2022

STATE TEACHERS RETIREMENT SYSTEM OF OHIO

Annual Comprehensive Financial Report

Fiscal Years Ending June 30, 2022 and 2021

2022

STATE TEACHERS RETIREMENT SYSTEM OF OHIO

Annual Comprehensive Financial Report

Fiscal Years Ending June 30, 2022 and 2021

Prepared through the joint efforts of the STRS Ohio staff
275 E. Broad St., Columbus, OH 43215-3771 • 614.227.4090 • www.strsoh.org

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

State Teachers Retirement System of Ohio

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

June 30, 2021

Christopher P. Morrill

Executive Director/CEO

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STATE TEACHERS RETIREMENT BOARD

The 11-member State Teachers Retirement Board is the governing body of the State Teachers Retirement System of Ohio (STRS Ohio). It provides the direction, fiduciary oversight and policies that enable STRS Ohio to fulfill its mission.

The Retirement Board consists of five elected contributing teacher members; two elected retired teacher members; an investment expert appointed by the governor; an investment expert appointed jointly by the speaker of the House and the Senate president; an investment expert designated by the treasurer of state; and the superintendent of public instruction or their designated investment expert.

Board members serve without compensation other than actual, necessary expenses.

Carol Correthers, Chair
Contributing member since 2009. Lorain City Schools, Lorain County. Term extends through Aug. 31, 2025.

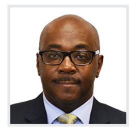
Dale Price, Vice Chair
Contributing member since 2010. Toledo Public Schools, Lucas County. Term extends through Aug. 31, 2024.

Rudy H. Fichtenbaum
Retired teacher member since 2021. Term extends through Aug. 31, 2025.

Steven Foreman
Contributing member since 2022. Zanesville City Schools, Muskingum County. Term extends through Aug. 31, 2026.

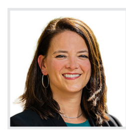
Claudia Herrington
Appointed jointly by the speaker of the house and the senate president in 2020. Term extends through Nov. 4, 2024.

Elizabeth Jones
Retired teacher member since 2022. Term extends through Aug. 31, 2026.

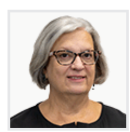


Arthur Lard
Contributing member since 2019. Portsmouth City Schools, Scioto County. Term extends through Aug. 31, 2023.

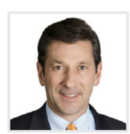
Scott Roulston
Appointed by the treasurer of state in 2022. Term extends through Jan. 8, 2026.



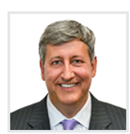
Stephanie K. Siddens
Interim superintendent of public instruction. Ex officio member of the board since appointed to office in 2021.



Julie Sellers
Contributing member since 2022. Cincinnati Federation of Teachers, Hamilton County. Term extends through Aug. 31, 2026.



Wade Steen
Appointed by the governor of the state in 2016. Term extends through Sept. 27, 2024.



William J. Neville, Executive Director
State Teachers Retirement System of Ohio

ADVISORS TO THE STATE TEACHERS RETIREMENT BOARD

Independent Auditor
Crowe LLP, Columbus, OH

Investment Consultants
Callan Associates, Inc., Chicago
Cliffwater LLC, Marina del Ray, CA

Actuarial Consultant
Cheiron, Chicago

Performance Verification Consultant
ACA Group, Performance Services Division, New York

STRS Ohio Mission and Vision

The **mission** of STRS Ohio is to partner with our members in helping to build retirement security.

The **vision** of STRS Ohio is to be a leading retirement system by providing comprehensive retirement benefits and quality service to our members through exceptional financial performance, ethical business practices and responsible resource management.

STRS Ohio Guiding Principles

1. Make decisions that produce the greatest sustainable benefits for our members.
2. Attract, develop and retain highly competent and motivated associates who have authority commensurate with their responsibilities.
3. Continually improve through research, development, evaluation and risk management.
4. Build an organizational culture that fosters diversity and inclusion, and inspires a high level of professionalism and performance.

STRS Ohio Senior Staff Members

Internally, STRS Ohio is managed by an executive director, three deputy executive directors and seven senior staff members, and employs about 500 associates.

William J. Neville, Executive Director

Lynn A. Hoover, Deputy Executive Director — Finance and Chief Financial Officer

Gary M. Russell, Deputy Executive Director — Member Benefits and Chief Benefits Officer

Matthew E. Worley, Deputy Executive Director — Investments and Chief Investment Officer

Marla E. Bump, Director, Governmental Relations

Rhonda L. Hare, Retirement Board Liaison

Andrew J. Marfurt, Director, Human Resource Services

Gregory A. Taylor, Chief Information Officer

Nicholas J. Treneff, Director, Communication Services

Robert L. Vance, Chief Audit Executive, Internal Audit

Stacey L. Wideman, Chief Legal Officer

Dec. 9, 2022

Members of the State Teachers Retirement Board:

State Teachers Retirement System of Ohio

275 East Broad Street
Columbus, OH 43215-3771
614-227-4090
www.strsoh.org

We are pleased to present the *Annual Comprehensive Financial Report* (ACFR) of the State Teachers Retirement System of Ohio for the fiscal year ended June 30, 2022. This report is intended to provide financial, investment, actuarial and statistical information in a single publication. STRS Ohio management is responsible for the accuracy of the data, as well as the completeness and fairness of the presentation.

STRS Ohio was established by law in 1919 — the first statewide, actuarially-based teacher retirement system in the United States. STRS Ohio is a cost-sharing, multiple-employer plan providing service retirement, disability and survivor benefits to teachers and faculty members of public boards of education, state-supported colleges and universities, and the state of Ohio and its political subdivisions. Optional health care coverage is available to eligible benefit recipients and their eligible dependents.

More analysis and information of the financial activities of STRS Ohio can be found in the Management's Discussion and Analysis section that begins on Page 10 of this report.

Key Activities in Fiscal 2022

Retirement Board Approves Benefit Plan Improvements That Benefit Both Active and Retired Educators

In March 2022, the board approved a set of benefit plan improvements that were in the planning and review stages for several months. The changes benefit both active and retired members of the system.

For eligible benefit recipients, the approved changes took effect on July 1, 2022, and included a 3% cost-of-living increase (COLA) as applied under Ohio law. An increase of 3% of base benefit will be added to the monthly payment in fiscal 2023 for benefit recipients who began receiving benefits on June 1, 2018, or earlier, and will apply to future monthly payments. The date of the increase is the anniversary date of retirement.

For active members, the board voted to eliminate the age 60 requirement for age and service eligibility that was set to take effect in August 2026. With this change, the final change to the phased-in age and service requirements will be made Aug. 1, 2023, when 35 years of service will be required for an unreduced retirement benefit. Age and service eligibility changes were part of the pension reform legislation passed by the Ohio General Assembly in 2012. These changes have been phased in over the last decade.

The board's actuarial consultant, Cheiron, is required by law to evaluate proposed benefit changes and they determined that the approved changes will not materially impair the fiscal integrity of the system. The board also shared its intent to review benefits again, no later than spring 2023, to evaluate whether additional benefit enhancements may be made in accordance with the laws in effect at that time.

Health Care Plan Enrollees Receive Premium Rebate

More than 102,000 retirees received a premium rebate in their November 2021 benefit payments totaling $34 million. Each retiree enrolled in an STRS Ohio health care plan in September 2021 received $300 for themselves and $300 for each enrolled dependent. Of the $34 million payout, $30.0 million was a rebate for STRS Ohio benefit recipients, $3.7 million was for covered spouses and $0.3 million was for other dependents. Since the payment was a rebate of previously paid health care premiums, the payment was not taxable.

System Receives Positive Results From Several Important Studies

Fiscal 2022 saw the conclusion of several long-anticipated audits and studies and STRS Ohio values the guidance they provide. Staff worked closely with the various consultants and independent reviewers to provide the information necessary to complete the reviews. Following is a brief description of the work and results.

Fiduciary Audit — *(The Ohio Retirement Study Council (ORSC) periodically selects an independent auditor to critically review and evaluate the organizational design, structure and practices of Ohio's five statewide public retirement systems.)* In May 2022, Funston Advisory Services presented findings from its independent fiduciary performance audit of STRS Ohio. Funston noted the Retirement Board has been effectively fulfilling its fiduciary duties of loyalty, prudence, staying informed, diversifying assets, controlling costs, compliance with laws and co-fiduciary duties. Overall, STRS is operationally excellent with effective operational policies and processes and is a generally well-run, high performing operation. STRS' investment performance is in the top quartile of systems in the country. Member Services are consistently a top performer while costs are currently lower than the average of STRS' peers.

Actuarial Audit — *(The ORSC periodically selects an actuary to provide an independent review of the work of STRS Ohio's consulting actuary.)* In May 2022, the ORSC posted the final report from the actuarial audit of STRS Ohio. The report showed the work of STRS Ohio's actuarial consultants is considered strong. The audit was performed by Pension Trustee Advisors, Inc., KMS Actuaries, LLC on behalf of the ORSC. The report concluded, "We found Cheiron's work to be strong. It was reasonable, consistent and accurate. We do not believe that any methods, assumptions or calculations are erroneous to the level of necessary recalculations."

Asset-Liability Study — *(This study is conducted by STRS Ohio's investment consultant every five years to help determine investment risk-return expectations.)* The asset-liability study began in August 2021 to help the board determine reasonable risk and return expectations. Following completion of the study conducted by the Retirement Board's investment consultant, Callan LLC, the board made slight adjustments to STRS Ohio's asset mix. The new asset mix is designed to provide a similar risk/return profile to the current asset mix. Callan projects the new asset mix to earn a return of about 6% over the next 10 years, but projects higher returns over a longer time horizon.

Actuarial Experience Review — *(This review is conducted by the system's actuarial consultant approximately every five years and compares actuarial assumptions to the system's actual experience.)* Cheiron concluded its review in February 2022 and recommended several slight modifications to STRS Ohio's demographic assumptions. Demographic measures include retirement, salary increase, disability/termination and mortality assumptions. The board approved the recommendations, which will result in an actuarial gain of about $2.7 billion. These changes also have a positive impact on STRS Ohio's Health Care Fund. There were no recommended changes to the economic assumptions.

