily to an increase in the total employer contribution rate from 34.29% in FY 2020 to 34.51% in FY 2021.

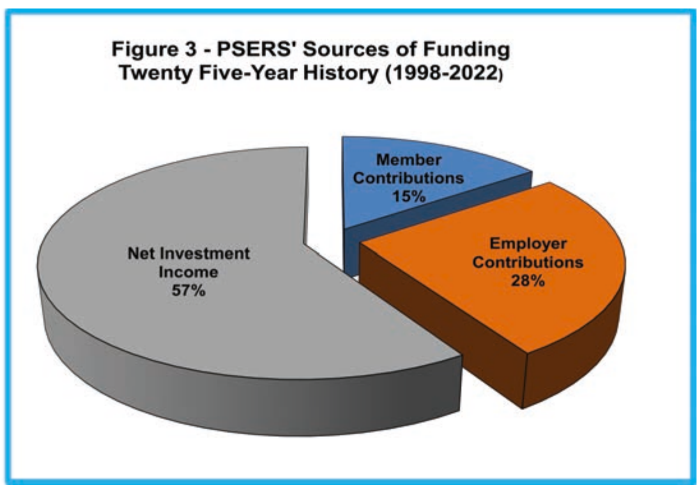
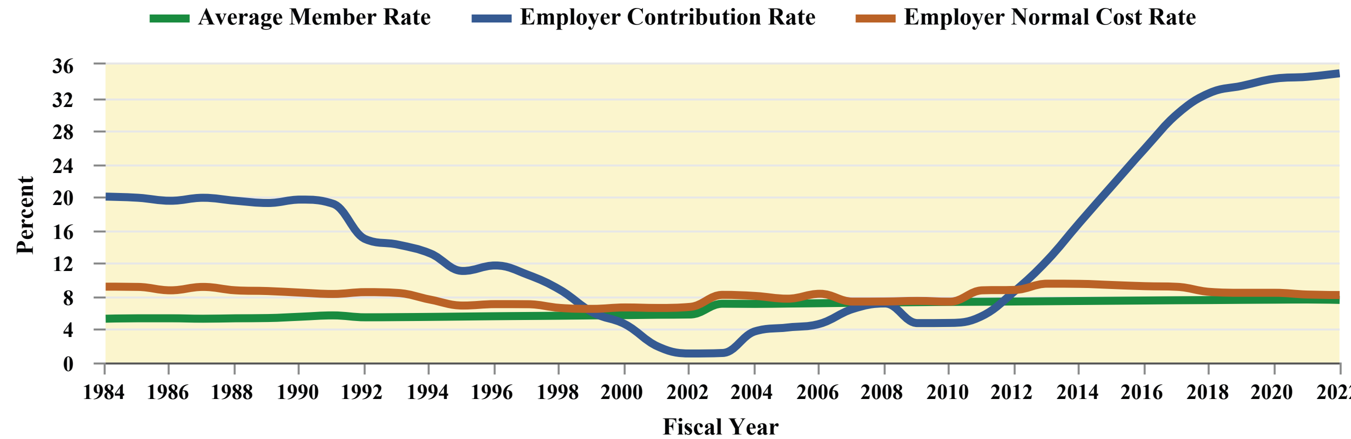


Figure 4- History of PSERS' Contribution Rates as a Percent of Payroll*
Fiscal Year Ending June 30



* Includes Premium Assistance & DC

Total member contributions increased from $1.10 billion in FY 2021 to $1.17 billion in FY 2022 mainly due to an increase in member contributions from active member payroll and an additional $22 million increase due to the member shared risk contribution rate increases. Total member contributions increased from $1.08 billion in FY 2020 to $1.10 billion in FY 2021 mainly due to an increase in member contributions from active member payroll.

Member contribution receivables increased from $368.8 million at June 30, 2021 to $382.6 million at June 30, 2022 as a result of an increase in member purchase of service contributions and active member payroll that was partially offset by a decrease in the average member contribution rate from 7.61% in FY 2021 to 7.56% in FY 2022. Member contribution receivables increased from $356.4 million at June 30, 2020 to $368.8 million at June 30, 2021 as a result of an increase in member purchase of service contributions, active member payroll, and the average member contribution rate from 7.59% in FY 2020 to 7.61% in FY 2021. The employer contribution receivables remained consistent at $1.4 billion at June 30, 2021 and June 30, 2022. See Figure 4 for a history of PSERS contribution rates.

Commonwealth Share of Employer Contributions

The Commonwealth reimburses all school entity employers (school districts, intermediate units and vocational technical schools) a portion of all employer contributions paid to the System. The Commonwealth reimburses at least 50% of school entities' contributions. The Commonwealth reimbursement rate, however, could be larger based on its Market Value/Personal Income Aid Ratio, which is a Commonwealth of Pennsylvania Department of Education calculation of local tax rates and socioeconomic factors. This reimbursement that school entities receive from the Commonwealth is referred to as the Commonwealth Share of employer contributions. The Commonwealth Share of contributions is paid to the school entities approximately 75 days after the end of each quarter. School entities have five days after receiving the Commonwealth Share to pay the total employer contributions to PSERS. Total employer contributions are comprised of the Commonwealth Share and remaining contributions which are referred to as the school and non-school entity share.

For non-school entity employers (state colleges/universities, community colleges, and state agencies) the Commonwealth remits directly to the System 50% of total employer contributions due, and the non-school entity employer remits 50% of the total employer contributions due directly to the System.

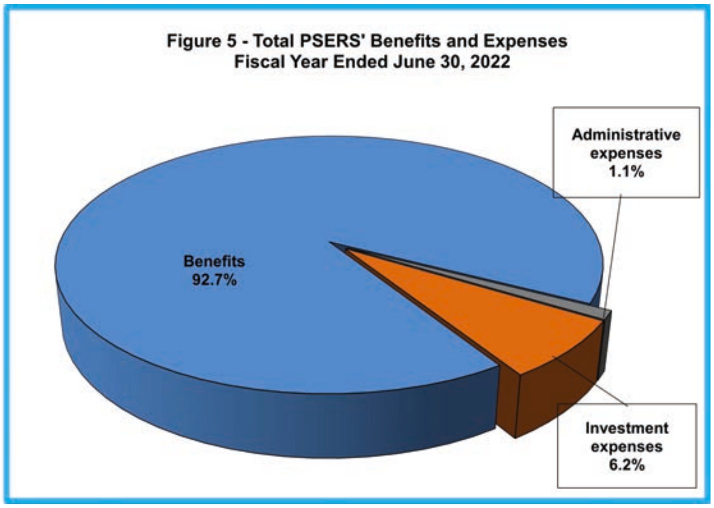
The Commonwealth Share of total employer contributions for FY 2022 was $2.8 billion and for FY 2021 was $2.7 billion. The school and non-school entity share of total employer contributions for FY 2022 was $2.3 billion and for FY 2021 was $2.2 billion. For FY 2022 total employer contributions were $5.1 billion and for FY 2021 were $4.9 billion.

Investment Income

Net investment loss of $(282.4) million in FY 2022 decreased significantly from a net investment income of $14.8 billion in FY 2021 which is consistent with the decrease in the time-weighted investment rate of return from 24.58% for FY 2021 to 2.28% for FY 2022.

Net investment income increased from $1.0 billion in FY 2020 to $14.8 billion in FY 2021, which is consistent with

Management's Discussion and Analysis (continued)



the increase in the time-weighted investment rate of return from 1.12% for FY 2020 to 24.58% for FY 2021. As depicted in Figure 3, investment earnings provided 57% of PSERS' funding over the past 25 years. Net investment income also includes investment expenses as a deduction. The "Total PSERS' Benefits and Expenses" section that follows includes an analysis of investment expenses.

Total PSERS' Benefits and Expenses

The primary source of expense during FY 2022 was for the payment of pension and healthcare benefits approximating $7.8 billion. The breakdown consisted of $7.3 billion for Pension, $4.0 million for Defined Contribution, $113.7 million for Premium Assistance, and $422.8 million for HOP benefits. Figure 5 illustrates the significant portion of expenses attributable to benefit payments.

Total PSERS' benefit expense increased from $7.6 billion in FY 2021 to $7.8 billion in FY 2022. The increase is attributable to an ongoing increase to the average monthly benefit. Pension benefits payable decreased from $576.3 million at June 30, 2021 to $542.0 million at June 30, 2022. This decrease was mainly attributable to a decrease in pension payments payable from a lower number of retirements in the 4th quarter of FY 2022. Total PSERS' benefit expense slightly increased from $7.4 billion in FY 2020 to $7.6 billion in FY 2021. The increase is attributable to an ongoing increase to the average monthly benefit and an increase in pension lump sum rollover payments. Pension benefits payable decreased from $590.8 million at June 30, 2020 compared to $576.3 million at June 30, 2021. The decrease was mainly attributable to a decrease in pension and death payments payable.

Investment expenses decreased by $92.7 million from $618.1 million in FY 2021 to $525.4 million in FY 2022 mainly due to a decrease in management fees in collective trust funds of $89 million. The decrease in collective trust fund fees is mainly attributable to lower performance fees earned in FY 2022 and the reduction of the absolute return program. As a percentage of total benefits and expenses, investment expense decreased from 7.4% in FY 2021 to 6.2% in FY 2022.

As a percentage of total benefits and expenses, investment expense has decreased from a high of 8.2% in FY 2013 to 6.2% in FY 2022. During this same period net assets increased $22.5 billion from $48.7 billion at June 30, 2012 to $71.2 billion at June 30, 2022.

PSERS continues to be one of the most transparent among large public pension funds in the nation for the disclosure of management fees. For example, certain pension funds report no or very little management fees for alternative investments because they are considered part of the cost of the investment and are netted against performance rather than shown separately. PSERS, however, requests management fee information from each of its limited partnerships and collective trust fund investments, even if it is not specifically disclosed in the fund's standard reports or identified in capital call requests. Such management fee information includes both base and performance fees obtained from either the fund's administrator statement, capital account statement or financial statements. This information is then utilized to report all relevant management fees in the System's financial statements. While the national debate over what constitutes a "fee" continues, PSERS will endeavor to remain transparent and report fees in accordance with current GASB standards and prevailing public pension industry practices to keep PSERS' financial statements both meaningful and comparative to its peers. In addition, PSERS reports all other investment expenses, including staff compensation and overhead, consultant, legal, and bank expenses incurred.

Administrative expenses slightly increased by $0.3 million from $91.4 million during FY 2021 to $91.7 million during FY 2022. This increase was mainly attributable to an increase in consultant and legal fees offset by lower Pension expense and OPEB expense. As depicted in Figure 5, administrative expenses represent only 1.1% of total benefits and expenses.

Defined Contribution Plan (DC)

PSERS administers a defined contribution plan. The following paragraphs and summary financial data provide supplementary information to the financial statements which contain the financial position and activities for the defined contribution plan.

Financial Highlights

- Total net position increased by $36.7 million from June 30, 2021 to June 30, 2022. This increase is primarily due to participant and employer contributions and investments (additions) exceeding the benefits and administrative expenses (deductions).

- Investments increased from $62.6 million at June 30, 2021 to $99.6 million at June 30, 2022 as the defined contribution plan is relatively new and investments continue to grow at a rapid pace.

Contributions

Total member contributions increased from $19.3 million to $32.9 million, while total employer contributions increased from $14.9 million to $25.4 million for the years ended June 30, 2021 and 2022, respectively. Contributions increased due to an increase in participants from 29,300 in FY 2021 to 46,500 in FY 2022 resulting in an increase in member and employer contributions.

Investment Income (Loss)

Investment income (loss) decreased from $9.3 million to $(15.8) million for the years ended June 30, 2021, and 2022, respectively. Equity returns declined significantly in FY 2022 due to growing inflation concerns, tighter monetary policy, the Russian invasion of Ukraine and the associated uncertain economic implications.

Benefits and Expenses

Overall deductions increased from $2.6 million to $5.8 million for the years ended June 30, 2021, and 2022, respectively. Total distributions increased by $2.6 million due to a 94.4% increase in the number of participants receiving distributions. Overall DC administrative expenses increased due to a significant increase in the total number of participants in the plan and an increase in PSERS personnel cost.

Management's Discussion and Analysis (continued)

Defined Contribution Plan

Summary of Fiduciary Net Position	(Dollar Amounts in Thousands)				
Assets:	**FY 2022**	Increase (Decrease)	FY 2021	Increase (Decrease)	FY 2020
Receivables	**$ 601**	$ (68)	$ 669	$ 208	$ 461
Investments	**99,638**	36,993	62,645	41,080	21,565
Total Assets	**100,239**	36,925	63,314	41,288	22,026
Liabilities:					
Payables and other liabilities	**1,268**	230	1,038	373	665
Total Liabilities	**1,268**	230	1,038	373	665
Net Position	**$ 98,971**	$ 36,695	$ 62,276	$ 40,915	$ 21,361

Summary of Changes in Fiduciary Net Position	(Dollar Amounts in Thousands)				
Additions:	**FY 2022**	Increase (Decrease)	FY 2021	Increase (Decrease)	FY 2020
Contributions	**$ 58,299**	$ 24,071	$ 34,228	$ 19,299	$ 14,929
Net investment income (loss)	**(15,813)**	(25,127)	9,314	8,659	655
Total Additions	**42,486**	(1,056)	43,542	27,958	15,584
Deductions:					
Distributions	**3,630**	2,590	1,040	1,028	12
Administrative expenses	**2,161**	574	1,587	(1,580)	3,167
Total Deductions	**5,791**	3,164	2,627	(552)	3,179
Changes in Net Position	**$ 36,695**	$ (4,220)	$ 40,915	$ 28,510	$ 12,405

Management's Discussion and Analysis (continued)

Postemployment Healthcare

PSERS administers two postemployment healthcare programs, the Health Insurance Premium Assistance Program (Premium Assistance) and the Health Options Program (HOP), for its annuitants. The following paragraphs and summary financial data provide supplementary information to the financial statements which contain the financial position and activities for the two postemployment healthcare programs.

Health Insurance Premium Assistance Program (Premium Assistance)

Financial Highlights

- Total net position increased by $3.0 million in FY 2022 mainly due to net investment income and employer contributions exceeding benefit expense deductions and administrative expenses. The total net position continues to be sufficient to fund one full year of benefits. The change in net position from June 30, 2020 to June 30, 2021 was an increase of $2.1 million due to net investment income and employer contributions exceeding benefit expense deductions. The employer contribution rate for FY 2022 was 0.80%, a reduction of 0.02% from the contribution rate of 0.82% for FY 2021.
- Net investments increased to $101.9 million at June 30, 2022 from $99.0 million at June 30, 2021 as Premium Assistance income exceeded expenses, producing more funds for investment.

Contributions

Employer contributions increased from $116.5 million in FY 2021 to $117.2 million in FY 2022 due to 2.9% growth in employer payroll partially offset by a 2.4% decrease in the contribution rate from 0.82% in FY 2021 to 0.80% in FY 2022.

Investment Income

Total investment income for Premium Assistance remained steady at $0.3 million for FY 2021 and FY 2022.

Benefits and Expenses

Premium Assistance deductions decreased slightly from $114.7 million in FY 2021 to $114.5 million in FY 2022. Administrative costs were lower due to reduced consulting costs while premium assistance benefit payments rose slightly by 0.15%.

Health Options Program (HOP)

Financial Highlights

- Total net position increased by $19.1 million in FY 2022 due to increases in participant premiums and CMS receipts which exceeded benefits and administrative expenses. Total net position increased from June 30, 2020 to June 30 2021 by $49.5 million primarily due to participant premiums and CMS receipts exceeding benefits and administrative expenses.
- Total receivables decreased from $76.1 million at June 30, 2021 to $64.4 million at June 30, 2022. This is due to a reduction in CMS reinsurance receivables and an increase in timely CMS receipts resulting in a reduced year-end receivable.
- Investments increased from $365.7 million at June 30, 2021 to $394.6 million at June 30, 2022. Both HOP income exceeding expenses and more timely receipts of CMS revenue were partially offset by more timely payments of administrative expenses. These factors produced more funds for investment.
- Total liabilities decreased 2.8% from $71.3 million at June 30, 2021 to $69.3 million at June 30, 2022. The decrease is due to timing of administrative expense payments partially offset by an increase in prescription drug and medical claims payable.

Participant and CMS Premiums

Total Participant and CMS premiums for HOP increased from $470.8 million for FY 2021 to $480.8 million for FY 2022 due to increased member premiums and CMS contributions.

Investment Income

Net investment income grew from $0.2 million for FY 2021 to $0.3 million in FY 2022 due to recent increased short-term investment rates.

Benefits and Expenses

HOP total deductions increased by 9.6% from $421.5 million in FY 2021 to $462.1 million in FY 2022. This is due to an 11.0% increase in medical claim costs along with increases in prescription drug claims and drug costs. Administrative expenses rose by 0.6% to $39.3 million for the year ended June 30, 2022.

Management's Discussion and Analysis (continued)

Premium Assistance

Summary of Fiduciary Net Position

(Dollar Amounts in Thousands)

Assets:	FY 2022	Increase (Decrease)	FY 2021	Increase (Decrease)	FY 2020
Receivables	**$ 34,173**	$ (988)	$ 35,161	$ (1,778)	$ 36,939
Investments	**101,907**	(4,274)	106,181	12,565	93,616
Miscellaneous	**—**	(400)	400	98	302
Total Assets	**136,080**	(5,662)	141,742	10,885	130,857
Liabilities:					
Payables and other liabilities	**604**	(8,623)	9,227	8,787	440
Total Liabilities	**604**	(8,623)	9,227	8,787	440
Net Position	**$ 135,476**	$ 2,961	$ 132,515	$ 2,098	$ 130,417

Summary of Changes in Fiduciary Net Position

(Dollar Amounts in Thousands)

Additions:	FY 2022	Increase (Decrease)	FY 2021	Increase (Decrease)	FY 2020
Contributions	**$ 117,178**	$ 659	$ 116,519	$ (1,388)	$ 117,907
Net investment income	**316**	56	260	(1,492)	1,752
Total Additions	**117,494**	715	116,779	(2,880)	119,659
Deductions:					
Benefit expenses	**113,707**	169	113,538	259	113,279
Administrative expenses	**826**	(317)	1,143	(5)	1,148
Total Deductions	**114,533**	(148)	114,681	254	114,427
Changes in Net Position	**$ 2,961**	$ 863	$ 2,098	$ (3,134)	$ 5,232

Health Options Program

Summary of Fiduciary Net Position

(Dollar Amounts in Thousands)

Assets:	FY 2022	Increase (Decrease)	FY 2021	Increase (Decrease)	FY 2020
Receivables	**$ 64,375**	$ (11,743)	$ 76,118	$ (828)	$ 76,946
Investments	**394,618**	28,893	365,725	47,899	317,826
Miscellaneous	**136**	40	96	(418)	514
Total Assets	**459,129**	17,190	441,939	46,653	340,637
Liabilities:					
Payables and other liabilities	**69,340**	(2,802)	71,263	(2,801)	74,064
Total Liabilities	**69,340**	(2,802)	71,263	(2,801)	73,445
Net Position	**$ 389,789**	$ 19,113	$ 370,676	$ 49,454	$ 267,192

Summary of Changes in Fiduciary Net Position

(Dollar Amounts in Thousands)

Additions:	FY 2022	Increase (Decrease)	FY 2021	Increase (Decrease)	FY 2020
Participant and CMS premiums	**$ 480,843**	$ 10,086	$ 470,757	$ (1,374)	$ 472,131
Net investment income	**346**	132	214	(2,250)	2,464
Total Additions	**481,189**	10,218	470,971	(3,624)	474,595
Deductions:					
Benefit expenses	**422,786**	40,320	382,466	930	381,536
Administrative expenses	**39,290**	239	39,051	22	39,029
Total Deductions	**462,076**	40,559	421,517	952	420,565
Changes in Net Position	**$ 19,113**	$ (30,341)	$ 49,454	$ (4,576)	$ 54,030

Statements of Fiduciary Net Position
June 30, 2022 and 2021
(Dollar Amounts in Thousands)

	2022				
			Postemployment Healthcare		
	Pension	Defined Contribution (DC)	Premium Assistance	Health Options Program	Totals
Assets:					
Receivables:					
Members	$ 380,534	$ 340	$ 1,628	$ 123	$ 382,625
Employers	1,382,281	256	32,476	—	1,415,013
Investment income	200,975	5	69	110	201,159
Investment proceeds	408,568	—	—	—	408,568
CMS Part D and prescriptions	—	—	—	64,142	64,142
Interfund receivable	973	—	—	—	973
Total Receivables	2,373,331	601	34,173	64,375	2,472,480
Investments, at fair value:					
Short-term	8,915,210	8,743	101,907	394,618	9,420,478
Fixed income	13,752,793	—	—	—	13,752,793
Equity	17,136,393	—	—	—	17,136,393
Collective trust funds	5,481,102	90,895	—	—	5,571,997
Real estate	7,122,100	—	—	—	7,122,100
Alternative investments	17,900,975	—	—	—	17,900,975
Total Investments	70,308,573	99,638	101,907	394,618	70,904,736
Securities lending collateral pool	9,828,590	—	—	—	9,828,590
Capital assets (net of accumulated depreciation $42,983)	14,886	—	—	—	14,886
Miscellaneous	31,423	—	—	136	31,559
Total Assets	82,556,803	100,239	136,080	459,129	83,252,251
Liabilities:					
Accounts payable and accrued expenses	147,812	99	213	1,247	149,371
Benefits payable	541,983	—	60	33,902	575,945
HOP participant premium advances	—	—	—	34,157	34,157
Investment purchases and other payables	1,357,940	561	—	—	1,358,501
Obligations under securities lending	9,828,590	—	—	—	9,828,590
Interfund payable	—	608	331	34	973
Other liabilities	152,236	—	—	—	152,236
Total Liabilities	12,028,561	1,268	604	69,340	12,099,773
Net position restricted for pension, DC and postemployment healthcare benefits	$ 70,528,242	$ 98,971	$ 135,476	$ 389,789	$ 71,152,478

The accompanying notes are an integral part of the financial statements.

Statements of Fiduciary Net Position
June 30, 2022 and 2021
(Dollar Amounts in Thousands)

	2021				
			Postemployment Healthcare		
	Pension	Defined Contribution (DC)	Premium Assistance	Health Options Program	Totals
Assets:					
Receivables:					
Members	$ 366,165	$ 382	$ 2,013	$ 195	$ 368,755
Employers	1,331,419	284	33,111	—	1,364,814
Investment income	459,975	1	37	19	460,032
Investment proceeds	274,186	2	—	—	274,188
CMS Part D and prescriptions	—	—	—	75,904	75,904
Interfund receivable	2,225	—	—	—	2,225
Total Receivables	2,433,970	669	35,161	76,118	2,545,918
Investments, at fair value:					
Short-term	9,000,456	7,338	106,181	365,725	9,479,700
Fixed income	13,253,332	—	—	—	13,253,332
Equity	18,437,873	—	—	—	18,437,873
Collective trust funds	7,321,974	55,307	—	—	7,377,281
Real estate	5,986,463	—	—	—	5,986,463
Alternative investments	17,626,135	—	—	—	17,626,135
Total Investments	71,626,233	62,645	106,181	365,725	72,160,784
Securities lending collateral pool	7,862,287	—	—	—	7,862,287
Capital assets (net of accumulated depreciation $34,515)	17,021	—	—	—	17,021
Miscellaneous	36,219	—	400	96	36,715
Total Assets	81,975,730	63,314	141,742	441,939	82,622,725
Liabilities:					
Accounts payable and accrued expenses	188,188	75	339	5,884	194,486
Benefits payable	576,347	—	52	31,275	607,674
HOP participant premium advances	—	—	—	34,068	34,068
Investment purchases and other payables	1,214,614	418	7,192	—	1,222,224
Obligations under securities lending	7,862,287	—	—	—	7,862,287
Interfund payable	—	545	1,644	36	2,225
Other liabilities	166,942	—	—	—	166,942
Total Liabilities	10,008,378	1,038	9,227	71,263	10,089,906
Net position restricted for pension, DC and postemployment healthcare benefits	$ 71,967,352	$ 62,276	$ 132,515	$ 370,676	$ 72,532,819

The accompanying notes are an integral part of the financial statements.

Statements of Changes in Fiduciary Net Position
Years Ended June 30, 2022 and 2021
(Dollar Amounts in Thousands)

	2022				
			Postemployment Healthcare		
	Pension	Defined Contribution (DC)	Premium Assistance	Health Options Program	Totals
Additions:					
Contributions:					
Members	$ 1,134,051	$ 32,875	$ —	$ —	$ 1,166,926
Employers	4,997,912	25,424	117,178	—	5,140,514
Total contributions	6,131,963	58,299	117,178	—	6,307,440
HOP Participant premiums	—	—	—	409,361	409,361
Centers for Medicare & Medicaid Services premiums	—	—	—	71,482	71,482
Investment income:					
From investing activities:					
Net depreciation in fair value of investments	(1,765,123)	(15,682)	(345)	—	(1,781,150)
Short-term	22,295	19	694	377	23,385
Fixed income	556,068	—	—	—	556,068
Equity	416,326	—	—	—	416,326
Collective trust funds	472	5	—	—	477
Real estate	455,027	—	—	—	455,027
Alternative investments	547,142	—	—	—	547,142
Total investment activity income (loss)	232,207	(15,658)	349	377	217,275
Investment expenses	(525,171)	(155)	(33)	(31)	(525,390)
Net income (loss) from investing activities	(292,964)	(15,813)	316	346	(308,115)
From securities lending activities:					
Securities lending income	54,711	—	—	—	54,711
Securities lending expense	(28,997)	—	—	—	(28,997)
Net income from securities lending activities	25,714	—	—	—	25,714
Total net investment income (loss)	(267,250)	(15,813)	316	346	(282,401)
Total Additions	5,864,713	42,486	117,494	481,189	6,505,882
Deductions:					
Benefits	7,217,812	—	113,707	422,786	7,754,305
Refunds of contributions	36,560	—	—	—	36,560
Distributions	—	3,630	—	—	3,630
Administrative expenses	49,451	2,161	826	39,290	91,728
Total Deductions	7,303,823	5,791	114,533	462,076	7,886,223
Net increase (decrease)	(1,439,110)	36,695	2,961	19,113	(1,380,341)
Net position restricted for pension, DC and postemployment healthcare benefits:					
Balance, beginning of year	71,967,352	62,276	132,515	370,677	72,532,819
Balance, end of year	$ 70,528,242	$ 98,971	$ 135,476	$ 389,789	$ 71,152,478

The accompanying notes are an integral part of the financial statements.

Statements of Changes in Fiduciary Net Position
Years Ended June 30, 2022 and 2021
(Dollar Amounts in Thousands)

	2021				
			Postemployment Healthcare		
	Pension	Defined Contribution (DC)	Premium Assistance	Health Options Program	Totals
Additions:					
Contributions:					
Members	$ 1,080,701	$ 19,282	$ —	$ —	$ 1,099,983
Employers	4,759,189	14,946	116,519	—	4,890,654
Total contributions	5,839,890	34,228	116,519	—	5,990,637
HOP Participant premiums	—	—	—	402,945	402,945
Centers for Medicare & Medicaid Services premiums	—	—	—	67,812	67,812
Investment income:					
From investing activities:					
Net appreciation (depreciation) in fair value of investments	13,940,110	9,394	(417)	—	13,949,087
Short-term	11,710	17	714	250	12,691
Fixed income	294,417	—	—	—	294,417
Equity	272,651	—	—	—	272,651
Collective trust funds	913	—	—	—	913
Real estate	267,489	—	—	—	267,489
Alternative investments	565,392	—	—	—	565,392
Total investment activity income	15,352,682	9,411	297	250	15,362,640
Investment expenses	(617,882)	(97)	(37)	(36)	(618,052)
Net income from investing activities	14,734,800	9,314	260	214	14,744,588
From securities lending activities:					
Securities lending income	27,450	—	—	—	27,450
Securities lending expense	(7,626)	—	—	—	(7,626)
Net income from securities lending activities	19,824	—	—	—	19,824
Total net investment income	14,754,624	9,314	260	214	14,764,412
Total Additions	20,594,514	43,542	116,779	470,971	21,225,806
Deductions:					
Benefits	7,107,407	—	113,538	382,466	7,603,411
Refunds of contributions	26,925	—	—	—	26,925
Distributions	—	1,040	—	—	1,040
Administrative expenses	49,616	1,587	1,143	39,051	91,397
Total Deductions	7,183,948	2,627	114,681	421,517	7,722,773
Net increase (decrease)	13,410,566	40,915	2,098	49,454	13,503,033
Net position restricted for pension, DC and postemployment healthcare benefits:					
Balance, beginning of year	58,556,786	21,361	130,417	321,222	59,029,786
Balance, end of year	$ 71,967,352	$ 62,276	$ 132,515	$ 370,676	$ 72,532,819

The accompanying notes are an integral part of the financial statements.

Notes to Financial Statements
Years Ended June 30, 2022 and 2021

1. Organization and Description of the System

(A) Organization

The System was established on July 18, 1917, under the provisions of Pamphlet Law 1043, No. 343 as a governmental cost-sharing multiple-employer plan that provides retirement allowances and other benefits to its members. Membership in the System is mandatory for nearly all qualifying public school employees in the Commonwealth of Pennsylvania (Commonwealth). At June 30, 2022, there were 770 participating employers, generally school districts. Membership at June 30, 2022, the most recent year for which actual amounts are available, is presented in Table 2.

The Public School Employees' Retirement Board (Board) is established by state law as an independent administrative board of the Commonwealth. The Board exercises control and management of the System, including the investment of its assets. The Board has fifteen members including the Commonwealth's Secretary of Education, the Commonwealth's Secretary of Banking and Securities, the State Treasurer, the Executive Director of the Pennsylvania School Boards Association, one member appointed by the Governor, six elected members (three from among the System's certified members, one from among the System's noncertified members, one from among the System's annuitants, and one from among school board members in Pennsylvania), two members from the Senate, and two members from the House of Representatives.

The State Treasurer is the custodian of the System's Fund. The retirement plan of the System is a contributory defined benefit plan for which the benefit payments to members and contribution provisions by employers and employees are specified in the Pennsylvania Public School Employees' Retirement Code (Code). Changes in benefit and contribution provisions for the retirement plan must be made by legislation. Pursuant to state law, all legislative bills and amendments proposing to change the System's retirement plan are to be accompanied with an actuarial note prepared by an enrolled pension actuary from the Independent Fiscal Office (IFO) providing an estimate of the cost and actuarial effect of the proposed change.

Based upon criterion of financial accountability as defined by governmental accounting standards, the System is considered a component unit of the Commonwealth of Pennsylvania financial reporting entity and is included in the Annual Comprehensive Financial Report of the Commonwealth of Pennsylvania.

Table 2 - Membership as of June 30, 2022

Active members:	
Vested	145,194
Nonvested	102,679
Total active members	**247,873**
Inactive members:	
Retirees and beneficiaries currently receiving benefits	246,901
Inactive members and vestees entitled to but not receiving benefits	26,836
Total retirees and other members	**273,737**
Total number of members	**521,610**

(B) Pension Plan

i. Pension Benefits

(a) Traditional Defined Benefit (DB) Plan

Under the provisions of the 1975 revision of the Code by the Pennsylvania General Assembly, members are eligible for monthly retirement benefits upon reaching (a) age 62 with at least 1 year of credited service; (b) age 60 with 30 or more years of credited service; or (c) 35 or more years of service regardless of age. Act 120 of 2010 (Act 120) preserves the benefits of existing members and introduced benefit reductions for individuals who became new members on or after July 1, 2011 through June 30, 2019. Act 120 created two new membership classes, Membership Class T-E (Class T-E) and Membership Class T-F (Class T-F). To qualify for normal retirement, Class T-E and Class T-F members must work until age 65 with a minimum of 3 years of service or attain a total combination of age and service that is equal to or greater than 92 with a minimum of 35 years of service. The Internal Revenue Code (IRC) limitation on the annual benefits for a defined benefit plan was $245,000 for 2022 and $230,000 for 2021.

(b) Hybrid DB/DC Benefit

Act 5 of 2017 (Act 5) introduced a hybrid benefit with two membership classes and a separate defined contribution plan for individuals who become new members on or after July 1, 2019. Act 5 created two new hybrid membership classes, Membership Class T-G (Class T-G) and Membership Class T-H (Class T-H) and the separate defined contribution membership class, Membership Class DC (Class DC). To qualify for normal retirement, Class T-G and Class T-H members must work until age 67 with a minimum of 3 years of credited service. Class T-G may also qualify for normal retirement by attaining a total combination of age and service that is equal to or greater than 97 with a minimum of 35 years of credited service.

Notes to Financial Statements (continued)

The normal retirement age, vesting period and final average salary for virtually all members are presented below:

Membership Class	Normal Retirement Age	Pension multiplier	Vesting	Final Average Salary
T-C	Age 62, or Age 60 with 30 years of service, or 35 years of service regardless of age.	2.00%	5 Years	For any 3 years of service
T-D		2.50%	5 Years	For any 3 years of service
T-E	Age 65 with a minimum of three years of service credit, or Any combination of age and service that totals 92 with at least 35 years of credited service.	2.00%	10 Years	For any 3 years of service
T-F		2.50%	10 Years	For any 3 years of service
T-G	Age 67 with a minimum of three years of service credit, or Any combination of age and service that totals 97 with at least 35 years of credited service.	1.25%	10 Years	For any 5 years of service
T-H	Age 67 with a minimum of three years of credited service.	1.00%	10 Years	For any 5 years of service

(c) Benefits Attributable to both the Traditional DB & Hybrid DB/DC

As summarized in the table above, benefits are generally between 1% to 2.5%, depending upon membership class, of the member's final average salary (as defined in the Code) multiplied by the number of years of credited service. A members' right to a defined benefit is vested in 5 to 10 years depending on membership class as summarized in the table above.

Active members may purchase credit for various types of school and non-school service on a lump-sum, installment purchase basis, or through an actuarially calculated benefit reduction. Class T-E, Class T-F, Class T-G and Class T-H members must purchase Non-Qualifying Part Time service and most other types of non-school or non-state service credit at full actuarial cost. Depending on membership class, members have 1 year or 3 years after enrollment in the system to purchase service for Non-Qualifying Part Time service.

In addition to regular retirement benefits, the System also provides for disability retirement benefits and death benefits. Participants are eligible for disability retirement benefits after completion of five years of credited service.

Such benefits are generally between 2% to 2.5%, depending upon membership class, of the member's final average salary (as defined in the Code) multiplied by the number of years of credited service. Depending on membership class, certain minimum disability requirements apply. Members over normal retirement age may apply for disability benefits.

Death benefits are payable upon the death of an active member who has reached age 62 with at least one year of credited service or who has at least five years of credited service for Class T-C and Class T-D members; age 65 with at least three years of credited service for Class T-E and Class T-F members; age 67 with at least three years of credited services for Class T-G and Class T-H members or ten years of credited service for Class T-E, Class T-F, Class T-G, and Class T-H members. Such benefits are actuarially equivalent to the benefit that would have been effective if the member had retired on the day before death.

Members with credited service in the Commonwealth of Pennsylvania State Employees' Retirement System (SERS) may elect to have that service combined with service in the Public School Employees' Retirement System upon commencement of employment in the public school system. Similarly, a member with credited service in the System may elect to combine such service with SERS upon becoming a member of that system.