STRS Ohio Has Second Highest Service-Level Score While Reducing Administrative Costs

CEM Benchmarking's pension administration survey for fiscal 2021 showed STRS Ohio received the second highest service-level score of the 43 participating systems in the United States and Canada. High service levels in the Member Services Center, benefits counseling and self-service website options continue to drive the high service score. The survey results also showed STRS Ohio continues to improve on administration efficiency. The pension administrative cost per active member and annuitant was $7 below the peer average and $19 below the average cost of the survey universe. STRS Ohio's cost per active member and annuitant has decreased at a rate of 1% per year over the past eight years compared to an average annual increase of 2.4% for our peers.

STRS Ohio Introduces *Summary Annual Financial Report*

STRS Ohio has developed a new publication to share basic information and statistics about the retirement system. The new *Summary Annual Financial Report* (SAFR) is a reader-friendly summary of the more detailed *Annual Comprehensive Financial Report*. The SAFR includes information on funding and investments, financial highlights, membership, the economic impact STRS Ohio has on the state of Ohio and more. The 16-page publication provides key data in a streamlined format and is posted on the STRS Ohio website under Annual Reports.

Management Responsibility and Report Contents

This report consists of management's representations regarding STRS Ohio's finances. Management assumes full responsibility for the completeness and reliability of all information presented in this report. To provide a reasonable basis for making these representations, management has established a comprehensive internal control framework that is designed both to protect the assets from loss, theft or misuse and to compile sufficient, reliable information for the preparation of STRS Ohio's financial statements in conformity with generally accepted accounting principles. The internal control framework has been designed to provide reasonable rather than absolute assurance that the financial statements will be free from material misstatement. 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. We as management believe that the internal controls currently in place support this purpose, and assert that, to the best of our knowledge and belief, this financial report is complete and reliable in all material respects.

STRS Ohio's external auditors, Crowe LLP, conducted an independent audit of the financial statements in accordance with auditing standards generally accepted in the United States. This audit and the financial statements are presented in the Financial Section, beginning on Page 8.

Investments

Total investments (including short-term investments) decreased to $88.8 billion as of June 30, 2022. The Investment Review starting on Page 41 discusses the investment environment during fiscal 2022. The investment objectives and policies for the total fund are on Pages 44–52. The allocation of investment assets is designed to achieve the long-term actuarial objective at an acceptable level of risk. Investment risks are diversified over a very broad range of market sectors, securities and other investments. This strategy is intended to reduce portfolio risk to adverse developments in sectors and issuers experiencing unusual difficulties and offers opportunity to benefit from future markets. A summary of the asset allocation and other information can be found starting on Page 64.

Despite challenging market conditions for stocks and bonds, STRS Ohio's diversified portfolio and positive returns in the real estate and alternative asset classes helped the fund achieve a fiscal 2022 total fund net return of –3.73% after all management fees and costs, including carried interest and other fund expenses. STRS Ohio's annualized total fund net return was 8.60% over the last three years and 8.44% for the last five years. STRS Ohio outperformed the benchmark returns of –5.62%, 7.58% and 7.79% over the same one-, three- and five-year periods, respectively. STRS Ohio's external verification firm, ACA Group, conducted an independent verification and performance examination on the total fund performance in accordance with the Global Investment Performance Standards (GIPS®). This verification and performance examination report is on Pages 54–62 and full performance disclosures are on Pages 63–64.

Plan Contributions

Member and employer contributions, as well as income from investments, provide funds for pension benefits and health care coverage. Member and employer contributions totaled $3.6 billion in fiscal 2022 and increased over the prior year by $185 million as a result of the payroll growth increase. Employer contributions include amounts paid by employers of participants in alternative retirement plans (ARPs). ARP participants are not members of STRS Ohio; however, their employers contribute 4.47% of salaries to STRS Ohio to help pay for unfunded liabilities. Effective July 1, 2022, employers contribute 2.91% of salaries to STRS Ohio to help pay for unfunded liabilities.

Plan Deductions

The principal purpose for STRS Ohio is to provide retirement, survivor and disability benefits to qualified members and their beneficiaries. Plan deductions, including refunds to terminated members, optional health care coverage and administrative expenses, totaled $7.7 billion. Service retirement payments slightly increased 0.9% in fiscal 2022. Disability retirement benefits were $182 million in fiscal 2022 and were lower due to a decrease in disability recipients. Survivor benefits remained relatively flat in fiscal 2022.

Refunds were $319.8 million and increased by 14.7% in fiscal 2022. While the number of withdrawal counts decreased in fiscal 2022, the average dollar amount withdrawn was 21% higher than the prior year. This is in part due to an increase in large withdrawals of $200,000 or more. Administrative expenses were maintained at a slight increase of 0.7% in fiscal 2022.

Pension Funding Results

Contribution rates are intended to provide a level basis of funding using the entry age normal cost method, and an annual actuarial valuation is performed by STRS Ohio's external actuarial consultant, Cheiron. The June 30, 2022, valuation shows that the amortization period for the unfunded accrued liability decreased to 11.5 years from 14.0 the prior year, and the ratio of actuarial value of smoothed assets compared to accrued liabilities improved to 80.9% from 80.1% last year. For actuarial measurements, investment gains and losses are smoothed over four years to spread market volatility. When measured using the June 30, 2022, market value of assets, the funded ratio decreases to 78.9% from 87.8%. The newly-adopted demographic assumption changes decreased liabilities by $2.7 billion and plan changes increased liabilities by $2.4 billion. A detailed discussion of funding is provided in the Actuarial Section of this report beginning on Page 68.

Retiree Health Care Program

Health Care Fund net position decreased to $4.6 billion as of June 30, 2022, from $4.9 billion the previous fiscal year. Government reimbursements were $97.7 million in fiscal 2022 compared to $96.5 million the prior year due to Medicare pharmacy rebates increasing slightly in fiscal 2022, following repeatedly upward trends in recent years.

Total payments for health care claims, net of health care premiums and provider administrative fees, totaled $193.6 million in fiscal 2022, an increase of 5.6% from the previous fiscal year. This is primarily attributed to a decrease in health care premiums and a larger premium rebate provided to members.

The June 30, 2022, annual health care actuarial valuation performed by Cheiron shows the funded ratio of the plan is 230.7%, meaning if the fund earns 7.00% in all future years and all other plan experience matches assumptions, the fund is projected to remain solvent for all current members. Benefit payments for the 12-month period ending June 30, 2022, totaled $418.1 million — an average of about $1.1 million per day spent for the health care program enrollees. The health care program does not receive employer contributions and is susceptible to volatility from investment returns, government reimbursement changes, enrollment fluctuations and health care inflation. A detailed discussion of funding is provided in the Actuarial Section of this report beginning on Page 77.

Certificate of Achievement and Other Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to STRS Ohio 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 comprehensive annual financial report that conforms to program standards. This report must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for one year. STRS Ohio has received a Certificate of Achievement for the last 32 years. We believe our current report continues to meet the Certificate of Achievement program requirements and will be submitted to the GFOA.

In addition, the Public Pension Coordinating Council (PPCC) presented STRS Ohio with the 2022 Public Pension Standards Award for Administration in recognition of meeting professional standards set forth in the Public Pension Standards. PPCC is a coalition made up of the National Association of State Retirement Administrators (NASRA), the National Council on Teacher Retirement (NCTR) and the National Conference on Public Employee Retirement Systems (NCPERS).

Acknowledgments

The preparation of this report is possible only through the combined efforts of the STRS Ohio staff. It is intended to provide comprehensive and reliable information as a basis for making management decisions, complying with legal provisions and determining responsible stewardship of the assets contributed by members and their employers.

Respectfully submitted,

William J Neville

William J. Neville
Executive Director

Lynn A. Hoover

Lynn A. Hoover, CPA
Deputy Executive Director
Chief Financial Officer

Crowe

Crowe LLP
Independent Member Crowe Global

INDEPENDENT AUDITOR'S REPORT

Retirement Board
State Teachers Retirement System of Ohio
Columbus, Ohio

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the State Teachers Retirement System of Ohio (STRS Ohio), as of and for the years ended June 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the STRS Ohio's basic financial statements as listed in the table of contents.

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

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards (Government Auditing Standards)*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of STRS Ohio, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

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 control 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 the STRS Ohio'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.

Auditor's 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 auditor's report that includes our opinion. 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

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- 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.
- Obtain an understanding of internal control 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 STRS Ohio's internal control. Accordingly, no such opinion is expressed.

(Continued)

- 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.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the STRS Ohio'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 employers' net pension liability, employers' net pension liability, employers' contributions - pension, investment returns - pension, changes in employers' net OPEB liability (asset), employers' net OPEB liability (asset), employers' contributions – OPEB, investment returns – 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 auditing standards generally accepted in the United States of America, 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.

Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise STRS Ohio's basic financial statements. The schedules of administrative expenses, internal investment expenses and external asset management fees 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 auditing standards generally accepted in the United States of America. In our opinion, the schedules of administrative expenses, internal investment expenses and external asset management fees are 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 Introduction, Investments, Actuarial and Statistical sections but does not include the basic financial statements and our auditor's report thereon. Our opinion on the basic financial statements does 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards,* we have also issued our report dated December 8, 2022, on our consideration of STRS Ohio's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of STRS Ohio's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering STRS Ohio's internal control over financial reporting and compliance.

Crowe LLP

Crowe LLP

Columbus, Ohio
December 8, 2022

***Management is pleased to provide this overview and analysis of the financial activities of the State Teachers Retirement System of Ohio (STRS Ohio) for the years ended June 30, 2022, and 2021. This information is intended to supplement the financial statements, which begin on Page 17 of this report. We encourage readers to consider additional information and data in this 2022* Annual Comprehensive Financial Report.**

Since its beginning in 1920, STRS Ohio's primary goal has been to provide retirement benefits for public educators. STRS Ohio is a long-term investor with a long-time horizon. It is investing money today that is used to pay the benefits earned by its members — but not all those benefits are due at once. Many STRS Ohio members are just entering the classroom and will not retire for many years.

STRS Ohio's asset allocation model is designed to provide the best long-term returns while managing risks to the system. This fiscal year, STRS Ohio conducted an asset-liability study to help determine reasonable risk and return expectations. Following completion of the study, the board made slight adjustments to the system's asset mix.

The system's funded status has improved over the past several years, but vulnerability to future adverse experience remains due to increased volatility in financial markets, soaring inflation, a fixed employer contribution rate that is at the statutory maximum of 14% and negative cash flow due to benefit payments far exceeding contributions. Economic activity through the end of fiscal 2022 was well below the Retirement Board's 7.00% assumed rate of return and has been turbulent since the COVID-19 pandemic recession occurred near the end of fiscal 2020.

STRS Ohio continues to phase-in changes from the 2013 multifaceted pension reform plan to strengthen the financial condition of the pension fund and changes will be fully phased-in on Aug. 1, 2023. Key changes made to the pension plan included increasing retirement eligibility requirements, increasing member contributions, changing the benefit formula, changing the final average salary calculation, changes to cost-of-living adjustment (COLA), changes to disability and survivor benefits and granting the Retirement Board authority to make future adjustments depending on the retirement system's funding progress.

In fiscal 2022, the Retirement Board approved benefit plan improvements that benefit both active and retired educators — granting a 3% COLA for eligible benefit recipients for fiscal 2023 and eliminating the age 60 requirement for retirement age and service eligibility for active members.

Financial Highlights

Highlights of the fiscal year include:

- The total fund net return was –3.73% in fiscal 2022. The total fund net return for fiscal 2021 was 29.16%. Five- and 10-year total fund net annualized returns are 8.44% and 9.19%, respectively. Net returns are net of all internal and external investment management fees and costs, including carried interest and other fund expenses.
- Total fiduciary net position decreased 9.4% from the prior fiscal year, ending at $87.6 billion as of June 30, 2022. Net position increased 23.4% during fiscal 2021, ending at $96.7 billion as of June 30, 2021.
- The post-employment Health Care (HC) Fund net position was $4.6 billion as of June 30, 2022, decreasing 7.3% from the prior fiscal year. The HC Fund balance increased 26.5% during fiscal 2021, ending at $4.9 billion as of June 30, 2021.
- The Defined Contribution (DC) Plan finished fiscal 2022 with $2.2 billion in net position, a decrease of 10.4% from the end of fiscal 2021. The DC Plan ended fiscal 2021, with $2.4 billion in net position, an increase of 38.9% during fiscal 2021.
- Total additions to fiduciary net position were –$1.4 billion during fiscal 2022 compared to $26.0 billion during fiscal 2021.
- Member and employer contributions totaled $3.6 billion in fiscal 2022 and increased over the prior year by $185 million as a result of payroll growth. Total member and employer contributions were $3.4 billion in fiscal 2021 and increased over the prior year by $73 million.
- Contributions from other retirement systems for joint retirement credit and a proportionate share of OPERS net pension and retiree health care deferred activity were $104 million in fiscal 2022 compared to $60 million in fiscal 2021.
- The net investment loss was $5.3 billion in fiscal 2022 compared to net investment income of $22.3 billion in fiscal 2021. Investment performance for fiscal 2022 was below the Board's long-term investment return assumption of 7.00%, while fiscal 2021 was significantly above the Board's long-term investment return assumption.
- Total deductions to fiduciary net position were $7.7 billion in 2022 and $7.6 billion in 2021.
- Total benefit payments were $7.3 billion during fiscal 2022 and 2021. STRS Ohio paid benefit recipients $7.1 billion in service retirement, disability, survivor and other benefits plus $194 million for health care coverage net of health care premiums and provider administrative expenses, during fiscal 2022 compared to $7.0 billion in benefit payments and $183 million for health care coverage in fiscal 2021.
- Refunds to members who have withdrawn were $319.8 million in fiscal 2022 compared to $278.8 million in

fiscal 2021 which is a 14.7% increase. While the number of withdrawal counts decreased in fiscal 2022, the average dollar amount withdrawn was 21.0% higher than fiscal 2021.

- Administrative expenses were $68.6 million in fiscal 2022 compared to $68.2 million in fiscal 2021. Internal investment management expenses were $45.1 million in fiscal 2022 compared to $41.4 million in fiscal 2021. External asset management fees increased to $254.8 million in fiscal 2022 from $250.2 million in fiscal 2021.

Annual Financial Review

The total fund delivered a –3.73% net return in fiscal 2022. Real estate led all asset classes generating a 21.96% return while alternative investments returned 18.36%. Three asset classes had negative returns. Fixed income returned –9.79%, international equities returned –11.80% and domestic equities returned –14.90%. The total fund net annualized return for the 10 years through fiscal 2022 was 9.19%.

Net position for the HC Fund decreased to $4.6 billion at June 30, 2022, from $4.9 billion at June 30, 2021. Government reimbursements (comprised of federal reinsurance and direct subsidies) of $98 million were received in fiscal 2022 to help offset prescription drug costs compared to $96 million in fiscal 2021. Health care expenses, net of health care premiums and provider administrative expenses, increased to $194 million in fiscal 2022 from $183 million in fiscal 2021.

Overview of the Financial Statements of STRS Ohio

The basic financial statements are the *Statements of Fiduciary Net Position* and the *Statements of Changes in Fiduciary Net Position*. Amounts are shown for the most recent and previous fiscal years for comparison and analysis of changes in individual line items. The statements are prepared in conformity with generally accepted accounting principles.

The *Statements of Fiduciary Net Position* are a measure of STRS Ohio's assets and liabilities at the close of the fiscal year. Total assets less current liabilities equals net position held in trust for future benefits.

Additions
Years Ended June 30, 2022 and 2021
(dollar amounts in thousands)

	2022	2021	Percentage Change
Member contributions	$ 1,806,217	$ 1,706,818	5.8%
Employer contributions	1,828,258	1,743,049	4.9%
Government reimbursements	97,713	96,478	1.3%
Other contributions and transfers from DC Plan	128,165	83,062	54.3%
Net investment income (loss)	(5,262,211)	22,334,378	–123.6%
Total additions	**$ (1,401,858)**	**$ 25,963,785**	**–105.4%**

Deductions
Years Ended June 30, 2022 and 2021
(dollar amounts in thousands)

	2022	2021	Percentage Change
Benefits (includes optional health care and transfers to DB Plan)	$ 7,340,656	$ 7,254,754	1.2%
Refunds	319,846	278,771	14.7%
Administrative expenses	68,648	68,155	0.7%
Total deductions	**$ 7,729,150**	**$ 7,601,680**	**1.7%**

The *Statements of Changes in Fiduciary Net Position* show additions and deductions for the fiscal year. The net increase (or decrease) is the change in net position available for benefits since the end of the previous fiscal year.

For financial reporting purposes, STRS Ohio assets are divided into three primary funds: the Defined Benefit (DB) Plan, the Defined Contribution (DC) Plan and the post-employment Health Care (HC) Fund.

- The DB Plan is the largest fund and includes member contributions, employer contributions and investment earnings for DB Plan participants. The DB Plan pays service retirement benefits using a fixed formula based on age, years of service and salary. In addition to service retirement, DB Plan participants are eligible for disability and survivor benefits.
- The DC Plan began on July 1, 2001. It is an optional plan available to new members. DC Plan participants allocate both member and employer contributions in investment choices provided by STRS Ohio. Benefits are based on the member's account value.

  As an alternative to the DB or DC Plan, new members may elect the Combined (CO) Plan.

CO Plan participants allocate their member contributions among the same investment choices as DC Plan members, and employer contributions are used to provide a reduced formula service retirement benefit along with disability and survivor protection. Assets to provide benefits to CO Plan members are divided between the DB Plan and the DC Plan.

- Net position for the HC Fund consists of funds set aside to subsidize optional health care coverage for members enrolled in the DB and CO Plans.

The *Notes to Financial Statements* are a fundamental part of the financial statements and provide important information to supplement the financial statements. The notes describe accounting policies along with plan membership and benefits. Additional disclosures of selected financial data are included in the notes.

In addition to the basic financial statements and notes, a *Schedule of Changes in Employers' Net Pension Liability*, *Schedule of Employers' Net Pension Liability, Schedule of Employers' Contributions — Pension* and *Schedule of Investment Returns — Pension* are included as "required supplementary information." These schedules emphasize the long-term nature of pension plans and the status of STRS Ohio in accumulating sufficient assets to pay benefits when due. They also provide a history of contributions from employers and actuarial assumptions and methods that assist in understanding the net pension liability of STRS Ohio.

The *Notes to Required Supplementary Information — Pension* provide the actuarial assumptions and methods used to determine the data in the *Schedule of Changes in Employers' Net Pension Liability,* the *Schedule of Employers' Net Pension Liability* and the *Schedule of Employers' Contributions — Pension*.

Likewise, to provide actuarial assumptions and methods that assist in understanding the net post-employment benefits other than pensions (OPEB) asset of STRS Ohio, a *Schedule of Changes in Employers' Net OPEB Liability (Asset)*, *Schedule of Employers' Net OPEB Liability (Asset), Schedule of Employers' Contributions — OPEB* and *Schedule of Investment Returns — OPEB* are also included as "required supplementary information."

The *Notes to Required Supplementary Information — OPEB* provide the actuarial assumptions and methods used to determine the data in the *Schedule of Changes in Employers' Net OPEB Liability (Asset),* the *Schedule of Employers' Net OPEB Liability (Asset)* and the *Schedule of Employers' Contributions — OPEB*.

Schedules of Administrative Expenses, *Internal Investment Expenses* and *External Asset Management Fees* are included to detail the administrative and investment costs to operate STRS Ohio.

Investment Allocation and Fiscal Year Performance

For fiscal 2022, the total fund net return was –3.73%. The relative benchmark for STRS Ohio returned –5.62%. The target allocations at the end of fiscal 2022, were 1% liquidity reserves, 21% fixed income, 28% domestic equities, 23% international equities, 10% real estate and 17% alternative investments. Amounts actually invested in these categories at the end of June 2022 represent an investment over/underweight if different from the target allocation. Over/underweighting occurs as fair values change and as investment managers determine allocation entry and exit timing strategies. See Page 13 for detailed investment performance.

Internal investment expenses and external asset management fees are shown separately in the *Statements of Changes in Fiduciary Net Position* as a reduction of investment income, which amounted to $300 million in fiscal 2022 and $292 million in fiscal 2021.

Financial Statement Analysis

The tables on Page 15 show condensed information from the *Statements of Fiduciary Net Position* and the *Statements of Changes in Fiduciary Net Position*.