All members are fully vested in their individual balance in the Members' Savings Account which is described in Note 3. All non-vested members may receive a refund of their individual balance of member contributions and interest from the Members' Savings Account upon termination of public school employment. Vested members may elect to receive a return of their accumulated contributions and interest from the Members' Savings Account upon their retirement which results in a reduced monthly annuity.

ii. Contributions

The contribution policy is set by the Code and requires contributions by active members, employers, and the Commonwealth. The System's funding policy provides for periodic employer and Commonwealth contributions at actuarially determined rates, expressed as a percentage of annual covered payroll, such that they, along with employee contributions and an actuarially determined rate of investment return, are adequate to accumulate assets to pay retirement benefits when due. Level percentage of payroll employer contribution rates are determined using the entry age normal actuarial funding method. This method determines the amount of contributions necessary to (1) fully fund all current costs, (also known as normal cost), which represents the estimated amount necessary to pay for the benefits earned by the employees during the current service year; and (2) liquidate the prior service cost for service earned prior to the current service year and subsequent benefit increases, which represents the amount necessary to fund accrued liabilities over the appropriate amortization periods.

Notes to Financial Statements (continued)

Contribution rates for active members are set by law (redefined with the provisions of Act 9 of 2001, Act 120 and Act 5) and are dependent upon membership class. The IRC limitation on the annual compensation for a defined benefit plan was $305,000 for 2022 and $290,000 for 2021.

Active members who enrolled between July 1, 2001, the effective date of Act 9, and June 30, 2011 are Membership Class T-D (Class T-D). The contribution rates for all members in Class T-D were effective January 1, 2002. For Act 120 members, all new members automatically became Class T-E members. New members, however, had a one-time opportunity to elect Class T-F within 45 days of receiving written notification from PSERS. Failure to elect Class T-F at time of original eligibility made the member ineligible for Class T-F forever. For Act 5 members, all new members automatically become Class T-G members. New members, however, have a one-time opportunity to elect Class T-H or Class DC within 90 days of receiving written notification from PSERS. Failure to elect Class T-H or Class DC at time of original eligibility will make the member ineligible for Class T-H or Class DC forever.

Act 120 introduced shared risk for Class T-E and Class T-F members. Act 5 enhanced shared risk for T-E and T-F members and added T-G and T-H members. Under shared risk eligible members benefit when investments of the Fund are doing well and share some of the risk when investments underperform.

The member contribution rate will stay within the ranges specified in Shared Risk Summary table but can fluctuate by the shared risk increment every three years depending on the investment performance of PSERS.

The investment performance calculations utilized for the member risk share assessment are performed by the System's General Investment Consultant and, consistent with current investment policy, use quarter lagged values for private market investments. For example, for the nine-year measurement period ended June 30, 2020, the investment performance was determined using June 30th valuations for the System's publicly traded investments and March 31st valuations, (on a quarter lag basis), for its private market investments. In the Statements of Fiduciary Net Position as of June 30, 2020, however, the System's investments are presented at June 30th valuations in accordance with the investment fair value policy as described in Note 4(B).

The contribution rates based on qualified member compensation for virtually all members are presented below:

Member Contribution Rates

Membership Class	Continuous Employment Since	Defined Benefit (DB) Contribution Rate	DC Contribution Rate	Total Contribution Rate
T-C	Prior to July 22, 1983	5.25%	N/A	5.25% 6.25%
T-C	On or after July 22, 1983	6.25%	N/A	6.25%
T-D	Prior to July 22, 1983	6.50%	N/A	6.50%
T-D	On or after July 22, 1983	7.50%	N/A	7.50%
T-E	On or after July 1, 2011	7.50% base rate with shared risk provision	N/A	Prior to 7/1/21: 7.50% After 7/1/21: 8.00%
T-F	On or after July 1, 2011	10.30% base rate with shared risk provision	N/A	Prior to 7/1/21: 10.30% After 7/1/21: 10.8%
T-G	On or after July 1, 2019	5.50% base rate with shared risk provision	2.75%	Prior to 7/1/21: 8.25% After 7/1/21: 9.00%
T-H	On or after July 1, 2019	4.50% base rate with shared risk provision	3.00%	Prior to 7/1/21: 7.50% After 7/1/21: 8.25%
DC	On or after July 1, 2019	N/A	7.50%	7.50%

Shared Risk Summary

Membership Class	Defined Benefit (DB) Base Rate	Shared Risk Increment	Minimum	Maximum
T-E	7.50%	+/-0.50%	5.50%	9.50%
T-F	10.30%	+/-0.50%	8.30%	12.30%
T-G	5.50%	+/-0.75%	2.50%	8.50%
T-H	4.50%	+/-0.75%	1.50%	7.50%

Notes to Financial Statements (continued)

The most recent member risk share measurement for the nine-year period ended June 30, 2020 determined that PSERS investment performance did not meet the shared risk target return threshold. As a result membership Class T-E, Class T-F, Class T-G and Class T-H member defined benefit contribution rates increased starting on July 1, 2021. The Member Contribution Rates table shows the risk share impact to each class's contribution rate. The next member risk share measurement is for the ten-year period ending June 30, 2023 and may affect membership Classes T-E, T-F, T-G and T-H member contributions starting on July 1, 2024.

The total contribution rate for the employers and the Commonwealth was 34.94% and 34.51% (33.99% and 33.51% for pension component) of qualified compensation for the years ended June 30, 2022 and 2021, respectively.

According to requirements established in Act 29 of 1994, the Commonwealth reimburses school entity employers a portion of the employer contributions paid to the System. All school entity employers are reimbursed by the Commonwealth at least 50% of the total employer contributions based on the total contribution rate. The Commonwealth reimburses certain school entity employers at a rate greater than 50% based on the Commonwealth of Pennsylvania Department of Education's Market Value/Personal Income Aid Ratio and other factors. School entities remit 100% of total employer contributions directly to the System. The Commonwealth remits 50% of the total employer contributions for employers other than school entities directly to the System. All contributions from employers and the Commonwealth are shown as employer contributions on the Statements of Changes in Fiduciary Net Position.

The Commonwealth Share of total employer contributions for FY 2022 was $2.8 billion and for FY 2021 was $2.7 billion. The school and non-school entity share of total employer contributions for FY 2022 was $2.3 billion and for FY 2021 was $2.2 billion. For FY 2022 total employer contributions were $5.1 billion and for FY 2021 were $4.9 billion.

(C) Postemployment Healthcare Plans

i. Health Insurance Premium Assistance Program

(a) Premium Assistance Benefits

The System provides a Health Insurance Premium Assistance Program (Premium Assistance) for all eligible annuitants who qualify and elect to participate. Under this program, employer contribution rates for Premium Assistance are established to provide reserves in the Health Insurance Account that are sufficient for the payment of premium assistance benefits for each succeeding year. Effective January 1, 2002, under the provisions of Act 9 of 2001, participating eligible annuitants are entitled to receive premium assistance payments equal to the lesser of $100 per month or their out-of-pocket monthly health insurance premium. To receive premium assistance, eligible annuitants must have an out-of-pocket premium expense from an approved plan. Plans approved for Premium Assistance are health insurance plans maintained by a Commonwealth School Employer or the PSERS sponsored Health Options Program. As of June 30, 2022 there were no assumed future benefit increases to participating eligible annuitants in the Premium Assistance program. Membership at June 30, 2021, the most recent year for which actual amounts are available, is presented in Table 3.

(b) Contributions

A portion of each employer contribution to the System is set aside for the funding of Premium Assistance. The Premium Assistance contribution rate is set at a level necessary to establish reserves sufficient to provide Premium Assistance payments for all participating eligible members for the subsequent fiscal year. The portion of the total contribution rate for employers used to fund Premium Assistance was 0.80% for the year ended June 30, 2022 and 0.82% for the year ended June 30, 2021. Members do not contribute to Premium Assistance.

Table 3 - Premium Assistance Membership at June 30, 2022

Retirees and beneficiaries currently receiving benefits	93,875
Inactive members and vestees entitled to but not receiving benefits	551
Total retirees and other inactive members	**94,426**
Total active members	248,803
Total number of members	**343,229**

ii. Health Options Program

The Health Options Program (HOP) is a PSERS-sponsored voluntary health insurance program for the sole benefit of annuitants of PSERS, spouses of annuitants, survivor annuitants and their dependents who participate in HOP. The HOP is funded exclusively by the premiums paid by its participants for the benefit coverage they elect. The PSERS pension fund assets are not available to fund or satisfy obligations of the HOP.

The HOP offers several health plans. Participants may select among two self-funded Medicare supplement plans, three Medicare Rx plans, and multiple Medicare Advantage plans

Notes to Financial Statements (continued)

for those eligible for Medicare. Participants not eligible for Medicare have a choice between a self-funded high deductible indemnity plan and multiple managed care plans. Medicare Advantage and managed care plans are available to retirees residing in the plan's service area. The Medicare supplements and pre-65 high deductible plan are self-funded and claims are adjudicated by a third party administrator. The Medicare Rx Options and the prescription drug benefit of the pre-65 high deductible plan are also self-funded and claims are adjudicated by a pharmacy benefits manager. The Medicare Advantage and managed care plans are provided by private insurance companies or managed care organizations and benefits are fully insured. HOP also offers a fitness program and a dental and vision option through fully insured carriers.

Effective January 1, 2006, PSERS entered into an Employer/Union Entity contract with the Centers for Medicare and Medicaid Services (CMS) to operate a voluntary Medicare Prescription Drug Plan (PDP). The PDP covers approximately 96,000 participants. CMS provides partial funding of the PDP in the form of monthly per capita payments and reinsurance. An independent actuarial consulting firm sets the rates for the self-funded benefits. The HOP maintains reserves for claims that are Incurred But Not Reported (IBNR) and for claim fluctuation for the self-funded benefit plans. At June 30, 2022 and 2021 PSERS recorded \$20,312,400 and \$19,347,000, respectively, in IBNR. The IBNR is included in benefits payable.

(D) Defined Contribution Plan

On June 12, 2017, Commonwealth of Pennsylvania Act 5 of 2017 was signed into law. This legislation establishes a new hybrid defined benefit/defined contribution (DC) retirement benefit applicable to all school employees who become new members of PSERS on July 1, 2019 and thereafter. The three new plan design options under Act 5 include two hybrid benefits consisting of defined benefit and defined contribution components and a stand-alone defined contribution plan. A stand-alone defined benefit plan is no longer available to new members. The financial statements for FY 2022 and FY 2021 reflect the defined contribution plan activities for the second and third years of operations. All new members starting on July 1, 2019 and thereafter participate in the DC plan.

Defined Contribution Plan Membership at June 30, 2022	
Active members	43,579
Inactive members entitled to but not receiving distributions	2,934
Total number of members	**46,513**

PSERS DC Plan is a defined contribution plan for which the benefit payments to members and contribution provisions by employers and employees are specified in the Pennsylvania Public School Employees' Retirement Code (Code).

i. DC Benefits

Under PSERS DC Plan the retirement benefit is based on the amount of contributions in the account and any investment performance less expenses. DC participants are always 100% vested in their own mandatory before-tax, after-tax, and rollover contributions in the DC plan. DC participants who have at least three eligibility points become vested and eligible for employer DC contributions made on their behalf. Participants with fewer than three eligibility points are not eligible to receive the employer contributions. DC account balances can grow based on investment earnings, however DC account balances are not guaranteed against loss in declining investment markets.

Death benefits are payable upon death of an active DC participant. DC participants who have at least three eligibility points in the DC plan receive participant and employer contributions with any investment gains, while participants with less than three eligibility points in the DC plan receive participants contributions and any investment gains. There is no disability benefit with PSERS DC Plan. Each eligibility point is earned the first day a contribution is made to the plan on behalf of a DC participant in a school year (July 1 – June 30). Only one eligibility point may be credited in a school year.

Class DC participants with 24.5 or more eligibility points who have terminated school service, who are Medicare eligible, and who received all or a part of their distributions; and Class DC participants with 15 or more eligibility points who terminate school service on or after attaining age 67, and receive all or a part of their distributions are entitled to receive premium assistance benefits.

i. DC Contributions

Members hired after July 1, 2019 have a portion of each member and employer contribution to the system set aside for the DC plan. Member and employer rates are set by statute. A member may elect to make additional voluntary post-tax member contributions.

2. Summary of Significant Accounting Policies

(A) Basis of Accounting

The financial statements of the System are prepared on the accrual basis of accounting under which expenses are recorded when the liability is incurred, revenues are recorded in the accounting period in which they are earned and

Notes to Financial Statements (continued)

become measurable, and investment purchases and sales are recorded as of their trade date. Member and employer contributions are recognized in the period for which employees' salaries are reported. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

The accounting and reporting policies of the System conform to accounting principles generally accepted in the United States of America (GAAP). The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions in fiduciary net position during the reporting period. Actual results could differ from those estimates.

(B) Investments

The System's investments are reported at fair value. Fair value is the amount that the System can reasonably expect to receive for an investment in a current sale between a willing buyer and a willing seller, that is, other than in a forced or liquidation sale. See Note 4(B) for the description of the Fair Value of Investments.

Net appreciation (depreciation) is determined by calculating the change in fair value of investments between the beginning of the year and end of the year, less purchases of investments at cost, plus sales of investments at fair value.

Investment purchases and sales are recorded as of the trade date. Interest income is comprised of dividend, interest, and other investment income. Dividend income is recognized on the ex-dividend date. Interest and other investment income is recognized when earned.

Investment expenses consist of investment manager fees and those administrative expenses directly related to the System's investment operations. Investment proceeds receivable generally includes unsettled investment sales. Unsettled investment purchases are included in investment purchases and other payables.

(C) Capital Assets

Capital assets consist primarily of data processing equipment, software, and internally developed computer software recognized as intangible assets. Capital assets are depreciated using the straight-line method over an estimated useful life of five years. Intangible assets are amortized using the straight-line method over an estimated useful life of twenty years for assets purchased prior to July 1, 2012 and up to 10 years for assets purchased after June 30, 2012.

(D) Benefits Payable

Benefits payable represents the obligations of the System, on an accrual basis, at the end of the fiscal year. It includes the estimated retirement and death benefits payable, federal taxes withheld but not yet due to the IRS, premium assistance benefits payable, and the HOP IBNR claims for its participants.

(E) Pensions for Employees of the System

For purposes of measuring the net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense, information about the fiduciary net position of the Pennsylvania State Employees' Retirement System (SERS) and additions to/deductions from SERS' fiduciary net position have been determined on the same basis as they are reported by SERS. Please refer to Note 8 for additional information regarding SERS. PSERS' net pension liability for its employees to SERS is reported in Other liabilities. Deferred inflows of resources are reported in Other liabilities. Deferred outflows of resources are reported in Miscellaneous assets. Pension expense is reported in administrative expenses and is detailed on the Schedule of Administrative and Investment Expenses Supplementary Schedule.

(F) Postemployment Healthcare Plan for Employees of the System

For purposes of measuring the net OPEB liability, deferred outflows of resources, deferred inflows of resources and OPEB expense, information about the fiduciary net position of the Commonwealth of Pennsylvania Retired Employees Health Program (REHP) and additions to/deductions from REHP fiduciary net position have been determined on the same basis as they are reported by the REHP. Please refer to Note 9 for additional information regarding the REHP. PSERS' net OPEB liability for its employees to the REHP is reported in Other liabilities. Deferred inflows of resources are reported in Other liabilities. Deferred outflows of resources are reported in Miscellaneous assets. OPEB expense is reported in administrative expenses and is detailed on the Schedule of Administrative and Investment Expenses Supplementary Schedule.

(G) Compensated Absences

The System uses the accrual basis of accounting for measuring vacation leave, sick leave, and other compensated absences liabilities. Employees of the System are paid for accumulated vacation leave upon termination or retirement. Retiring employees of the System that meet service, age, or disability requirements are paid between 30% and 100% of sick days available at retirement, up to 161 maximum days paid. At June 30, 2022 and 2021, $6,420,000 and $6,736,000

Notes to Financial Statements (continued)

respectively, were accrued for unused vacation and sick leave for the System's employees and are included in Accounts payable and accrued expenses on the Statements of Fiduciary Net Position.

(H) Participant Premium Advances

Premium advances at June 30, 2022 and 2021 are for HOP premiums related to health care coverage to be provided in July of 2022 and 2021, respectively.

(I) Federal Income Taxes

PSERS is exempt from federal income taxes under section 501 (a) of the Internal Revenue Code.

(J) Risk Management

The System is exposed to various liabilities and risks of loss, including, without limitation, the ordinary risks of investment losses, risks related to theft or destruction of assets, liabilities resulting from injuries to employees, and liabilities resulting from court challenges to fiduciary decisions. As an administrative agency of the Commonwealth of Pennsylvania, the System is accorded sovereign immunity. For claims not shielded by sovereign immunity, the System participates in certain Commonwealth pooled insurance programs and requires asset managers to carry certain insurance coverage for the protection of the System. The System has implemented a self-insurance program for fiduciary and director and officer liability coverage. During the past three fiscal years, insurance settlements did not exceed insurance coverage. In addition the DC plan has its own fiduciary insurance through a third party.

The Health Options Program maintains a reserve equal to approximately 8 to 9 months of self-funded benefits and expenses. Reserves are recommended for all self-insured group health plans to cover the potential for unexpected claim volatility (high amount claim events) and unanticipated economic changes (excessive inflation). Further, The Health Options Program, as a Medicare Supplement Plan has limited exposure to high cost claims which reduces the potential for excess risk. Medicare is the primary payer for most medical claims in the HOP Medical and Value Medical plans, and the Medicare Prescription Drug Program is protected by Medicare Part D Catastrophic coverage. Benefits for members who are not eligible for Medicare are limited to $300,000 per year in medical benefits, and $1,000,000 over a member's lifetime. Medical and Prescription drug benefits provided by Managed Care Organizations are fully insured by those providers. For these reasons, the Health Options Program is sufficiently reserved and reinsurance (stop loss coverage) is not needed or recommended at this time.

(K) Reclassifications

Certain 2021 amounts have been reclassified in conformity with the 2022 presentation. These reclassifications had no effect on net position restricted for pension benefits or the change in fiduciary net position.

(L) Members Receivables

Members receivables include an amount for members' obligations to the System for the purchase of service credit. Members have a variety of options to remit purchase of service payments:

- Remit a lump sum payment.
- Request an installment plan from one to seven years where the member's employer establishes a payroll deduction process. The member's employer then forwards monthly payments of the withheld amounts to PSERS.
- Accept an actuarial reduction debt through which the amount of the purchase plus accumulated interest will reduce the member's retirement or death benefit.
- Rollover funds from an eligible distribution.

The following is a summary of member receivables at June 30, 2022 and 2021:

(Dollar Amounts in Thousands)

	2022	2021
Pension		
Member Contributions	**$ 78,895**	$ 77,278
Purchase of Service	**294,228**	282,668
Other	**7,411**	6,219
Total Pension	**$ 380,534**	$ 366,165
Defined Contribution Plan	**$ 340**	$ 382
Postemployment Healthcare:		
Premium Assistance	**$ 1,628**	$ 2,013
Health Options Program	**123**	195

(M) Interfund Transactions and Balances

Interfund transfers of assets take place on a regular recurring basis between Pension, Premium Assistance, HOP and Defined Contribution. The transfers occur upon receipt of employer contributions and payment of benefits or expenses. The interfund receivables and payables related to interfund activity are classified under receivables and liabilities on the financial statements.

Notes to Financial Statements (continued)

(N) Adoption of New Accounting Standards

PSERS reviews the requirements of all new GASB pronouncements and assesses the potential impact to the System. There were no new GASB standards that materially impacted PSERS' financial statements for the fiscal year ended June 30, 2022.

3. Description of Accounts

The Code requires the System to maintain the following accounts which represent reserves held for future and current benefit payments as follows and as illustrated in Table 4.

(A) State Accumulation Account

The State Accumulation Account is credited with contributions from the Commonwealth and the employers. Additionally, interest earnings of the System (after crediting the Members' Savings Account with 4% interest and the reserve for retirement with 5.50% statutory interest) are credited to this account. Each year, the necessary amounts, as determined by the actuary for the payment of retirement, disabilities, and death benefits, are transferred from the State Accumulation Account to the Annuity Reserve Account increasing the reserve credit to the 7.00% valuation assumption rate determined by the actuary. All administrative expenses necessary for the operation of the System, except for Premium Assistance, HOP, and Defined Contribution Plan expenses, are paid from the State Accumulation Account.

(B) Members' Savings Account

The Members' Savings Account is credited with all contributions made by active members of the System. Interest is added to the member's individual account at an annual rate of 4%. Upon death or retirement of a member, the accumulated contributions plus interest are transferred to the Annuity Reserve Account for subsequent payment of benefits.

(C) Annuity Reserve Account

The Annuity Reserve Account represents the amounts transferred from the Members' Savings and State Accumulation Accounts, plus additional contributions made by the Commonwealth and employers for the payment of supplemental annuities and cost-of-living increases. All death, disability, and retirement benefits are paid from this account. Annual interest of 5.50% is credited to the Annuity Reserve Account.

(D) School Employees' Defined Contribution Trust (Defined Contribution Plan)

The School Employees' Defined Contribution Trust accumulates DC participants and employer contributions, investment earnings and DC plan expenses of the School Employees' Defined Contribution Plan. The trust is comprised of individual investment accounts, all assets in those accounts and any assets held that are not allocated to the individual investment accounts. The assets of the plan are held in trust for the exclusive benefit of the participants and their beneficiaries and may be used for payment of fees, costs and expenses related to the administration and investment of the plan and the trust.

Table 4 - Account Balance

(Dollar Amounts in Thousands)

	2022	2021
Pension:		
State Accumulation Account	**$ (10,504,636)**	$ (7,398,176)
Members' Savings Account	**18,802,945**	18,156,350
Annuity Reserve Account	**62,229,933**	61,209,178
	$ 70,528,242	$ 71,967,352
Defined Contribution Plan	**$ 98,971**	$ 62,276
Postemployment Healthcare:		
Health Insurance Account	**$ 135,476**	$ 132,515
Health Insurance Program Account	**$ 389,789**	$ 370,676

(E) Health Insurance Account

The Health Insurance Account is credited with contributions from the employers for Premium Assistance. Effective January 1, 2002, under the provisions of Act 9 of 2001, participating eligible annuitants are entitled to receive premium assistance payments equal to the lesser of $100 per month or their out-of-pocket monthly health insurance premium. The Health Insurance Account pays all administrative expenses necessary to operate the Premium Assistance Program.

(F) Health Insurance Program Account

The Health Insurance Program Account is credited with premiums from members of the HOP and from CMS. All benefits related to the HOP (premium payments to the insurance companies and self-funded benefits) are paid from this account. The Health Insurance Program Account pays all administrative expenses necessary to operate the HOP.

Notes to Financial Statements (continued)

4. Investments

(A) Summary of Investments

The Board has the responsibility to invest and reinvest available funds of the System in accordance with the guidelines and limitations set forth in the Code and other applicable state law. The Board accomplishes the daily management of the System's investments through investment advisors who act as agents for the System and through internal investment managers.

The Board invests the funds of the System using the Prudent Investor Standard, as articulated in the Code, which means "the exercise of that degree of judgment, skill and care under the circumstances then prevailing which persons of prudence, discretion, and intelligence who are familiar with such matters exercise in the management of their own affairs not in regard to speculation, but in regard to the permanent disposition of the fund, considering the probable income to be derived therefrom as well as the probable safety of their capital." The Board has adopted its investment policy to formally document investment objectives and responsibilities. This policy, as well as applicable state law, establishes guidelines for permissible investments of the System.

(B) Fair Value of Investments

i. Fair Value Levels

PSERS measures and records its investments using fair value measurement guidelines established by generally accepted accounting principles. These guidelines recognize a three-tiered fair value hierarchy as follows:

- **Level 1 inputs:** Level 1 inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets. A quoted price for an identical asset or liability in an active market (e.g., an equity security traded on a major exchange) provides the most reliable fair value measurement and, if available, should be used to measure fair value in that particular market.

- **Level 2 inputs:** Level 2 inputs are prices that are observable either directly or indirectly. Level 2 inputs may include quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable such as interest rates, yield curves, implied volatilities, credit spreads or market-corroborated inputs.

- **Level 3 inputs:** Reporting entities may use unobservable inputs to measure fair value if relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date. These unobservable inputs are considered Level 3.

Debt, equity, and derivative instrument securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices and recently published security specific trading levels. Short-term securities are carried at cost, which approximates fair value, unless they have published market prices or quotations from national securities exchanges or securities pricing services, in which case they are valued at the published market price. Fixed income securities and equities are generally valued based on published market prices and quotations from national securities exchanges or securities pricing services. Securities which are not traded on a national securities exchange are valued by the respective fund manager or other third parties based on similar sales.

For Collective trust fund investments (CTF), PSERS' management in consultation with investment advisors has determined the fair value based upon the reported share value of the respective fund. The reported share value of the fund is based upon each respective fund's administrator statement.

Alternative investments, which include private equity, equity real estate, private credit, and private infrastructure, are generally organized as limited partnerships. The fair value of investments that are organized as limited partnerships, and has no readily available daily fair value, has been determined by using the net asset value per share (or its equivalent) of PSERS' ownership interest in partners' capital. These net asset values are based on the individual investor's June 30, 2022 capital account balance reported at fair value by the general partner of the respective limited partnership, or the most recently available reporting period, adjusted for subsequent contributions, distributions, management fees, changes in values of foreign currency, and published market prices for certain securities.

The limited partnerships' annual financial statements, which include estimates of fair values, are audited by independent certified public accounting firms. It is possible that these estimates could change in the near-term, or upon the sale of the assets, resulting in valuations that could differ from the June 30, 2022, reported net asset value.

Directly-owned real estate investments are valued based upon the June 30th financial statements completed by the asset manager. The directly-owned real estate investments are

Notes to Financial Statements (continued)

appraised annually by an independent third-party appraiser as of calendar year-end unless subject to a waiver as approved by the Deputy CIO or CIO. Properties not appraised are internally valued by the asset manager at fair market value. Certain properties acquired with no appraisal are held at cost. Directly-owned real estate investments are reported net of related debt borrowed against the market value of the property. The $132,000,000 of open-ended repurchase agreements that were netted against the related property valuations and classified as Level 1 in FY 2021 were paid in full during FY 2022. At June 30, 2022 and 2021, $136,235,000 of mortgage financings were netted against the related property valuations and classified as Level 1. Three mortgage loans totaling $102,000,000 have monthly interest-only payments at a fixed interest rate of 1.70% with all principal due at March 1, 2026. A fourth mortgage loan totaling $34,235,000 has monthly interest-only payments at a fixed interest rate of 3.97% with all principal due at March 1, 2026.

Derivative instruments classified in Level 1 of the fair value hierarchy are valued using observable exchange, dealer, or broker market pricing.

ii. Investments at Net Asset Value (NAV)

(a) Collective trust fund investments (CTF) consist primarily of domestic and international institutional funds. The fair value of CTF is based on the reported share value of the respective fund by the fund administrator. CTF are managed by investment advisors for which regulatory agencies such as the Securities and Exchange Commission have regulatory oversight. Investments that are not subject to this oversight are subject to annual independent audits. Redemption frequency for these assets range from monthly, to quarterly, to annual.

(b) Equity real estate generally consists of real estate limited partnerships. These investments are across multiple asset types such as industrial, multi-family, office, retail, hotels, agriculture (permanent crops), and other real estate related assets.

The equity real estate investments utilize core, value-added, and opportunistic strategies. Core real estate strategies are expected to deliver a significant percentage of their return from income and should demonstrate lower volatility than opportunistic and value-added strategies due to lower leverage, higher levels of occupancy, and asset location in primary markets. Value-added real estate strategies typically have near-term leasing, repositioning, and /or renovation risk. Value-added strategies are expected to have modest initial operating revenues with potential for substantial income growth and will likely encounter greater volatility than core strategies, but lower volatility than opportunistic strategies. Opportunistic real estate strategies typically have significant development, lease-up, financial restructuring, and/or liquidity risk with little or no initial operating income. Opportunistic real estate strategies typically utilize higher levels of leverage, are expected to achieve most of its return from future capital gains, and are likely to encounter greater volatility than core and value-added strategies. The fair value of the equity real estate investments has been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from each fund may be received as: 1) cash flows from operations or 2) return of capital from dispositions. It is expected that the underlying assets of the equity real estate investments will be liquidated over the next 7 to 12 years.

(c) Private equity includes limited partnerships that invest in private companies and utilize buyout, growth equity, and venture capital strategies. Buyout funds acquire shares of a private company in an attempt to gain a controlling interest. Venture capital funds invest in young, relatively small, rapidly growing companies, typically in either the health care or information technology sectors. Growth equity funds are in between venture capital and buyouts in that they tend to have positive revenue growth and earnings at times, but don't have the leverage that is typical in a buyout investment. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Instead, the nature of the investments in private equity is that distributions are received through the orderly liquidation of the underlying assets of the fund throughout the stated term of the fund. It is expected that the underlying assets of the funds will be liquidated over the next 3 to 10 years in a typical private equity fund.

(d) Private credit includes limited partnerships and open-ended funds that invest in all types of credit which is not traditional investment grade government or corporate debt. Private credit strategies include direct lending, mezzanine lending, distressed and special situations, specialty finance, structured credit, real estate credit, and real assets credit. Direct lending is focused on providing senior secured loans to middle-market businesses. Mezzanine is primarily focused on providing subordinated debt capital to private businesses.

Notes to Financial Statements (continued)

Distressed and special situations is focused on issuing loans to companies undergoing financial or operational challenges or purchasing publicly listed, stressed securities. Specialty finance is a set of niche lending strategies that provide financing to consumers, small businesses, and other borrowers. Structured credit is a set of strategies that target investments in securitized debt obligations, such as collateralized loan obligations and collateralized debt obligations. Real estate credit is focused on commercial real estate collateral or residential mortgage origination. Real assets credit is focused on providing debt capital to companies operating within the real asset space with loans typically secured by real assets. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from each fund may be received as: 1) cash flows from operations or 2) return of capital from dispositions. It is expected that the underlying assets of the funds will be liquidated over the next 3 to 5 years.

(e) Private infrastructure investments generally consist of limited partnership vehicles which invest in private companies and assets that provide essential services to the economy, including regulated assets, contracted energy assets, and transportation assets with high barriers to entry and stable and predictable long-term cash flows. Regulated assets generally include electricity transmission and distribution facilities, gas distribution systems, pipelines, water distribution, and wastewater collection and processing facilities. Contracted energy assets generally include renewable and conventional generation, pipelines, and storage. Transportation assets generally include toll roads, bridges and tunnels, airports, seaports, parking facilities, and rail lines. The fair value of the private infrastructure investments has been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from each infrastructure investment may be received as: 1) cash flows from operations or 2) return of capital from dispositions. It is expected that the underlying assets of the infrastructure investments will be liquidated over the next 7 to 12 years.

(f) Absolute return includes investments that are private investment funds that seek to produce absolute returns generally using event-driven, tactical trading, and relative value strategies. Event-driven funds seek to gain an advantage from pricing inefficiencies that may occur before or after a corporate action or related event, such as a merger, spinoff, earnings call, bankruptcy, or restructuring. Tactical trading funds invest their holdings in indexes, commodities, interest rate instruments, and currencies as a result of relative value or directional forecasts from a systematic or discretionary approach. Relative value strategies use a range of fixed income arbitrage, insurance linked, long-short credit, and/or quantitative strategies that seek to take advantage of price differentials. The fair values of the investments in this type have been determined using the NAV per share of the investments. With the most recently approved strategic asset allocation, the absolute return portfolio is in liquidation. While many of the investments can be redeemed within 12 months of June 30, 2022, there are investments that include restrictions that do not allow for redemption during the next 12 months and could take as long as seven years to be fully liquidated.

(g) DC Collective trust fund investments (DC-CTF) consist primarily of domestic and international institutional funds. The fair value of DC-CTF is based on the reported share value of the respective fund. DC-CTF are managed by state chartered banks for which various state banking departments have regulatory oversight and investment advisors for which regulatory agencies such as the Securities and Exchange Commission have regulatory oversight. Investments that are not subject to this oversight are subject to annual independent audits. Redemption frequency for these assets range from monthly, to quarterly, to annual.

(C) Deposit and Investment Risk Disclosures

i. Deposits

Custodial credit risk for deposits is the risk that, in the event of a financial institution failure, the System would not be able to recover the value of the deposits. The Commonwealth's Treasury Department is the custodian of the System's funds. Commonwealth Treasury Department deposits must be held in insured depositories approved by the Commonwealth's Board of Finance and Revenue and must be fully collateralized. The deposit and investment policies of the Treasury Department are governed by Sections 301, 301.1, and 505 of the Pennsylvania Fiscal Code (Act of 1929, P.L. 343), and Section 321.1 of the Pennsylvania Administrative Code (Act of 1929, P.L. 177, No. 175).

Notes to Financial Statements (continued)

The System, through its third party administrator, maintains certain bank deposits for the operation of its voluntary HOP. These deposits are not required to be collateralized by statute or policy. These deposits totaled $300,204,000 and $270,382,000 at June 30, 2022 and 2021, respectively, and are under the custody of M&T Bank which has an A rating by Standard and Poor's (S&P) and an Aa3 rating by Moody's Investor Services (Moody's).

ii. Investment Risks

The System's investments, including derivatives and other similar investments, may be subject to various risks. Among these risks are concentration of credit risk, custodial credit risk, credit risk, interest rate risk, and foreign currency risk. The policies addressing each one of these risks, discussed in more detail below, are contained within the Investment Policy Statement, Objectives, and Guidelines reviewed and approved by the Board. Due to the level of risk associated with certain investments, it is possible that changes in the values of investments may occur in the near term and that such changes could materially affect the amounts reported in the Statements of Fiduciary Net Position.

Notes to Financial Statements (continued)

At June 30, 2022, the System had the following recurring fair value measurements in the Pension Plan.

Pension Investments

Investments and Derivative Instruments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2022	Level 1	Level 2	Level 3
Investments by fair value level				
Short-term:				
PSERS Short-Term Investment Fund	**$ 8,145,521**	$ 6,876,768	$ 1,268,753	$ —
Other domestic short-term	**755,232**	751,519	3,713	—
International short-term	**14,457**	11,770	2,687	—
	8,915,210	7,640,057	1,275,153	—
Fixed income				
Domestic asset-backed and mortgage-backed securities	**603,577**	—	603,577	—
U.S. government and agency obligations	**10,513,307**	10,505,354	7,953	—
Domestic corporate and taxable municipal bonds	**766,260**	—	766,260	—
International fixed income	**255,118**	21,253	233,865	—
	12,138,262	10,526,607	1,611,655	—
Equity				
Domestic equity	**8,217,398**	8,217,398	—	—
International equity	**7,256,999**	7,256,996	—	3
	15,474,397	15,474,394	—	3
Directly-owned real estate	**1,721,215**	(136,235)	—	1,857,450
Total investments by fair value level	**38,249,084**	$ 33,504,823	$ 2,886,808	$ 1,857,453
Investments measured at the net asset value (NAV)				
Collective trust funds - Fixed Income	**1,614,531**			
Collective trust funds - Equity	**1,661,996**			
Collective trust funds - Other	**5,481,102**			
Equity real estate	**4,281,128**			
Private Infrastructure	**1,119,757**			
Alternative investments:				
Private equity	**12,459,390**			
Private credit	**5,257,782**			
Absolute return	**183,803**			
	17,900,975			
Total investments measured at the NAV	**32,059,489**			
Total investments measured at fair value	**$ 70,308,573**			
Investment derivative instruments				
Futures	**$ 64,144**	$ 64,144	$ —	$ —
Total return type swaps	**(859,392)**	(859,392)	—	—
Foreign exchange contracts	**10,685**	10,685	—	—
Options	**3,213**	3,213	—	—
Total investment derivative instruments	**$ (781,350)**	$ (781,350)	$ —	$ —

Notes to Financial Statements (continued)

At June 30, 2021, the System had the following recurring fair value measurements in the Pension Plan.

Pension Investments

Investments and Derivative Instruments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2021	Level 1	Level 2	Level 3
Investments by fair value level				
Short-term:				
PSERS Short-Term Investment Fund	$ 8,548,497	$ 7,216,976	$ 1,331,521	$ —
Other domestic short-term	421,723	409,030	12,693	—
International short-term	30,236	10,409	19,827	—
	9,000,456	7,636,415	1,364,041	—
Fixed income				
Domestic asset-backed and mortgage-backed securities	727,668	—	727,668	—
U.S. government and agency obligations	9,128,804	9,107,400	21,404	—
Domestic corporate and taxable municipal bonds	783,904	—	783,904	
International fixed income	264,200	—	264,200	—
	10,904,576	9,107,400	1,797,176	—
Equity				
Domestic equity	9,350,519	9,336,155	14,364	—
International equity	7,239,623	7,239,618	—	5
	16,590,142	16,575,773	14,364	5
Directly-owned real estate	1,224,906	(232,000)	—	1,456,906
Total investments by fair value level	37,720,080	$ 33,087,588	$ 3,175,581	$ 1,456,911
Investments measured at the net asset value (NAV)				
Collective trust funds - Fixed Income	2,348,756			
Collective trust funds - Equity	1,847,731			
Collective trust funds - Other	7,321,974			
Equity real estate	4,229,593			
Private Infrastructure	531,964			
Alternative investments:				
Private equity	12,206,056			
Private credit	5,285,350			
Absolute return	134,729			
	17,626,135			
Total investments measured at the NAV	33,906,153			
Total investments measured at fair value	$ 71,626,233			
Investment derivative instruments				
Futures	$ 75,247	$ 75,247	$ —	$ —
Total return type swaps	(65,756)	(65,756)	—	—
Foreign exchange contracts	45,319	45,319	—	—
Options	5,693	5,693	—	—
Total investment derivative instruments	$ 60,503	$ 60,503	$ —	$ —

Notes to Financial Statements (continued)

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) at June 30, 2022 and 2021 are presented in the following tables.

Pension Investments

Fair Value of Investments

Investments measured at the NAV
(Dollar Amounts in Thousands)

	2022			
	Fair Value	**Unfunded Commitments**	**Redemption Frequency**	**Redemption Notice Period**
Collective trust funds - Fixed Income (a)	**$ 1,661,996**	$ —	see note (a)	see note (a)
Collective trust funds - Equity (a)	**1,614,531**	—	see note (a)	see note (a)
Collective trust funds - Other (a)	**5,481,102**	—	see note (a)	see note (a)
Equity real estate (b)	**4,281,128**	2,268,595	see note (b)	see note (b)
Private Infrastructure (e)	**1,119,757**	1,323,421	see note (e)	see note (e)
Alternative investments:				
Private equity (c)	**12,459,390**	4,440,134	see note (c)	see note (c)
Private credit (d)	**5,257,782**	3,271,248	see note (d)	see note (d)
Absolute return (f)	**183,803**	325,740	see note (f)	see note (f)
	17,900,975			
Total investments measured at the NAV	**$ 32,059,489**			

Pension Investments

Fair Value of Investments

Investments measured at the NAV
(Dollar Amounts in Thousands)

	2021			
	Fair Value	**Unfunded Commitments**	**Redemption Frequency**	**Redemption Notice Period**
Collective trust funds - Fixed Income (a)	$ 2,348,756	$ —	see note (a)	see note (a)
Collective trust funds - Equity (a)	1,847,731	—	see note (a)	see note (a)
Collective trust funds - Other (a)	7,321,974	—	see note (a)	see note (a)
Equity real estate (b)	4,229,593	2,220,783	see note (b)	see note (b)
Private Infrastructure (e)	531,964	943,655	see note (e)	see note (e)
Alternative investments:				
Private equity (c)	12,206,056	5,552,444	see note (c)	see note (c)
Private credit (d)	5,285,350	2,902,087	see note (d)	see note (d)
Absolute return (f)	134,729	490,069	see note (f)	see note (f)
	17,626,135			
Total investments measured at the NAV	$ 33,906,153			

Notes to Financial Statements (continued)

At June 30, 2022, the System had the following recurring fair value measurements in the Premium Assistance Program.

Premium Assistance Investments

Investments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2022	**Level 1**	**Level 2**	**Level 3**
Investments by fair value level				
Short-term:				
PSERS Short-Term Investment Fund	**$ 101,799**	$ 85,943	$ 15,856	$ —
Other domestic short-term	**108**	—	108	—
Total investments measured at fair value	**$ 101,907**	$ 85,943	$ 15,964	$ —

At June 30, 2021, the System had the following recurring fair value measurements in the Premium Assistance Program.

Premium Assistance Investments

Investments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2021	Level 1	Level 2	Level 3
Investments by fair value level				
Short-term:				
PSERS Short-Term Investment Fund	$ 84,064	$ 70,970	$ 13,094	$ —
Other domestic short-term	22,117	—	22,117	—
Total investments measured at fair value	$ 106,181	$ 70,970	$ 35,211	$ —

Notes to Financial Statements (continued)

At June 30, 2022, the System had the following recurring fair value measurements in the Health Options Program.

Health Options Program Investments

Investments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2022	**Level 1**	**Level 2**	**Level 3**
Investments by fair value level				
Short-term:				
PSERS Short-Term Investment Fund	**$ 94,414**	$ 79,708	$ 14,706	$ —
Other domestic short-term	**300,204**	300,204	—	—
Total investments measured at fair value	**$ 394,618**	$ 379,912	$ 14,706	$ —

At June 30, 2021, the System had the following recurring fair value measurements in the Health Options Program.

Health Options Program Investments

Investments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2021	Level 1	Level 2	Level 3
Investments by fair value level				
Short-term:				
PSERS Short-Term Investment Fund	$ 95,343	$ 80,492	$ 14,851	$ —
Other domestic short-term	270,382	270,382	—	—
Total investments measured at fair value	$ 365,725	$ 350,874	$ 14,851	$ —

Notes to Financial Statements (continued)

At June 30, 2022, the System had the following recurring fair value measurements in the DC Plan.

Defined Contribution Plan Investments

Investments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2022	**Level 1**	**Level 2**	**Level 3**
Investments by fair value level				
Short-term:				
PSERS Short-Term Investment Fund	**$ 5,301**	$ 4,475	$ 826	$ —
Other domestic short-term	**3,442**	3,442	—	—
Total investments by fair value level	**8,743**	$ 7,917	$ 826	$ —
Investments measured at the net asset value (NAV)				
Collective trust funds	**90,895**			
Total investments measured at the NAV	**90,895**			
Total investments measured at fair value	**$ 99,638**			

At June 30, 2021, the System had the following recurring fair value measurements in the DC Plan.

Defined Contribution Plan Investments

Investments Measured at Fair Value
(Dollar Amounts in Thousands)

		Fair Value Measurements Using		
	2021	Level 1	Level 2	Level 3
Investments by fair value level				
PSERS Short-Term Investment Fund	$ 6,081	$ 5,134	$ 947	$ —
Other domestic short-term	1,257	1,257	—	—
Total investments by fair value level	7,338	$ 6,391	$ 947	$ —
Investments measured at the net asset value (NAV)				
Collective trust funds	55,307			
Total investments measured at the NAV	55,307			
Total investments measured at fair value	$ 62,645			

Notes to Financial Statements (continued)

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) at June 30, 2022 is presented in the following table.

Defined Contribution Plan Investments

Fair Value of Investments

Defined Contribution Plan investments measured at the NAV
(Dollar Amounts in Thousands)

	2022			
	Fair Value	**Commitments**	**Redemption Frequency**	**Redemption Notice Period**
Collective trust funds (g)	**$ 90,895**	$ —	see note (g)	see note (g)
Total investments measured at the NAV	**$ 90,895**			

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) at June 30, 2021 is presented in the following table.

Defined Contribution Plan Investments

Fair Value of Investments

Defined Contribution Plan investments measured at the NAV
(Dollar Amounts in Thousands)

	2021			
	Fair Value	**Commitments**	**Redemption Frequency**	**Redemption Notice Period**
Collective trust funds (g)	$ 55,307	$ —	see note (g)	see note (g)
Total investments measured at the NAV	$ 55,307			

Notes to Financial Statements (continued)

The following table discloses aggregate market value for Short-term and Fixed Income assets by credit quality rating category. Many securities have ratings from more than one NRSRO*** and sometimes those ratings differ from one NRSRO to another. The data listed below uses the rating (expressed as S&P equivalent) available from Fitch, Moody's and/or S&P that indicates the lowest credit quality at June 30, 2022 and 2021.

	(Dollar Amounts in Thousands)	
	2022	2021
Quality Rating	**Fair Value**	Fair Value
AAA	**$ 4,113,419**	$ 7,681,352
AA	**2,712,774**	716,912
A	**875,885**	172,808
BBB	**802,534**	283,592
BB and Below	**365,691**	125,558
NR*	**3,629,077**	4,405,935
Total Exposed to Credit Risk	**12,499,380**	13,386,157
U.S. Government Guaranteed**	**10,673,891**	9,346,875
Total Fixed Income and Short-Term Investments	**$ 23,173,271**	$ 22,733,032

*Not Rated securities include $1,614,531 and $2,348,756 in collective trust funds and $724,869 and $205,340 in PSERS Short-Term Investment Fund assets at June 30, 2022 and 2021 respectively.

**Comprised of U.S government and agency obligations explicitly guaranteed by the U.S. government and not considered to have credit risk.

***nationally recognized statistical rating organizations (NRSRO)

Notes to Financial Statements (continued)

(a) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer. As of June 30, 2022 and 2021, the System had no single issuer that exceeded 5% of total investments. Investments issued or explicitly guaranteed by the U.S. government and investments in mutual funds, external investment pools, and other pooled investments were excluded.

(b) Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the System would not be able to recover the value of investment or collateral securities that are in the possession of an outside party. In accordance with a contractual relationship between the Commonwealth's Treasury Department and its custodial agent, substantially all investments, where securities are used as evidence of the investment, are held by the custodian in book-entry form in the System's name. Those investments are defined as insured or registered investments for which the securities are held by the System or its agent and, therefore, have a very minimal level of custodial credit risk. The remaining investments, which do not have securities that are used as evidence of the investment, are primarily in collective trust funds and limited partnerships, which include real estate and alternative investments.

(c) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The credit risk of a debt instrument is measured by nationally recognized statistical rating organizations (NRSRO) such as Fitch Investor Services (Fitch), Moody's, and S&P. Annually, the Board establishes an asset allocation plan. This plan manages the overall credit risk of the fixed income asset class through a clearly defined long-term asset allocation policy. This policy establishes a long-term target allocation of the fixed income asset class at 33.0% of the investment portfolio. The fixed income target allocation consists of:

- An allocation of 9.0% of the portfolio has been made to the investment grade segment of the fixed income asset class benchmarked to the Bloomberg U.S. Aggregate Bond TR Index (1%) and the Bloomberg U.S. Long Treasury TR Index (8%). Within this segment, the U.S. long treasury allocation (8.0%) is composed of primarily long duration U.S. Treasury securities issued by the U.S. government. The U.S. core fixed allocation (1.0%) is composed of primarily investment grade, relatively liquid, public domestic and government-related bonds with an overall weighted-average NRSRO credit rating of A or better.

- An allocation of 6.0% of the portfolio has been made to the private fixed income segment of the fixed income asset class benchmarked to the S&P LSTA Leveraged Loan TR Index plus 200 basis points. The private fixed income allocation is composed of primarily investments in limited partnerships focusing on direct lending, mezzanine, distressed and special situations, specialty finance and structured credit strategies.

- An allocation of 12.0% of the portfolio has been made to the inflation protected securities segment of the fixed income asset class benchmarked to the Bloomberg U.S. Government Inflation-Linked Bond All Maturities TR Index and the Bloomberg World Government ex U.S. Inflation-Linked Bond All Maturities TR Index (Hedged to USD). Within this segment, the U.S. inflation protected allocation (10.0%) is composed of primarily government issued Treasury Inflation Protected Securities (TIPS) with an overall weighted-average NRSRO credit rating of AA or better. The portfolio manager is permitted to leverage the portfolio using TIPS total return swaps up to 2:1. The Non-U.S. inflation protected allocation (2.0%) is composed primarily of non-U.S. government related securities tied to inflationary measures.

- An allocation of 6.0% of the portfolio has been made to the credit related segment of the fixed income asset class with 4.0% benchmarked to the Bloomberg U.S. Corporate High Yield Bond Index and 2.0% benchmarked to the JP Morgan GBI-EM Broad Diversified Index (34.0%), JP Morgan EMBI Global Diversified Index (33.0%), and the Intercontinental Exchange (ICE) Bank of America/Merrill Lynch Emerging Markets Corporate Plus Index (Hedged to USD) (33.0%).

For derivatives exposed to credit risk, the table below presents aggregate market value by the least favorable credit rating provided by NRSROs at June 30, 2022 and 2021.

	(Dollar Amounts in Thousands)	
	2022	2021
Quality Rating	**Fair Value**	Fair Value
A	**$ (859,392)**	$ (72,139)
BBB	—	6,383
Total Swaps - Total Return	**$ (859,392)**	$ (65,756)

Notes to Financial Statements (continued)

PSERS applies leverage opportunistically in implementing its asset allocation policy, providing an additional mechanism to increase expected volatility in order to target higher expected return when warranted. Total Leverage is allocated at (11.0%); Leverage is netted against the System's Cash allocation of 3% for a Net Leverage Allocation of (8.0%).

- An allocation of 3.0% of the portfolio has been made to cash benchmarked to the ICE Bank of America/Merrill Lynch U.S. 0-3 Month U.S. Treasury Bill Index composed of primarily investment grade, relatively liquid U.S. public bonds with an overall weighted-average NRSRO credit rating of AA or better.

(d) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of a fixed income investment. The System manages its interest rate risk by diversifying the fixed income portfolio and maintaining the fixed income portfolio at a Board- approved effective duration range of the benchmark index.

Duration is a measure of the approximate sensitivity of a bond's value to interest rate changes. The higher the duration, the greater the changes in fair value when interest rates change. For example, a duration of 4.0 would mean that, given a 100-basis point change up/down in rates, a bond's price would move down/up approximately 4.0%. PSERS measures interest rate risk using option-adjusted duration, which recognizes the fact that yield changes may change the expected cash flows due to embedded options.

(e) Foreign Currency Risk

Foreign currency risk is the risk that fluctuations in exchange rates will adversely affect the fair value of an investment. As part of the System's program to manage risk and enhance returns, the System invests in non-U.S. markets. Investment managers in non-U.S. equity and global fixed income may hedge their non-U.S. foreign currency exposure back to U.S. dollars. In addition, the System partially hedges non-U.S. developed market currency exposure not hedged by the investment managers back to U.S. dollars.

(D) Securities Lending

The System participates in a securities lending program with a third party agent. Under this program, the lending agent loans securities (equities, fixed income, and money market instruments) to independent brokers and dealers in exchange for U.S. dollar cash collateral in an amount not less than 102% of the fair value of any securities loaned. Collateral is marked-to-market daily. If the fair value of the collateral held falls below the minimum guidelines for securities loaned, additional collateral is obtained. The lending agent invests the cash collateral in accordance with reinvestment guidelines approved by the System.

The System minimizes its credit risk exposure by requiring borrowers to provide collateralization in excess of 100% of the fair value of the securities loaned. Under the securities lending program, the lending agent provides indemnification to the System if a borrower fails to return borrowed securities (and the collateral is inadequate to replace the loaned securities) or fails to pay income distributions on them. The lending agent also provides indemnification to the System if investment of cash collateral results in investment loss. There were no losses during the fiscal years ended June 30, 2022 and 2021 resulting from a default of the borrowers or the lending agent.

All securities loans can be terminated on demand by either the System or the borrower, although the average term of the loan is one day. There were no term loans as of June 30, 2022 and 2021.

At June 30, 2022 and 2021, the System's fixed income portfolio had the following option-adjusted durations by fixed income sector:

(Dollar Amounts in Thousands)

Investment Type	2022 Option-Adjusted Duration	2022 Fair Value	2021 Option-Adjusted Duration	2021 Fair Value
Domestic asset-backed and mortgage-backed securities	**1.0**	**$ 3,898,511**	1.3	$ 3,973,149
U.S. government and agency obligations	**11.5**	**7,218,373**	14.0	5,883,323
Domestic corporate and taxable municipal bonds	**3.0**	**766,260**	3.3	783,904
International fixed income	**2.0**	**255,118**	2.6	264,200
Collective trust funds*	**4.1**	**1,614,531**	3.6	2,348,756
PSERS Short-Term Investment Fund	**0.1**	**8,347,035**	0.1	8,733,986
Other Short-Term Assets	**0.1**	**1,073,443**	0.1	745,714
Total	**4.2****	**$ 23,173,271**	4.4**	$ 22,733,032

* Represents funds holding fixed income assets.

** Fixed income investment managers enter into futures contracts to adjust the durations of their portfolios as a whole rather than any particular investment type within the portfolio. In total, the futures contracts have adjusted PSERS' total portfolio duration upward by 0.1 at June 30, 2022 and 2021. The total portfolio option adjusted duration is calculated by weighting each investment type by fair value.

Notes to Financial Statements (continued)

Non-U.S. currency exposures at June 30, 2022 and 2021:

2022**

(Dollar Amounts in Thousands)

Currency	Equity	Fixed Income	Alternative Investments & Real Estate	Short-Term*	Currency Hedge	Total Fair Value
British pound sterling	**$ 770,689**	**$ —**	**$ 445,900**	**$ 647**	**$ (864,720)**	**$ 352,516**
Japanese yen	**906,040**	**6,721**	**48,436**	**4,539**	**(762,005)**	**203,731**
Taiwan new dollar	**182,810**	**—**	**—**	**44**	**—**	**182,854**
Indian rupee	**152,569**	**—**	**—**	**167**	**—**	**152,736**
South Korean won	**74,696**	**—**	**—**	**762**	**—**	**75,458**
Danish krone	**125,349**	**—**	**—**	**1,724**	**(52,060)**	**75,013**
Hong Kong dollar	**300,984**	**—**	**—**	**72**	**(226,963)**	**74,093**
Swiss Franc	**340,126**	**—**	**—**	**4,821**	**(274,238)**	**70,709**
Euro	**1,386,868**	**12,800**	**1,317,232**	**15,378**	**(2,817,021)**	**(84,743)**
Other non-U.S. currencies	**1,766,449**	**91,824**	**—**	**8,154**	**(1,695,102)**	**171,325**
Total	**$ 6,006,580**	**$ 111,345**	**$ 1,811,568**	**$ 36,308**	**$ (6,692,109)**	**$ 1,273,692**

**PSERS increased currency hedge ratios during FY 2022. To determine the level of currency risk, the currency hedge program uses a country of risk method. This table is prepared using currency risk based on investments held in a foreign currency.

2021

(Dollar Amounts in Thousands)

Currency	Equity	Fixed Income	Alternative Investments & Real Estate	Short-Term*	Currency Hedge	Total Fair Value
Euro	$ 1,448,747	$ 7,121	$ 1,586,131	$ 13,735	$ (1,785,403)	$ 1,270,331
British pound sterling	879,659	—	394,014	4,331	(423,288)	854,716
Japanese yen	1,159,064	10,306	27,585	7,681	(589,265)	615,371
Taiwan new dollar	307,935	—	—	1,763	—	309,698
Indian rupee	227,084	—	—	3,274	—	230,358
South Korean won	171,849	—	—	472	426	172,747
Hong Kong dollar	370,175	—	—	(1,738)	(209,740)	158,697
Danish krone	173,959	—	—	4,025	(28,670)	149,314
Swedish krona	209,181	—	—	355	(89,765)	119,771
Other non-U.S. currencies	1,532,182	89,793	—	25,019	(1,377,550)	269,444
Total	**$ 6,479,835**	**$ 107,220**	**$ 2,007,730**	**$ 58,917**	**$ (4,503,255)**	**$ 4,150,447**

* Includes investment receivables and payables

Notes to Financial Statements (continued)

The following table summarizes the System's foreign exchange contracts by currency at June 30, 2022 and 2021:

2022
(Dollar Amounts in Thousands)

Currency	Buys	Unrealized Gain/(Loss)	Sells	Unrealized Gain/(Loss)
Euro	**$ 14,520**	**$ 1**	**$ 2,831,541**	**$ 13,554**
Japanese yen	**599**	**2**	**762,604**	**(1,682)**
Swiss franc	**805**	**—**	**275,043**	**(2,860)**
Australian dollar	**1,769**	**—**	**595,482**	**1,532**
Swedish krona	**1,637**	**—**	**103,818**	**1,010**
Canadian dollar	**5,128**	**(2)**	**745,074**	**(4,737)**
Singapore dollar	—	—	**77,518**	**124**
Hong Kong dollar	—	—	**226,963**	**(30)**
British pound sterling	—	—	**865,528**	**2,767**
New Zealand dollar	—	—	**137,152**	**808**
Other non-U.S. currencies	**2,995**	**(9)**	**98,839**	**207**
Total	**$ 27,453**	**$ (8)**	**$ 6,719,562**	**$ 10,693**

2021
(Dollar Amounts in Thousands)

Currency	Buys	Unrealized Gain/(Loss)	Sells	Unrealized Gain/(Loss)
Euro	$ 49,100	$ 3	$ 1,834,502	$ 28,998
Japanese yen	4,416	(19)	593,680	5,286
Swiss franc	6	—	166,931	1,362
Australian dollar	2,746	1	495,617	1,948
Swedish krona	133	—	89,898	1,119
Canadian dollar	236	—	536,711	1,227
Singapore dollar	315	(6)	59,328	377
British pound sterling	16,836	10	440,124	4,698
New Zealand dollar	109	(4)	93,081	36
Hong Kong dollar	1,878	—	211,618	44
Other non-U.S. currencies	1,044	—	58,165	239
Total	$ 76,819	$ (15)	$ 4,579,655	$ 45,334

Notes to Financial Statements (continued)

Cash collateral is invested in a short-term collateral investment pool that is managed by the lending agent, is segregated from all other clients of the lending agent, and is not subject to custodial credit risk. The System's income from securities lending represents the earnings from the cash collateral provided by the borrower less a fee paid to the third party agent minus a negotiated rebate of a portion of the earnings on the cash collateral. The weighted-average maturity of the investments in the pool was one day at June 30, 2022 and 2021. During the fiscal years ended June 30, 2022 and 2021 the mismatch between the maturities of the investments made with cash collateral and the maturities of the securities loans may have posed some interest rate risk to the System. In the event of a default, the lending agent may use the collateral to replace the loaned securities.

As of June 30, 2022, the fair value of loaned securities was $9,665,650,000. The fair value of the associated collateral was $9,828,590,000, all of which was cash. As of June 30, 2021, the fair value of loaned securities was $7,734,304,000. The fair value of the associated collateral was $7,862,287,000, all of which was cash.

5. Derivative and Other Similar Investments

The System enters into a variety of financial contracts, which include options and futures. The System also enters into foreign exchange positions, such as forward and spot contracts to obtain or hedge foreign currency exposure; swap agreements to gain exposure to certain sectors of the equity and fixed income markets; collateralized mortgage obligations (CMOs); other forward contracts; and U.S. Treasury STRIPS. The System is not a dealer, but an end user of these instruments. The contracts are used primarily to enhance performance and/or reduce the volatility of the portfolio. The System is exposed to credit risk in the event of non-performance by counterparties to financial instruments. The System generally enters into transactions only with high quality institutions. Legal risk is mitigated through selection of executing brokers and review of all documentation. The System is exposed to market risk, the risk that future changes in market conditions may make an instrument less valuable. Exposure to market risk is managed in accordance with risk limits set by senior management, through buying or selling instruments or entering into offsetting positions.

The notional or contractual amounts of derivatives indicate the extent of the System's involvement in the various types and uses of derivative financial instruments and do not measure the System's exposure to credit or market risks and do not necessarily represent amounts exchanged by the parties. The amounts exchanged are determined by reference to the notional amounts and the other terms of the derivatives.

Futures contracts are contracts in which the buyer agrees to purchase and the seller agrees to make delivery of a specific financial instrument at a predetermined date and price. Gains and losses on futures contracts are settled daily based on a notional (underlying) principal value and do not involve an actual transfer of the specific instrument. Futures contracts are standardized and are traded on exchanges. The exchange assumes the risk that a counterparty will not pay and generally requires margin payments to minimize such risk. In addition, the System enters into short sales, sales of securities it does not presently own, to neutralize the market risk of certain equity positions. Initial margin requirements on futures contracts and collateral for short sales are provided by investment securities pledged as collateral and by cash held by various brokers. Although the System has the right to access individual pledged securities, it must maintain the amount pledged by substituting other securities for those accessed. The value of securities pledged and the amount of cash held at June 30, 2022 and 2021 represent a restriction on the amount of assets available at year-end for other purposes.

Option contracts provide the option purchaser with the right, but not the obligation, to buy or sell the underlying security at a set price during a period or at a specified date. The option writer is obligated to buy or sell the underlying security if the option purchaser chooses to exercise the option. The System generally uses exchange listed currency, index, equities, and futures options. In FY2022 and FY2021, the System purchased over-the-counter put options on the S&P 500 Index. The fair value of these option contracts of $3,213,000 and $5,693,000 at June 30, 2022 and 2021, respectively, is included in the Statements of Fiduciary Net Position.

Foreign exchange contracts involve an agreement to exchange the currency of one country for the currency of another country at an agreed-upon price and settlement date. To reduce the risk of counterparty non-performance, the investment managers generally enter into these contracts with institutions regarded as meeting high standards of credit worthiness. The contracts reported in Table 5 primarily include forwards. The $ 6,747,015,000 of foreign currency contracts outstanding at June 30, 2022 consist of "buy" contracts, which represent the U.S. dollar equivalents of commitments to purchase foreign currencies of $27,453,000 and "sell" contracts, which represent U.S. dollar equivalents of commitments to sell foreign currencies of $6,719,562,000. The $4,656,474,000 of foreign currency contracts outstanding at June 30, 2021 consist of "buy" contracts of $76,819,000 and "sell" contracts of $4,579,655,000. The unrealized gain on contracts of $10,685,000 and $45,319,000 at June 30, 2022 and 2021, respectively, is included in the Statements of Fiduciary Net Position and represents the fair value of the contracts.

Notes to Financial Statements (continued)

Table 5 - Notional Amounts of Derivatives

The table presented below summarizes the aggregate notional or contractual amounts for the System's derivative financial instruments at June 30, 2022 and 2021.

	(Dollar Amounts in Thousands) 2022	2021
Futures contracts - long:		
Treasury futures	**$ 250,321**	**$ 320,823**
U.S. equity futures	**200,465**	**182,480**
Non-U.S. equity futures	**185,605**	**—**
Commodity futures	**502,872**	**400,014**
Futures contracts - short:		
Treasury futures	**5,402**	**37,271**
Foreign exchange forward and spot contracts, gross	**6,747,015**	**4,656,474**
Options - puts purchased	**918,350**	**4,880,200**
Swaps - total return type	**12,187,253**	**15,432,197**

The fair values of derivative instruments outstanding at June 30, 2022 and 2021 are classified by type and by the changes in fair value of the derivative instrument in the table below.

(Dollar Amounts in Thousands)

	Change in Fair Value Gain/(Loss) FY 2022		**Fair Value at June 30, 2022**	
Investment Derivative Type	**Classification**	**Amount**	**Classification**	**Amount**
Futures	Investment income	**$ 64,144**	Receivable/(Payable)	**$ 64,144**
Total return type swaps	Investment income	**(859,392)**	Receivable/(Payable)	**(859,392)**
Foreign exchange contracts	Investment income	**10,685**	Receivable/(Payable)	**10,685**
Options	Investment income	**(1,890)**	Investment	**3,213**
Total		**$ (786,453)**		**$ (781,350)**

	Change in Fair Value Gain/(Loss) FY 2021		Fair Value at June 30, 2021	
Investment Derivative Type	Classification	Amount	Classification	Amount
Futures	Investment income	$ 75,247	Receivable/(Payable)	$ 75,247
Total return type swaps	Investment income	(65,756)	Receivable/(Payable)	(65,756)
Foreign exchange contracts	Investment income	45,319	Receivable/(Payable)	45,319
Options	Investment income	(10,473)	Investment	5,693
Total		$ 44,337		$ 60,503

Notes to Financial Statements (continued)

Swap agreements provide for periodic payments at predetermined future dates between parties based on the change in value of underlying securities, indexes, or interest rates. During the year ended June 30, 2022 and 2021, the System entered into total return type swaps. Under the total return type swap arrangements, the System receives the net return of certain equity securities or indexes in exchange for a short-term rate minus a spread or a predetermined fixed charge. The payable on the total return type swap contracts of $(859,392,000) and $(65,756,000) at June 30, 2022 and 2021, respectively, is included in the Statements of Fiduciary Net Position and represents the fair value of the contracts. The contracts have varying maturity dates ranging from July 29, 2022 to August 31, 2023.

The System also invests in mortgage-backed securities (MBS) such as CMOs and MBS forwards to maximize yields. These securities are sensitive to prepayments of mortgages, which may result from a drop in interest rates. The MBS forwards are subject to credit risk in the event of nonperformance by counterparties. The fair value of CMOs at June 30, 2022 and 2021 is $116,279,000 and $172,285,000, respectively.

The System invests in U.S. Treasury STRIPS which essentially act as zero-coupon bonds and are subject to market volatility from a rise or drop in interest rates.

Through certain hedge funds, the System also indirectly holds various derivative financial instruments. The hedge funds invest in futures and options thereon; forward foreign currency contracts; options; interest rate, currency, equity, index, and total return swaps; interest-only STRIPS; and CMOs, to enhance the performance and/or reduce the volatility of their portfolios.

6. Net Pension Liability of Participating Employers

The components of the net pension liability of the participating employers at June 30, 2022 were as follows:

(Dollar amounts in thousands)

Total pension liability	$ 114,986,964
Less: Plan fiduciary net position	70,528,242
Employer net pension liability	$ 44,458,722
Plan fiduciary net position as a percentage of the total pension liability	61.34%

Actuarial Assumptions

The total pension liability at June 30, 2022 was determined by rolling forward the System's total pension liability at June 30, 2021 to June 30, 2022 using the following actuarial assumptions, applied to all periods included in the measurement:

- Actuarial cost method - Entry Age Normal - level % of pay.
- Investment return - 7.00%, includes inflation at 2.75%.
- Salary growth - Effective average of 4.50%, comprised of inflation of 2.50% and 2.00% for real wage growth and for merit or seniority increases.
- Payroll growth assumption decreased from 3.50% to 3.25%.
- Mortality rates were modified from the RP-2014 Mortality Tables for Males and Females to a blended table based on 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 (Total General Employees data), adjusted to reflect PSERS' experience and projected using a modified version MP-2020.
- PSERS Board approved new actuarial assumptions effective for the June 30, 2021 actuarial valuation. The new assumptions were used to calculate the net pension liability at June 30, 2022 and are reflected above.

Investments

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The pension plan's policy in regard to the allocation of invested plan assets is established and may be amended by the Board. Plan assets are managed with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension.

For the year ended June 30, 2022, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 2.40%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. Table 6 shows the Board's adopted asset allocation policy and best estimates of geometric real rates of return for each major asset class at June 30, 2022.

Notes to Financial Statements (continued)

Discount Rate

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from employers will be made at contractually required rates, actuarially determined. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all the projected future benefit payments of current plan members to determine the total pension liability. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Table 6 - Pension Asset Allocation

Pension -Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global public equity	28.0 %	5.3 %
Private equity	12.0 %	8.0 %
Fixed income	33.0 %	2.3 %
Commodities	9.0 %	2.3 %
Infrastructure/MLPs	9.0 %	5.4 %
Real estate	11.0 %	4.6 %
Absolute Return	6.0 %	3.5 %
Cash	3.0 %	0.5 %
Leverage	(11.0)%	0.5 %
	100.0 %	

Sensitivity of the Net Pension Liability

Table 7 presents the net pension liability, calculated using the discount rate of 7.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage point lower (6.00%) or 1-percentage point higher (8.00%) than the current rate:

Table 7 - Sensitivity of the Net Pension Liability

(Dollar amounts in thousands)

	1% Decrease	Current Discount Rate	1% Increase
	6.00%	7.00%	8.00%
Net pension liability	$57,504,316	$44,458,722	$33,459,707

For additional information on the total pension liability, net pension liability, plan fiduciary net position as a percentage of the total pension liability, actuarial assumptions, and money weighted returns please refer to the multiple year Required Supplementary Information Schedule 1, Schedule 2, Schedule 3, Schedule 7 and Notes to Required Supplementary Information.

7. Net Other Postemployment Benefits (OPEB) Liability of Participating Employers

The components of the net OPEB liability of the participating employers at June 30, 2022 were as follows:

(Dollar amounts in thousands)

Total OPEB liability	$1,976,247
Less: Plan fiduciary net position	135,476
Employer net OPEB liability	$1,840,771
Plan fiduciary net position as a percentage of the total OPEB liability	6.86%

Postemployment Healthcare Plans

PSERS provides a Health Insurance Premium Assistance program funded by employer contributions which makes up the OPEB liability.

HOP is a PSERS sponsored voluntary health insurance program funded exclusively by the premiums paid by its participants for benefit coverage they elect. The HOP is not part of the OPEB liability.

Change in Actuarial Assumptions

The following change in assumption was used in the measurement of the Total OPEB Liability beginning June 30, 2022. The Investment Rate of Return was adjusted from 2.18% to 4.09% which represents the S&P 20 Year Municipal Bond Rate.

Actuarial Assumptions

The total OPEB liability at June 30, 2022 was determined by rolling forward the System's total OPEB liability at June 30, 2021 to June 30, 2022 using the following actuarial assumptions, applied to all periods included in the measurement:

- Actuarial cost method - Entry Age Normal - level % of pay.
- Investment return - 4.09% - S&P 20 Year Municipal Bond Rate.
- Salary growth - Effective average of 4.50%, comprised of inflation of 2.50% and 2.00% for real wage growth and for merit or seniority increases.
- Payroll growth assumption decreased from 3.50% to 3.25%.
- Premium Assistance reimbursement is capped at $1,200 per year.
- Assumed Healthcare cost trends were applied to retirees with less than $1,200 in premium assistance per year.

Notes to Financial Statements (continued)

- Mortality rates were modified from the RP-2014 Mortality Tables for Males and Females to a blended table based on 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 (Total General Employees data), adjusted to reflect PSERS' experience and projected using a modified version MP-2020.
- PSERS Board approved new actuarial assumptions effective for the June 30, 2021 actuarial valuation. The new assumptions were used to calculate the net pension liability at June 30, 2022 and are reflected above.