Total fiduciary net position decreased 9.4% in fiscal 2022, increased 23.4% in fiscal 2021 and decreased 1.5% in fiscal 2020. In fiscal 2022, the fund experienced a net investment loss and combined with contributions did not fully offset benefit payments, refunds and administrative expenses. In fiscal 2021 net investment income and contributions more than offset benefit payments, refunds and administrative expenses; and in fiscal 2020 net investment income and contributions did not fully offset benefit payments.

The net investment loss was $5.3 billion in fiscal 2022 compared to a net investment income of

Investment Performance
(total returns, annualized on a fiscal-year basis, July 1–June 30)

1-Year Returns (2022)

Asset Category	STRS Ohio Return	Benchmark Return	Benchmark Name
Liquidity Reserves	0.16%	0.17%	ICE BofA U.S. 3-Month Treasury Bill Index
Fixed Income	–9.79%	–9.90%	Fixed-Income Blended Benchmark
Domestic Equities	–14.90%	–13.87%	Russell 3000® Index
International Equities	–11.80%	–14.09%	International Blended Benchmark
Real Estate	21.96%	17.30%	Real Estate Blended Benchmark
Alternative Investments	18.36%	13.59%	Alternative Investments Blended Benchmark
Total Fund	**–3.61%**	**–5.62%**	**Total Fund Blended Benchmark**
Total Fund Net	**–3.73%**		

5-Year Returns (2018–2022)

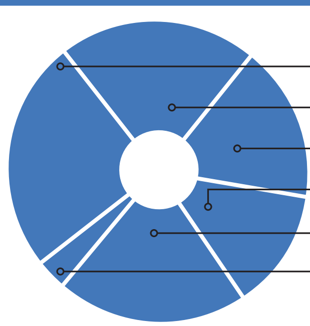
Asset Category	STRS Ohio Return	Benchmark Return	Benchmark Name
Liquidity Reserves	1.08%	1.11%	ICE BofA U.S. 3-Month Treasury Bill Index
Fixed Income	1.20%	1.00%	Fixed-Income Blended Benchmark
Domestic Equities	11.16%	10.60%	Russell 3000® Index
International Equities	4.37%	4.09%	International Blended Benchmark
Real Estate	9.60%	8.66%	Real Estate Blended Benchmark
Alternative Investments	15.88%	–	Alternative Investments Blended Benchmark
Total Fund	**8.57%**	**7.79%**	**Total Fund Blended Benchmark**
Total Fund Net	**8.44%**		

Investment performance is calculated using a time-weighted rate of return. The one-year returns for the fiscal years ended June 30, 2012, through 2022 have been examined by ACA Group, Performance Services Division. Please refer to the Global Investment Performance Standards (GIPS®) Verification and Performance Examination Report by ACA Group, Performance Services Division on Pages 54–62.

The long-term policy objective for the 10-year period is a projected annualized policy return of 6.8% based on return forecasts by asset class before any value added. The State Teachers Retirement Board expects the net value added to be 0.40% per year.

Please refer to Page 63 in the Investments section for the associated return and benchmark footnotes. The Alternative Investment Blended Benchmark became effective July 1, 2021, so no five-year return is displayed. Alternative investment performance history through June 30, 2021, is displayed on Page 64.

Investment Distribution by Fair Value — as of June 30, 2022
(dollar amounts in thousands)



Domestic Equities:	$ 22,432,255	**25.2%**
International Equities:	$ 18,811,671	**21.2%**
Fixed Income:	$ 14,880,563	**16.7%**
Real Estate:	$ 11,605,959	**13.1%**
Alternative Investments:	$ 18,349,495	**20.7%**
Cash and Short-Term Investments:	$ 2,739,169	**3.1%**
Total Investments:	**$ 88,819,112**	

$22.3 billion in fiscal 2021 and net investment income of $2.8 billion in fiscal 2020. Investment performance for fiscal 2022 was well below the board's long-term investment return assumption, while fiscal 2021 was well above the board's long-term investment return assumption and fiscal 2020 was a positive absolute return but below the board's long-term investment return assumption.

Member contributions increased 5.8% in fiscal 2022, increased 2.2% in fiscal 2021 and increased 2.9% in fiscal 2020. Employer contributions increased 4.9% in fiscal 2022, up 2.1% in fiscal 2021 and up 3.1% in fiscal 2020. Member and employer rates remained at 14% in fiscal 2022, 2021 and 2020. Increases in contributions were due to the increase in employer payroll growth.

Government reimbursements for the health care program were $97.7 million in fiscal 2022, $96.5 million in fiscal 2021 due to Medicare pharmacy rebates increasing slightly in fiscal 2022, following repeatedly upward trends in recent years. Government reimbursements were $81.9 million in fiscal 2020. No employer contributions were allocated to the health care fund in fiscal years 2022, 2021 and 2020.

STRS Ohio was created to provide retirement, disability and survivor benefits to members and eligible beneficiaries. Expenditures include monthly payments to eligible recipients, refunds of contributions to members who terminate employment and administrative costs of operating STRS Ohio.

Total deductions from net position were $7.7 billion in fiscal 2022, $7.6 billion in fiscal 2021 and $7.6 in fiscal 2020. Fiscal 2022 deductions were a 1.7% increase from fiscal 2021 and fiscal 2021 deductions were a 0.1% decrease from fiscal 2020. Monthly benefit payments for service retirement, disability and survivor benefits increased 0.8% in fiscal 2022, increased 0.2% in fiscal 2021 and increased 0.3% in fiscal 2020.

Total payments for health care claims and provider administrative fees, net of health care premiums, totaled $193.6 million in fiscal 2022, $183.4 million in fiscal 2021 and $194.8 million in fiscal 2020. The increase of 5.6% from last year is primarily attributed to a decrease in health care premiums and a larger premium rebate provided to members. Health care premiums received were $258.4 million in fiscal 2022 compared to $282.9 million in fiscal 2021 and $295.8 million in fiscal 2020. A premium rebate paid to members was $33.9 million in fiscal 2022 and $28.9 million in fiscal 2021. Health care payments and provider administrative fees totaled $418.1 million in fiscal 2022, down from $437.4 million in fiscal 2021 and down from $490.6 million in 2020.

Pension Funding Valuation (Funding Method)

The present value of expected benefits to be paid to current and future benefit recipients less the portion that will be paid for by future normal cost contributions (the actuarial accrued liability or AAL) at fiscal year end 2022, 2021 and 2020 was $105.3 billion, $104.6 billion and $98.7 billion, respectively.

Market changes in investment assets are smoothed over a four-year period, except that the actuarial value of assets or AVA shall not be less than 91% nor more than 109% of market value. Actuarial value of assets ended fiscal 2022 at $85.1 billion, up from $83.8 billion at fiscal year end 2021 and $76.4 billion at fiscal year end 2020.

The unfunded actuarial accrued liability or UAAL for STRS Ohio pension benefits was $20.1 billion as of June 30, 2022, down from $20.8 billion as of June 30, 2021, and $22.3 billion as of June 30, 2020. The funded ratio, which is actuarial value of assets divided by actuarial accrued liability, was 80.9% at June 30, 2022. At June 30, 2021, the funded ratio was 80.1% and at June 30, 2020, the funded ratio was 77.4%. At June 30, 2022, the funding period was 11.5 years, down from 14.0 years at June 30, 2021, and 14.9 years at June 30, 2020.

Pension Financial Reporting Valuation (Accounting Method)

Some of the actuarial calculations for financial reporting purposes are different than the funding valuation calculations described above. The approach used for financial reporting complies with Governmental Accounting Standards Board (GASB) reporting requirements and is based on the market value of assets, referred to as the fiduciary net position, rather than the actuarial value of assets. The primary purpose of the valuation for financial reporting is to provide a consistent, standardized methodology that allows comparability of data and increased transparency of the pension liability across plans.

Net Position (dollar amounts in thousands)

	2022	2021	2020	Amount Increase (Decrease) From 2021 to 2022	Amount Increase (Decrease) From 2020 to 2021
Cash and investments	$ 88,819,112	$ 98,111,576	$ 79,839,692	$ (9,292,464)	$ 18,271,884
Receivables	1,390,651	1,203,061	981,936	187,590	221,125
Securities lending collateral	1,437,730	646,451	355,533	791,279	290,918
Net capital assets	78,242	77,915	76,239	327	1,676
Total assets	91,725,735	100,039,003	81,253,400	(8,313,268)	18,785,603
Total liabilities	4,121,496	3,303,756	2,880,258	817,740	423,498
Net position	**$ 87,604,239**	**$ 96,735,247**	**$ 78,373,142**	**$ (9,131,008)**	**$ 18,362,105**

Additions to Net Position (dollar amounts in thousands)

	2022	2021	2020	Amount Increase (Decrease) From 2021 to 2022	Amount Increase (Decrease) From 2020 to 2021
Contributions:					
Member contributions	$ 1,806,217	$ 1,706,818	$ 1,670,406	$ 99,399	$ 36,412
Employer contributions	1,828,258	1,743,049	1,706,961	85,209	36,088
Transfers from Defined Contribution Plan	24,051	22,933	14,941	1,118	7,992
Government reimbursements	97,713	96,478	81,876	1,235	14,602
Other	104,114	60,129	39,288	43,985	20,841
Total contributions	3,860,353	3,629,407	3,513,472	230,946	115,935
Net investment income (loss)	(5,262,211)	22,334,378	2,832,375	(27,596,589)	19,502,003
Total additions to net position	**$ (1,401,858)**	**$ 25,963,785**	**$ 6,345,847**	**$ (27,365,643)**	**$ 19,617,938**

Deductions From Net Position (dollar amounts in thousands)

	2022	2021	2020	Amount Increase (Decrease) From 2021 to 2022	Amount Increase (Decrease) From 2020 to 2021
Deductions:					
Benefit payments	$ 7,082,652	$ 7,029,864	$ 7,016,726	$ 52,788	$ 13,138
Transfers to Defined Benefit Plan	24,051	22,933	14,941	1,118	7,992
Health care	193,572	183,390	194,780	10,182	(11,390)
Refunds to members	319,846	278,771	270,573	41,075	8,198
Administrative expenses	68,648	68,155	68,018	493	137
Other	40,381	18,567	6,370	21,814	12,197
Total deductions from net position	**$ 7,729,150**	**$ 7,601,680**	**$ 7,571,408**	**$ 127,470**	**$ 30,272**

Net Increase (Decrease) in Net Position (dollar amounts in thousands)

	2022	2021	2020	Amount Increase (Decrease) From 2021 to 2022	Amount Increase (Decrease) From 2020 to 2021
Net increase (decrease) in net position	**$ (9,131,008)**	**$ 18,362,105**	**$ (1,225,561)**	**$ (27,493,113)**	**$ 19,587,666**

A side-by-side comparison of the two calculation methods (Funding and Accounting) is as follows:

Funding Method	Accounting Method
Actuarial Accrued Liability (AAL)	Total Pension Liability
– Actuarial Value of Assets (AVA)	– Fiduciary Net Position
= Unfunded Actuarial Accrued Liability (UAAL)	= Net Pension Liability (NPL)

Health Care Financial Reporting Valuation

Additionally, STRS Ohio also complies with GASB reporting requirements for Postemployment Benefit Plans Other Than Pension Plans (OPEB). The OPEB standards are designed to bring greater clarity to post-employment benefit liabilities, the most significant of which is retiree health care insurance. These requirements parallel the pension accounting standards discussed above.