Investments

The Board has the responsibility to invest and reinvest available funds of the System in accordance with the guidelines and limitations set forth in the Code and other applicable state law. The Board accomplishes the daily management of the System's investments through investment advisors who act as agents for the System and through internal investment managers. Investments consist primarily of short-term assets designed to protect the principal of plan assets. Table 8 reflects the Fund's OPEB asset allocation policy and best estimates of geometric real rates of return for each asset class at June 30, 2022.

Under the program, employer contribution rates for Premium Assistance are established to provide reserves in the Health Insurance Account that are sufficient for the payment of Premium Assistance benefits for each succeeding year.

For the year ended June 30, 2022, the annual money-weighted rate of return on OPEB plan investments, net of OPEB plan investment expense, was 0.35%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Discount Rate

The discount rate used to measure the total OPEB liability was 4.09%. The Health Insurance Premium Assistance Program is funded by employer contributions. Under the plan's funding method, the OPEB plan's fiduciary net position was not projected to be sufficient to meet projected future benefit payments. Therefore, the plan is considered a "pay-as-you go" plan and a discount rate of 4.09%, which represents the S&P 20 year Municipal Bond Rate at June 30, 2022 was applied to all projected benefit payments to measure the total OPEB liability.

Table 8 - OPEB Asset Allocation

OPEB - Asset Class	Target Allocation	Long Term Expected Real Rate of Return
Cash	100.0%	0.5%
	100.0%	

Sensitivity of the Net OPEB Liability

Table 9 presents the net OPEB liability, calculated using the discount rate of 4.09%, as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1-percentage point lower (3.09%) or 1-percentage point higher (5.09%) than the current rate:

Table 9 - Sensitivity of the Net OPEB Liability
(Dollar amounts in thousands)

	1% Decrease	Current Discount Rate	1% Increase
	3.09%	4.09%	5.09%
Net OPEB liability	$ 2,081,691	$ 1,840,771	$ 1,639,172

Healthcare Cost Trend Rates

Healthcare cost trends were applied to retirees with less than $1,200 in Premium Assistance per year. Premium Assistance is capped at a maximum of $1,200 per year. At June 30, 2022, there were 93,293 members receiving the maximum amount allowed of $1,200 in Premium Assistance per year and their Premium Assistance benefits are not subject to future healthcare cost increases. At June 30, 2022, there were 582 members receiving less than the maximum amount allowed of $1,200 per year. The actual number of retirees receiving less than the $1,200 per year cap is a small percentage of the total population and has a minimal impact from Healthcare Cost Trends, as depicted in Table 10, which discloses the effect of a 1% increase or decrease in the rate.

Table 10 - Sensitivity of the Net OPEB Liability to Change in Healthcare Cost Trend Rates
(Dollar amounts in thousands)

	1% Decrease	Current Discount Rate	1% Increase
Net OPEB liability	$ 1,840,584	$ 1,840,771	$ 1,840,921

Notes to Financial Statements (continued)

For additional information on the total OPEB liability, net OPEB liability, plan fiduciary net position as a percentage of the total OPEB liability, actuarial assumptions, and money weighted returns please refer to the multiple year Required Supplementary Information Schedule 4, Schedule 5, Schedule 6, Schedule 7 and Notes to Required Supplementary Information.

8. Pension Plan for Employees of the System

(A) SERS' Plan Description

As an employer, the System contributes to SERS, a cost-sharing multiple-employer defined benefit pension plan established by the Commonwealth to provide pension benefits for employees of state government and certain independent agencies. SERS is a component unit of the Commonwealth and is included in the Commonwealth's financial report as a pension trust fund.

Membership in SERS is mandatory for most state employees. SERS provides retirement, death, and disability benefits. Article II of the Commonwealth's Constitution assigns the authority to establish and amend the benefit provision of the plan to the General Assembly.

(B) SERS' Benefits Provided to Employees of the System

SERS member retirement benefits are generally determined by taking years of credited service times final average salary times 1.0%, 1.25%, 2% or 2.5%, depending on date of hire. The normal retirement age ranges from 50 - 65, depending on the membership class. According to the State Employees' Retirement Code (SERC), all obligations of SERS will be assumed by the Commonwealth should SERS terminate.

(C) Contributions to SERS

The contribution requirements of SERS plan members is mandated by Commonwealth statute. The member contribution rate for the majority of SERS' members is 6.25%. At December 31, 2021 and 2020 the blended employer contribution rates were 26.94% and 27.03%, respectively. Contributions to SERS from PSERS were $9.4 million for the year ended June 30, 2022.

(D) Proportionate Share of Pension Liabilities, Pension Expense, and Deferred Inflows of Resources and Deferred Outflows of Resources

At June 30, 2022, PSERS reported a liability of $61.1 million and $77.5 million at June 30, 2021, for its proportionate share of the net pension liability for the SERS plan in Other liabilities on the Statement of Fiduciary Net Position. The net pension liability was measured at December 31, 2021 and 2020, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation at December 31, 2021 and 2020. PSERS' proportion of the net pension liability was calculated utilizing a projected-contribution method. At December 31, 2021, PSERS' proportion was 0.41907639 percent and 0.42345499 percent at December 31, 2020.

PSERS recognized total pension expense of $6.8 million in FY 2022 on the Statement of Changes in Fiduciary Net Position. Of the $6.8 million of pension expense, $3.9 million was reflected in administrative expenses, $0.1 million in Postemployment Healthcare, $0.1 million in defined contributions and $2.7 million was reflected in investment expenses. Deferred inflows of resources of $18.8 million and $10.2 million at June 30, 2022, and June 30, 2021, respectively, are reported in Other liabilities on the Statement of Fiduciary Net Position. Deferred outflows of resources of $17.7 million and $22.9 million at June 30, 2022, and June 30, 2021, respectively, are reported in Miscellaneous assets. Of the $17.7 million of deferred outflows of resources at June 30, 2022, PSERS recorded $5.3 million for contributions subsequent to the measurement date which will be recognized as a reduction of the net pension liability in the year ending June 30, 2023. Other amounts reported as deferred outflows of resources and deferred inflows of resources will be recognized in pension expense as follows:

Year Ending June 30:	(Dollar amounts in thousands)
2023	(281)
2024	862
2025	(2,912)
2026	(1,083)
Thereafter	(2,307)

(E) SERS' Pension Plan Fiduciary Net Position

Detailed information about SERS' fiduciary net position is available in SERS' Annual Comprehensive Financial Report which can be found on SERS' website at www.SERS.pa.gov.

9. Postemployment Healthcare Plan for Employees of the System

(A) REHP Plan Description

As an employer, the System participates in the Commonwealth's REHP. The REHP is a single employer plan and provides certain healthcare benefits to qualifying individuals meeting specified age and/or service requirements. The Commonwealth's Office of Administration (OA), in its sole discretion, determines

Notes to Financial Statements (continued)

available REHP benefits on an ongoing basis. The Pennsylvania Employees Benefit Trust Fund (PEBTF) is a third party administrator for the REHP under the provisions of an Administration Agreement between OA and PEBTF.

(B) OPEB Benefits Provided to Employees of the System

The Commonwealth sponsors the REHP for eligible retirees and their dependents to receive subsidized health coverage for the retiree's lifetime. The REHP is provided as part of collective bargaining agreements with most Commonwealth labor unions. All policy decisions, types and levels of benefits for the REHP fall under the purview of the Commonwealth's Executive Board and the Secretary of Administration.

(C) Contributions to the REHP

Employer costs for retiree healthcare benefits are charged as a component of payroll expenditures, on a 'pay as you go' basis. All employing agencies contributed $120 per biweekly pay period for each current REHP eligible active employee during fiscal year ended June 30, 2022 to the REHP Trust. PSERS' contributions to the REHP for FY 2022 were $1.0 million. Plan members who retired after June 30, 2005 contribute to the plan based on a percentage of their final annual gross base salary at the time of retirement. Plan member contribution rates vary based on their REHP enrollment date.

(D) Proportionate Share of OPEB Liabilities, OPEB Expense and Deferred Inflows of Resources and Deferred Outflows of Resources

At June 30, 2022, PSERS reported a liability of $43.9 million and $50.9 million at June 30, 2021 for its proportionate share of net OPEB liability for the REHP plan in Other Liabilities on the Statement of Fiduciary Net Position. The current liability portion of the net OPEB liability is $2.0 million. The net OPEB liability was measured at June 30, 2021, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation at June 30, 2021. Since the REHP has insufficient assets to meet next year's projected benefit payments, the discount rate used to measure the total OPEB liability is based on the 20 year tax-exempt general obligation municipal bond index rate which was 3.63% on June 30, 2022. PSERS' proportion of the net OPEB liability was calculated utilizing a contribution method. At June 30, 2021, PSERS' proportion was 0.429416 percent and at June 30, 2020 PSERS' proportion was 0.41302 percent.

REHP had a decrease in Total OPEB Liability of approximately $1.9 billion. The primary cause was due to changes in actuarial assumptions driven by an increase in the discount rate from 2.21% to 3.63%.

PSERS recognized total OPEB expense of $(5.3) million in FY 2022 on the Statement of Changes in Fiduciary Net Position. Of the $(5.3) million of OPEB expense, $(4.2) million was reflected in administrative expenses, $(0.1) million in Postemployment Healthcare, $0.1 million in defined contributions and $(1.1) million was reflected in investment expenses. Deferred outflows of resources of $13.7 million and $13.3 million at June 30, 2022 and June 30, 2021, respectively are reported in Miscellaneous assets. Of the $13.7 million of deferred outflows at June 30, 2022, PSERS recorded $0.4 million for contributions subsequent to the measurement date which will be recognized as a reduction of the net OPEB liability in the year ending June 30, 2023. Deferred inflows of resources of $28.4 million and $28.4 million at June 30, 2022 and June 30, 2021, respectively are reported in Other liabilities on the Statement of Fiduciary Net Position and will be recognized in OPEB expense as follows:

Year Ending June 30:	(Dollar amounts in thousands)
2023	(8,050)
2024	(5,478)
2025	(1,813)
2026	(178)
Thereafter	(898)

(E) REHP Plan Fiduciary Net Position

Detailed information about the REHP fiduciary net position is available in the Commonwealth's Annual Comprehensive Financial Report which can be found at www.budget.pa.gov.

10. Litigation and Contingencies

The System is subject to various threatened and pending lawsuits. These lawsuits include issues related to benefit calculations and eligibility. The System is also exposed to various other liabilities and risks related to fiduciary responsibilities of directors and officers.

In 2021, the System received subpoenas from the Department of Justice ("DOJ") and the Securities and Exchange Commission ("SEC") regarding the certification of the shared risk member contribution rate in December 2020, as well as the purchase and valuation of certain directly held properties. PSERS' Board retained outside counsel to conduct an independent internal investigation of the shared risk calculation and the purchase and valuation of certain directly held properties. The independent internal investigation concluded in January 2022 with no findings of wrongdoing. In August 2022, PSERS was informed by the DOJ that it has

Notes to Financial Statements (continued)

closed its investigation of PSERS with no criminal or civil charges. PSERS continues to cooperate fully with the SEC investigation which is ongoing.

It is the opinion of management that the ultimate liability arising from such threatened, pending litigation and investigations will not have a material effect on the financial position of the System.

Required Supplementary Information

Schedule 1
Schedule of Changes in the Employer Net Pension Liability
(Unaudited – See Accompanying Auditor's Report)
(Dollar Amounts in Thousands)

	2022	2021	2020	2019	2018
Total pension liability					
Service cost	**$ 1,826,693**	$ 1,963,645	$ 1,949,427	$ 1,921,417	$ 1,890,906
Interest	**7,789,946**	7,703,465	7,546,367	7,465,228	7,334,484
Changes of benefit terms	**—**	—	—	—	—
Differences between expected and actual experience	**(399,385)**	40,322	(339,969)	(1,477,660)	(745,306)
Changes of assumptions	**—**	2,655,180	—	—	—
Benefit payments	**(7,254,372)**	(7,134,332)	(6,876,515)	(6,761,172)	(6,655,146)
Net change in total pension liability	**1,962,882**	5,228,280	2,279,310	1,147,813	1,824,938
Total pension liability - beginning	**113,024,082**	107,795,802	105,516,492	104,368,679	102,543,741
Total pension liability - ending (a)	**$ 114,986,964**	$ 113,024,082	$ 107,795,802	$ 105,516,492	$ 104,368,679
Plan fiduciary net position					
Contributions - employer	**4,997,912**	4,759,189	4,676,413	4,487,520	4,249,611
Contributions - member	**1,134,051**	1,080,701	1,067,957	1,064,043	1,026,375
Net investment income	**(267,250)**	14,754,624	1,001,846	3,628,710	4,714,158
Benefit payments	**(7,254,372)**	(7,134,332)	(6,876,515)	(6,761,172)	(6,655,146)
Administrative expense	**(49,451)**	(49,616)	(46,799)	(48,931)	(46,544)
Net Change in plan fiduciary net position	**(1,439,110)**	13,410,566	(177,098)	2,370,170	3,288,454
Plan fiduciary net position - beginning	**71,967,352**	58,556,786	58,733,884	56,363,714	53,155,336
Effect of change in accounting principle	**—**	—	—	—	(80,076)
Plan fiduciary net position - beginning restated	**71,967,352**	58,556,786	58,733,884	56,363,714	53,075,260
Plan fiduciary net position - ending (b)	**$ 70,528,242**	$ 71,967,352	$ 58,556,786	$ 58,733,884	$ 56,363,714
Employer net pension liability - ending (a)-(b)	**$ 44,458,722**	$ 41,056,730	$ 49,239,016	$ 46,782,608	$ 48,004,965

Required Supplementary Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report and notes to the required supplementary information.

Required Supplementary Information

Schedule 1
Schedule of Changes in the Employer Net Pension Liability (continued)
(Unaudited – See Accompanying Auditor's Report)

(Dollar Amounts in Thousands)

	2017	2016	2015	2014
Total pension liability				
Service cost	$ 1,873,844	$ 1,932,401	$ 1,926,539	$ 2,139,037
Interest	7,110,987	7,028,292	6,857,497	6,523,484
Changes of benefit terms	(449)	—	—	—
Differences between expected and actual experience	644,051	(348,429)	(223,437)	—
Changes of assumptions	—	2,236,118	—	—
Benefit payments	(6,473,579)	(6,360,325)	(6,220,601)	(6,053,505)
Net change in total pension liability	3,154,854	4,488,057	2,339,998	2,609,016
Total pension liability - beginning	99,388,887	94,900,830	92,560,832	89,951,816
Total pension liability - ending (a)	$ 102,543,741	$ 99,388,887	$ 94,900,830	$ 92,560,832
Plan fiduciary net position				
Contributions - employer	3,832,773	3,189,510	2,596,731	1,992,084
Contributions - member	1,013,847	989,266	984,634	966,926
Net investment income	4,995,362	473,206	1,328,516	7,097,761
Benefit payments	(6,473,579)	(6,360,325)	(6,220,601)	(6,053,505)
Administrative expense	(45,127)	(45,118)	(42,331)	(38,712)
Net Change in plan fiduciary net position	3,323,276	(1,753,461)	(1,353,051)	3,964,554
Plan fiduciary net position - beginning	49,832,060	51,585,521	52,980,115	49,015,561
Effect of change in accounting principle	—	—	(41,543)	—
Plan fiduciary net position - beginning restated	49,832,060	51,585,521	52,938,572	49,015,561
Plan fiduciary net position - ending (b)	$ 53,155,336	$ 49,832,060	$ 51,585,521	$ 52,980,115
Employer net pension liability - ending (a)-(b)	$ 49,388,405	$ 49,556,827	$ 43,315,309	$ 39,580,717

Required Supplementary Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report and notes to the required supplementary information.

Required Supplementary Information

Schedule 2
Schedule of Employer Net Pension Liability
(Unaudited – See Accompanying Auditor's Report)
(Dollar Amounts in Thousands)

	2022	2021	2020	2019	2018
Total pension liability	**$114,986,964**	$113,024,082	$107,795,802	$105,516,492	$104,368,679
Less: Plan fiduciary net position	**70,528,242**	71,967,352	58,556,786	58,733,884	56,363,714
Employer Net Pension liability	**$ 44,458,722**	$ 41,056,730	$ 49,239,016	$ 46,782,608	$ 48,004,965
Plan fiduciary net position as a percentage of the total pension liability	**61.34%**	63.67%	54.32%	55.66%	54.00%
Covered Payroll	**$ 14,704,344**	$ 14,176,097	$ 14,036,006	$ 13,791,197	$ 13,466,526
Employer net pension liability as a percentage of covered payroll	**302.35%**	289.62%	350.81%	339.22%	356.48%

Schedule 2
Schedule of Employer Net Pension Liability
(Unaudited – See Accompanying Auditor's Report)
(continued)
(Dollar Amounts in Thousands)

	2017	2016	2015	2014
Total pension liability	$102,543,741	$ 99,388,887	$ 94,900,830	$ 92,560,832
Less: Plan fiduciary net position	53,155,336	49,832,060	51,585,521	52,980,115
Employer Net Pension liability	$ 49,388,405	$ 49,556,827	$ 43,315,309	$ 39,580,717
Plan fiduciary net position as a percentage of the total pension liability	51.84%	50.14%	54.36%	57.24%
Covered Payroll	$13,313,900	$12,951,077	$12,866,473	$12,760,785
Employer net pension liability as a percentage of covered payroll	370.95%	382.65%	336.65%	310.17%

Required Supplementary Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report and notes to the required supplementary information

Required Supplementary Information

Schedule 3
Schedule of Employer Pension Contributions
(Unaudited – See Accompanying Auditor's Report)
(Dollar Amounts in Thousands)

	2022	2021	2020	2019
Actuarially determined contribution	**$ 4,985,571**	$ 4,752,338	$ 4,671,931	$ 4,478,236
Contributions in relation to the actuarially determined contribution (1)(2)	**4,985,571**	4,752,338	4,671,931	4,478,236
Contribution deficiency	—	—	—	—
Covered payroll	**$14,704,344**	$14,176,097	$14,036,006	$13,791,197
Contributions as a percentage of covered payroll	**33.91%**	33.52%	33.29%	32.47%

Schedule 3
Schedule of Employer Pension Contributions
(Unaudited – See Accompanying Auditor's Report)
(continued)
(Dollar Amounts in Thousands)

	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 4,243,328	$ 3,824,908	$ 3,540,304	$ 3,289,615	$ 2,965,715
Contributions in relation to the actuarially determined contribution (1)(2)	4,243,328	3,824,908	3,181,438	2,582,114	1,992,084
Contribution deficiency	—	—	358,866	707,501	973,631
Covered payroll	$13,466,526	$13,313,900	$12,951,077	$12,866,473	$12,760,785
Contributions as a percentage of covered payroll	31.51%	28.73%	24.57%	20.07%	15.61%

(1) Amounts for 2015-2022 exclude purchase of service contributions.
(2) Same as contractually required contributions.

Required Supplementary Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report and notes to the required supplementary information.

Required Supplementary Information

Schedule 4
Schedule of Changes in the Employer Net OPEB (Premium Assistance) Liability
(Unaudited – See Accompanying Auditor's Report)
(Dollar Amounts in Thousands)

Total OPEB liability	**2022**	2021	2020	2019	2018	2017
Service cost	**$ 47,563**	$ 44,699	$ 42,643	$ 40,201	$ 37,809	$ 42,038
Interest	**54,361**	60,632	62,452	65,319	67,091	61,404
Differences between expected and actual experience	**(11,835)**	7,272	11,987	1,435	15,019	—
Changes of assumptions	**(502,733)**	212,419	35,284	50,166	38,456	(110,610)
Benefit payments	**(113,707)**	(113,538)	(113,279)	(112,777)	(111,847)	(110,229)
Net change in total OPEB liability	**(526,351)**	211,484	39,087	44,344	46,528	(117,397)
Total OPEB liability - beginning	**2,502,598**	2,291,114	2,252,027	2,207,683	2,161,155	2,278,552
Total OPEB liability - ending (a)	**$ 1,976,247**	$ 2,502.598	$ 2,291,114	$ 2,252,027	$ 2,207,683	$ 2,161,155
Plan fiduciary net position						
Contributions - employer	**$ 117,178**	$ 116,519	$ 117,907	$ 114,829	$ 111,986	$ 110,985
Net investment income	**316**	260	1,752	2,313	1,455	663
Benefit payments	**(113,707)**	(113,538)	(113,279)	(112,777)	(111,847)	(110,229)
Administrative expense	**(826)**	(1,143)	(1,148)	(1,914)	(2,602)	(2,239)
Net Change in plan fiduciary net position	**2,961**	2,098	5,232	2,451	(1,008)	(820)
Plan fiduciary net position - beginning	**132,515**	130,417	125,185	122,734	123,743	124,563
Plan fiduciary net position - ending (b)	**$ 135,476**	$ 132,515	$ 130,417	$ 125,185	$ 122,735	$ 123,743
Employer net OPEB liability - ending (a) - (b)	**$ 1,840,771**	$ 2,370,083	$ 2,160,697	$ 2,126,842	$ 2,084,948	$ 2,037,412

Required Supplementary Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report and notes to the required supplementary information.

Required Supplementary Information

Schedule 5
Schedule of Employer Net OPEB (Premium Assistance) Liability
(Unaudited – See Accompanying Auditor's Report)
(Dollar Amounts in Thousands)

	2022	2021	2020	2019	2018	2017	2016
Total OPEB Liability	**$ 1,976,247**	$ 2,502,598	$ 2,291,114	$ 2,252,027	$ 2,207,683	$ 2,161,155	$ 2,278,552
Less: Plan fiduciary net position	**135,476**	132,515	130,417	125,185	122,734	123,743	124,563
Employer Net OPEB Liability	**$ 1,840,771**	$ 2,370,083	$ 2,160,697	$ 2,126,842	$ 2,084,949	$ 2,037,412	$ 2,153,989
Plan fiduciary net position as a percentage of the total OPEB liability	**6.86%**	5.30%	5.69%	5.56%	5.56%	5.73%	5.47%
Covered Payroll	**$ 14,704,344**	$ 14,176,097	$ 14,036,006	$ 13,791,197	$ 13,466,526	$ 13,313,900	$ 12,951,077
Employer net OPEB liability as a percentage of covered payroll	**12.52%**	16.72%	15.39%	15.42%	15.48%	15.30%	16.63%

Schedule 6
Schedule of Employer OPEB (Premium Assistance) Contributions
(Unaudited – See Accompanying Auditor's Report)
(Dollar Amounts in Thousands)

	2022	2021	2020	2019	2018	2017	2016
Actuarially determined contribution	**$ 147,312**	$ 133,971	$ 138,776	$ 139,484	$ 134,607	$ 125,694	$ 129,494
Contributions in relation to the actuarially determined contribution (1)(2)	**116,773**	116,365	117,723	114,571	111,724	110,558	112,557
Contribution deficiency	**$ 30,539**	$ 17,606	$ 21,053	$ 24,913	$ 22,883	$ 15,136	$ 16,937
Covered payroll	**$ 14,704,344**	$ 14,176,097	$ 14,036,006	$ 13,791,197	$ 13,466,526	$ 13,313,900	$ 12,951,077
Contributions as a percentage of covered payroll	**0.79%**	0.82%	0.84%	0.83%	0.83%	0.83%	0.87%

(1) Amounts exclude purchase of service contributions.
(2) Same as contractually required contributions.

Required Supplementary Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report and notes to the required supplementary information.

Required Supplementary Information

Schedule 7
Schedule of Investment Returns - Pension and OPEB
(Unaudited – See Accompanying Auditor's Report)

	2022	2021	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense- Pension	2.40%	24.57%	1.14%	6.58%	9.30%	10.15%	1.11%	3.08%	14.98%
Annual money-weighted rate of return, net of investment expense- OPEB	0.35%	0.31%	1.97%	2.68%	1.63%	0.90%	0.65%	0.30%	-

Required Supplementary Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report and notes to the required supplementary information.

Notes to Required Supplementary Information for the Years Ended June 30, 2014 thru June 30, 2022

Pension

Changes in benefit terms
With the passage of Act 5 on June 12, 2017, class T-E & T-F members are now permitted to elect a lump sum payment of member contributions upon retirement.

Changes in assumptions used in measurement of the Total Pension Liability beginning June 30, 2022
None.

Changes in assumptions used in measurement of the Total Pension Liability beginning June 30, 2021
The Discount Rate decreased from 7.25% to 7.00%. The inflation assumption was decreased from 2.75% to 2.50%. Payroll growth assumption decreased from 3.50% to 3.25%.

Salary growth changed from an effective average of 5.00%, which was comprised of inflation of 2.75%, real wage growth and for merit or seniority increases of 2.25%, to an effective average of 4.50%, comprised of inflation of 2.50% and 2.00% for real wage growth and for merit or seniority increases.

Mortality rates were modified from the RP-2014 Mortality Tables for Males and Females to a blended table based on 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 (Total General Employees data), adjusted to reflect PSERS' experience and projected using a modified version MP-2020.

For disabled annuitants the rates were modified from the RP-2014 Mortality Tables for Males and Females to Pub-2010 Disability Mortality Non-Safety Headcount Weighted table, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2020.

Changes in assumptions used in measurement of the Total Pension Liability beginning June 30, 2017, beginning June 30, 2018, beginning June 30, 2019 & beginning June 30, 2020
None.

Changes in assumptions used in measurement of the Total Pension Liability beginning June 30, 2016
The Investment Rate of Return was adjusted from 7.50% to 7.25%. The inflation assumption was decreased from 3.00% to 2.75%.

Salary growth changed from an effective average of 5.50%, which was comprised of inflation of 3.00%, real wage growth and for merit or seniority increases of 2.50%, to an effective average of 5.00%, comprised of inflation of 2.75% and 2.25% for real wage growth and for merit or seniority increases.

Mortality rates were modified from the RP-2000 Combined Healthy Annuitant Tables (male and female) with age set back 3 years for both males and females to the RP-2014 Mortality Tables for Males and Females, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2015 Mortality Improvement Scale. For disabled annuitants the RP-2000 Combined Disabled Tables (male and female) with age set back 7 years for males and 3 years for females to the RP-2014 Mortality Tables for Males and Females, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2015 Mortality Improvement Scale.

Method and assumptions used in calculations of actuarially determined contributions
The actuarially determined contributions are calculated as of the June 30 preceding the fiscal year in which contributions are made. That is, the contribution calculated as of the June 30, 2021 actuarial valuation will be made during the fiscal year ending June 30, 2023. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule:

Notes to Required Supplementary Information for the Years Ended June 30, 2014 thru June 30, 2022 (continued)

Pension

- Investment return - 7.00%, includes inflation at 2.50% and the real rate of return 4.50%.
- Salary growth - Effective average of 4.50%, which reflects an allowance for inflation of 2.50%, real wage growth and merit or seniority of 2.00%.
- Benefit payments - no postretirement benefit increases assumed in the future.
- Mortality Tables for Males and Females to a blended table based on 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 (Total General Employees data), adjusted to reflect PSERS' experience and projected using a modified version MP-2020.

10-year reporting requirements

Required Supplementary Schedules 1-3 and 7, as related to pensions, are intended to show information for 10 years. Additional years will be displayed as they become available.

The Accounting Valuation

The GASB 67 accounting valuation can be found on PSERS' website at www.psers.pa.gov.

Notes to Required Supplementary Information for the Years Ended June 30, 2014 thru June 30, 2022

OPEB

Changes in benefit terms
None.

Changes in assumptions used in measurement of the Total OPEB Liability beginning June 30, 2022
The Discount Rate increased from 2.18% to 4.09%.

Changes in assumptions used in measurement of the Total OPEB Liability beginning June 30, 2021
The Discount Rate decreased from 2.66% to 2.18%.The inflation assumption was decreased from 2.75% to 2.50%. Payroll growth assumption decrease from 3.50% to 3.25%.

Salary growth changed from an effective average of 5.00%, which was comprised of inflation of 2.75%, real wage growth and for merit or seniority increases of 2.25%, to an effective average of 4.50%, comprised of inflation of 2.50% and 2.00% for real wage growth and for merit or seniority increases.

Mortality rates were modified from the RP-2014 Mortality Tables for Males and Females to a blended table based on 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 (Total General Employees data), adjusted to reflect PSERS' experience and projected using a modified version MP-2020.

For disabled annuitants the rates were modified from the RP-2014 Mortality Tables for Males and Females to Pub-2010 Disability Mortality Non-Safety Headcount Weighted table, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2020.

Changes in assumptions used in measurement of the Total OPEB Liability beginning June 30, 2020
The Discount Rate decreased from 2.79% to 2.66%.

Changes in assumptions used in measurement of the Total OPEB Liability beginning June 30, 2019
The Discount Rate decreased from 2.98% to 2.79%.

Changes in assumptions used in measurement of the Total OPEB Liability beginning June 30, 2018
The Discount Rate decreased from 3.13% to 2.98%.

Changes in assumptions used in measurement of the Total OPEB Liability beginning June 30, 2017
The Discount Rate increased from 2.71% to 3.13%.

Changes in assumptions used in measurement of the Total OPEB Liability beginning June 30, 2016
Salary growth changed from an effective average of 5.50%, which was comprised of inflation of 3.00%, real wage growth and for merit or seniority increases of 2.50%, to an effective average of 5.00%, comprised of inflation of 2.75% and 2.25% for real wage growth and for merit or seniority increases.

Mortality rates were modified from the RP-2000 Combined Healthy Annuitant Tables (male and female) with age set back 3 years for both males and females to the RP-2014 Mortality Tables for Males and Females, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2015 Mortality Improvement Scale. For disabled annuitants the RP-2000 Combined Disabled Tables (male and female) with age set back 7 years for males and 3 years for females to the RP-2014 Mortality Tables for Males and Females, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2015 Mortality Improvement Scale.

Method and assumptions used in calculations of actuarially determined contributions
The actuarially determined contributions are calculated as of the June 30 preceding the fiscal year in which contributions are made. That is, the contribution calculated as of the June 30, 2021 actuarial valuation will be made during the fiscal year ending

Notes to Required Supplementary Information for the Years Ended June 30, 2014 thru June 30, 2022 (continued)

OPEB

June 30, 2023. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule:

- Investment return - 4.09% - 20 year S&P Municipal Bond Rate.
- Salary growth - Effective average of 4.50%, which reflects an allowance for inflation of 2.50%, real wage growth and merit or seniority of 2.00%.
- Benefit payments - no postretirement benefit increases assumed in the future.
- Mortality Tables for Males and Females to a blended table based on 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 (Total General Employees data), adjusted to reflect PSERS' experience and projected using a modified version MP-2020.
- Assumed Healthcare cost trends were applied to retirees with less than $1,200 in premium assistance per year.

10-year reporting requirements
Required Supplementary Schedules 4-7, as related to OPEB, are intended to show information for 10 years. Additional years will be displayed as they become available.

The Accounting Valuation
The GASB 74 accounting valuation can be found on PSERS' website at www.psers.pa.gov.

Supplementary Schedule 1
Schedule of Administrative and Investment Expenses
Year Ended June 30, 2022
(Dollar Amounts in Thousands)

	Administrative Expenses				
	Pension	Defined Contributions	Postemployment Healthcare (1)	Investment Expenses (2)	Total
Personnel costs:					
Salaries and wages	$ 17,789	$ 428	$ 1,172	$ 10,913	**$ 30,302**
Employee benefits	11,524	263	748	5,191	**17,726**
Total personnel costs	29,313	691	1,920	16,104	**48,028**
Operating costs:					
Investment managers' fees	—	—	—	495,802	**495,802**
Custodian fees	—	—	—	2,522	**2,522**
Specialized services	74	1,298	104	494	**1,970**
Investment Systems	—	—	—	3,783	**3,783**
Investment Services	—	—	—	3,079	**3,079**
Third party administrator	—	—	31,984	—	**31,984**
Fitness program administrator	—	—	848	—	**848**
Healthcare project management	—	—	3,439	—	**3,439**
Real estate rental, electricity	1,947	—	233	224	**2,404**
Consultant and legal fees	8,366	85	1,401	4,131	**13,983**
Treasury and other Commonwealth services	2,094	—	—	183	**2,277**
Postage	553	—	68	—	**621**
Contracted maintenance and repair services	3,130	—	—	217	**3,347**
Printing and office supplies	222	—	23	1	**246**
Equipment and software rental	5,832	—	—	—	**5,832**
Travel and training	108	—	100	29	**237**
Telecommunications	395	—	28	80	**503**
Equipment (non-capital assets)	813	—	—	—	**813**
Subscriptions	25	—	4	925	**954**
Miscellaneous	1,117	21	158	117	**1,413**
Total operating costs	24,676	1,404	38,390	511,587	**576,057**
Other charges:					
Depreciation	2,908	—	—	—	**2,908**
Total Administrative and Investment Expenses Before Pension & OPEB Expense	56,897	2,095	40,310	527,691	**626,993**
Pension expense (3)	(1,655)	(27)	(32)	(838)	**(2,552)**
OPEB expense (4)	(5,791)	93	(162)	(1,463)	**(7,323)**
Total Administrative and Investment Expenses	$ 49,451	$ 2,161	$ 40,116	$ 525,390	**$ 617,118**

(1) Administrative expenses for Postemployment Healthcare includes $826 related to Premium Assistance and $39,290 related to Health Options Program for the fiscal year ended June 30, 2022.

(2) Includes investment expenses of $33 related to Postemployment Healthcare Premium Assistance, $31 related to Health Options Program and $155 for DC for the fiscal year ended June 30, 2022 and does not include $5,748 in capitalized broker commissions for the fiscal year ended June 30, 2022.

(3) Total GASB 68 pension expense is $6.8 million and is reflected under Employee benefits and Pension expense. Employer contributions of $9.4 million are included as Employee benefits under Personnel costs and $(2.6) million is reflected as Pension expense.

(4) Total GASB 75 OPEB expense is $(5.3) million and is reflected under Employee benefits and OPEB expense. Employer contributions of $2.0 million are included as Employee benefits under Personnel costs and $(7.3) million is reflected as OPEB expense.

Supplementary Schedule 2
Summary of Investment Expenses*
Year Ended June 30, 2022
(Dollar Amounts in Thousands)

	Investment Management			
	Base	Performance	Other Expenses	Total
External management:				
Domestic equity	$ —	$ —	$ —	**$ —**
International equity	25,547	73,509	—	**99,056**
Fixed income	32,164	7,922	—	**40,086**
Real estate	45,579	—	—	**45,579**
Alternative investments	106,573	—	—	**106,573**
Absolute return	81,504	45,115	—	**126,619**
Commodities	7,710	—	—	**7,710**
Infrastructure	9,035	—	—	**9,035**
Master limited partnership	365	1,248	—	**1,613**
Private credit	58,079	655	—	**58,734**
Tail Risk Mitigation	642	—	—	**642**
Defined Contribution	155	—	—	**155**
Total external management	367,353	128,449	—	**495,802**
Total internal management	—	—	22,935	**22,935**
Total investment management	367,353	128,449	22,935	**518,737**
Custodian fees	—	—	2,522	**2,522**
Consultant and legal fees	—	—	4,131	**4,131**
Total investment expenses	$ 367,353	$ 128,449	$ 29,588	**$ 525,390**

*External investment management fees classified on an asset allocation basis.