Requests for Information

Questions about any information provided in this report should be addressed to:

State Teachers Retirement System of Ohio
ATTN: Chief Financial Officer
275 E. Broad St.
Columbus, OH 43215-3771

Statements of Fiduciary Net Position (in thousands)

	June 30, 2022				June 30, 2021			
	Defined Benefit	Defined Contribution	Post-employment Health Care	Totals	Defined Benefit	Defined Contribution	Post-employment Health Care	Totals
Assets:								
Cash and short-term investments	$ 2,406,442	$ 196,167	$ 136,560	$ 2,739,169	$ 1,313,584	$ 178,594	$ 72,832	$ 1,565,010
Receivables:								
Accrued interest and dividends	241,682		13,715	255,397	236,737		13,126	249,863
Member contributions	243,374	63		243,437	233,262	92		233,354
Employer contributions	327,641	163		327,804	337,411	36		337,447
Securities sold	467,095		26,507	493,602	317,308		17,593	334,901
Medical benefits receivable			34,537	34,537			24,862	24,862
Miscellaneous receivables	35,874			35,874	22,634			22,634
Total receivables	**1,315,666**	**226**	**74,759**	**1,390,651**	**1,147,352**	**128**	**55,581**	**1,203,061**
Investments, at fair value:								
Fixed income	13,838,393	256,874	785,296	14,880,563	17,057,441	290,196	945,763	18,293,400
Domestic equities	20,015,166	1,281,276	1,135,813	22,432,255	24,108,500	1,482,890	1,336,713	26,928,103
International equities	17,528,699	288,260	994,712	18,811,671	19,977,844	317,408	1,107,684	21,402,936
Real estate	10,839,860	150,963	615,136	11,605,959	9,307,430	157,254	516,057	9,980,741
Alternative investments	17,364,123		985,372	18,349,495	18,893,805		1,047,581	19,941,386
Total investments	**79,586,241**	**1,977,373**	**4,516,329**	**86,079,943**	**89,345,020**	**2,247,748**	**4,953,798**	**96,546,566**
Invested securities lending collateral	1,360,524		77,206	1,437,730	612,491		33,960	646,451
Capital assets	258,984			258,984	252,738			252,738
Accumulated depreciation	(180,742)			(180,742)	(174,823)			(174,823)
Net capital assets	78,242			78,242	77,915			77,915
Total assets	**84,747,115**	**2,173,766**	**4,804,854**	**91,725,735**	**92,496,362**	**2,426,470**	**5,116,171**	**100,039,003**
Liabilities:								
Securities purchased and other investment liabilities	382,702		21,717	404,419	402,310		22,306	424,616
Debt on real estate investments	2,040,925		115,818	2,156,743	1,969,380		109,194	2,078,574
Accrued expenses and other liabilities	35,099		1,992	37,091	32,125		1,781	33,906
Medical benefits payable			18,081	18,081			19,205	19,205
Obligations under securities lending program	1,360,518		77,206	1,437,724	612,240		33,946	646,186
Net pension and OPEB liabilities	67,438			67,438	101,269			101,269
Total liabilities	**3,886,682**		**234,814**	**4,121,496**	**3,117,324**		**186,432**	**3,303,756**
Fiduciary net position restricted for defined benefit, defined contribution and post-employment health care coverage:	**$ 80,860,433**	**$ 2,173,766**	**$ 4,570,040**	**$ 87,604,239**	**$ 89,379,038**	**$ 2,426,470**	**$ 4,929,739**	**$ 96,735,247**

See accompanying Notes to Financial Statements.

Statements of Changes in Fiduciary Net Position (in thousands)

	Year Ended June 30, 2022				Year Ended June 30, 2021			
	Defined Benefit	Defined Contribution	Post-employment Health Care	Totals	Defined Benefit	Defined Contribution	Post-employment Health Care	Totals
Additions:								
Contributions:								
Member	$ 1,672,407	$ 133,810		$ 1,806,217	$ 1,585,509	$ 121,309		$ 1,706,818
Employer	1,776,074	52,184		1,828,258	1,696,121	46,928		1,743,049
Transfers from Defined Contribution Plan	24,051			24,051	22,933			22,933
Government reimbursements			$ 97,713	97,713			$ 96,478	96,478
Other retirement systems	104,114			104,114	60,129			60,129
Total contributions	**3,576,646**	**185,994**	**97,713**	**3,860,353**	**3,364,692**	**168,237**	**96,478**	**3,629,407**
Income from investing activities:								
Net appreciation (depreciation) in fair value of investments	(5,810,277)	(338,545)	(325,944)	(6,474,766)	19,473,132	592,775	1,059,270	21,125,177
Interest	436,675	438	24,497	461,610	445,378	144	24,227	469,749
Dividends	763,368		42,823	806,191	785,910		42,750	828,660
Real estate income	227,646		12,770	240,416	185,547		10,093	195,640
Investment income (loss)	(4,382,588)	(338,107)	(245,854)	(4,966,549)	20,889,967	592,919	1,136,340	22,619,226
Less internal investment expenses	(41,697)	(1,105)	(2,339)	(45,141)	(38,269)	(1,038)	(2,081)	(41,388)
Less external asset management fees	(241,237)		(13,533)	(254,770)	(237,319)		(12,909)	(250,228)
Net income (loss) from investing categories	(4,665,522)	(339,212)	(261,726)	(5,266,460)	20,614,379	591,881	1,121,350	22,327,610
Securities lending income	4,543		255	4,798	7,135		388	7,523
Securities lending expenses	(520)		(29)	(549)	(716)		(39)	(755)
Net income from securities lending activities	4,023		226	4,249	6,419		349	6,768
Net investment income (loss)	(4,661,499)	(339,212)	(261,500)	(5,262,211)	20,620,798	591,881	1,121,699	22,334,378
Total additions	**(1,084,853)**	**(153,218)**	**(163,787)**	**(1,401,858)**	**23,985,490**	**760,118**	**1,218,177**	**25,963,785**
Deductions:								
Benefits:								
Service retirement	6,777,083			6,777,083	6,716,896			6,716,896
Disability benefits	181,521			181,521	189,145			189,145
Survivor benefits	124,048			124,048	123,823			123,823
Transfers to Defined Benefit Plan		24,051		24,051		22,933		22,933
Health care			193,572	193,572			183,390	183,390
Other	40,381			40,381	18,567			18,567
Total benefit payments	7,123,033	24,051	193,572	7,340,656	7,048,431	22,933	183,390	7,254,754
Refunds to members who have withdrawn	244,859	74,987		319,846	221,018	57,753		278,771
Administrative expenses	65,860	448	2,340	68,648	65,363	448	2,344	68,155
Total deductions	**7,433,752**	**99,486**	**195,912**	**7,729,150**	**7,334,812**	**81,134**	**$185,734**	**7,601,680**
Net increase (decrease) in net position	**(8,518,605)**	**(252,704)**	**(359,699)**	**(9,131,008)**	**16,650,678**	**678,984**	**1,032,443**	**18,362,105**
Fiduciary net position restricted for defined benefit, defined contribution and post-employment health care coverage:								
Beginning of year	89,379,038	2,426,470	4,929,739	96,735,247	72,728,360	1,747,486	3,897,296	78,373,142
End of year	**$ 80,860,433**	**$ 2,173,766**	**$ 4,570,040**	**$ 87,604,239**	**$ 89,379,038**	**$ 2,426,470**	**$ 4,929,739**	**$ 96,735,247**

See accompanying Notes to Financial Statements.

1. Summary of Significant Accounting Policies

The financial statements of the State Teachers Retirement System of Ohio (STRS Ohio) presented herein have been prepared on the accrual basis of accounting following the accounting policies set forth below.

Organization — STRS Ohio is a cost-sharing, multiple-employer plan that operates under Chapter 3307 of the Ohio Revised Code (R.C.) and is administered by a board comprised of 11 members as follows: five elected contributing members; two elected retired teacher members; an investment expert appointed by the governor; an investment expert appointed jointly by the speaker of the Ohio House of Representatives and the Ohio Senate President; an investment expert designated by the treasurer of state; and the superintendent of public instruction or his or her designated investment expert.

The accompanying financial statements comply with the provisions of the Governmental Accounting Standards Board (GASB) Statement No. 39, an amendment of GASB Statement No. 14, *The Financial Reporting Entity*. This statement requires that financial statements of the reporting entity include all of the organizations, activities, functions and component units for which the reporting entity is financially accountable. Financial accountability is defined as the appointment of a voting majority of the component unit's board and either (1) the reporting entity's ability to impose its will over the component unit, or (2) the possibility that the component unit will provide a financial benefit to or impose a financial burden on the reporting entity. STRS Ohio does not have financial accountability over any entities.

Based on the implementation of GASB 84, STRS Ohio is not a financial reporting entity for purposes of the State of Ohio *Annual Comprehensive Financial Report*. Responsibility for the organization is vested in the STRS Ohio Retirement Board pursuant to RC Chapter 3307.

Investment Accounting — Purchases and sales of investments are recorded as of their trade date. Dividend income is recognized on the ex-dividend date. Interest and real estate income is recognized as the income is earned. Investment-related costs associated with external asset management whether directly invoiced or subtracted from the fund on a net basis, are reported as external asset management fees.