Supplementary Schedule 3
Schedule of Payments to Non-Investment Consultants
Year Ended June 30, 2022
(Dollar Amounts Greater than $100,000)

Non-Investment Consultants	Fees	Services Provided
Trustmark Health Benefits	$ 31,979,496	Postemployment Healthcare benefits administration and claims adjudication
Optum RX, Inc.	6,921,876	Administration of post employment healthcare benefits and prescription drug plan
Vitech Systems Group, Inc.	5,500,188	Pension administration system services
The Segal Company, Inc.	3,536,054	Actuarial services and consulting for HOP and prescription drug plan
Gallagher Benefit Services, Inc.	1,401,119	Pharmacy benefit consulting services
OST Inc.	862,702	Information technology, training, testing and consulting services
Tivity Health	847,858	Administration of the Silver Sneakers Fitness program
Buck Global, LLC	529,864	Pension benefit actuarial services
CliftonLarsonAllen LLP	140,730	Financial audit of pension system, defined contribution plan and postemployment healthcare programs

Investment Section

Report on Investment Activity and Policies

For Fiscal Year July 1, 2021 through June 30, 2022

Authority and Fiduciary Standard

The Board has the responsibility to invest funds of the System in accordance with guidelines and limitations set forth in the Code and other applicable state law. Pursuant to the Board's enabling legislation, the members of the Board, employees of the Board, and their agents are fiduciaries to the System's members and beneficiaries and must invest and manage the fund for exclusive benefit of the System's members and beneficiaries (24 Pa. C. S. §8521(e)). As such, they must act consistent with the duty of prudence as well as the duty of loyalty.

In performance of their duties, the trustees shall exercise "that degree of judgment, skill and care under the circumstances then prevailing which persons of prudence, discretion and intelligence who are familiar with such matters exercise in the management of their own affairs not in regard to speculation, but in regard to the permanent disposition of the fund, considering the probable income to be derived therefrom as well as the probable safety of their capital." (24 Pa. C.S.§8521(a)).

The System shall at all times be managed in accordance with all applicable state and federal laws, rules, and regulations, as well as the Investment Policy Statement and other applicable policies of the Board.

Policies and Objectives and Investment Philosophy

The Board is responsible for the formulation of investment policies for the System. Professional Staff is responsible for the implementation of those investment policies. The overall investment objectives of the System are as follows:

- to generate returns to support the System's actuarial soundness so it may provide its members with benefits as required by law;
- to earn a long-term total return, net of fees, and investment and administrative expenses, that equals or exceeds the actuarial assumed rate approved by the Board (currently 7.00%);
- to earn a long-term total return, net of fees and investment expenses, that equals or exceeds the Policy Index approved by the Board; and
- to prudently manage investment risks that are related to the achievement of investment goals.

The PSERS Board of Trustees believes the System's assets should be managed in accordance with the System's unique liability stream, funding sources, cash flows, and portfolio size, focusing on the prudent accumulation of wealth over the long term to meet the retirement benefit obligations established by the plan sponsor to its members. The Board's Investment Policy Statement states that the System's assets should be managed based on the following investment beliefs:

1. Uncertainty - The future is difficult to forecast with any accuracy or certainty, particularly changes in the economic and market environment.
2. Asset Allocation - The strategic asset allocation mix, more than implementation or any other factor or decision, largely determines the portfolio's overall risk and return.
3. Diversification - Diversification is the best approach to addressing future uncertainty and therefore meeting PSERS' long-term investment objectives.
4. Risk - For an underfunded plan or for a plan with negative external cash flow (benefits paid exceed contributions received), the path of compounding of investment returns – from month to month, quarter to quarter, and year to year – matters more than for a plan that is fully funded or has positive external cash flow; for the former type of plan, peak-to-trough declines transform unrealized losses into permanent ones. Drawdown risk should be mitigated, especially since the environment in which drawdowns occur is likely to take place when the plan sponsor's willingness and ability to make contributions to the plan may be less than in normal times. Liquidity should be managed to reasonably ensure that the fund can meet its obligations during periods of market dislocations.
5. Leverage - Leverage at the total fund level can be an effective tool to enhance diversification, since asset classes, over the long-term, have similar risk-adjusted returns, different correlations to each other, and different responses to changes in the economic and market environment. Leverage can be a vital tool to increase or decrease total fund risk in a diversified manner.
6. Rebalancing - Disciplined rebalancing enhances long-term returns as it is an inherently contrarian process. Rebalancing restores strategic asset allocation as the primary driver of return and risk.

7. Portfolio Size - Managing a large pool of assets provides investors unique access to investment opportunities not available to smaller institutional investors or individual investors. PSERS should use its size to its advantage to enhance its net-of fees return and diversification opportunities.
8. Private Investments - Allocations to Private Equity, Private Credit, Private Real Estate, Private Infrastructure, and other illiquid asset classes may be justified by the illiquidity risk premium available to investors. Allocations to these asset classes may also be justified by the diversification benefit they provide, through exposure to sectors, businesses, and mode of corporate governance not obtainable through public markets.
9. Active Management - Passive investing, rather than active management, is the default choice to be used for any asset class that is highly efficient or where skilled active managers are less likely to be identified. Certain asset classes continue to exhibit information inefficiency, where skilled active management and well-resourced investors such as PSERS can potentially persistently outperform peers and the benchmark for that asset class. There will be short-term periods when a skilled active manager may underperform peers and the benchmark; that is to be expected and accepted; therefore a long-term perspective will be employed.
10. Internal Management - PSERS has developed skilled internal investment managers; as such, internal investment management is preferred over external investment management in cases where internal management most likely can match or exceed the long-term, net of fees, risk-adjusted returns provided by external managers, provided the internal investment and operational resources are available to do so.
11. Investment Fees - Investment management fees for external management are one of the few aspects of investment management that are certain and over which the investor has control. Investment management and performance fees should be managed to (i) maximize long-term, net of fees, risk-adjusted returns, (ii) split the value added fairly between the investment manager and PSERS, and (iii) align the interests of the investment manager with PSERS.

To achieve the System's objectives, the Board meets periodically to review the overall asset allocation plan and investment policies for the System. Implementation of investment policy decisions necessitates asset management. Implementation is through external investment management firms which act as agents for the System as well as through internal investment managers.

Roles and Responsibilities

The Board, via its Investment Committee, provides direction and oversight of investment activities. The Investment Committee generally conducts six meetings per year and may meet more frequently as needed. Investment Office professionals, as well as external consultants, external investment managers, Investment Accounting professionals, and Internal Audit professionals, assist the Board in achieving investment objectives and monitoring compliance with investment policies.

As of June 30, 2022, the Board's consultants include the following: Verus Advisory, Inc. provides investment oversight consulting services; Aon Investment Consulting, Inc. (Aon) serves as the general investment consultant, assisting the Board and Professional Staff in formalizing investment objectives, establishing an asset allocation, conducting investment manager due diligence, calculating and reviewing performance, and commenting on compliance with investment policies; Aksia, LLC serves as absolute return and private credit consultant; Hamilton Lane Advisors, L.L.C. serves as private equity, private infrastructure, private credit and private real estate consultant; and Constellation Advisers LLC provides investment compliance services.

Investment Office professionals implement investment decisions within the guidelines established in the Investment Policy Statement, Objectives and Guidelines regarding asset allocation, manager selection, security selection, and other objectives directed by the Board.

The Board employs both external investment management firms and internal investment managers to manage the investment portfolio of the System. At fiscal year-end, $7.8 billion in assets were managed by external public markets managers, $32.5 billion in assets were managed by internal investment managers, and the remaining $30.0 billion in assets were managed by numerous private equity, private credit, private infrastructure, private real estate investment managers, and absolute return managers.

Asset Allocation

The Board reviews the long-term asset allocation targets of the System on a periodic basis. The Board consults with its actuary, consultants, Investment Office professionals, and other sources of information it deems appropriate in formulating the asset allocation. The level of risk assumed by the System is largely a result of the asset allocation. The Board, in determining its long-term asset allocation, takes the following factors into consideration:

- The System's investment time horizon;
- The demographics of the plan participants and beneficiaries;
- The cash flow requirements of the System;
- The actuarial assumptions approved by the Board;
- The funded status of the System;
- The Board's willingness and ability to take risk; and
- The employers' (Commonwealth and school districts) financial strength.

In approving the asset allocation for the System, the Board considers capital market expectations for expected return, volatility, and asset class correlations for each asset class, as prepared by its general investment consultant.

For the long-term target asset allocation as of June 30, 2022,In the 4th calendar quarter of 2021, the Board approved changes to the long-term target asset allocation. In the new long-term target asset allocation, the allocations are as follows. The equity target allocation is 40%, comprised of 28% public equity and 12% private equity. Public equity in turn consists of U.S. equity (12%) and non-U.S. equity (16%). Within U.S. equity, the allocation is diversified across small, mid, and large capitalization equity. Within non-U.S. equity, exposure includes international developed markets and emerging markets, and small, mid, and large capitalization equity. Non-U.S. developed markets equity exposure is partially currency-hedged back to the U.S. dollar.

The fixed income target allocation is 33%, comprised of 9% investment grade exposure, 6% public credit-related exposure, 6% private credit-related exposure, and 12% U.S. inflation-protected exposure. Investment grade exposure consists of U.S. core fixed income (1%) and U.S. long-term treasury bonds (8%). Public credit-related exposure consists of public high yield bonds (4%) and emerging markets debt (2%).

The real assets target allocation is 29%, comprised of public and private real estate (11%), public and private infrastructure (9%), and commodities and gold (9%).

The absolute return target allocation of 6.0% consisted primarily of investment managers retained by the System to generate positive returns over time that are independent of how the equity, fixed income, and commodity markets perform. Strategies implemented to achieve this target include, but are not limited to, event-driven, relative value, tactical trading, and long/short equity. The absolute return program is included in the allocation to generate positive, absolute returns with low volatility and low correlation to the public financial markets to diversify the System's total portfolio risk.

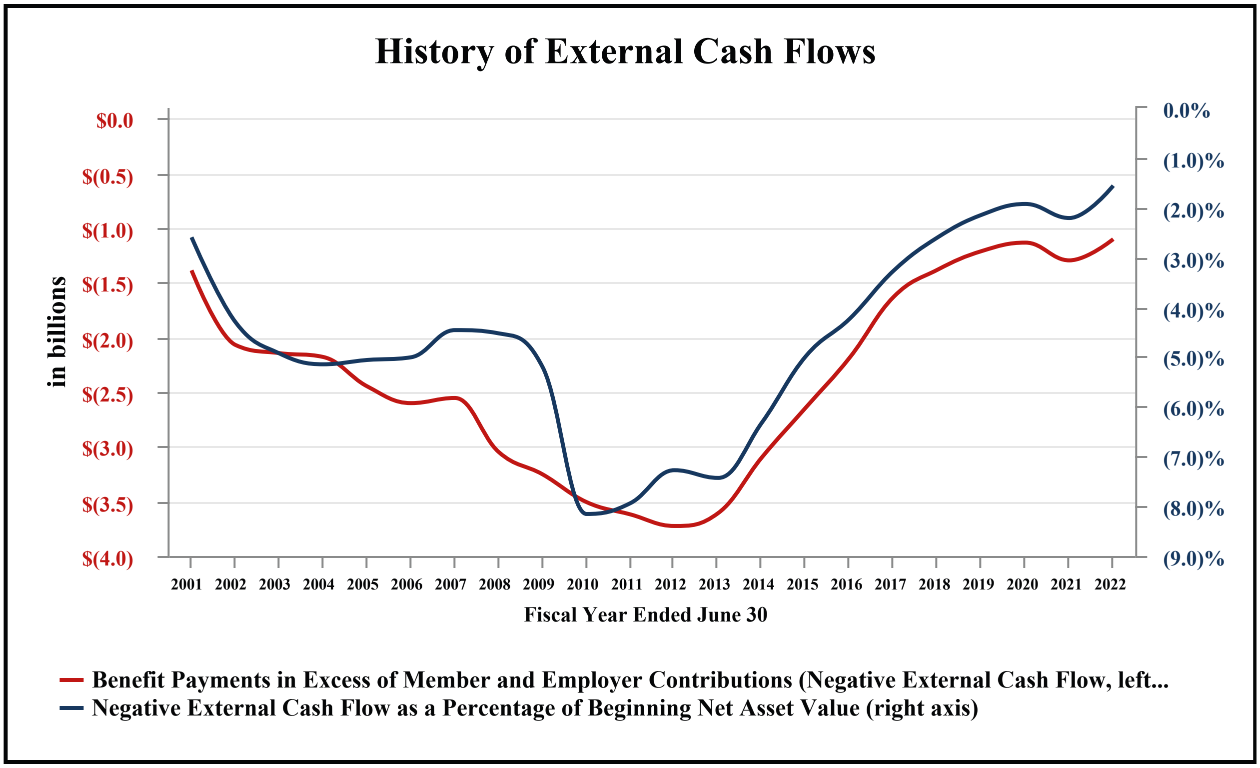
Leverage is utilized in the asset allocation as a means of gaining exposure to a portion of the above fixed income and real assets asset classes. Leverage is deployed through use of derivative instruments (typically total return swaps) that allow the System to gain this exposure with minimal margin requirements. Total leverage is targeted at (11%). (Market convention is to show this with a negative sign.)

Finally, the System has a 3% allocation to cash, consisting of short-duration, liquid, high quality securities.

The System also participates in a securities lending program administered by Deutsche Bank AG. This program is designed to provide incremental income to the System by lending publicly-traded securities in the System's portfolio held by the System's custodial bank, The Bank of New York Mellon, to securities dealers in exchange for cash collateral, which can be reinvested to generate income. This program generated $25.7 million in net income during the fiscal year.

Liquidity and Cash Flow

The System's asset allocation and risk profile are, in part, driven by its liquidity needs. Over the past twenty fiscal years, the System has paid out $50.4 billion more in benefits than it has received in member and employer contributions (i.e., the System has experienced negative external cash flow). The average negative external cash flow was approximately $2.2 billion per year during this period. This annual funding deficiency has amounted to 1.6% or more of beginning net assets each year and represents the amount of investment return needed each year to make up the shortfall (for example, if in a given year the System earned 3% on its investments and had a 3% external cash flow shortfall, then the net assets of the System will be unchanged for that year). The negative annual external cash flow has improved significantly since fiscal year 2012 due to the implementation of Act 120 in 2010 (see chart below). Act 120 provided for increased employer contributions to the actuarial required contribution levels. The annual cash flow shortfall, while much improved, will continue over the next few years and necessitates a larger liquidity position and lower risk profile than a retirement system that has smaller liquidity requirements.



The Economy and Investment Markets During The Past Fiscal Year

The combined aggressive response from monetary policy (central banks) and fiscal policy (governments) to the COVID-19 pandemic successfully transitioned economies from collapse in fiscal year 2020 (July 2019 to June 2020), to lift off in fiscal year 2021, to a more uncertain state in fiscal year 2022. This heightened uncertainty in fiscal year 2022 was due to the emergence of three powerful forces: inflation, geopolitical instability from Russia's invasion of the Ukraine, and the continued mutation of COVID-19 into new variants. Each issue- on its own; would have been difficult for policy makers and investors to manage. Together, they made the cone of potential outcomes far wider than normal and the job of policy makers and investors that much more difficult to navigate.

Despite most every country and region of the world facing the same three powerful forces, specific conditions differed somewhat from country to country and region to region. The United States arguably had the largest monetary and fiscal response to COVID-19. The United States saw a significant rise in the level and stickiness of inflation and witnessed growing tightness in labor market conditions (where the demand for labor far exceeded the supply). As a result, the Federal Reserve (the U.S. central bank) increased its hawkish rhetoric and began to move to increase interest rates in an effort to subdue inflation. Nominal GDP growth remained healthy, giving the Federal Reserve some room to maneuver without inducing a recession.

Europe confronted a more dire set of conditions. It faced the same inflationary and labor market dynamics, but saw nominal GDP growth worse than in the United States. Europe was also far closer, geographically and economically, to the fallout of the Russia/Ukraine war; than the United States. Europe's dependence on imports of oil and natural gas made it especially vulnerable to supply interruptions and spikes in energy prices. Finally, Europe's own political and economic heterogeneity among its constituent countries made a unified monetary and fiscal response very difficult to achieve, with the risk growing of the disintegration of the Eurozone.

China saw its "zero COVID" policy exact a material toll on economic growth, helping to keep China's inflation rate moored at relatively modest levels compared to the rest of the world. Coupled with a weakening commercial and residential real estate sector – a large sector in China's economy – China's policymakers were concerned with preventing deflation and maintaining economic growth, admittedly at a growth rate lower than the high growth rate of the past two decades. In addition, policymakers were focused on maintaining political stability leading up to China's party congress in late 2022.

Reflecting the turbulent macroeconomic picture, the return picture for investors was a tale of two halves for fiscal year 2022. Returns for the first half were markedly different from returns for the second half. In the first half, nearly all asset classes had positive returns. In the second half, nearly all asset classes had negative returns. See the table below for the returns of some common benchmarks.

ASSET CLASS	1H FY 2022	2H FY 2022
U.S. Large Cap Stocks	11.7%	(20.0%)
U.S. Mid Cap Stocks	6.1%	(19.5%)
U.S. Small Cap Stocks	2.6%	(18.9%)
Non-U.S. Developed Markets Stocks	(0.4%)	(16.5%)
Emerging Markets Stocks	(8.3%)	(17.9%)
U.S. Investment Grade Bonds	0.1%	(10.3%)
U.S. Long Maturity Treasury Bonds	3.6%	(21.3%)
Emerging Markets Bonds	(1.9%)	(15.6%)
U.S. High Yield Bonds	1.6%	(14.2%)
U.S. Inflation Linked Bonds	4.4%	(9.7%)
Non-U.S. Inflation Linked Bonds	6.0%	(14.7%)
Infrastructure Stocks	9.9%	(0.7%)
Commodities	4.9%	18.4%
Gold	2.9%	(1.5%)
REITS Stocks	12.1%	(16.2%)

The sharp dichotomy in performance between the first half of the fiscal year and the second half of the fiscal year was evidence of the difficulty in navigating a world driven by the three powerful forces mentioned above. In the second half, there was no place to hide and it was hard to make money. In the first half, there was no need to hide and it was hard not to make money.

We expect these quick and large shifts in performance to continue for the foreseeable future. They will be hard to anticipate and hard to manage. Heightened volatility is likely to be a persistent feature of the investing landscape.

Investment Results

Aon calculates the total investment return of the System, the total fund Policy Index return, and the performance of each externally managed and internally managed portfolio. Performance is calculated using a time-weighted return methodology.

For the one-year period ended June 30, 2022, the System generated a total net of fee return of 2.23%. This return exceeded the total fund Policy Index return of (0.18)% by 2.41%. Annualized total net of fee returns for the three-, five- and ten-year periods ended June 30, 2022 were 8.80%, 8.46% and 7.91%, respectively. The three-, five- and ten-year returns exceeded the total fund Policy Index returns by 1.37%, 0.80%, and 0.55%, respectively.

Asset classes that were significant positive contributors to PSERS performance this past fiscal year included:

- Private Real Assets: +38.2%
- Private Equity: +22.6%
- Absolute Return: +8.8%
- Private Credit: +7.6%
- Public Real Assets: +5.7%

Asset classes that were significant detractors from PSERS performance this past fiscal year included:

- Public Real Estate: -9.2%
- Public Credit-Related Fixed Income: -12.9%
- Public Global Equity: -17.6%
- Public Investment Grade Fixed Income: -17.6%

Prepared by PSERS Investment Office
Robert Devine, Interim CIO/Managing Director
Thomas Bauer, Deputy Chief Investment Officer

Annualized Time-Weighted Returns (%) Net of Fees (1)

Periods Ended June 30, 2022

	1 Year	3 Years	5 Years	10 Years
PSERS Total Portfolio	2.23	8.80	8.46	7.91
Total Fund Policy Index	(0.18)	7.43	7.66	7.36
Median Public Defined Benefit Plan (DBP) Fund Universe (Aon Investment Consulting Database)	(7.21)	6.26	6.47	7.54
PSERS U.S. Equity Portfolios	(11.61)	10.21	10.48	12.74
U.S. Equity Policy Index	(11.87)	9.83	10.65	12.60
PSERS Non-U.S. Equity Portfolios	(21.33)	3.98	5.01	7.94
Non-U.S. Equity Policy Index	(18.87)	2.34	3.50	6.79
PSERS Fixed Income Portfolios (4)	(5.58)	2.39	4.28	4.82
Fixed Income Policy Index	(9.10)	0.74	2.51	2.67
PSERS Commodity Portfolios (4)	8.66	8.20	5.98	0.54
Commodity Policy Index	8.27	6.50	4.84	(0.99)
PSERS Absolute Return Portfolios	8.79	6.86	5.55	4.82
Absolute Return Policy Index	1.10	6.11	5.97	5.71
PSERS Infrastructure (4)	10.92	0.60	1.73	N/A
Blended Infrastructure Index	10.63	1.69	2.60	7.63
PSERS Real Estate (hedged) (2) (4)	26.92	14.31	12.79	11.98
Blended Real Estate Index (2)	16.69	8.93	9.09	9.87
Private Equity (hedged) (3)	22.64	22.68	19.01	13.85
Burgiss Private Equity (3)	23.07	21.96	18.71	14.97

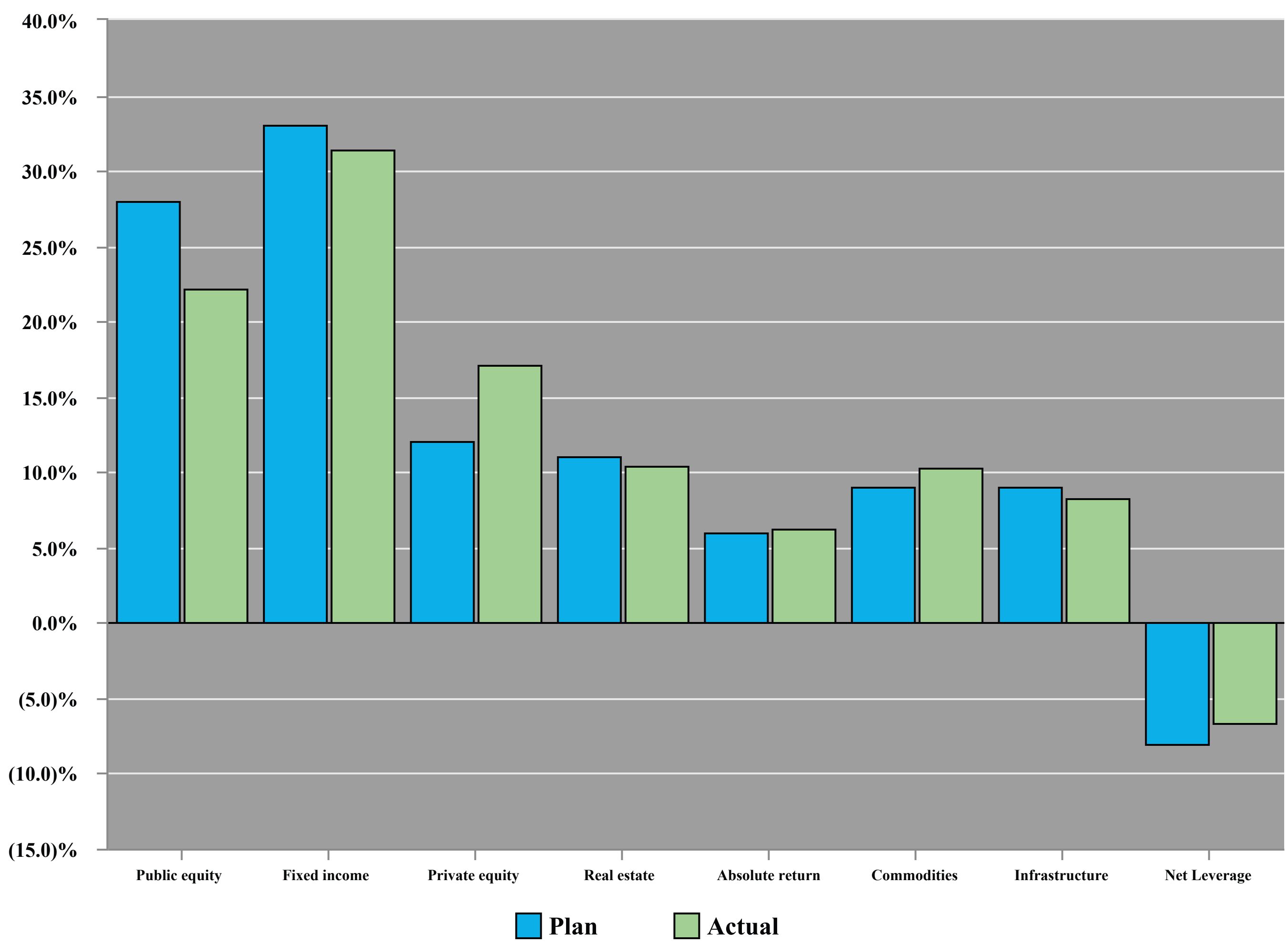
1. For more specific details on policy indices, refer to PSERS Investment Policy Statement at www.psers.pa.gov.
2. Returns reported on a one-quarter lag, except for publicly traded real estate security investments.
3. Returns reported on a one-quarter lag.
4. Returns are presented on an unleveraged basis for comparability purposes to the Policy Index.

Portfolio Summary Statistics
Asset Allocation Basis
As of June 30, 2022
(Dollar Amounts in Thousands)

Pension investments	Fair Value	% Fair Value
Public equity:		
Large and mid cap equity	$ 5,971,280	8.5
Small cap equity	597,775	0.9
Emerging markets equity	2,595,451	3.7
Total Non-U.S. equity	**9,164,506**	**13.1**
Large cap equity	4,712,155	6.7
Mid and small equity	1,687,023	2.4
Total U.S. equity	**6,399,178**	**9.1**
Total Equity	**15,563,684**	**22.2**
Fixed income:		
Investment grade fixed income	14,919,065	21.2
Private credit	5,257,782	7.5
Total U.S. Fixed income	**20,176,847**	**28.7**
Non-U.S. developed markets fixed income	1,522,416	2.2
Emerging markets fixed income	373,157	0.5
Total Non-U.S. Fixed income	**1,895,573**	**2.7**
Total Fixed income	**22,072,420**	**31.4**
Real estate	**7,323,505**	**10.4**
Private equity	**12,006,503**	**17.1**
Absolute return	**4,460,394**	**6.4**
Commodities	**7,253,255**	**10.3**
Infrastructure	**5,852,937**	**8.3**
Tail Risk Mitigation	**369,975**	**0.5**
Leverage:		
Leverage	(8,561,198)	(12.2)
Cash and cash equivalents	3,967,098	5.6
Total Net Leverage	**(4,594,100)**	**(6.6)**
Total Pension investments	**$ 70,308,573**	**100.0**
Postemployment Healthcare investments	**$ 496,525**	**100.0**
Defined Contribution plan investments	**$ 99,638**	**100.0**

Comparison of Actual Portfolio Distribution to Asset Allocation Plan - Pension Investments * As of June 30, 2022

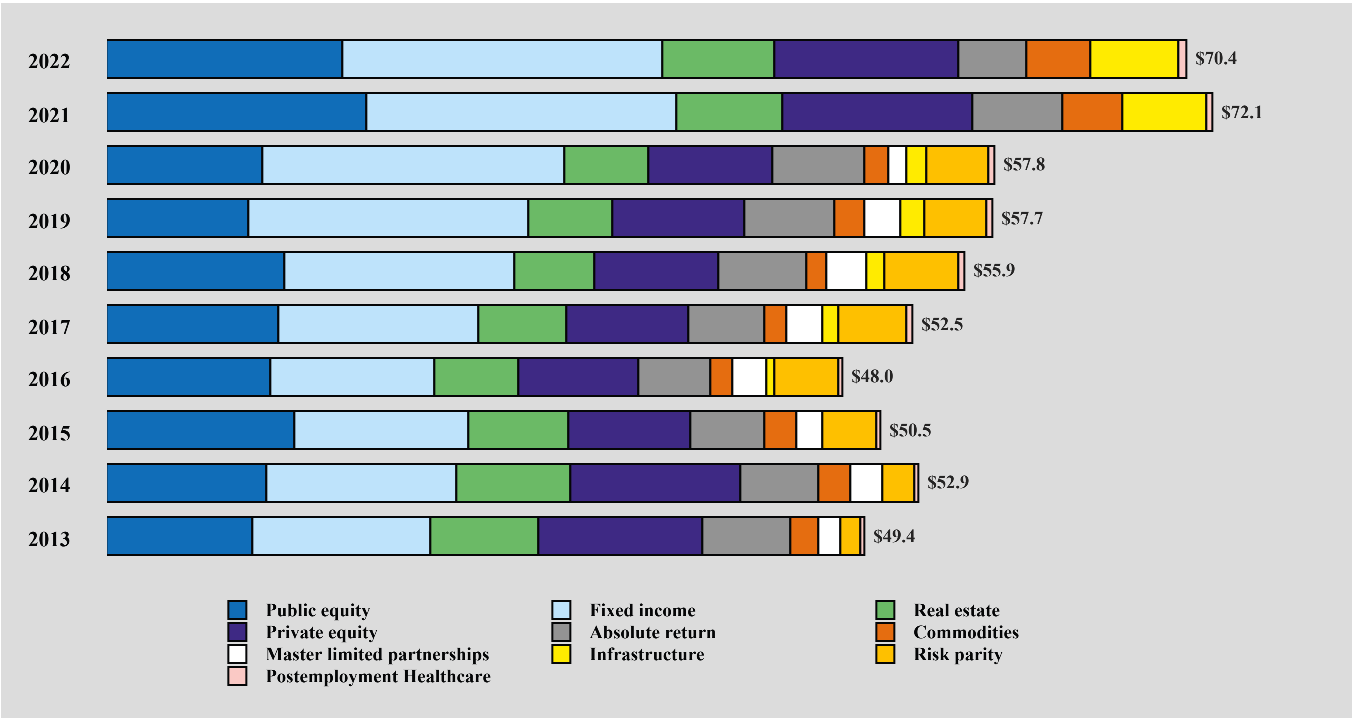
Asset Category	Plan	Actual
Public Equity	28.0%	22.2%
Fixed income	33.0	31.4
Private equity	12.0	17.1
Real estate	11.0	10.4
Absolute return	6.0	6.4
Commodities	9.0	10.3
Infrastructure	9.0	8.3
Net Leverage	(8.0)	(6.6)
Tail Risk Mitigation	—	0.5
Total	**100.0%**	**100.0%**



*Tail Risk Mitigation is not included in the above chart.

Portfolio Capital Distribution 10 Year Trend*

(Fair Value - Dollar Amounts in Billions)



*Defined Contribution Plan and Tail Risk Mitigation are not included in the above chart.

The following lists of portfolio detail statistics present the 10 largest holdings by descending order of fair value for the largest public market asset classes. Information on the complete holdings of the System can be downloaded from the PSERS website at www.psers.pa.gov.

Public Equity

10 Largest Holdings in Descending Order by Fair Value

As of June 30, 2022

(Dollar Amounts and Shares in Thousands)

Description	No. of Shares	Fair Value
iShares MSCI ETF	18,619	$ 913,438
The Children's Investment Fund LP	614,318	614,318
BlackRock Emerging Markets Alpha Advantage Fund Ltd.- Class D	251	392,717
Effissimo Capital Management Feeder Fund 2	713	381,412
Apple Inc.	2,239	306,080
Steadview Capital Partners LP	255,373	287,371
Microsoft Corporation	1,089	279,813
Wellington Management Company LLP	30,245	267,361
Cederberg Greater China Equity Fund	2,534	216,089
Alphabet Inc.	95	207,016
Total of 10 Largest Holdings		**$ 3,865,615**

Fixed Income

10 Largest Holdings in Descending Order by Fair Value
As of June 30, 2022
(Dollar Amounts and Shares in Thousands)

Description	No. of Shares	Fair Value
BlackRock US Extended Core Global Alpha Bond Fund Ltd.	365	$ 888,163
Garda Fixed Income Relative Value Opportunity Fund Ltd.	319	677,890
Bridgewater Pure Alpha Fund II, Ltd.	105	659,308
Bridgewater International Inflation-Linked Bond Fund	148	520,571
PSERS TAO Partners Parallel Fund, LP	N/A	493,758
Park Square - PSERS Credit Opportunities Fund, LP	N/A	397,058
Cerberus PSERS Levered Loan Opportunities Fund, LP	N/A	392,711
LBC-P Credit Fund, LP	N/A	337,320
Bain Capital Credit Managed Account, LP	N/A	291,446
PIMCO BRAVO Fund III Onshore Feeder, LP	N/A	246,244
Total of 10 Largest Holdings		**$ 4,904,469**

Absolute Return

10 Largest Holdings in Descending Order by Fair Value
As of June 30, 2022
(Dollar Amounts and Shares in Thousands)

Description	No. of Shares	Fair Value
Aeolus Property Catastrophe Keystone PF Fund, LP	128	$ 750,501
Bridgewater Pure Alpha Fund II, Ltd.	256	442,218
Capula Global Relative Value Fund, Ltd.	3,460	431,290
Capula Tail Risk Fund Ltd.	178	399,751
Caspian Select Credit International, Ltd.	280	373,984
Nimbus Weather Fund, Ltd.	153	290,043
Oceanwood Opportunities Fund	1,964	178,643
OWS Credit Opportunity Offshore Fund III, Ltd.	217	139,049
Palmetto Fund, Ltd.	48	83,273
PIMCO Commodity Alpha Fund, Ltd.	93	81,796
Total of 10 Largest Holdings		**$ 3,170,548**

Postemployment Healthcare Investments
Holdings in Descending Order by Fair Value
As of June 30, 2022
(Dollar Amounts in Thousands)

Description	Maturity Date	Interest Rate (%)	Par Value	Fair Value
Wilmington US Government MM	N/A	Various	$ 263,182	$ 263,182
PSERS Short-Term Investment Fund	Various	Various	196,213	196,213
Dell Equipment Financial	10/22/2024	1.90%	107	107
Total Holdings				**$ 459,502**

Defined Contribution Plan Investments
10 Largest Holdings in Descending Order by Fair Value
As of June 30, 2022
(Dollar Amounts and Shares in Thousands)

Description	No. of Shares	Fair Value
T Rowe Price Target Date 2060	2,575	$ 33,675
T Rowe Price Target Date 2055	1,012	12,564
T Rowe Price Target Date 2050	741	9,206
T Rowe Price Target Date 2065	750	8,051
T Rowe Price Target Date 2045	604	7,511
T Rowe Price Target Date 2040	508	6,277
PSERS Short-Term Investment Fund	N/A	5,301
T Rowe Price Target Date 2035	426	5,216
T Rowe Price Target Date 2030	324	3,924
Vanguard® Treasury Money Market	2,881	2,881
Total of 10 Largest Holdings		**$ 94,606**

Comparison of Investment Activity Income
Fiscal Years Ended June 30, 2022 and 2021
(Dollar Amounts in Thousands)

Investment Activity	**2022**	2021
Net appreciation (depreciation) in fair value of investments	**$ (1,781,150)**	$ 13,949,087
Short-term	**23,385**	12,691
Fixed income	**556,068**	294,417
Equity	**416,326**	272,651
Collective trust funds	**477**	913
Real estate	**455,027**	267,489
Alternative investments	**547,142**	565,392
Total investment activity income	**$ 217,275**	$ 15,362,640

Brokers’ fees on equity investment transactions for the fiscal year ended June 30, 2022, were $5.7 million. The System has commission recapture contracts with several brokers. These contracts generally stipulate that the brokers rebate a percentage of commissions earned on investment transactions directly to the System. During the fiscal year ended June 30, 2022, the System earned approximately $26,000 from a commissions recapture program. A list of the brokers receiving fees in excess of $100,000 during the fiscal year follows:

Summary Schedule of Brokers’ Fees
(Cumulative Fiscal Year Amounts Exceeding $100,000)
Fiscal Year Ended June 30, 2022
(Shares in Thousands)

Broker Name	**Fees Paid**	**Shares**	**Broker Name**	**Fees Paid**	**Shares**
Instinet LLC	$ 1,040,032	216,745	J P Morgan Chase & Co.	$ 186,515	101,518
Bank Of America Merrill Lynch	273,880	82,566	Macquarie Bank Ltd.	152,847	53,282
Liquidnet Inc.	220,325	34,732	Credit Suisse	138,892	30,357
Morgan Stanley & Company	219,016	96,414	Goldman Sachs & Company	136,937	34,950
UBS	215,738	99,393	Citigroup Inc.	117,791	73,921
Fimat USA	213,171	87	Direct Trading	112,351	7,100
Knight Securities	199,233	20,158	Sanford Bernstein & Co.	102,712	7,894

Professional Consultants

Roster of Investment Managers, Advisors, and Consultants
As of June 30, 2022

Absolute Return Managers

- Aeolus Capital Management, Ltd.
- Bridgewater Associates, LP
- Capula Investment Management, LLP
- Carlyle Aviation Management Limited
- Caspian Capital, LP
- Falko Regional Aircraft Limited
- Garda Capital Partners, LP
- HS Group Ltd.
- Independence Reinsurance Partners GP, LLC
- Nephila Capital, Ltd.
- Oceanwood Capital Management, Ltd.
- One William Street Capital Management, LP
- Pacific Investment Management Company, LLC
- Venor Capital Management, LP

Non-U.S. Equity Managers

- Acadian Asset Management, LLC
- Baillie Gifford Overseas, Ltd.
- BlackRock Institutional Trust Company, N.A.
- Cederberg Capital
- Effissimo Capital Management Pte. Ltd.
- Marathon Asset Management Limited
- Oberweis Asset Management, Inc.
- Steadview Capital Partners, LP
- The Children's Investment Fund, LP
- Wasatch Advisors, Inc.