STRS Ohio has no individual investment that exceeds 5% of net position available for benefits.

Contributions and Benefits — Member and employer contributions are recognized when due based on statutory or contractual requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

Capital Assets — STRS Ohio maintains two categories of assets: tangible capital assets and intangible right-to-use assets.

1. Tangible capital assets are recorded at historical cost. Building enhancements, furniture, equipment and computer software and hardware with purchases of $5,000 or more that have a useful life of at least five years or more are recorded as tangible capital assets and depreciated using the straight-line method and the following schedule:

   a. building and improvements 40 years
   b. computers and related peripherals five years
   c. furniture and equipment 5–40 years
   d. vehicles five years

2. Intangible right-to-use assets are recorded under GASB Statement No. 87— Leases. The intangible right-to-use assets and related liabilities are recorded at the commencement date of the related contract. The lease liabilities, included in Accrued Expenses and Other Liabilities on the Combining Statements of Fiduciary Net Position, are measured at the present value of expected payments over the contract term. STRS Ohio has adopted capitalization thresholds consistent with capitalization thresholds of tangible capital assets. Lease assets are amortized over the shorter of the term of the contract or the useful life of the underlying assets. Interest expense is recognized over the contract term.

Method Used to Value Investments — Investments are reported at fair value. Short-term investments including commercial paper, certificates of deposit and repurchase agreements, are reported at amortized cost, which approximates fair value. Equity securities traded on a national or international exchange are valued at the primary closing market price on the principal registered stock exchange. Fixed-income investments are valued as determined by a qualified independent service. The fair value of real estate investments and other internally managed alternative investments is based on independent external appraisals and internal valuations. The fair value of externally managed alternative investments and real estate is determined by the valuation methodology outlined in the fund governing documents and updated to include capital activity through the statement of fiduciary net position date. Refer to Note 7 for additional information on the valuation of investments.

Federal Income Tax Status — STRS Ohio is exempt from federal income taxes under Section 401(a) of the Internal Revenue Code.

Use of Estimates — In preparing financial statements in conformity with accounting principles generally accepted in the United States of America, management makes estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates and assumptions.

New Accounting Pronouncements — GASB Statement No. 87, *Leases,* was issued in June 2017. The objective of this statement is to increase the usefulness of financial statements by establishing a single model for lease accounting based on the principle that leases are financings of the right to use an asset. Lessees will recognize a lease liability and an intangible right-to-use asset and lessors will recognize a lease receivable and a deferred inflow of resources. The effective date of this standard is for reporting periods beginning after June 15, 2021. The adoption of GASB 87 did not have a material impact on the financial statements and the requirements are reflected in this report.

GASB Statement No. 92, *Omnibus 2020*, was issued in January 2020. This statement addresses practice issues that have been identified during implementation and application of certain GASB statements. The effective date of this standard is for reporting periods beginning after June 15, 2021. The only impact of this statement is that derivatives will now be referred to as derivative instruments. The adoption of GASB statement 92 did not have a material impact on the financial statements and the requirements are reflected in this report.

GASB Statement No. 93, *Replacement of Interbank Offered Rates*, was issued in March 2020. This statement is in response to global reference rate reform, under which the London Interbank Offered Rate (LIBOR) is expected to cease to exist in its current form at the end of 2021, prompting governments to amend or replace financial instruments utilizing LIBOR as a reference rate. The effective date of this standard is for reporting periods beginning after June 15, 2021, except for certain provisions that are effective for reporting periods beginning after Dec. 31, 2021. STRS Ohio has reviewed this Statement and determined it is not impacted at this time.

GASB Statement No. 95, *Postponement of the Effective Dates of Certain Authoritative Guidance,* was issued in May 2020. The objective of this statement is to provide temporary relief to governments and other stakeholders in light of the COVID-19 pandemic through postponing the effective dates of certain statements that are scheduled to become effective for periods beginning after June 15, 2018 and later. The effective date of this statement was immediate and postponed GASB 92 and 93 by one year and GASB 87 by 18 months.

GASB Statement No. 96, *Subscription-Based Information Technology Arrangements* (SBITAs), was issued in May 2020. The objective of this statement is to establish uniform accounting and financial reporting requirements for SBITAs and improve comparability of financial statements among governments that have entered in SBITAs. The effective date of this standard is for reporting periods beginning after June 15, 2022. STRS Ohio is currently evaluating this statement.

GASB Statement No. 97, *Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans,* was issued in June 2020. The objectives of this statement are to increase consistency and comparability related to the reporting of the fiduciary component units in circumstances in which a potential component unit does not have a governing board and the primary government performs the duties that a governing board typically would perform; mitigate costs associated with the reporting of certain defined contribution pension plans, defined contribution OPEB plans, and employee benefit plans other than pension plans or OPEB plans as fiduciary component units in fiduciary fund financial statements; and, enhance the relevance, consistency, and comparability of the accounting and financial reporting for IRC Section 457 deferred compensation plans that meet the definition of a pension plan and for benefits provided through those plans. The effective date of this standard is fiscal years beginning after June 15, 2021. STRS Ohio has reviewed this statement and determined it is not impacted.

GASB issued Statement No. 98, The *Annual Comprehensive Financial Report*, was issued in October 2021. The requirements of this Statement are effective for fiscal years beginning after Dec. 15, 2021. The statement updates the document name and acronym. STRS Ohio implemented GASB 98 and the requirements of the Statement are reflected in this report.

GASB issued Statement No. 99, *Omnibus 2022*, was issued in April 2022. This statement addresses practice issues that have been identified during implementation and application of certain GASB statements. The requirements related to the extension of the use of LIBOR, accounting for Supplemental Nutrition Assistance Program (SNAP) distributions, disclosures of nonmonetary transactions, pledges of future revenues by pledging governments, clarification of certain provisions in Statement 34, as amended, and terminology updates related to Statement 53 and Statement 63 are effective upon issuance. The requirements related to leases, Public-Private Partnerships (PPPs), and SBITAs are effective for fiscal years beginning after June 15, 2022. The requirements related to financial guarantees and the classification and reporting of derivative instruments within the scope of Statement 53 are effective for fiscal years beginning after June 15, 2023. STRS Ohio is currently evaluating this statement.

GASB issued Statement No. 100, *Accounting Changes and Error Corrections*, was issued in June 2022. The requirements of this Statement are effective for fiscal years beginning after June 15, 2023. The objective of this Statement will improve the clarity of the accounting and financial reporting requirements for accounting changes and error corrections. In addition, the display and note disclosure requirements will result in more consistent, decision useful, understandable, and comprehensive information for users about accounting changes and error corrections. STRS Ohio is currently evaluating this statement.

GASB issued Statement No. 101, *Compensated Absences*, was issued in June 2022. The requirements of this Statement are effective for fiscal years beginning after December 15, 2023. The objective of this Statement is to better meet the information needs of financial statement users by updating the recognition and measurement guidance for compensated absences. STRS Ohio is currently evaluating this statement.

Reclassifications — Certain reclassifications of 2021 amounts were made to conform with the 2022 presentation. The reclassifications have no effect on the fiduciary net position or changes in fiduciary net position.

2. Description of the STRS Ohio Plan

Plan Membership — STRS Ohio is a statewide retirement plan for licensed teachers and other faculty members employed in the public schools of Ohio (the state) or any school, college, university, institution or other agency controlled, managed and supported, in whole or part, by the state or any political subdivision thereof.

Member and retiree data and participating employers are shown in the following tables on Page 21.

Member and Retiree Data at June 30, 2022 and 2021

	2022	2021
Current active members	174,036	166,427
Inactive members eligible for refunds only	144,446	143,708
Terminated members entitled to receive a benefit in the future	20,262	20,513
Inactive Defined Contribution Plan members	5,420	5,443
Retirees and beneficiaries currently receiving a benefit	156,225	156,921
Defined Contribution Plan members	10,829	9,940
Reemployed retirees	17,110	17,734
Total Plan Membership	**528,328**	**520,686**

Participating Employers at June 30, 2022 and 2021

	2022	2021
City school districts	194	194
Local school districts	368	368
County educational service centers	51	52
Exempted village school districts	49	49
Joint vocational schools	49	49
Colleges and universities	36	36
County boards of developmental disabilities	54	56
Community schools	307	299
Other	13	12
Total	**1,121**	**1,115**

Active members are defined as participants who earned 0.25 years of service credit or more in the valuation year and new members employed on or after Jan. 1, 2022, with less than 0.25 years of service credit.

Plan Options — New members have a choice of three retirement plan options. In addition to the DB Plan, new members are offered a DC Plan or a CO Plan. The DC Plan allows members to allocate all of their member contributions and employer contributions equal to 9.53% of earned compensation among various investment choices. The CO Plan offers features of the DC Plan and the DB Plan. In the CO Plan, member contributions less 2% of earned compensation are allocated among investment choices by the member. Employer contributions and a portion of member contributions in the CO Plan are used to fund a defined benefit payment at a reduced level from the regular DB Plan. Contributions into the DC Plan and the CO Plan are credited to member accounts as employers submit their payroll information to STRS Ohio.

DB Plan Benefits — Plan benefits are established under Chapter 3307 of the R.C. Effective Aug. 1, 2021–July 1, 2023, any member can retire with unreduced benefits with 34 years of service credit at any age or five years of service credit and age 65. Retirement eligibility for reduced benefits is 30 years of service credit at any age; or 29 years of service credit and age 55; or five years of service credit and age 60. Effective on or after Aug. 1, 2023, any member can retire with unreduced benefits with 35 years of service credit at any age or five years of service credit and age 65. Retirement eligibility for reduced benefits is 30 years of service credit at any age or five years of service credit and age 60.

The annual retirement allowance, payable for life, is based on the average of the member's five highest years of earnings multiplied by 2.2% for each year of credited service. Members retiring before age 65 with less than 30 years of service credit receive a percentage reduction in benefit amounts.

For members who were eligible to retire on July 1, 2015, the annual benefit is the greater of the benefit amount calculated upon retirement under the new benefit formula or the frozen benefit amount as of July 1, 2015.

Since the plan is tax-qualified, benefits are subject to limits established by Section 415 of the Internal Revenue Code.