Tail Risk Mitigation Manager

- Capstone

Fixed Income Managers

U.S. High Yield Fixed Income Manager

- BlackRock Institutional Trust Company, N.A.

Private Credit Managers

- Apollo Global Management, LLC
- Ares SSG Capital Management Limited
- Avenue Capital Group
- Bain Capital Credit, LP
- Brigade Capital Management
- Carlyle Group, The
- Cerberus Business Finance, LLC
- Clearlake Capital Group, LP
- Galton Capital Group, LLC
- Hayfin Capital Management LLP
- Intermediate Capital Group PLC
- LaSalle Mortgage Real Estate Investors
- LBC Credit Management, LP
- Newmarket Global Management, LP
- Pacific Investment Management Company, LLC
- Park Square Capital, LLC
- Sixth Street Partners, LLC
- Summit Partners
- TCI Fund Management Limited
- Varde Partners, Inc.
- Whitehorse Liquidity Partners, Inc.

Emerging Markets Debt Manager

- Franklin Templeton Investments

Non-U.S. Inflation-Linked Securities Manager

- Bridgewater Associates, LP

LIBOR-Plus Short-Term Investment Pool Manager

- Radcliffe Capital Management

Real Assets

Commodity Managers

- Denham Capital Management, LP
- Gresham Investment Management, LLC
- NGP Energy Capital Management
- Wellington Management Company, LLP

Farmland Advisor

- Prudential Agricultural Group

Professional Consultants (Continued)

Private Infrastructure Managers

- Blackstone Group, The
- Brookfield Asset Management, Inc.
- GCM Grosvenor
- I Squared Capital
- Newmarket Global Management, LP
- Strategic Partners

Publicly Traded Real Estate Securities Manager

- Security Capital Research & Management, Inc.

Real Estate Advisors

- Bell Partners, Inc.
- GF Management, Inc.
- L&B Realty Advisors
- O'Connor Real Estate Advisors, LLC.
- Property Management, Inc.
- Stockbridge Capital Partners

Real Estate Fund Managers

- Almanac Realty Investors, LLC
- Angelo, Gordon & Co., LP
- Ares Management, LLC
- Avenue Capital Group
- Bell Partners, Inc.
- BlackRock Real Estate
- Blackstone Group, The
- Brookfield Asset Management, Inc.
- Cabot Properties, Inc.
- Carlyle Group, The
- C-III Capital Partners, LLC
- DRA Advisors, LLC
- Exeter Property Group
- Fortress Investment Group
- LAI Real Estate Investors, LLC
- LaSalle Mortgage Real Estate Investors
- LEM Capital Partners, LP
- O'Connor Capital Partners
- Paramount Group, Inc.
- PGIM Real Estate
- RCG Longview Management, LLC
- Silverpeak Real Estate Partners
- Stockbridge Capital Partners
- Strategic Partners
- UBS Realty Investors, LLC

Currency Hedging Manager

- Insight Investment International Limited

Private Equity Fund Managers

Buyout Fund Managers

- Actis LLP
- APAX Partners, LLP
- Apollo Global Management, LLC
- Arrowhead Mezzanine
- Avenue Capital Group
- Bain Capital Partners, LLC
- Baring Private Equity Asia Limited
- Black Diamond Capital Management, LLC
- Blue Point Capital Partners LLC
- Bridgepoint Capital Ltd.
- Capital Group
- L Catterton Management Company LLC
- Cerberus Capital Management, LP
- Cinven
- Clearlake Capital Group, LP
- Coller Investment Management LTD
- Crestview Advisors LLC
- CVC Capital Partners Group
- Denham Capital
- The Energy & Minerals Group
- Equistone Partners Europe Limited
- First Reserve Corporation
- Gold Hill Venture Lending 03, LLC
- GoldPoint Partners LLC
- Hahn & Company
- HgCapital
- Huntsman Gay Global Capital LLC
- Incline Management Corp.
- IPC Advisors
- K4 Capital Advisors
- Landmark Partners
- Lindsay Goldberg & Bessemer
- Milestone Partners
- Morgan Stanley
- New Mountain Investments
- NGP Energy Capital Management
- Oaktree Capital Management, LP
- Odyssey Investment Partners LLC
- Orchid Asia
- PAI Europe

Professional Consultants (Continued)

- Palladium Equity Partners
- Partners Group Mgt VI LTD
- Platinum Equity Advisors, LLC
- Polaris Capital Group, Ltd.
- Portfolio Advisors, LLC
- Searchlight Capital Partners, LP
- StepStone Group
- Sterling Partners
- Strategic Partners
- Trilantic Capital Management, LLC
- Tulco Management, LLC.
- Venor Capital Management, LP
- Versa Capital Management, LLC
- Webster Capital Management, LLC

Growth Equity Fund Managers

- Greenoaks Capital
- Insight Venture Management, LLC
- LLR Partners
- Oak HC/FT Management Company, LLC
- Summit Partners

Venture Capital Fund Managers

- Adams Capital Management, Inc.
- Aisling Capital, LLC
- Cross-Atlantic Capital Partners
- Insight Venture Management, LLC
- Mid-Atlantic Venture Funds
- Sante Ventures
- SCP Private Equity Partners
- StarVest Associates
- Sterling Partners
- Strategic Partners
- Tenaya Capital
- Valar Ventures, LLC

Custodian Bank

- **The Bank of New York Mellon Corporation**

Securities Lending Agent

- **Deutsche Bank AG**

Investment Accounting Application Service Provider

- **STP Investment Services, LLC**

Proxy Voting Agent

- **Glass, Lewis & Co., LLC**

Board Investment Consultant

- **Verus Advisory, Inc.**

General Investment Consultant

- **Aon Investments USA Inc.**

Private Equity, Private Real Estate, Private Credit, and Private Infrastructure Investment Consultant

- **Hamilton Lane Advisors, LLC**

Absolute Return & Private Credit Consultant

- **Aksia, LLC**

Risk Management System Provider

- **BlackRock Solutions**

Defined Contribution Investment Consultant

- **CAPTRUST Financial Advisors**

General Pension Consultant

- **Ernst & Young US LLP**

Actuarial Section

BUCK 200 Plaza Drive 1st Floor
Secaucus, New Jersey 07094-1533

September 28, 2022

Board of Trustees
Pennsylvania Public School Employees' Retirement System
5 North 5th Street
Harrisburg, Pennsylvania 17101-1905

Re: Actuary's Certification Letter

Members of the Board:

An actuarial valuation of the Pennsylvania Public School Employees' Retirement System (Retirement System or PSERS) is performed annually to measure the ongoing costs and progress towards the funding goals of the Retirement System over time. The most recent actuarial valuation was completed as of June 30, 2021. The financing objective of the Retirement System is to:

- Fully fund all current costs based on the normal contribution rate determined under the funding method,
- Liquidate the unfunded accrued liability based on level percentage of pay amortization schedules required by the Public School Employees' Retirement Code, 24 Pa. C.S. §8101 et. seq. (Retirement Code) as amended by Act 120 of 2010, which requires amortization over 24 years of the unfunded accrued liability as of June 30, 2010, and of each change in the unfunded accrued liability due to actuarial experience after the June 30, 2010 valuation. Any increases in the unfunded liability arising from legislation enacted after June 30, 2010, are to be amortized over 10 years; and
- As directed by Act 5 of 2017, contribute 2.25% of pay for future Class T-G members and 2.00% for future Class T-H members and DC only participants to the School Employees' Defined Contribution Plan (Act 5 DC contributions).

The contribution policy of the Retirement System is set by statute. The Commonwealth's General Assembly has the authority to amend the benefit terms and funding policy for the System by passing bills in the Senate and House of Representatives and sending them to the Governor for approval.

Based on the June 30, 2021 actuarial valuation, a total contribution rate of 35.26% (34.31% Pension plus 0.75% Premium Assistance and 0.20% for Act 5 DC contributions) of payroll payable by employers for FY2022/2023, when taken together with the contributions payable by the members, current assets, and expected future asset returns, is sufficient to achieve the financing objective. The Act 120 minimum employer pension rate is the employer pension normal cost rate of 6.07%. The 0.20% Act 5 DC Contribution rate is an estimated average DC contribution rate. The actual employer DC contribution rate will be based on each employer's Class T-G, Class T-H and DC only membership/ participation.

As required by the Retirement Code, the valuation takes into account all of the promised benefits to which members are entitled as of June 30, 2021, including pension and survivor benefits, as the basis for the pension contribution rate for fiscal year 2022/2023.

There were no legislative or administrative changes made to the benefits payable by PSERS since the prior valuation.

As required under Section 8502(j) of the Retirement Code, experience studies are performed for PSERS every five years, the most recent having been made as of June 30, 2020. This valuation was prepared on the basis of the demographic and economic assumptions that were recommended on the basis of the July 1, 2015 – June 30, 2020 Experience Review and approved by the Board of Trustees at its March 5, 2021, June 11, 2021 and August 6, 2021 meetings, which includes a 7.00% per annum rate of investment return.

In our opinion, the actuarial assumptions used for funding purposes are reasonably related to the experience of the System and to reasonable long-term expectations. These assumptions were selected in accordance with applicable Actuarial Standards of Practice published by the Actuarial Standards Board.

The actuarial assumptions and methods used by PSERS for financial reporting meet the requirements set forth in Governmental Accounting Standards Board (GASB) Statement No. 67. The Health Insurance funding provisions of the Retirement Code differ from the GASB 74 disclosure requirements. For funding purposes, the actuarial liability equals the assets in the health insurance account, and a contribution is determined to provide for solvency of the account through the third fiscal year following the valuation date. For GASB 74 purposes the Health Insurance actuarial liability and normal cost requirements are determined under the entry age actuarial cost method. The entry age actuarial cost method meets the GASB 74 requirements for determining actuarial liability and normal cost and is the cost method specified by the Retirement Code for the PSERS pension plan.

The Retirement System reported the individual data for members of the Retirement System as of the valuation date to the actuaries. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Retirement System. The accuracy of the results presented in this report is dependent on the accuracy of the data.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

In our opinion, the attached schedules of valuation results fairly represent the status of the Public School Employees' Retirement System and present an accurate view of historical data. The underlying assumptions and methods used for both funding and GASB disclosure purposes are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the Retirement System.

The following supporting schedules in the Actuarial Section were prepared by Buck Global, LLC (Buck):

- Summary of Results of Actuarial Valuation as of June 30, 2021
- History of Contribution Rates and Funded Ratios
- Description of Actuarial Assumptions and Methods
- Schedule of Active Member Valuation Data
- Schedule of Retired Members and Beneficiaries Added To and Removed From Rolls
- Solvency Test
- Schedule of Funding Progress for Pensions
- Analysis of Past Financial Experience - Reconciliation of Employer Contribution Rates

In addition, Buck prepared the "Schedule of Changes in the Employer Net Pension Liability," "Schedule of Employer Net Pension Liability," "Schedule of Employer Pension Contributions," "Schedule of Changes in the Employer Net OPEB (Premium Assistance) Liability," "Schedule of Employer Net OPEB (Premium Assistance) Liability" and the "Schedule of Employer OPEB (Premium Assistance) Contributions" in the Financial Section.

This report was prepared solely for the Pennsylvania Public School Employees' Retirement System for the purposes herein stated and may not be appropriate to use for other purposes. Buck does not intend to benefit and assumes no duty or liability to other parties who receive this work. Use of this report for any other purposes or by anyone other than PSERS and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. Buck should be asked to review any statement to be made on basis of the results contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

David L. Driscoll is a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. Edward Quinn and Salvador Nakar are Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions concerning it.

Respectfully submitted,

David L. Driscoll

David L. Driscoll, FSA, EA, MAAA, FCA
Principal, Consulting Actuary

Edward Quinn

Edward A. Quinn, EA, MAAA, FCA
Director, Retirement Actuary

Salvador Nakar

Salvador Nakar, EA, MAAA, FCA
Senior Consultant, Actuary

SUMMARY OF RESULTS OF ACTUARIAL VALUATION
AS OF JUNE 30, 2021
(Dollar Amounts in Thousands)

	Item	June 30, 2021	June 30, 2020
	Member Data		
1.	Number of Members		
	a) Active Members [1]	248,091	256,246
	b) Vestees [2]	26,892	25,903
	c) Annuitants, Beneficiaries and Survivor Annuitants [3]	242,839	239,614
	d) Total	517,822	521,763
2.	Annualized Salaries [4]	$ 14,057,526	$ 13,974,295
3.	Annual Annuities	$ 6,311,757	$ 6,170,896
	Valuation Results		
4.	Present Value of Future Pension Benefits		
	a) Active Members	$ 65,522,561	$ 66,004,231
	b) Inactive Members and Vestees	2,827,728	2,444,758
	c) Annuitants, Beneficiaries and Survivor Annuitants	61,168,172	58,415,383
	d) Total	$ 129,518,461	$ 126,864,372
5.	Present Value of Future Pension Normal Cost		
	a) Active Members	$ 9,697,482	$ 10,044,827
	b) Employer	7,170,154	8,986,146
	c) Total	$ 16,867,636	$ 19,030,973
6.	Pension Accrued Liability		
	a) Active Members (4a) - (5c)	$ 48,654,925	$ 46,973,258
	b) Inactive Members and Vestees	2,827,728	2,444,758
	c) Annuitants, Beneficiaries and Survivor Annuitants	61,168,172	58,415,383
	d) Total	$ 112,650,825	$ 107,833,399
7.	Health Insurance Assets for Premium Assistance	$ 132,515	$ 130,417
8.	Total Accrued Liability for Funding (6) + (7)	$ 112,783,340	$ 107,963,816
9.	Actuarial Value of Assets	$ 67,248,672	$ 63,929,354
10.	Funded Status (9) / (8)	59.6%	59.2%
11.	Unfunded Accrued Liability (8) - (9)	$ 45,534,668	$ 44,034,462
12.	Total Normal Cost Rate	13.59%	14.76%
13.	Member Contribution Rate	7.52%	7.56%
14.	Employer Normal Cost Rate (12) - (13)	6.07%	7.20%
	Employer Annual Funding Requirement	**Fiscal 2022/2023**	**Fiscal 2021/2022**
15.	Employer Contribution Rate Calculated by Actuary		
	a) Normal Cost	6.07%	7.20%
	b) Unfunded Accrued Liability	28.24	26.79
	c) Preliminary Pension Rate	34.31%	33.99%
	d) Health Insurance Premium Assistance	0.75	0.80
	e) Act 5 DC [5]	0.20	0.15
	f) Total Rate [6] = (15c) + (15d) + (15e)	35.26%	34.94%

1. Excludes 54 and 60 DC-only participants as of June 30, 2021 and June 30, 2020, respectively.
2. Excludes 140,771 and 135,613 inactive members and non-members as of June 30, 2021 and June 30, 2020, respectively, who are no longer participating and are valued for their accumulated deductions only.
3. Excludes 1,678 and 1,281 beneficiaries as of June 30, 2021 and June 30, 2020, respectively, who are only entitled to a pending lump sum distribution.
4. The salaries shown represent an annual rate of pay for members who were in active service on the valuation date.
5. Average DC contribution rate. Actual rate will vary by employer based on Class T-G, Class T-H, and Class DC only memberships.
6. The Act 120 minimum pension rate for the June 30, 2021 valuation is 6.07% and for the June 30, 2020 valuation is 7.20%.

HISTORY OF CONTRIBUTION RATES AND FUNDED RATIOS

Fiscal Year Ending June	Budgeted Total Employer Payroll (Thousands)	Contribution Rates[1]								Funded Ratio
		Employee	Employer Normal Cost	Employer Unfunded Liability	Preliminary Employer Pension	Final Employer Pension[2]	Act 5 Employer DC[7]	Employer Health Insurance	Total Employer	
2012[3]	$ 14,112,000	7.37%	8.12%	10.15%	18.27%	8.00%	N/A	0.65%	8.65%	66.4%
2013[4]	14,297,000	7.40	8.66	12.99	21.65	11.50	N/A	0.86	12.36	63.8
2014	13,720,000	7.43	8.57	15.25	23.82	16.00	N/A	0.93	16.93	62.0
2015	13,482,000	7.46	8.46	17.51	25.97	20.50	N/A	0.90	21.40	60.6
2016	13,375,000	7.49	8.38	19.44	27.82	25.00	N/A	0.84	25.84	57.3
2017	13,549,000	7.52	8.31	20.89	29.20	29.20	N/A	0.83	30.03	56.3
2018[5]	13,449,000	7.54	7.70	24.04	31.74	31.74	N/A	0.83	32.57	56.5
2019	13,775,000	7.57	7.59	25.01	32.60	32.60	N/A	0.83	33.43	58.1
2020	13,880,000	7.59	7.49	25.87	33.36	33.36	0.09%	0.84	34.29	59.2
2021	14,078,000	7.61	7.37	26.14	33.51	33.51	0.18	0.82	34.51	**59.6**
2022	14,289,000	7.56	7.20	26.79	33.99	33.99	0.15	0.80	34.94	*
2023[6]	**14,497,000**	**7.52**	**6.07**	**28.24**	**34.31**	**34.31**	**0.20**	**0.75**	**35.26**	*

1. In general, the Preliminary Employer Pension Rate equals the sum of the rates for the Employer Normal Cost and the Unfunded Liability; and the Final Employer Pension Rate is the greater of the Preliminary Pension Rate and any Pension Rate Floor or Collar stated in the Retirement Code. The Total Employer Rate is the sum of the Final Employer Pension Rate, Act 5 Employer DC Rate and the Employer Health Insurance Premium Assistance Rate.

2. The Final Employer Pension rate is limited by the Act 120 of 2010 pension rate collars for fiscal years 2012 through 2016.

3. At its January 2009 meeting, the Board voted to reduce the interest rate from 8.50% to 8.25% for the June 30, 2008 valuation and to 8.00% for subsequent valuations.

4. Revised actuarial assumptions based on a five-year experience review ended June 30, 2010 were used to determine the contributions for the fiscal year ending June 30, 2013 and thereafter, which include an interest rate of 7.50%.

5. Revised actuarial assumptions based on a five-year experience review ended June 30, 2015 were used to determine the contributions for the fiscal year ending June 30, 2018 and thereafter, which include an interest rate of 7.25%.

6. Revised actuarial assumptions based on a five-year experience review ended June 30, 2020 were used to determine the contributions for the fiscal year ending June 30, 2023 and thereafter, which include an interest rate of 7.00%.

7. Act 5 new member assumptions:

Valuation	Class T-G	Class T-H	DC Only
2018-2019	65%	30%	5%
After 2019	98%	1%	1%

The above rate is an average DC contribution rate. Actual rate will vary by employer based on Class T-G, Class T-H, and Class DC only memberships.

* Not Available

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

ASSUMPTIONS

Interest Rate: 7.00% per annum, compounded annually (adopted as of June 30, 2021). The components are 2.50% for inflation and 4.50% for the real rate of return. Actuarial equivalent benefits are determined based on an interest rate of 4.00% per year (since 1960) except, in accordance with Act 5 of 2017, an interest rate of 7.00% per year is used for Class T-E, Class T-F, Class T-G and Class T-H members' Option 4 partial withdrawal of accumulated member contributions and certain Class T-G and Class T-H early retirement factors.

Discount Rate for GASB 67 Accounting: 7.25% as of June 30, 2020 and 7.00% as of June 30, 2021. Rates were determined in accordance with the methods prescribed in GASB Statement No. 67.

Discount Rate for GASB 74 Accounting: 2.66% as of June 30, 2020 and 2.18% as of June 30, 2021. This rate represents the S&P 20-Year Municipal Bond Rate. Rates were determined in accordance with the methods prescribed in GASB Statement No. 74.

Separation from Service: Illustrative rates of assumed separation from service are shown in the following table (adopted as of June 30, 2021).

Age	Class T-C and Class T-D Annual Rate of:						
	Withdrawal Less Than 5 Years of Service	Withdrawal: Between 5 and 10 Years of Service	Withdrawal: 10 or More Years of Service	Death [1]	Disability	Early Retirement [2]	Superannuation Retirement
MALES							
25	21.83%	9.22%	4.55%	0.022%	0.01%		
30	14.93	3.84	4.55	0.029	0.01		
35	15.17	3.77	1.68	0.038	0.04		
40	16.04	4.44	1.42	0.053	0.06		
45	15.12	5.17	1.41	0.082	0.11		19.00%
50	15.81	4.96	1.89	0.129	0.23		19.00
55	15.54	4.96	3.63	0.194	0.37	14.50%	25.00
60	13.85	6.37	5.49	0.289	0.37	14.50	29.00
65				0.447	0.11		23.00
70				0.699	0.08		20.00
75				1.076	0.08		25.00
79				1.701	0.08		25.00
FEMALES							
25	18.33%	7.47%	3.90%	0.008%	0.01%		
30	15.16	5.92	3.90	0.013	0.02		
35	14.66	5.68	2.83	0.019	0.03		
40	12.86	5.16	1.67	0.030	0.06		
45	12.82	5.25	1.60	0.046	0.11		16.00%
50	13.02	5.23	2.08	0.069	0.18		16.00
55	13.43	5.31	3.66	0.102	0.29	14.50%	16.00
60	13.81	7.53	5.94	0.154	0.24	15.00	31.00
65				0.251	0.07		28.00
70				0.431	0.09		23.00
75				0.766	0.09		25.00
79				1.239	0.09		25.00

1. These base mortality tables will then be projected on a generational basis using the Buck Modified scale MP-2020. Refer to the pre-retirement mortality description below.
2. Early Retirement - Age 55 with 25 years of service, but not eligible for Superannuation retirement.

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS
(Continued)

Age	Class T-E, Class T-F, Class T-G and Class T-H Annual Rate of:					
	Withdrawal					
	Less Than 10 Years of Service	10 or More Years of Service	Death [1]	Disability	Early Retirement [2]	Superannuation Retirement
MALES						
25	17.02%	4.55%	0.022%	0.01%		
30	11.25	4.55	0.029	0.01		
35	12.09	1.68	0.038	0.04		
40	13.14	1.42	0.053	0.06		
45	13.87	1.41	0.082	0.11		
50	13.67	1.89	0.129	0.23		
55	11.91	3.63	0.194	0.37	14.50%	16.30%
60	11.19	5.49	0.289	0.37	14.50	16.30
65	11.19		0.447	0.11		16.30
70	11.19		0.699	0.08		16.30
75	11.19		1.076	0.08		16.30
79	11.19		1.701	0.08		16.30
FEMALES						
25	14.54%	3.90%	0.008%	0.01%		
30	11.68	3.90	0.013	0.02		
35	12.39	2.83	0.019	0.03		
40	11.53	1.67	0.030	0.06		
45	10.99	1.60	0.046	0.11		
50	10.72	2.08	0.069	0.18		
55	10.75	3.66	0.102	0.29	14.50%	19.50%
60	11.62	5.94	0.154	0.24	15.00	19.50
65	11.62		0.251	0.07		19.50
70	11.62		0.431	0.09		19.50
75	11.62		0.766	0.09		19.50
79	11.62		1.239	0.09		19.50

1. These base mortality tables will then be projected on a generational basis using the Buck Modified scale MP-2020. Refer to the pre-retirement mortality description below.
2. Early Retirement - prior to eligibility for Superannuation retirement.

Death after Retirement:
Male annuitants: 50% PubT-2010 Retiree (Total Teacher dataset) and 50% PubG-2010 Retiree (Total General Employees dataset) Amount Weighted Male Tables, with a 99.7% adjustment, generationally projected with Buck Modified scale MP-2020.

Female annuitants: 50% PubT-2010 Retiree (Total Teacher dataset) and 50% PubG-2010 Retiree (Total General Employees dataset) Amount Weighted Female Tables, with a 95.4% adjustment, generationally projected with Buck Modified scale MP-2020.

Male disabled annuitants; Pub-2010 Disability Mortality Non-Safety Amount Weighted Male Table, with a 105.4% adjustment, generationally projected with Buck Modified scale MP-2020.

Female disabled annuitants: Pub-2010 Disability Mortality Non-Safety Amount Weighted Female Table, with a 95.0% adjustment, generationally projected with Buck Modified scale MP-2020.

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS (Continued)

Male contingent annuitants: Pub-2010 Contingent Survivor Amount Weighted Male Table, with a 106.0% adjustment, generationally projected with Buck Modified scale MP-2020.

Female contingent annuitants: Pub-2010 Contingent Annuitant Amount Weighted Female Table, with a 116.2% adjustment, generationally projected with Buck Modified scale MP-2020.

For determination of actuarial equivalence, a unisex table based on 25% males and 75% females blend of the Board approved base mortality tables to be used for actuarial valuations beginning June 30, 2021, generationally projected to 2025 with the Buck Modified MP-2020 improvement scale.

Death before Retirement:
Male participants: 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 Employee (Total General Employees dataset) Amount Weighted Male Tables, with a 99% adjustment, generationally projected with Buck Modified scale MP-2020.

Female participants: 50% PubT-2010 Employee (Total Teacher dataset) and 50% PubG-2010 Employee (Total General Employees dataset) Amount Weighted Female Tables, with a 88.6% adjustment, generationally projected with Buck Modified scale MP-2020.

Salary Increase: Effective average of 4.50% per annum, compounded annually (adopted as of June 30, 2021). The components are 2.50% for inflation, and 2.00% for real wage growth and merit or seniority increases. Representative values are as follows:

Age	Annual Rate of Salary Increase
20	9.65%
30	7.15
40	5.15
50	3.15
55	2.75
60	2.75
65	2.75
Over 65	2.75

Payroll Growth: A 3.25% per annum payroll growth assumption is used to liquidate the unfunded accrued liability based on level-percent-of-pay amortization schedules required by the Retirement Code as amended by Act 120 of 2010 and Act 5 of 2017, i.e., a schedule of 24 years for the unfunded accrued liability as of June 30, 2010 and each change in the unfunded accrued liability due to actuarial experience after the June 30, 2010 valuation. Any legislation after June 30, 2010 that increases the liability due to benefit enhancements will be funded over 10 years based on level-percent-of-pay amortization.

MISCELLANEOUS

Option 4 - Refund of Contributions Elections: 75% of Class T-C and Class T-D and 50% of Class T-E, Class T-F, Class T-G and Class T-H members are assumed to elect a refund of contributions and a reduced annuity.

Withdrawal Annuity: 50% of members are assumed to commence payment immediately and 50% are assumed to defer payment to superannuation age.

Optional Forms of Annuity Payment at Retirement:
Anticipated active member elections of optional forms of payment at retirement as follows:

- 45% will elect Maximum Straight Life Annuity (MSLA)
- 25% will elect OPTION 1 (Straight life annuity with guaranteed payments equal to present value of MSLA)
- 20% will elect OPTION 2 (100% Joint and Survivor with males 3 years older than females)
- 10% will elect OPTION 3 (50% Joint and Survivor with males 3 years older than females)
- 0% will elect OPTION 4 annuity

Option Forms of Payment Factors: Actuarial equivalent benefits are determined based on a statutorily specified interest rate of 4% per year or 7.00% per annum, as applicable. The mortality basis is a blend of 25% males and 75% females blend of the Board approved base mortality tables to be used for actuarial valuations beginning June 30, 2021, generationally projected to 2025 with the Buck Modified MP-2020 improvement scale.

Health Insurance: Elections: 63% of eligible retirees are assumed to elect premium assistance for fiscal years 2021/2022. Beginning in fiscal year 2022/2023, 62% of eligible retirees are assumed to elect premium assistance.

Administrative Expenses: Assumed equal to $1,344,000 for fiscal year 2021/2022, $1,415,000 for fiscal year 2022/2023 and $1,486,000 for fiscal year 2023/2024.

Summary of Changes since the June 30, 2020 Valuation:
The following is a summary of the demographic and economic assumptions recommended on the basis of the July 1, 2015 to June 30, 2020 Experience Review and approved by the Board for use effective with the June 30, 2021 actuarial valuation:

- Non-mortality related demographic assumptions as adopted by the Board of Trustees at its March 5, 2021 Board meeting
- Mortality related demographic assumptions as adopted by the Board of trustees at its June 11, 2021 Board meeting
- Economic assumptions, which include a 7.00% interest rate, as adopted by the Board of Trustees at its August 6, 2021 Board meeting

Assumed administrative expenses for the Health Insurance Premium Assistance Plan changed from $1,901,000 for fiscal year 2021/2022 to $1,344,000, from $1,996,000 for fiscal year 2022/2023 to $1,415,000 and the amount of $1,486,000 was added for the fiscal year 2023/2024.

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS (Continued)

METHODS

Calculations: The actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system, and on actuarial assumptions that are internally consistent and reasonable based on the actual experience of the System.

Asset Valuation Method: A 10-year moving market average (five-year moving market average prior to June 30, 2010) value of assets that recognizes the 7.00% (7.25% prior to June 30, 2021, 7.50% prior to June 30, 2016, and 8.00% prior to June 30, 2011, 8.25% prior to June 30, 2009 and 8.50% prior to June 30, 2008) actuarial expected investment return immediately and spreads the difference between the actual return on the market value of assets and the expected return on the actuarial value of assets over a period of ten years. The actuarial value of assets can be no less than 70% and no more than 130% of the market value of assets.

Actuarial Cost Method for Pension Funding: Entry Age Normal Cost Method (modified slightly as of June 30, 2005, to use a pay-weighted average normal contribution rate). The results of each June 30 valuation normally determine the employer contribution rate for the second succeeding fiscal year. Act 120 revised the funding method effective with the June 30, 2010, valuation. Act 120 mandated that the outstanding balance of the unfunded accrued liability as of June 30, 2010, including changes in the unfunded accrued liability due to the funding reforms of Act 120, be amortized over a 24-year period, as a level percent of pay, beginning July 1, 2011. Future valuation gains and losses, and changes in the unfunded accrued liability resulting from changes in actuarial assumptions and methods, are amortized over a 24-year period, as a level percent of pay. As provided by Act 5 of 2017, future increases in the unfunded accrued liability due to benefit enhancement legislation will be amortized over 10-year periods, as a level percent of pay. Act 120 also modified the employer pension contribution requirements by imposing collars on the rate for fiscal years ending June 30, 2012, June 30, 2013, and on or after June 30, 2014; the pension contribution rate was limited to 3%, 3.5% and 4.5%, respectively, of total compensation of all active members, greater than the prior year's final contribution rate. Beginning with the fiscal year ending June 30, 2017, the actuarially required contribution rate was less than the collared rate and the final contribution rate was the actuarially determined contribution rate. However, as provided by Act 120 of 2010, the final contribution rate cannot be less than the employer normal contribution rate.

Actuarial Cost Method for Health Insurance Premium Assistance Funding: The actuarial liability equals the assets in the health insurance account, and the results of the June 30 valuation determine the contribution rate for the second succeeding fiscal year. The rate so determined is the rate necessary to establish reserves sufficient to cover administrative expenses and provide premium assistance payments for all participating eligible annuitants during the third fiscal year that follows the valuation date.

Actuarial Cost Method for GASB 74 Accounting for Health Insurance: The actuarial liability and service cost are determined under the entry age actuarial cost method.

Summary of Changes since the June 30, 2020 Valuation: None.

DATA

Census and Assets: The valuation was based on members of the Retirement System as of June 30, 2021, and does not take into account future members. All census data was supplied by the Retirement System and was subject to reasonable consistency checks. The actuaries adjust the data to account for service and pay earned by members on or before the valuation that is not reported by the Retirement System until after the actuarial valuation is performed. Asset data was supplied by the Retirement System.

For employer DC contributions, it is assumed among new employees hired on or after July 1, 2021, that 98% will become Class T-G members, 1% will become Class T-H members and 1% will become Class DC only participants. This is the same assumption that was used for the June 30, 2020, valuation and reflects the actual Class T-G, Class T-H and Class DC only elections as of June 30, 2020.

SCHEDULE OF ACTIVE MEMBERS VALUATION DATA

Valuation as of June 30	Number of Participating Employers	Number of Active Members	Annual Compensation (Thousands)	Average Compensation	% Increase in Average
2021	769	248,145	$ 14,057,526	$ 56,663	3.90%
2020	770	256,306	13,974,295	54,535	2.01
2019	773	255,749	13,671,927	53,458	2.43
2018	775	256,362	13,379,041	52,188	2.48
2017	775	255,945	13,033,919	50,924	1.87
2016	781	257,080	12,851,289	49,989	2.46
2015	784	259,868	12,678,213	48,787	1.79
2014	784	263,312	12,620,862	47,931	1.92
2013	782	267,428	12,577,105	47,030	1.17
2012	773	273,504	12,714,371	46,487	0.52

SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS

Valuation Date as of June 30	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance (Millions)	Number	Annual Allowance (Millions)	Number	Annual Allowance [1] (Millions)		
2021	11,682	$ 320.2	8,457	$ 135.9	242,839	$ 6,311.8	2.28%	$ 25,992
2020	9,708	256.1	7,433	115.6	239,614	6,170.9	1.97	25,753
2019	10,553	246.6	6,502	107.0	237,339	6,051.6	2.11	25,498
2018	11,806	235.3	8,532	98.6	233,288	5,926.7	1.90	25,405
2017	12,876	274.2	7,690	102.1	230,014	5,816.4	2.65	25,287
2016	12,686	267.1	7,633	93.5	224,828	5,666.4	2.64	25,203
2015	15,017	297.3	9,142	91.7	219,775	5,520.6	3.39	25,119
2014	15,225	300.5	8,878	84.9	213,900	5,339.5	3.74	24,962
2013	16,404	377.6	10,866	83.7	207,553	5,147.1	5.63	24,800
2012	14,579	332.7	7,186	66.6	202,015	4,872.9	4.78	24,122

1. Reflects changes in annuities for continuing payees due to finalization of benefit calculations and due to the commencement of supplemental annuity payments.

POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS SCHEDULE OF RETIRED MEMBERS ADDED TO AND REMOVED FROM ROLLS

Valuation Date as of June 30	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Premium Assistance	Average Annual Premium Assistance
	Number [2]	Annual Premium Assistance (Millions)	Number [2]	Annual Premium Assistance (Millions)	Number [2]	Annual Premium Assistance (Millions)		
2021	6,734	$ 5.1	5,431	$ 4.1	153,968	$ 116.4	0.87%	$ 1,200
2020	5,979	4.5	4,230	3.2	152,665	115.4	1.14	1,200
2019	5,673	4.3	3,999	3.0	150,916	114.1	1.15	1,200
2018	5,501	4.2	3,770	2.9	149,242	112.8	1.17	1,200
2017	5,821	4.4	3,806	2.9	147,511	111.5	1.36	1,200
2016	5,758	4.4	3,516	2.7	145,496	110.0	0.00	1,200
2015	6,516	5.0	3,635	2.8	143,254	110.0	0.46	1,200
2014	4,969	3.9	2,289	1.8	140,373	109.5	0.37	1,200
2013	6,759	5.4	2,364	1.9	137,693	109.1	3.31	1,200
2012	5,751	4.6	1,372	1.1	133,298	105.6	3.43	1,200

2. Number of retired members eligible to participate in the Health Insurance Premium Assistance; 63% of eligible retirees are assumed to elect premium assistance as of June 30, 2016 to June 30, 2021; 64% of eligible retirees are assumed to elect premium assistance as of June 30, 2015; 65% of eligible retirees are assumed to elect premium assistance as of June 30, 2014; 66% of eligible retirees are assumed to elect premium assistance for the periods June 30, 2007 to June 30, 2013.

SOLVENCY TEST FOR PENSIONS [1]
COMPARATIVE SUMMARY OF ACCRUED LIABILITY AND ACTUARIAL VALUE OF ASSETS
(Dollar Amounts in Thousands)

Valuation as of June 30	Accrued Liabilities for			Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed		(1)	(2)	(3)
2021	$ 18,156,350	$ 61,168,172	$ 33,326,303	$ 67,116,157	100%	80%	0%
2020	17,558,412	58,415,383	31,859,604	63,798,937	100	79	0
2019	16,839,956	57,413,088	30,946,461	61,065,304	100	77	0
2018	16,120,538	56,742,925	30,127,445	58,135,539	100	74	0
2017	15,500,215	56,184,146	30,164,456	57,336,856	100	74	0
2016	14,907,731	55,314,858	29,766,812	57,265,506	100	77	0
2015	14,079,658	52,739,489	27,757,563	57,240,946	100	82	0
2014	13,554,229	51,425,295	27,373,459	57,231,799	100	85	0
2013	13,089,342	49,979,444	26,883,030	57,353,262	100	89	0
2012	12,535,442	47,511,912	27,713,306	58,227,622	100	96	0

SCHEDULE OF FUNDING PROGRESS FOR PENSIONS [1]
(Dollar Amounts in Thousands)

Valuation as of June 30	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll[2]	Unfunded Accrued Liability as a Percentage of Covered Payroll
2021	$ 67,116,157	$ 112,650,825	$ 45,534,668	59.6%	$ 14,057,526	323.9%
2020	63,798,937	107,833,399	44,034,462	59.2	13,974,295	315.1
2019	61,065,304	105,199,505	44,134,201	58.0	13,671,927	322.8
2018	58,135,539	102,990,908	44,855,369	56.4	13,379,041	335.3
2017	57,336,856	101,848,817	44,511,961	56.3	13,033,919	341.5
2016	57,265,506	99,989,401	42,723,895	57.3	12,851,289	332.4
2015	57,240,946	94,576,710	37,335,764	60.5	12,678,213	294.5
2014	57,231,799	92,352,983	35,121,184	62.0	12,620,862	278.3
2013	57,353,262	89,951,816	32,598,554	63.8	12,577,105	259.2
2012	58,227,622	87,760,660	29,533,038	66.3	12,714,371	232.3

1. The amounts reported include assets and liabilities for Pensions.
2. The salaries shown represent an annual rate of pay for the year ended June 30th for members who were in active service on June 30th.

ANALYSIS OF PAST FINANCIAL EXPERIENCE
RECONCILIATION OF EMPLOYER CONTRIBUTION RATES

Fiscal Year Ending June 30	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Effective Prior Year Contribution Rate	34.94%	34.51%	34.29%	33.43%	32.57%	30.03%	25.84%	21.40%	16.93%	12.36%
Prior Year Adjustment for Legislation	N/A	N/A	N/A	N/A	N/A	N/A	2.82	5.47	7.82	10.15
Net Change Due to:										
Change in Normal Rate	(0.18)	(0.17)	(0.12)	(0.10)	(0.11)	(0.23)	(0.07)	(0.08)	(0.11)	(0.09)
Payroll Growth and Liability Experience	0.12	0.39	0.25	(0.12)	(0.17)	0.96	0.14	0.58	0.68	0.72
Investment Loss/(Gain)	(0.01)	0.26	0.02	0.98	1.22	1.08	0.83	0.66	0.81	0.78
Health Insurance Contribution Change	(0.05)	(0.02)	(0.02)	0.01	0.00	0.01	(0.01)	(0.06)	(0.03)	0.07
Assumption/Method Change	0.39	N/A	N/A	N/A	(0.08)	0.44	N/A	N/A	N/A	N/A
Act 5 Benefit and Funding Reforms [2]	0.05	(0.03)	0.09	0.09	N/A	N/A	N/A	N/A	N/A	N/A
Amortization of Prior Legislation Deferrals	0.00	0.00	0.00	0.00	0.00	0.28	0.48	0.69	0.77	0.76
Legislation Deferrals:										
Act 120 Collar [1]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(2.82)	(5.47)	(7.82)
Actual Contribution Rate:	35.26%	34.94%	34.51%	34.29%	33.43%	32.57%	30.03%	25.84%	21.40%	16.93%

1. The Final Employer Pension rate is limited by the Act 120 of 2010 pension rate collar. For the fiscal years ending June 30, 2012, June 30, 2013, and on or after June 30, 2014 the pension contribution rate can be no more than 3%, 3.5% and 4.5%, respectively, of total compensation of all active members, greater than the prior year's final contribution rate. Beginning with the fiscal year 2017, the actuarially required contribution rate is less than the collared rate and the final contribution rate is the actuarially determined contribution rate, provided that the final contribution rate is not less than the employer normal contribution rate.

2. Act 5 Defined Contribution rate. The above rate is an average DC contribution rate. Actual rate will vary by employer.

Statistical Section

Statistical Section Narrative

To assist readers in the assessment of the System's economic condition, the Statistical Section of this Annual Comprehensive Financial Report presents information to add historical perspective, context, and detail to the financial statements, notes to financial statements, and required supplementary information presented in the preceding sections. To provide historical perspective and a sense of trend, the exhibits in this section are presented in multiple-year formats. The information is categorized into three topical groups: *Financial Trends, Demographic and Economic Information, and Operating Information.*

Financial Trends

The Financial Trend Schedules and Graphs provide detailed information to present how PSERS' financial position has changed over time.

The following Financial Trend Schedules are presented:
- Schedule of Trend Data
- Total Changes in Fiduciary Net Position - Pension
- Total Changes in Fiduciary Net Position - Postemployment Healthcare Plans

The following Financial Trend Graphs are presented:
- Additions to Fiduciary Net Position - Pension
- Additions to Fiduciary Net Position - Postemployment Healthcare Plans
- Deductions from Fiduciary Net Position - Pension
- Deductions from Fiduciary Net Position - Postemployment Healthcare Plans

Demographic and Economic Information

Some of the following schedules listed are dependent upon an actuarial valuation. For those schedules, the most recent information is presented as of the year ended June 30, 2021, the date of PSERS' most current actuarial valuation completed at the time of publication.

- Summary Membership Data
- Summary Annuity Data
- Pension Benefit and Refund Deductions from Fiduciary Net Position
- Average Monthly Pension Benefit Payments
- Average Monthly Pension Benefit Payments and Average Final Average Salary
- Average Monthly Premium Assistance Benefit Payments and Average Final Average Salary

Operating Information

- Ten Largest Employers
- Schedule of Employers

Schedule of Trend Data
10 Year
(Dollar Amounts in Thousands)*

For years ended June 30	2022	2021	2020	2019	2018
Contribution Rates:					
Total Pension	33.99%	33.51%	33.36%	32.60%	31.74%
Health Care Insurance Premium Assistance	0.80%	0.82%	0.84%	0.83%	0.83%
Defined Contribution	0.15%	0.18%	0.09%	N/A	N/A
Total Employer	34.94%	34.51%	34.29%	33.43%	32.57%
Average Member	7.56%	7.61%	7.59%	7.57%	7.54%
Total Employer Contributions ***	$ 5,115,090	$ 4,875,708	$ 4,794,320	$ 4,602,349	$ 4,361,597
Market Value of Assets ***	$ 70,700,000	$ 72,100,000	$ 58,687,000	$ 58,859,000	$ 56,486,000
Actuarial Value of Assets	**	$ 67,249,000	$ 63,929,354	$ 61,190,000	$ 58,258,000
Accrued Actuarial Liability	**	$ 112,783,000	$ 107,963,816	$ 105,325,000	$ 103,114,000
Actuarial Funded Ratio	**	59.60%	59.20%	58.10%	56.50%
Total Benefits & Refunds	$ 7,794,495	$ 7,631,376	$ 7,365,198	$ 7,237,244	$ 7,143,341
Average Pension *	$ 26.078	$ 25,992	$ 25,753	$ 25,498	$ 25,405
Annuitants & Beneficiaries	246.901	242,839	239,614	237,339	233,288
Average Annual Member Compensation *	$ 58.076	$ 56,663	$ 54,535	$ 53,458	$ 52,188
Active Members	248.393	248,145	256,306	255,749	256,362
Retirements	9,356	9,411	8,290	8,746	9,840

For years ended June 30	2017	2016	2015	2014	2013
Contribution Rates:					
Total Pension	29.20%	25.00%	20.50%	16.00%	11.50%
Health Care Insurance Premium Assistance	0.83%	0.84%	0.90%	0.93%	0.86%
Total Employer	30.03%	25.84%	21.40%	16.93%	12.36%
Average Member	7.52%	7.49%	7.46%	7.43%	7.40%
Total Employer Contributions ***	$ 3,943,758	$ 3,302,817	$ 2,713,539	$ 2,109,952	$ 1,555,078
Market Value of Assets ***	$ 53,279,000	$ 49,957,000	$ 51,706,000	$ 53,092,000	$ 49,116,000
Actuarial Value of Assets	$ 57,461,000	$ 57,390,000	$ 57,362,000	$ 57,344,000	$ 57,454,000
Accrued Actuarial Liability	$ 101,973,000	$ 100,114,000	$ 95,945,000	$ 92,465,000	$ 90,052,000
Actuarial Funded Ratio	56.3%	57.30%	60.60%	62.00%	63.80%
Total Benefits & Refunds	$ 6,923,904	$ 6,779,577	$ 6,614,154	$ 6,417,455	$ 6,373,363
Average Pension *	$ 25,287	$ 25,203	$ 25,119	$ 24,962	$ 24,799
Annuitants & Beneficiaries	230,014	224,828	219,775	213,900	207,553
Average Annual Member Compensation *	$ 50,925	$ 49,989	$ 48,787	$ 47,931	$ 47,030
Active Members	255,945	257,080	259,868	263,312	267,428
Retirements	9,479	10,135	10,813	9,888	12,468

* All dollar amounts are in thousands, except Average Annual Member Compensation and Average Pension.

** Data for these categories relate to the actuarial valuation for fiscal year ended June 30, 2022. Results for this valuation were not available at publication date.

*** Excludes Health Options Program and Defined Contribution Plan.

Total Changes in Fiduciary Net Position - Pension
10 Year Trend

(Dollar Amounts in Thousands)

Additions to Fiduciary Net Position

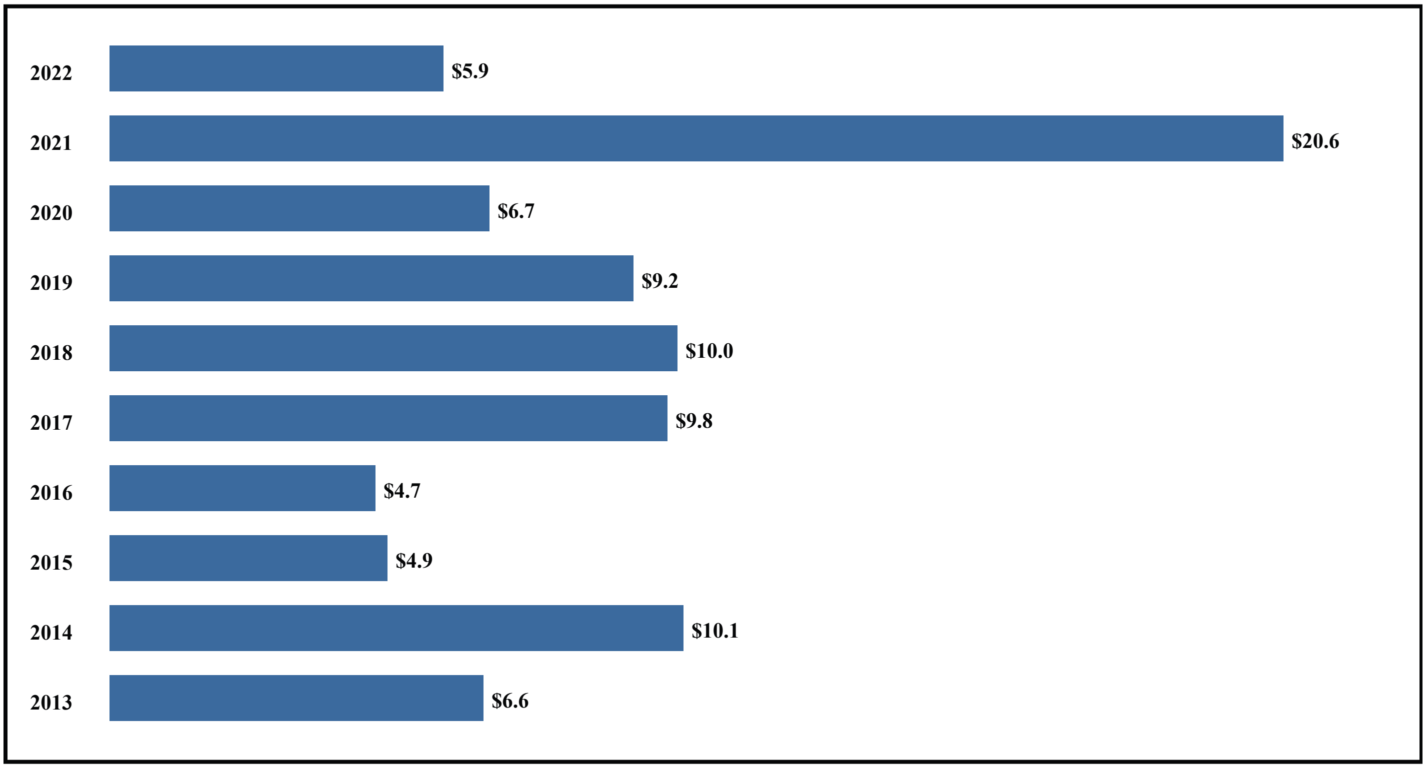
Year Ended June 30	Member Contributions	Employer Contributions	Net Investment Income (Loss)	Total Additions
2022	$ 1,134,051	$ 4,997,912	$ (267,250)	$ 5,864,713
2021	1,080,701	4,759,189	14,754,624	20,594,514
2020	1,067,957	4,676,413	1,001,846	6,746,216
2019	1,064,043	4,487,520	3,628,710	9,180,273
2018	1,026,375	4,249,611	4,714,158	9,990,144
2017	1,013,847	3,832,773	4,995,362	9,841,982
2016	989,266	3,189,510	473,206	4,651,982
2015	984,634	2,596,731	1,328,516	4,909,881
2014	966,926	1,992,084	7,097,761	10,056,771
2013	991,087	1,446,402	4,126,002	6,563,491

Deductions from Fiduciary Net Position

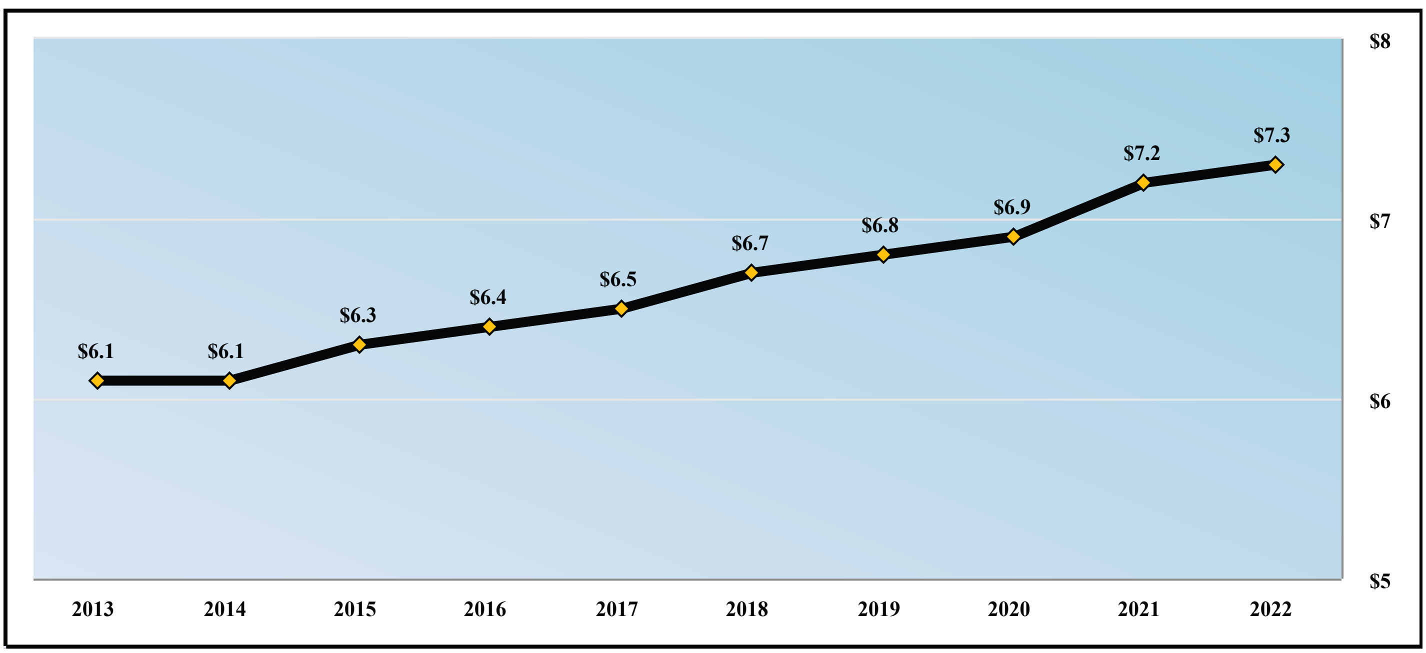
Year Ended June 30	Benefit Payments						
	Annuities	Lump-Sums**	Refunds of Contributions	Administrative	Net Transfers*	Total Deductions	Net Increase / (Decrease)
2022	$ 6,306,428	$ 906,337	$ 36,560	$ 49,451	$ 5,047	$ 7,303,823	$ (1,439,110)
2021	6,181,330	917,539	26,925	49,616	8,538	7,183,948	13,410,566
2020	6,051,233	794,675	27,463	46,799	3,144	6,923,314	(177,098)
2019	5,925,048	808,016	27,027	48,931	1,081	6,810,103	2,370,170
2018	5,813,139	814,384	19,881	46,544	7,742	6,701,690	3,288,454
2017	5,673,309	780,015	20,928	45,127	(673)	6,518,706	3,323,276
2016	5,522,662	815,131	20,069	45,118	2,463	6,405,443	(1,753,461)
2015	5,356,085	840,167	20,920	42,331	3,429	6,262,932	(1,353,051)
2014	5,166,777	862,018	22,823	38,712	1,887	6,092,217	3,964,554
2013	4,905,200	1,111,692	24,461	37,480	2,893	6,081,726	481,765

* Net transfers to the Commonwealth of Pennsylvania State Employees' Retirement System.
** Lump-Sums includes both pension and death lump sums.

Additions to Fiduciary Net Position - Pension
10 Year Trend
(Dollar Amounts in Billions)



Deductions from Fiduciary Net Position - Pension
10 Year Trend
(Dollar Amounts in Billions)



Total Changes in Fiduciary Net Position - Postemployment Healthcare Plans
10 Year Trend

(Dollar Amounts in Thousands)

Premium Assistance

Additions to Fiduciary Net Position

Year Ended June 30	Employer Contributions	Net Investment Income	Total Additions
2022	$ 117,178	$ 316	$ 117,494
2021	116,519	260	116,779
2020	117,907	1,752	119,659
2019	114,829	2,313	117,142
2018	111,986	1,455	113,441
2017	110,985	663	111,648
2016	113,307	542	113,849
2015	116,808	215	117,023
2014	117,868	70	117,938
2013	108,676	110	108,786

Deductions from Fiduciary Net Position

Year Ended June 30	Benefits	Administrative	Total Deductions	Net Increase / (Decrease)
2022	$ 113,707	$ 826	$ 114,533	$ 2,961
2021	113,538	1,143	114,681	2,098
2020	113,279	1,148	114,427	5,232
2019	112,777	1,914	114,691	2,451
2018	111,847	2,603	114,450	(1,009)
2017	110,229	2,239	112,468	(820)
2016	108,273	1,656	109,929	3,920
2015	106,298	2,142	108,440	8,583
2014	104,197	2,030	106,227	11,711
2013	100,078	2,112	102,190	6,596

Total Changes in Fiduciary Net Position - Postemployment Healthcare Plans
10 Year Trend (continued)

(Dollar Amounts in Thousands)

Health Options Program

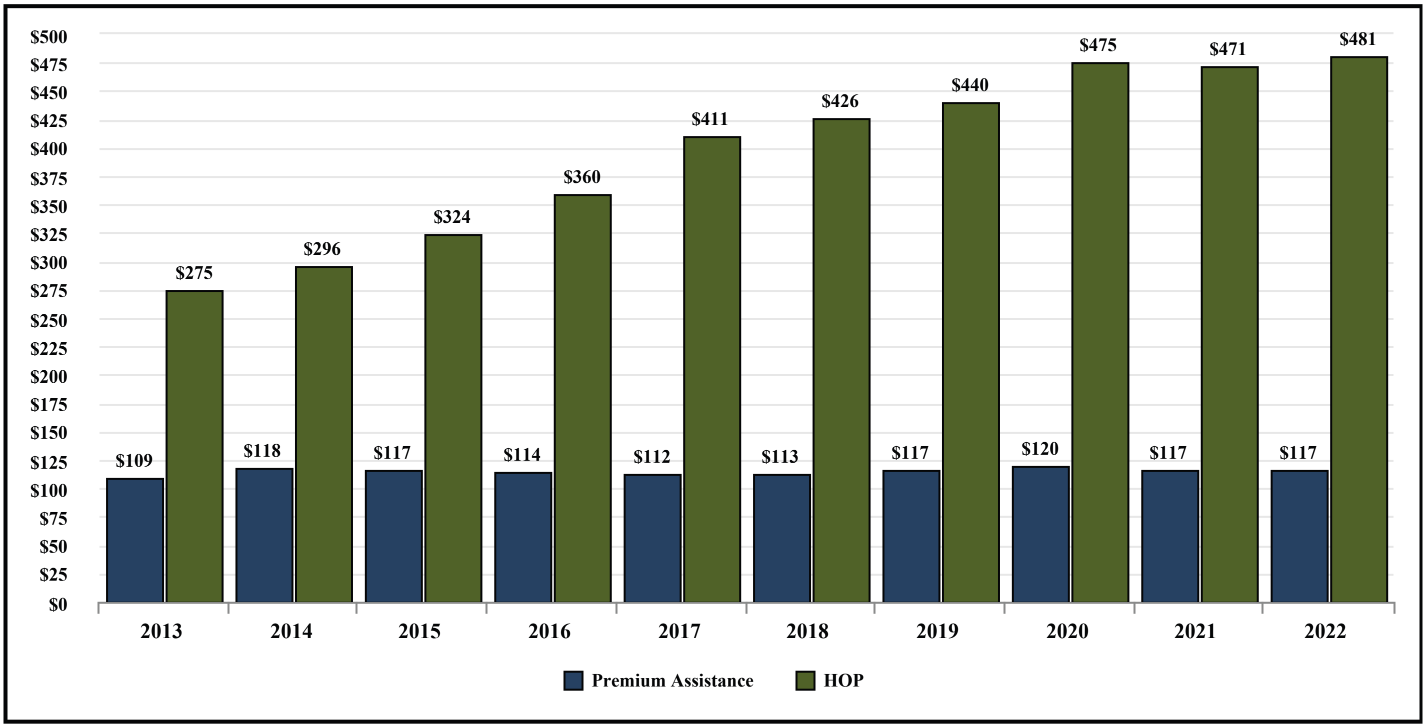
Additions to Fiduciary Net Position

Year Ended June 30	Participant Premiums	CMS Contributions	Net Investment Income	Total Additions
2022	$ 409,361	$ 71,482	$ 346	$ 481,189
2021	402,945	67,812	214	470,971
2020	390,883	81,248	2,464	474,595
2019	376,449	60,379	3,654	440,482
2018	359,896	63,998	1,960	425,854
2017	336,646	73,771	678	411,095
2016	308,132	51,034	299	359,465
2015	281,855	42,436	152	324,443
2014	257,740	37,759	191	295,690
2013	234,516	40,698	226	275,440

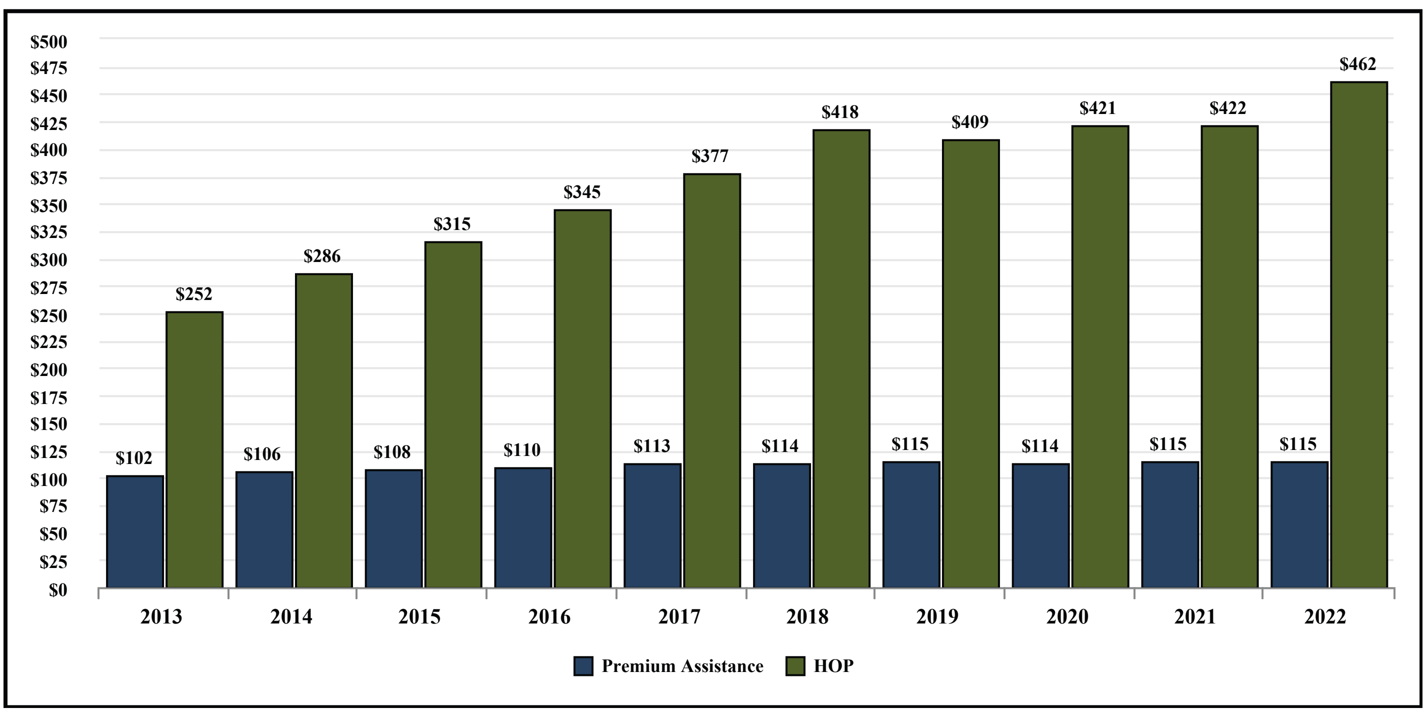
Deductions from Fiduciary Net Position

Year Ended June 30	Benefits	Administrative	Total Deductions	Net Increase / (Decrease)
2022	$ 422,786	$ 39,290	$ 462,076	$ 19,113
2021	382,466	39,051	421,517	49,454
2020	381,536	39,029	420,565	54,030
2019	363,295	45,515	408,810	31,672
2018	376,348	41,853	418,201	7,653
2017	340,096	37,071	377,167	33,928
2016	310,979	33,457	344,436	15,029
2015	287,255	28,027	315,282	9,161
2014	259,753	25,975	285,728	9,962
2013	229,039	22,644	251,683	23,757

Additions to Fiduciary Net Position - Postemployment Healthcare Plans
10 Year Trend
(Dollar Amounts in Millions)



Deductions from Fiduciary Net Position - Postemployment Healthcare Plans
10 Year Trend
(Dollar Amounts in Millions)



Total Changes in Fiduciary Net Position -Defined Contribution (DC) Plan
10 Year Trend
(Dollar Amounts in Thousands)

	Additions to Fiduciary Net Position			
Year Ended June 30	Member Contributions	Employer Contributions	Net Investment Income (Loss)	Total Additions
2022	$ 32,875	$ 25,424	$ (15,813)	$ 42,486
2021	19,282	14,946	9,314	43,542
2020	8,343	6,586	655	15,584

	Deductions from Fiduciary Net Position			
Year Ended June 30	Benefits	Administrative	Total Deductions	Net Increase / (Decrease)
2022	$ 3,630	$ 2,161	$ 5,791	$ 36,695
2021	1,040	1,587	2,627	40,915
2020	12	3,167	3,179	12,405

Defined Contribution table is intended to show information for 10 years. Additional years will be displayed as they become available.

Summary Membership Data
10 Year Trend

For year ended June 30	Male			Female			Total Number of Active Members
	Average Age	Average Service	Average Annual Salaries	Average Age	Average Service	Average Annual Salaries	
2022	45.6	12.3	$ 62,541	45.4	12.0	$ 56,393	248,393
2021	45.6	12.4	61,388	45.5	12.0	54,874	248,091
2020	45.6	12.1	59,699	45.5	11.7	52,599	256,246
2019	45.3	12.0	58,960	45.5	11.6	51,395	255,749
2018	45.2	11.8	57,722	45.4	11.4	50,115	256,362
2017	45.0	11.7	56,369	45.3	11.3	48,879	255,945
2016	44.8	11.6	55,518	45.2	11.1	47,912	257,080
2015	44.6	11.5	54,269	45.0	11.0	46,720	259,868
2014	44.5	11.2	53,248	45.0	10.9	45,918	263,312
2013	44.4	11.1	52,413	44.9	10.7	45,005	267,428

Summary Annuity Data
10 Year Trend

For year ended June 30	Number of Annuitants & Beneficiaries	Total Annual Annuities (In Thousands)	Average Annual Annuity
2022	246,901	$ 6,438,598	$ 26,078
2021	242,839	6,311,758	25,992
2020	239,614	6,170,896	25,753
2019	237,339	6,051,632	25,498
2018	233,288	5,926,658	25,405
2017	230,014	5,816,388	25,287
2016	224,828	5,666,392	25,203
2015	219,775	5,520,620	25,119
2014	213,900	5,339,477	24,962
2013	209,204	5,147,060	24,603

Pension Benefits and Refund Deductions from Fiduciary Net Position
10 Year Trend
(Dollar Amounts in Thousands)

For year ended June 30	Retirements: Normal	Early	Disability	Pension Lump Sum Benefits	Survivor and Beneficiary**
2022	$ 3,795,603	$ 2,243,335	$ 184,686	$ 806,300	$ 182,841
2021	3,725,656	2,187,995	175,004	821,512	188,702
2020	3,621,470	2,171,691	182,731	702,122	167,894
2019	3,485,370	2,111,663	181,178	700,911	253,942
2018	3,357,416	2,114,708	191,527	734,989	228,883
2017	3,292,906	2,040,966	186,674	678,736	254,042
2016	3,203,542	2,007,372	182,320	686,988	257,571
2015	3,088,036	1,986,684	177,693	709,240	234,599
2014	2,953,187	1,928,614	167,676	741,386	237,932
2013	2,811,906	1,845,269	161,995	933,049	264,673

For year ended June 30	Net Transfers*	Total Pension Benefits Deductions	Refunds	Total Pension Benefits and Refund Deductions
2022	$ 5,047	$ 7,217,812	$ 36,560	$ 7,254,372
2021	8,538	7,107,407	26,925	7,134,332
2020	3,144	6,849,052	27,463	6,876,515
2019	1,081	6,734,145	27,027	6,761,172
2018	7,742	6,635,265	19,881	6,655,146
2017	(673)	6,452,651	20,928	6,473,579
2016	2,463	6,340,256	20,069	6,360,325
2015	3,429	6,199,681	20,920	6,220,601
2014	1,887	6,030,682	22,823	6,053,505
2013	2,893	6,019,785	24,461	6,044,246

* Net transfers to the Commonwealth of Pennsylvania State Employees' Retirement System.
** Survivor and Beneficiary includes both death lump sums and survivor annuities.

Average Monthly Pension Benefit Payments
Total Annuitants Grouped by Years of Credited Service
10 Year Trend

	Years of Credited Service									
	< 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	Total
Fiscal year ended June 30, 2022										
Normal and Early	4,485	20,084	27,047	23,240	23,899	27,959	48,705	37,077	9,941	**222,436**
	$ 92	$ 207	$ 399	$ 870	$ 1,499	$ 2,279	$ 3,276	$ 4,245	$ 4,584	**$ 1,939**
Disability	17	1,827	2,034	1,757	1,695	1,354	391	17	—	**9,092**
	$ 2,296	$ 792	$ 1,026	$ 1,584	$ 2,358	$ 3,176	$ 3,999	$ 3,559	$ —	**$ 2,088**
Beneficiary and Survivor	705	629	1,257	1,137	1,259	1,291	2,250	2,179	756	**11,463**
	$ 908	$ 211	$ 335	$ 606	$ 907	$ 1,297	$ 1,810	$ 2,227	$ 2,403	**$ 1,189**
Fiscal year ended June 30, 2021										
Normal and Early	4,468	19,690	26,884	22,719	23,313	27,320	48,496	36,849	9,502	**219,241**
	$ 88	$ 206	$ 390	$ 853	$ 1,475	$ 2,265	$ 3,265	$ 4,235	$ 4,592	**$ 1,930**
Disability	16	1,842	2,057	1,698	1,659	1,363	380	17	1	**9,033**
	$ 2,318	$ 813	$ 1,135	$ 1,534	$ 2,283	$ 3,062	$ 3,966	$ 3,559	$ 4,550	**$ 2,580**
Beneficiary and Survivor	749	596	1,219	1,114	1,192	1,251	2,155	2,051	734	**11,061**
	$ 907	$ 209	$ 325	$ 579	$ 875	$ 1,252	$ 1,757	$ 2,167	$ 2,310	**$ 1,153**
Fiscal year ended June 30, 2020										
Normal and Early	4,498	19,335	26,748	22,391	22,666	26,725	48,227	36,688	9,153	**216,431**
	$ 86	$ 206	$ 393	$ 835	$ 1,444	$ 2,229	$ 3,240	$ 4,209	$ 4,591	**$ 1,915**
Disability	17	1,937	2,159	1,830	1,776	1,425	390	17	1	**9,552**
	$ 2,197	$ 746	$ 972	$ 1,593	$ 2,311	$ 3,062	$ 3,960	$ 3,559	$ 4,550	**$ 2,550**
Beneficiary and Survivor	783	571	1,180	1,102	1,148	1,191	2,031	1,972	717	**10,695**
	$ 927	$ 203	$ 322	$ 562	$ 856	$ 1,219	$ 1,717	$ 2,101	$ 2,206	**$ 1,124**
Fiscal year ended June 30, 2019										
Normal and Early	4,504	18,870	26,468	22,032	22,088	26,182	47,919	36,550	8,757	**213,370**
	$ 85	$ 216	$ 385	$ 817	$ 1,413	$ 2,200	$ 3,226	$ 4,194	$ 4,604	**$ 1,905**
Disability	17	1,885	2,095	1,741	1,716	1,398	361	17	1	**9,231**
	$ 2,197	$ 750	$ 965	$ 1,628	$ 2,265	$ 3,017	$ 3,475	$ 3,559	$ 4,550	**$ 2,490**
Beneficiary and Survivor	786	545	1,143	1,084	1,123	1,150	1,963	1,901	700	**10,395**
	$ 933	$ 198	$ 315	$ 551	$ 836	$ 1,199	$ 1,680	$ 2,019	$ 2,128	**$ 1,095**
Fiscal year ended June 30, 2018										
Normal and Early	4,491	18,293	26,168	21,619	21,551	25,664	47,527	36,395	8,352	**210,060**
	$ 83	$ 218	$ 380	$ 807	$ 1,388	$ 2,176	$ 3,210	$ 4,180	$ 4,572	**$ 1,890**
Disability	19	1,884	2,088	1,708	1,694	1,417	353	21	1	**9,185**
	$ 2,322	$ 784	$ 956	$ 1,631	$ 2,189	$ 3,032	$ 3,260	$ 3,562	$ 4,550	**$ 2,476**
Beneficiary and Survivor	826	519	1,113	1,055	1,096	1,088	1,885	1,825	682	**10,089**
	$ 945	$ 196	$ 308	$ 528	$ 806	$ 1,178	$ 1,636	$ 1,953	$ 2,047	**$ 1,066**

Average Monthly Pension Benefit Payments
Total Annuitants Grouped by Years of Credited Service
10 Year Trend (Continued)

	Years of Credited Service									
	< 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	Total
Fiscal year ended June 30, 2017										
Normal and Early	4,417	17,616	25,734	21,177	20,989	24,996	47,090	36,155	8,019	**206,193**
	$ 81	$ 222	$ 382	$ 793	$ 1,357	$ 2,145	$ 3,193	$ 4,161	$ 4,539	**$ 1,875**
Disability	18	1,831	2,001	1,634	1,639	1,381	346	6	1	**8,857**
	$ 2,449	$ 778	$ 948	$ 1,638	$ 2,208	$ 3,024	$ 3,240	$ 3,951	$ 4,550	**$ 2,532**
Beneficiary and Survivor	864	507	1,104	1,025	1,074	1,085	1,800	1,756	669	**9,884**
	$ 953	$ 195	$ 301	$ 505	$ 781	$ 114	$ 1,586	$ 1,880	$ 1,960	**$ 919**
Fiscal year ended June 30, 2016										
Normal and Early	4,437	19,030	25,603	21,411	21,273	25,037	46,029	36,489	5,534	**204,843**
	$ 93	$ 189	$ 373	$ 798	$ 1,383	$ 2,200	$ 3,247	$ 4,250	$ 4,616	**$ 2,173**
Disability	—	1,829	2,149	1,714	1,567	1,337	554	17	9	**9,176**
	$ —	$ 777	$ 1,001	$ 1,342	$ 1,985	$ 2,807	$ 3,588	$ 3,078	$ 2,353	**$ 1,613**
Beneficiary and Survivor	—	6,100	580	574	593	609	1,008	943	402	**10,809**
	$ —	$ 1,256	$ 278	$ 421	$ 613	$ 902	$ 1,233	$ 1,452	$ 1,508	**$ 1,129**
Fiscal year ended June 30, 2015										
Normal and Early	4,360	17,744	24,820	20,719	20,682	24,379	45,677	36,248	5,532	**200,161**
	$ 94	$ 186	$ 359	$ 772	$ 1,344	$ 2,153	$ 3,218	$ 4,222	$ 4,564	**$ 2,169**
Disability	—	1,841	2,134	1,686	1,534	1,332	550	19	9	**9,105**
	$ —	$ 762	$ 980	$ 1,306	$ 1,937	$ 2,773	$ 3,602	$ 3,235	$ 2,353	**$ 1,584**
Beneficiary and Survivor	—	5,481	619	621	628	648	1,067	1,018	427	**10,509**
	$ —	$ 1,219	$ 271	$ 399	$ 611	$ 883	$ 1,221	$ 1,420	$ 1,497	**$ 1,089**
Fiscal year ended June 30, 2014										
Normal and Early	4,232	16,238	24,007	20,109	20,068	23,694	45,272	35,798	5,468	**194,886**
	$ 94	$ 183	$ 346	$ 743	$ 1,292	$ 2,097	$ 3,186	$ 3,186	$ 4,181	**$ 2,146**
Disability	—	1,812	2,038	1,624	1,495	1,316	557	20	8	**8,870**
	$ —	$ 752	$ 954	$ 1,266	$ 1,888	$ 2,712	$ 3,598	$ 3,216	$ 2,240	**$ 1,532**
Beneficiary and Survivor	—	4,733	672	674	678	697	1,124	1,100	466	**10,144**
	$ —	$ 1,192	$ 256	$ 397	$ 606	$ 875	$ 1,213	$ 1,392	$ 1,455	**$ 866**
Fiscal year ended June 30, 2013										
Normal and Early	4,051	14,757	23,095	19,499	19,506	22,897	44,704	35,277	5,384	**189,170**
	$ 93	$ 179	$ 331	$ 708	$ 1,243	$ 2,041	$ 3,151	$ 4,142	$ 4,354	**$ 2,110**
Disability	—	1,749	1,950	1,554	1,455	1,283	547	17	10	**8,565**
	$ —	$ 729	$ 925	$ 1,249	$ 1,843	$ 2,654	$ 3,546	$ 3,163	$ 2,311	**$ 1,467**
Beneficiary and Survivor	—	5,659	724	729	728	745	1,191	1,190	503	**11,469**
	$ —	$ 814	$ 254	$ 387	$ 620	$ 854	$ 1,195	$ 1,368	$ 1,442	**$ 811**

Average Monthly Pension
Benefit Payments and Average Final Average Salary
New Annuitants Grouped by Years of Credited Service
10 Year Trend

	Years of Credited Service								
	< 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+
Fiscal year ended June 30, 2022									
Number of retired members	199	896	963	906	871	630	576	253	73
Final Average Salary	$ 20,801	$ 29,994	$ 36,567	$ 45,363	$ 54,314	$ 68,144	$ 79,417	$ 81,632	$ 77,212
Monthly Benefit	$ 112	$ 290	$ 635	$ 1,177	$ 1,866	$ 2,872	$ 3,937	$ 4,685	$ 5,194
Fiscal year ended June 30, 2021									
Number of retired members	194	939	1,077	1,023	1,037	753	734	299	84
Final Average Salary	$ 18,606	$ 27,782	$ 37,252	$ 46,464	$ 54,096	$ 68,005	$ 78,032	$ 78,324	$ 75,778
Monthly Benefit	$ 105	$ 262	$ 654	$ 1,228	$ 1,875	$ 2,892	$ 3,887	$ 4,612	$ 5,192
Fiscal year ended June 30, 2020									
Number of retired members	172	850	821	711	641	471	405	181	70
Final Average Salary	$ 21,714	$ 30,682	$ 37,547	$ 46,199	$ 54,113	$ 64,876	$ 71,857	$ 76,131	$ 79,480
Monthly Benefit	$ 124	$ 291	$ 620	$ 1,202	$ 1,858	$ 2,721	$ 3,613	$ 4,438	$ 5,331
Fiscal year ended June 30, 2019									
Number of retired members	212	1,322	1,329	1,439	1,321	1,201	1,212	517	169
Final Average Salary	$ 19,164	$ 29,025	$ 36,844	$ 47,538	$ 57,936	$ 67,160	$ 79,421	$ 82,570	$ 82,190
Monthly Benefit	$ 104	$ 272	$ 648	$ 1,258	$ 2,017	$ 2,822	$ 3,967	$ 4,910	$ 5,510
Fiscal year ended June 30, 2018									
Number of retired members	263	1,482	1,494	1,582	1,412	1,405	1,336	665	208
Final Average Salary	$ 20,236	$ 31,055	$ 37,759	$ 46,933	$ 58,435	$ 67,357	$ 77,429	$ 82,396	$ 81,987
Monthly Benefit	$ 104	$ 275	$ 680	$ 1,230	$ 2,034	$ 2,849	$ 3,906	$ 4,944	$ 5,575
Fiscal year ended June 30, 2017									
Number of retired members	265	1,614	1,482	1,446	1,220	1,307	1,155	709	160
Final Average Salary	$ 18,974	$ 30,501	$ 37,885	$ 45,909	$ 56,379	$ 66,588	$ 77,070	$ 79,036	$ 84,568
Monthly Benefit	$ 111	$ 279	$ 651	$ 1,217	$ 2,000	$ 2,839	$ 3,929	$ 4,736	$ 5,806
Fiscal year ended June 30, 2016									
Number of retired members	373	1,865	1,576	1,443	1,334	1,352	1,160	775	181
Final Average Salary	$ 18,335	$ 31,100	$ 37,355	$ 48,242	$ 56,310	$ 68,557	$ 75,449	$ 79,529	$ 78,836
Monthly Benefit	$ 129	$ 269	$ 634	$ 1,302	$ 1,964	$ 2,958	$ 3,890	$ 4,845	$ 5,464
Fiscal year ended June 30, 2015									
Number of retired members	393	2,099	1,649	1,469	1,381	1,412	1,286	961	234
Final Average Salary	$ 17,942	$ 30,693	$ 37,628	$ 47,743	$ 57,560	$ 67,961	$ 76,491	$ 80,236	$ 79,194
Monthly Benefit	$ 113	$ 264	$ 637	$ 1,274	$ 2,031	$ 2,929	$ 3,995	$ 4,884	$ 5,402
Fiscal year ended June 30, 2014									
Number of retired members	426	1,957	1,442	1,195	1,098	1,191	1,209	894	187
Final Average Salary	$ 18,745	$ 31,795	$ 35,935	$ 45,981	$ 56,674	$ 64,895	$ 74,770	$ 78,322	$ 82,919
Monthly Benefit	$ 126	$ 267	$ 605	$ 1,242	$ 2,043	$ 2,795	$ 3,973	$ 4,811	$ 5,835
Fiscal year ended June 30, 2013									
Number of retired members	404	1,967	1,662	1,386	1,471	1,680	2,013	1,517	298
Final Average Salary	$ 22,052	$ 30,966	$ 36,735	$ 46,773	$ 55,331	$ 67,805	$ 77,241	$ 83,353	$ 85,981
Monthly Benefit	$ 156	$ 280	$ 658	$ 1,265	$ 1,988	$ 2,956	$ 4,161	$ 5,200	$ 6,066

Average Monthly Premium Assistance Benefit Payments and Average Final Average Salary New Annuitants Grouped by Years of Credited Service 10 Year Trend

	Years of Credited Service								
	< 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+
Fiscal year ended June 30, 2022									
Number of retired members		1	1	120	207	209	192	83	39
Final Average Salary		$ 43,256	$ 25,553	$ 50,295	$ 59,139	$ 67,466	$ 85,152	$ 82,408	$ 82,455
Monthly Benefit		$ 100	$ 100	$ 100	$ 100	$ 97	$ 99	$ 99	$ 100
Fiscal year ended June 30, 2021									
Number of retired members		1	—	186	270	278	261	107	43
Final Average Salary		$ 49,634	$ —	$ 52,262	$ 55,535	$ 69,202	$ 78,565	$ 80,486	$ 75,087
Monthly Benefit		$ 100	$ —	$ 100	$ 99	$ 99	$ 99	$ 100	$ 100
Fiscal year ended June 30, 2020									
Number of retired members		2	5	124	161	172	167	82	30
Final Average Salary		$ 34,396	$ 45,093	$ 48,660	$ 55,672	$ 67,434	$ 72,738	$ 79,472	$ 82,504
Monthly Benefit		$ 100	$ 100	$ 100	$ 99	$ 96	$ 99	$ 99	$ 100
Fiscal year ended June 30, 2019									
Number of retired members		3	7	323	457	578	618	283	100
Final Average Salary		$ 41,862	$ 59,557	$ 53,896	$ 63,581	$ 70,831	$ 80,662	$ 81,735	$ 80,136
Monthly Benefit		$ 100	$ 100	$ 100	$ 99	$ 99	$ 99	$ 99	$ 100
Fiscal year ended June 30, 2018									
Number of retired members		4	11	407	488	686	719	397	129
Final Average Salary		$ 50,976	$ 51,460	$ 54,563	$ 62,642	$ 69,894	$ 78,859	$ 82,780	$ 84,484
Monthly Benefit		$ 100	$ 100	$ 100	$ 99	$ 99	$ 99	$ 99	$ 99
Fiscal year ended June 30, 2017									
Number of retired members		8	11	407	478	691	697	428	111
Final Average Salary		$ 42,397	$ 44,435	$ 52,914	$ 62,343	$ 70,886	$ 77,638	$ 80,600	$ 88,119
Monthly Benefit		$ 98	$ 100	$ 99	$ 99	$ 99	$ 98	$ 98	$ 99
Fiscal year ended June 30, 2016									
Number of retired members		11	18	364	490	751	679	477	119
Final Average Salary		$ 49,259	$ 54,492	$ 55,542	$ 61,110	$ 71,925	$ 76,944	$ 82,180	$ 80,265
Monthly Benefit		$ 100	$ 98	$ 99	$ 99	$ 99	$ 99	$ 99	$ 99
Fiscal year ended June 30, 2015									
Number of retired members		9	23	375	505	779	729	632	154
Final Average Salary		$ 43,082	$ 49,673	$ 55,760	$ 61,127	$ 71,418	$ 79,086	$ 80,931	$ 78,375
Monthly Benefit		$ 98	$ 100	$ 100	$ 98	$ 99	$ 99	$ 98	$ 99
Fiscal year ended June 30, 2014									
Number of retired members		20	24	279	402	628	723	549	127
Final Average Salary		$ 44,134	$ 45,734	$ 50,908	$ 61,032	$ 67,662	$ 74,376	$ 80,928	$ 85,627
Monthly Benefit		$ 99	$ 100	$ 99	$ 99	$ 98	$ 99	$ 98	$ 100
Fiscal year ended June 30, 2013									
Number of retired members		10	29	345	521	945	1,169	937	191
Final Average Salary		$ 38,956	$ 61,571	$ 51,758	$ 57,669	$ 69,854	$ 76,812	$ 83,780	$ 84,225
Monthly Benefit		$ 99	$ 100	$ 99	$ 100	$ 98	$ 98	$ 98	$ 100

Ten Largest Employers
Current Year
(Based on number of reported members)

As of June 30, 2022

	Employer	Number of Reported Members	Percentage of Total
1.	Philadelphia City School District	17,866	7.21%
2.	Pittsburgh School District	3,829	1.54%
3.	Central Bucks School District	2,812	1.13%
4.	North Penn School District	2,103	0.85%
5.	Allentown City School District	2,078	0.84%
6.	Bethlehem Area School District	1,887	0.76%
7.	Reading School District	1,775	0.72%
8.	Downingtown Area School District	1,768	0.71%
9.	Lower Merion School District	1,684	0.68%
10.	Pennsbury School District	1,652	0.67%

As of June 30, 2013

	Employer	Number of Reported Members	Percentage of Total
1.	Philadelphia City School District	19,056	6.88%
2.	Pittsburgh School District	4,172	1.51%
3.	Central Bucks School District	2,689	0.97%
4.	Allentown City School District	2,501	0.90%
5.	North Penn School District	2,064	0.75%
6.	Bethlehem Area School District	2,029	0.73%
7.	Reading School District	1,910	0.69%
8.	Council Rock School District	1,709	0.62%
9.	Pennsbury School District	1,642	0.59%
10.	Pocono Mountain School District	1,593	0.58%

Schedule of Employers for FY 2022

School Districts

A

Abington
Abington Heights
Albert Gallatin
Aliquippa
Allegheny Valley
Allegheny-Clarion Valley
Allentown City
Altoona Area
Ambridge Area
Annville-Cleona
Antietam
Apollo-Ridge
Armstrong
Athens Area
Austin Area
Avella Area
Avon Grove
Avonworth

B

Bald Eagle Area
Baldwin-Whitehall
Bangor Area
Beaver Area
Bedford Area
Belle Vernon Area
Bellefonte Area
Bellwood-Antis
Bensalem Township
Benton Area
Bentworth
Berlin Brothersvalley
Bermudian Springs
Berwick Area
Bethel Park
Bethlehem Area
Bethlehem-Center
Big Beaver Falls Area
Big Spring
Blackhawk
Blacklick Valley
Bloomsburg Area
Blue Mountain
Blue Ridge
Boyertown Area
Bradford Area
Brandywine Heights Area
Brentwood Borough
Bristol Borough
Bristol Township
Brockway Area
Brookville Area
Brownsville Area
Burgettstown Area
Burrell
Butler Area

C

California Area
Cambria Heights
Cameron County
Camp Hill
Canon-Mcmillan
Canton Area
Carbondale Area
Carlisle Area
Carlynton
Carmichaels Area
Catasauqua Area
Centennial
Central Bucks
Central Cambria
Central Columbia
Central Dauphin
Central Fulton
Central Greene
Central Valley
Central York
Chambersburg Area
Charleroi Area
Chartiers Houston
Chartiers Valley
Cheltenham Township
Chester-Upland
Chestnut Ridge
Chichester
Clairton City
Clarion Area
Clarion-Limestone Area
Claysburg-Kimmel
Clearfield Area
Coatesville Area
Cocalico
Colonial
Columbia Borough
Commodore Perry
Conemaugh Township Area
Conemaugh Valley
Conestoga Valley
Conewago Valley
Conneaut
Connellsville Area
Conrad Weiser Area
Cornell
Cornwall-Lebanon
Corry Area
Coudersport Area
Council Rock
Cranberry Area
Crawford Central
Crestwood
Cumberland Valley
Curwensville Area

D

Dallas
Dallastown Area
Daniel Boone Area
Danville Area
Deer Lakes
Delaware Valley
Derry Area
Derry Township
Donegal
Dover Area
Downingtown Area
Dubois Area
Dunmore
Duquesne City

E

East Allegheny
East Lycoming
East Penn
East Pennsboro Area
East Stroudsburg Area
Eastern Lancaster County
Eastern Lebanon County
Eastern York
Easton Area
Elizabeth Forward
Elizabethtown Area
Elk Lake
Ellwood City Area
Ephrata Area
Erie City
Everett Area
Exeter Township

F

Fairfield Area
Fairview
Fannett Metal
Farrell Area
Ferndale Area

Schedule of Employers (Continued)

Fleetwood Area
Forbes Road
Forest Area
Forest City Regional
Forest Hills
Fort Cherry
Fort Leboeuf
Fox Chapel Area
Franklin Area
Franklin Regional
Frazier
Freedom Area
Freeport Area

G

Galeton Area
Garnet Valley
Gateway
General Mclane
Gettysburg Area
Girard
Glendale
Governor Mifflin
Great Valley
Greater Johnstown
Greater Latrobe
Greater Nanticoke Area
Greencastle-Antrim
Greensburg Salem
Greenville Area
Greenwood
Grove City Area

H

Halifax Area
Hamburg Area
Hampton Township
Hanover Area
Hanover Public
Harbor Creek
Harmony Area
Harrisburg City
Hatboro-Horsham
Haverford Township
Hazleton Area
Hempfield
Hempfield Area
Hermitage
Highlands
Hollidaysburg Area
Homer-Center
Hopewell Area
Huntingdon Area

I

Indiana Area
Interboro
Iroquois

J

Jamestown Area
Jeannette City
Jefferson-Morgan
Jenkintown
Jersey Shore Area
Jim Thorpe Area
Johnsonburg Area
Juniata County
Juniata Valley

K

Kane Area
Karns City Area
Kennett Consolidated
Keystone
Keystone Central
Keystone Oaks
Knoch
Kiski Area
Kutztown Area

L

Lackawanna Trail
Lakeland
Lake-Lehman
Lakeview
Lampeter-Strasburg
Lancaster
Laurel
Laurel Highlands
Lebanon
Leechburg Area
Lehighton Area
Lewisburg Area
Ligonier Valley
Line Mountain
Littlestown Area
Lower Dauphin
Lower Merion
Lower Moreland Township
Loyalsock Township

M

Mahanoy Area
Manheim Central
Manheim Township
Marion Center Area
Marple Newtown
Mars Area
McGuffey
Mckeesport Area
Mechanicsburg Area
Mercer Area
Methacton
Meyersdale Area
Mid Valley
Middletown Area
Midd-West
Midland Borough
Mifflin County
Mifflinburg Area
Millcreek Township
Millersburg Area
Millville Area
Milton Area
Minersville Area
Mohawk Area
Monessen
Moniteau
Montgomery Area
Montour
Montoursville Area
Montrose Area
Moon Area
Morrisville Borough
Moshannon Valley
Mount Carmel Area
Mount Pleasant Area
Mount Union Area
Mountain View
Mt Lebanon
Muhlenberg
Muncy

N

Nazareth Area
Neshaminy
Neshannock Township
New Brighton Area
New Castle Area
New Hope-Solebury
New Kensington-Arnold
Newport
Norristown Area
North Allegheny
North Clarion County
North East
North Hills
North Penn
North Pocono

Schedule of Employers (Continued)

North Schuylkill
North Star
Northampton Area
Northeast Bradford
Northeastern York
Northern Bedford County
Northern Cambria
Northern Lebanon
Northern Lehigh
Northern Potter
Northern Tioga
Northern York County
Northgate
Northwest Area
Northwestern
Northwestern Lehigh
Norwin

O

Octorara Area
Oil City Area
Old Forge
Oley Valley
Oswayo Valley
Otto-Eldred
Owen J Roberts
Oxford Area

P

Palisades
Palmerton Area
Palmyra Area
Panther Valley S
Parkland
Pen Argyl Area
Penn Cambria
Penn Hills
Penn Manor
Penncrest
Penn-Delco
Pennridge
Penns Manor
Penns Valley Area
Pennsbury
Penn-Trafford
Pequea Valley
Perkiomen Valley
Peters Township
Philadelphia City
Philipsburg-Osceola Area
Phoenixville Area
Pine Grove Area
Pine-Richland
Pittsburgh
Pittston Area
Pleasant Valley
Plum Borough
Pocono Mountain
Port Allegany
Portage Area
Pottsgrove
Pottstown
Pottsville Area
Punxsutawney Area
Purchase Line

Q

Quaker Valley
Quakertown Community

R

Radnor Towship
Reading
Red Lion Area
Redbank Valley
Reynolds
Richland
Ridgway Area
Ridley
Ringgold
River Valley
Riverside
Riverside Beaver County
Riverview
Rochester Area
Rockwood Area
Rose Tree Media

S

Saint Clair Area
Saint Marys Area
Salisbury Township
Salisbury-Elk Lick
Saucon Valley
Sayre Area
Schuylkill Haven Area
Schuylkill Valley
Scranton
Selinsgrove Area
Seneca Valley
Shade Central City
Shaler Area
Shamokin Area
Shanksville-Stonycreek
Sharon City
Sharpsville Area
Shenango Area
Shenandoah Valley
Shikellamy
Shippensburg Area
Slippery Rock Area
Smethport Area
Solanco
Somerset Area
Souderton Area
South Allegheny
South Eastern
South Fayette Township
South Middleton
South Park
South Side Area
South Western
South Williamsport Area
Southeast Delco
Southeastern Greene
Southern Columbia Area
Southern Fulton
Southern Huntingdon County
Southern Lehigh
Southern Tioga
Southern York County
Southmoreland
Spring Cove
Spring Grove Area
Springfield
Springfield Township
Spring-Ford Area
State College Area
Steel Valley
Steelton-Highspire
Sto-Rox
Stroudsburg Area
Sullivan County
Susquehanna Community
Susquehanna Township
Susquenita

T

Tamaqua Area
Titusville Area
Towanda Area
Tredyffrin-Easttown
Trinity Area
Tri-Valley
Troy Area
Tulpehocken Area
Tunkhannock Area
Turkeyfoot Valley Area
Tuscarora

Schedule of Employers (Continued)

Tussey Mountain
Twin Valley
Tyrone Area

U

Union
Union Area
Union City Area
Uniontown Area
Unionville-Chadds Ford
United
Upper Adams
Upper Darby
Upper Dauphin Area
Upper Dublin
Upper Merion Area
Upper Moreland Township
Upper Perkiomen
Upper Saint Clair

V

Valley Grove
Valley View

W

Wallenpaupack Area
Wallingford-Swarthmore
Warren County
Warrior Run
Warwick
Washington
Wattsburg Area
Wayne Highlands
Waynesboro Area
Weatherly Area
Wellsboro Area
West Allegheny
West Branch Area
West Chester Area
West Greene
West Jefferson Hills
West Middlesex Area
West Mifflin Area
West Perry
West Shore
West York Area
Western Beaver County
Western Wayne
Westmont Hilltop
Whitehall-Coplay
Wilkes Barre Area
Wilkinsburg Borough
William Penn
Williams Valley
Williamsburg Community
Williamsport Area
Wilmington Area
Wilson
Wilson Area
Windber Area
Wissahickon
Woodland Hills
Wyalusing Area
Wyoming Area
Wyoming Valley West
Wyomissing Area

Y

York City
York Suburban
Yough

Area Vocational Technical Schools

A. W. Beattie Career Center
Admiral Peary AVTS
Beaver County AVTS
Bedford County Technical Center
Berks CTC
Bethlehem AVTS
Bucks County Technical
Butler County AVTS
Carbon Career & Technical Institute
Career Institute of Technology
Central Montco Technical High School
Central PA Institute of Science & Technology
Central Westmoreland CTC
Clarion County CTC
Clearfield County CTC
Columbia-Montour AVTS
Crawford County CTC
CTC of Lackawanna County
Cumberland-Perry AVTS
Dauphin County Technical School
Delaware County AVTS
Eastern Center for Arts & Technology
Eastern Westmoreland CTC
Erie County Technical School
Fayette County AVTS
Forbes Road CTC
Franklin County CTC
Fulton County AVTS
Greater Altoona CTC
Greater Johnstown AVTS
Greene County CTC
Huntingdon County CTC
Indiana County Technology Center
Jefferson County-DuBois AVTS
Lancaster County CTC
Lawrence County CTC
Lebanon County CTC
Lehigh Career & Technical Institute
Lenape Tech
Lycoming CTC
Mercer County Career Center
Middle Bucks Institute of Technology
Mifflin County Academy of Science & Technology
Mon Valley CTC
Monroe Career & Tech Institute
North Montco Technical Career Center
Northern Tier Career Center
Northern Westmoreland CTC
Northumberland County AVTS
Parkway West CTC
Reading-Muhlenberg CTC
Schuylkill Technology Centers
Somerset County Technology Center
Steel Center AVTS
SUN Area Technical Institute
Susquehanna County CTC
Upper Bucks County AVTS
Venango Technology Center
West Side AVTS
Western Area CTC
Western Center for Technical Studies
Wilkes-Barre Area CTC
York County School of Technology

Schedule of Employers (Continued)

Intermediate Units

Allegheny #3
Appalachia #8
Arin #28
Beaver Valley #27
Berks County #14
BLaST #17
Bucks County #22
Carbon-Lehigh #21
Central #10
Capital Area #15
Central Susquehanna #16
Chester County #24
Colonial #20
Delaware County #25
Intermediate Unit #1
Lancaster-Lebanon #13
Lincoln #12
Luzerne #18
Midwestern #4
Montgomery County #23
Northeastern Educational #19
Northwest Tri-County #5
Pittsburgh-Mt. Oliver #2
Riverview #6
Schuylkill #29
Seneca Highlands #9
Tuscarora #11
Westmoreland #7

Colleges / Universities

State System of Higher Education

- Bloomsburg University
- California University
- Cheyney University
- Clarion University of Pennsylvania
- East Stroudsburg University
- Edinboro University
- Indiana University
- Kutztown University
- Lock Haven University
- Mansfield University
- Millersville University
- Shippensburg University
- Slippery Rock University
- West Chester University

Bucks County Community College
Butler County Community College
Community College of Allegheny County
Community College of Beaver County
Community College of Philadelphia
Delaware County Community College
Harrisburg Area Community College
Lehigh Carbon Community College
Luzerne County Community College
Montgomery County Community College
Northampton County Community College
Penn State University
Pennsylvania College of Technology
Pennsylvania Highlands Community College
Reading Area Community College
Thaddeus Stevens College of Technology
Westmoreland County Community College

Other

Berks County Earned Income Tax Bureau
Department of Education - Commonwealth of Pennsylvania
Lancaster County Academy
Overbrook School for the Blind
Pennsylvania School Boards Association
Pennsylvania School for the Deaf
Western Pennsylvania School for Blind Children
Western Pennsylvania School for the Deaf
York Adams Academy

Charter Schools (C S)

21st Century Cyber C S
Achievement House C S
Ad Prima C S
Agora Cyber C S
Alliance For Progress C S
Antonia Pantoja C S
Arts Academy C S
Aspira Bilingual Cyber C S
Avon Grove C S
Baden Academy C S
Bear Creek Community C S
Belmont C S
Boys' Latin of Philadelphia C S
Bucks County Montessori C S
Casa C S
Center for Student Learning Charter School at Pennsbury
Central Pennsylvania Digital Learning Foundation C S
Centre Learning Community C S
Chester County Family Academy C S
Christopher Columbus C S
Circle of Seasons C S
City Charter High School
Collegium CS
Commonwealth Connections Academy C S
Community Academy of Philadelphia C S
Crispus Attucks Youthbuild C S
Discovery C S
Dr. Robert Ketterer C S
Environmental Charter School at Frick Park
Erie Rise Leadership Academy C S
Esperanza Academy C S
Esperanza Cyber C S
Eugenio Maria de Hostos Community Bilingual C S
Evergreen Community C S
Fell C S
First Philadelphia Charter School for Literacy

Folk Arts - Cultural Treasures C S
Franklin Towne Charter Elementary School
Franklin Towne Charter High School
Frederick Douglas Mastery C S
Freire C S
Gettysburg Montessori C S
Gillingham C S
Global Leadership Academy C S
Global Leadership Academy C S- Huey
Green Woods C S
Hardy Williams Academy C S
Hope for Hyndman C S
Howard Gardner Multiple Intelligence C S
IMHOTEP Institute C S
Independence C S Infinity C S
Infinity CS
Inquiry CS
Insight PA Cyber CS
John B Stetson C S
Keystone Academy C S
Keystone Education Center C S
Kipp Academy C S
La Academia: The Partnership C S
Laboratory C S
Lehigh Valley Academy Regional C S
Lehigh Valley Charter School for the
Performing Arts
Lehigh Valley Dual Language C S
Lincoln C S
Lincoln Leadership Academy C S
Lincoln Park Performing Arts C S
Lindley Academy CS
Manchester Academic C S
Mariana Bracetti Academy C S
Maritime Academy C S
Mastery Charter High School
Mastery Charter School - Cleveland
Elementary
Mastery Charter School - Clymer Elementary
Mastery Charter School - Francis D Pastorius
Elementary
Mastery Charter School - Harrity Elementary
Mastery Charter School - John Wister
Elementary
Mastery Charter School - Mann Elementary
Mastery Charter School - Pickett Campus
Mastery Charter School - Prep Elementary
Mastery Charter School - Shoemaker Campus
Mastery Charter School - Simon Gratz
Mastery Charter School - Smedley Elementary
Mastery Charter School - Thomas Campus
Math Civics and Sciences C S
Mathematics, Science & Technology
Community C S
Memphis Street Academy C S - J.P. Jones
Montessori Regional C S
Multi-Cultural Academy C S
New Day C S
New Foundations C S
Nittany Valley C S
Northwood Academy C S
Olney Charter High School
Pan American Academy C S
Passport Academy C S
Penn Hills C S for Entrepreneurship
Pennsylvania Cyber C S
Pennsylvania Distance Learning C S
Pennsylvania Leadership C S
Pennsylvania Steam Academy
Pennsylvania Virtual C S
People for People C S
Perseus House Charter School of Excellence
Philadelphia Academy C S
Philadelphia Charter School for Arts &
Sciences at H.R. Edmunds
Philadelphia Electrical & Technology Charter
High School
Philadelphia Harambee Institute of Science and
Technology C S
Philadelphia Montessori C S
Philadelphia Performing Arts C S
Premier Arts & Science C S
Preparatory Charter School of Mathematics,
Science, Technology & Careers
Propel Charter School - Braddock Hills
Propel Charter School - East C S
Propel Charter School - Hazelwood
Propel Charter School - Homestead
Propel Charter School - McKeesport
Propel Charter School - Montour
Propel Charter School- Northside
Propel Charter School - Pitcairn
Renaissance Academy - Edison C S
Richard Allen Preparatory C S
Robert Benjamin Wiley Community C S
Roberto Clemente C S
Russell Byers C S
Sankofa Freedom Academy C S
School Lane C S
Seven Generations C S
Souderton Charter School Collaborative
Spectrum C S
Stone Valley Community C S
Sugar Valley Rural C S
SusQ - Cyber C S
Sylvan Heights Science C S
Tacony Academy C S
Tidioute Community C S
Universal Alcorn C S
Universal Audenried C S
Universal Bluford C S
Universal Creighton C S
Universal Daroff C S
Universal Institute C S
Universal Vare C S
Urban Academy Greater Pittsburgh C S
Urban Pathways 6-12 C S
Urban Pathways K - 5 College C S
Vida C S
West Oak Lane C S
West Philadelphia Achievement Charter
Elementary School
Wissahickon C S
York Academy Regional C S
Young Scholars C S
Young Scholars of Central Pennsylvania C S
Young Scholars of Western Pennsylvania C S