A retiree of STRS Ohio or another Ohio public retirement system is eligible for reemployment as a teacher following the elapse of two months from the date of retirement. Contributions are made by the reemployed member and employer during the reemployment. Upon termination of reemployment or age 65, whichever comes later, the retiree is eligible for an annuity benefit or equivalent lump-sum payment in addition to the original retirement allowance. A reemployed retiree may alternatively receive a refund of member contributions with interest before age 65, once employment is terminated.

In September 2012, the Ohio General Assembly passed and the Governor signed into law Substitute Senate Bill 342. The legislation improves pension funding of the STRS Ohio DB Plan.

The legislative changes that improve funding to STRS Ohio's DB Plan include: increasing age and service requirements for retirement; pensions calculated on a lower, fixed formula; increasing the period for determining final average salary, increasing member contributions to the retirement system; and modifications to the COLA. The law also provides the Retirement Board with authority to make future adjustments to the member contribution rate, retirement age and service requirements, and the COLA as the need or opportunity arises, depending on the retirement system's funding progress. In April 2017, the Retirement Board made the decision to reduce COLA granted on or after July 1, 2017, to 0% upon a determination by its actuary that it was necessary to preserve the fiscal integrity of the retirement system. Benefit recipients' base benefit and past cost-of-living increases are not affected by this change.

DC Plan Benefits — Benefits are established under Chapter 3307.80 to 3307.89 of the R.C.

For members who select the DC Plan, all member contributions and employer contributions at a rate of 9.53% are placed in an investment account. The member determines how to allocate the member and employer money among various investment choices offered by STRS Ohio. The member receives a quarterly statement of his or her account activity and balance and can access their account online. Effective July 1, 2022, 2.91% of salaries are used to help pay for unfunded liabilities

A member is eligible to receive a monthly retirement benefit at age 50 and termination of employment. In lieu of a retirement benefit, the member may elect a lump-sum withdrawal. Employer contributions into member accounts are vested after the first anniversary of the first day of paid service. Members vest 20% per year in employer contributions and all gains and losses on those contributions.

Members in the DC Plan who become disabled are entitled only to their account balance. If a member dies before retirement benefits begin, the member's designated beneficiary is entitled to receive the member's account balance.

CO Plan Benefits — For members who select the CO Plan, 12% of the 14% member contribution rate is deposited into the member's DC account and the remaining amount applied to the DB Plan. In the CO Plan, member contributions are allocated among investment choices by the member, and employer contributions are used to fund a defined benefit payment.

A member's defined benefit is determined by multiplying 1% of the member's final average salary by the member's years of service credit. The defined benefit portion of the CO Plan payment is payable to a member on or after age 60 with five years of service. The defined contribution portion of the account may be taken as a lump sum or converted to a lifetime monthly annuity at age 50 and termination of employment.

DC and CO Plan members must actively select to change plans during their fifth year of membership or their original selection is maintained. Also, for DC and CO Plan members who retire and elect to have an annuity, the DC account balance is transferred to the DB Plan. During fiscal 2022, $24.1 million was transferred from the DC and CO Plan accounts to the DB Plan. During fiscal 2021, $22.9 million was transferred from the DC and CO Plan accounts to the DB Plan.

Death, Survivor and Disability Benefits — A DB or CO Plan member with five or more years of credited service who is determined to be disabled (illness or injury preventing individual's ability to perform regular job duties for at least 12 months) may receive a disability benefit. Additionally, eligible survivors of members who die before service retirement may qualify for monthly benefits. New members on or after July 1, 2013, must have at least 10 years of qualifying service credit to apply for disability benefits.

A death benefit of $1,000 is payable to the beneficiary of each deceased retired member who participated in the DB Plan. Death benefit coverage up to $2,000 can be purchased by participants in the DB, DC or CO Plans. Various other benefits are available to members' beneficiaries.

Health Care Coverage After Retirement — Ohio law allows the State Teachers Retirement Board to offer a cost-sharing, multiple-employer health care plan. STRS Ohio provides access to health care coverage to eligible retirees who participated in the DB or CO Plans and their eligible dependents.

Coverage under the current program includes hospitalization, physicians' fees and prescription drugs and partial reimbursement of monthly Medicare Part B premiums. Health care premiums will be reduced by a Medicare Part B premium credit beginning in 2023. Pursuant to the R.C., the Retirement Board has discretionary authority over how much, if any, of the associated health care costs will be absorbed by the plan. All benefit recipients pay a portion of the health care costs in the form of a monthly premium. Benefit recipients contributed $224.5 million, net of a premium rebate provided to members, or 54% of the total health care costs in fiscal 2022 (excluding deductibles, coinsurance and copayments). For fiscal 2021, benefit recipients contributed $254.0 million, net of a premium rebate provided to members, or 58% of the total health care costs (excluding deductibles, coinsurance and copayments).

Under Ohio law, funds to pay health care costs may be deducted from employer contributions, currently 14% of compensation. For fiscal years 2022 and 2021, no employer allocation was made to health care.

Medicare Part D is a federal program to help cover the costs of prescription drugs for Medicare beneficiaries. This program allows STRS Ohio to recover part of the cost for providing prescription coverage since all eligible STRS Ohio health care plans include creditable prescription drug coverage. For the years ended June 30, 2022 and 2021, STRS Ohio received $97.7 million and $96.5 million in Medicare Part D government reimbursements, respectively.

Refunds — Withdrawal cancels a member's rights and benefits in STRS Ohio.

Upon termination of employment, a DB Plan member may withdraw their accumulated contributions made to STRS Ohio. Refunds of member contributions may include interest and 50% matching payments.

A CO Plan member is eligible for the present value of future benefits from the defined benefit portion of the account if he or she terminates employment after at least five years of service. For the defined contribution portion of the account, the refund consists of member contributions plus or minus any investment gains or losses on those contributions.

DC Plan members receive their contributions plus or minus any investment gains or losses on member contributions until they have completed one year of membership. After one year of membership, members vest 20% per year in employer contributions and all gains or losses on those contributions.

Alternative Retirement Plan — Eligible faculty of Ohio's public colleges and universities may choose to enroll in either STRS Ohio or an alternative retirement plan (ARP) offered by their employer.

Employees have 120 days from their date of hire to select a retirement plan.

For employees who elect an ARP, employers are required to remit employer contributions to STRS Ohio at a rate of 4.47% of payroll. Effective July 1, 2022, employers contribute 2.91% of salaries to STRS Ohio to help pay for unfunded liabilities. For the years ended June 30, 2022 and 2021, the ARP participant payroll totaled $847.5 million and $828.3 million, respectively.

Administrative Expenses — The costs of administering the DB Plan and the retiree health care program are paid from investment income. The administrative and investment costs of the DC Plan are paid by participant fees.

3. Net Pension Liability of Participating Employers

The components of STRS Ohio's net pension liability of the participating employers as of June 30, 2022 and 2021, was as follows:

Net Pension Liability at June 30, 2022 and 2021
(dollar amounts in thousands)

	2022	2021
Total Pension Liability	$105,264,325	$ 104,591,406
Fiduciary Net Position	(83,034,199)	(91,805,507)
Net Pension Liability	$ 22,230,126	$ 12,785,899
Ratio of Fiduciary Net Position to the Total Pension Liability	78.9%	87.8%

The total pension liability for 2022 and 2021 was determined by an actuarial valuation as of June 30, 2022 and 2021, using actuarial assumptions related to inflation (2.50%), discount rate of 7.00%, 0% COLA and projected salary increases.

Pension and post-employment health care assets are commingled for investment purposes. Amounts reported for individual asset classes are allocated between the DB Plan and post-employment health care based upon ending net position. Amounts reported for individual asset classes for the DC Plan are based on the underlying participant choices.

STRS Ohio's investment consultant develops an estimated range for the expected investment returns based on the target allocation adopted by the Retirement Board. The target allocation and long-term median expected rate of return for each major asset class are summarized in the following table.

Asset Class	Target Allocation*	Long-term Median Expected Rate of Return**
Domestic Equity	26%	6.60%
International Equity	22%	6.80%
Alternatives	19%	7.38%
Fixed Income	22%	1.75%
Real Estate	10%	5.75%
Liquidity Reserves	1%	1.00%

* Final target weights reflected Oct. 1, 2022.

**10-year annualized geometric nominal returns include the real rate of return and inflation of 2.25% and is net of investment expenses. Over a 30-year period, STRS Ohio's investment consultant indicates that the above target allocations should generate a return above the actuarial rate of return, without net value added by management.

Pension Plan Discount Rate — The projection of cash flows used to determine the discount rate assumes that employer and member contributions will be made at statutory contribution rates of 14% each. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Based on those assumptions, STRS Ohio's fiduciary net position was projected to be available to make all projected future benefit payments to current plan members as of June 30, 2022 and 2021. Therefore, the long-term expected rate of return on pension plan investments of 7.00% was applied to all periods of projected benefit payments to determine the total pension liability, as of June 30, 2022 and 2021.

Sensitivity of the Net Pension Liability to the Discount Rate Assumption — The following represents the net pension liability as of June 30, 2022 and 2021, calculated using the applicable discount rate assumption, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the assumption.

Net Pension Liability (in thousands)

	1% Decrease (6.0%)	Current Assumption (7.00%)	1% Increase (8.00%)
June 30, 2021	$23,943,203	$12,785,899	$3,358,001
June 30, 2022	$33,581,628	$22,230,126	$12,630,270

Mortality Rates for Pension — For the actuarial valuation as of June 30, 2022, post-retirement mortality rates are based on Pub-2010 Teachers Healthy Annuitant Mortality Table, adjusted 110% for males, projected forward generationally using mortality improvement scale MP-2020; pre-retirement mortality rates are based on Pub-2010 Teachers Employee Table adjusted 95% for females, projected forward generationally using mortality improvement scale MP-2020.

Disabled: Post-retirement disabled mortality rates are based on Pub-2010 Teachers Disable Annuitant Table projected forward generationally using mortality improvement scale MP-2020.

For the actuarial valuation as of June 30, 2021, post-retirement mortality rates are based on RP-2014 Annuitant Mortality Table with 50% of rates through age 69, 70% of rates between ages 70 and 79, 90% of rates between ages 80 and 84, and 100% of rates thereafter, projected forward generationally using mortality improvement scale MP-2016; pre-retirement mortality rates are based on RP-2014 Employee Mortality Table, projected forward generationally using mortality improvement scale MP-2016.

Disabled: Post-retirement disabled mortality rates are based on RP-2014 Disabled Mortality Table with 90% of rates for males and 100% of rates for females, projected forward generationally using mortality improvement scale MP-2016.

Experience Study — The actuarial assumptions used in the June 30, 2022, valuation were adopted by the board from the results of an actuarial experience study for July 1, 2015, through June 30, 2021. The actuarial assumptions used in the June 30, 2021, valuation were adopted by the board from the results of an actuarial experience study for July 1, 2011, through June 30, 2016.

4. Post Employment Health Care Net OPEB Asset of Participating Employers

The components of STRS Ohio's net OPEB asset of the participating employers as of June 30, 2022 and 2021, are shown in the table below.

Net OPEB Asset at June 30, 2022 and 2021
(dollar amounts in thousands)

	2022	2021
Fiduciary Net OPEB Position	$ 4 ,570,040	$ 4,929,739
Total OPEB Liability	1,980,707	2,821,321
Net OPEB Asset	$ 2,589,333	$ 2,108,419
Ratio of Fiduciary Net Position to the Total OPEB Liability	230.7%	174.7%

The total OPEB asset for 2022 and 2021 was determined by an actuarial valuation as of June 30, 2022 and 2021, using actuarial assumptions including the discount rate of 7.00%, projected salary increases ranging from 2.5% to 8.5% for 2022 and 2.5% to 12.5% for 2021, and health care cost trend rates ranging from –68.78% to –5.47% initially and a 4% ultimate rate for 2022 and ranging from –16.2% to 30.0% initially and a 4% ultimate rate for 2021.

STRS Ohio's investment consultant develops an estimated range for the investment return assumption based on the target allocation adopted by the Retirement Board. The target allocation and long-term expected rate of return for each major asset class are summarized in the following table.

Asset Class	Target Allocation*	Long-term Expected Rate of Return**
Domestic Equity	26%	6.60%
International Equity	22%	6.80%
Alternatives	19%	7.38%
Fixed Income	22%	1.75%
Real Estate	10%	5.75%
Liquidity Reserves	1%	1.00%

* Target allocation percentage is effective as of July 1, 2022. Target weights were phased in over a 3-month period concluding on October 1, 2022.

**10-year annualized geometric nominal returns include the real rate of return and inflation of 2.25% and is net of investment expenses. Over a 30-year period, STRS Ohio's investment consultant indicates that the above target allocations should generate a return above the actuarial rate of return, without net value added by management.

OPEB Discount Rate — The projection of cash flows used to determine the discount rate assumed STRS Ohio continues to allocate no employer contributions to the HC Fund. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments to current plan members as of June 30, 2022 and 2021. Therefore, the long-term expected rate of return on HC Fund investments of 7.00% was applied to all periods of projected benefit payments to determine the total OPEB liability, as of June 30, 2022 and 2021.

Sensitivity of the Net OPEB Asset to the Discount Rate and Health Care Cost Trend Rate Assumptions — The following represents the net OPEB asset as of June 30, 2022 and 2021, calculated using the applicable discount rate assumption, as well as what the net OPEB asset would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the assumption. Also shown is the net OPEB asset as of June 30, 2022 and 2021, calculated using health care cost trend rates that are one percentage point lower or one percentage point higher than the current health care cost trend rates.

Net OPEB Asset (in thousands)

	At June 30, 2022	
1% Decrease in Discount Rate (6.00%)	Current Discount Rate (7.00%)	1% Increase in Discount Rate (8.00%)
$2,393,770	$2,589,333	$2,756,849
1% Decrease in Trend Rates	Current Trend Rates	1% Increase in Trend Rates
$2,685,768	$2,589,333	$2,467,607
	At June 30, 2021	
1% Decrease in Discount Rate (6.00%)	Current Discount Rate (7.00%)	1% Increase in Discount Rate (8.00%)
$1,779,179	$2,108,419	$2,383,448
1% Decrease in Trend Rates	Current Trend Rates	1% Increase in Trend Rates
$2,372,304	$2,108,419	$1,782,099

Mortality Rates for Health Care — For the actuarial valuation as of June 30, 2022, healthy mortality rates are based on Pub-2010 Teachers Healthy Annuitant Mortality Table, adjusted 110% for males, projected forward generationally using mortality improvement scale MP-2020; pre-retirement mortality rates are based on Pub-2010 Teachers Healthy Annuitant Mortality Table, adjusted 95% for females, projected forward generationally using mortality improvement scale MP-2020.

Disabled: Rates are based on Pub-2010 Teachers Disabled Annuitant Table projected forward generationally using mortality improvement scale MP-2020.

For the actuarial valuation as of June 30, 2021, healthy mortality rates are based on the RP-2014 Annuitant Mortality Table with 50% of rates through age 69, 70% of rates between ages 70 and 79, 90% of rates between ages 80 and 84, and 100% of rates thereafter, projected forward generationally using mortality improvement scale MP-2016.

Disabled: Rates are based on the RP-2014 Disabled Mortality Table with 90% of rates for males and 100% of rates for females, projected forward generationally using mortality improvement scale MP-2016.

Experience Study — The actuarial assumptions used in the June 30, 2022, valuation were adopted by the board from the results of an actuarial experience study for July 1, 2015, through June 30, 2021. The actuarial assumptions used in the June 30, 2021, valuation were adopted by the board from the results of an actuarial experience study for July 1, 2011, through June 30, 2016.

5. Contribution Requirements and Reserves

Member and employer contribution rates are established by the Retirement Board and limited by Chapter 3307 of the R.C. The member and employer contribution rates are 14% of covered payroll.

Various funds are established under the R.C. to account for contributions, reserves, income and administrative expenses.

The Teachers' Savings Fund (TSF) is used to accumulate member contributions in trust and from which transfers are made to fund retirement and survivor benefits.

The Employers' Trust Fund (ETF) is used to accumulate employer contributions in trust and from which transfers are made to fund retirement and survivor benefits. The remaining balance in the Guarantee Fund is closed to the ETF at year-end.

The DC Fund accumulates contributions deducted from DC and CO Plan members, employer contributions credited to the DC member accounts and investment earnings thereon less DC Plan expenses and withdrawals. Transfers are made from the DC Fund to the Annuity and Pension Reserve Fund for accounts annuitized at retirement.

The Annuity and Pension Reserve Fund (APRF) is the fund from which all annuity and pension payments for retirement and disability benefits are made. Reserves for the present value of new benefits are transferred to this fund from the TSF, ETF and DC funds at the time of retirement and interest is transferred to this fund annually from the Guarantee Fund.

The Survivors' Benefit Fund (SBF) is the fund from which all survivor benefit payments are made. Reserves for the present value of new benefits are transferred to this fund from the TSF and ETF funds at the time benefits begin and interest is transferred to this fund annually from the Guarantee Fund.

The Guarantee Fund (GF) is used to accumulate income derived from investments, gifts and bequests for the year. It is also the fund from which transfers are made to cover the balance in the Expense Fund and from which interest is transferred and credited to the APRF and SBF funds. Any remaining balance in the GF at fiscal year end is closed to the ETF.

The Expense Fund is the fund from which all administrative and management expenses of STRS Ohio are paid each year. A transfer from the GF is made at the end of each fiscal year to cover the accumulated balance in this fund.

The HC Fund is used to accumulate amounts for the retiree health care program from the allocated portion of employer contributions, investment earnings, governmental reimbursements and benefit recipient premiums less health care expenses.

6. Commitments, Contingencies and Economic Uncertainty

STRS Ohio has made commitments to fund various real estate investments totaling $1,943,041,000 as of June 30, 2022. These commitments have expected funding dates from July 2022 to July 2026.

STRS Ohio has made commitments to fund various alternative investments totaling $7,095,192,000 as of June 30, 2022. The expected funding dates for the commitments as of June 30, 2022, range from July 2022 to January 2028.

STRS Ohio is a party in various legal actions. While the final outcome cannot be determined at this time, management is of the opinion that the liability, if any, for these legal actions will not have a material adverse effect on fiduciary net position.

7. Fair Value Measurement

STRS Ohio's investments measured and reported at fair value are shown on Page 26 and are classified according to the following hierarchy:

Level 1: Level 1 inputs are quoted prices in active markets such as exchange markets.

Level 2: Level 2 inputs are prices that are observable either directly or indirectly. Level 2 inputs may include quoted prices in markets that are not considered active or inputs other than quoted prices that are observable such as interest rates, yield curves, implied volatilities, credit spreads or market-corroborated inputs.

Level 3: Level 3 inputs are prices based on unobservable sources. Level 3 inputs include the best information available

Investments Measured at Fair Value at June 30, 2022 and 2021 (in thousands)

		Fair Value Measurements Using:				Fair Value Measurements Using:		
	June 30, 2022	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	June 30, 2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level:								
Short-term								
U.S. Government Obligations	$ 2,580,556		$ 2,580,556					
U.S. Treasury bills					$ 1,212,972		$ 1,212,972	
Commercial paper	49,748		49,748		287,475		287,475	
Short-term investment funds	80,000		80,000		59,000		59,000	
Fixed income								
U.S. government agency obligations	27,324		27,324		45,112		45,112	
Corporate bonds	3,728,293		3,728,293		4,604,493		4,604,493	
High yield and emerging markets	1,620,014	$ 434	1,619,580		2,042,216	$ 82,864	1,959,352	
Mortgages and asset-backed	3,154,375		3,154,375		3,047,228		3,047,228	
U.S. government obligations	6,349,042		6,349,042		8,553,834		8,553,834	
Domestic equities								
Common and preferred stock	22,449,364	22,449,225	139		26,918,294	26,918,100	194	
International								
Foreign stock	16,434,098	16,434,098			19,210,833	19,210,833		
Foreign equity index funds	1,522,457		1,522,457		1,555,221		1,555,221	
Corporate bonds held in equity swap	339,646		339,646		409,799		409,799	
Asset-Backed held in equity swap	61,368		61,368					
U.S. government obligations held in equity swap	200,294		200,294		100,073		100,073	
Real estate								
Direct real estate assets	9,207,571			$ 9,207,571	7,556,535			$ 7,556,535
REITs	1,126,574	1,126,574			1,269,508	1,269,508		
Alternative investments								
Foreign stock held in alternative investments					143,515	143,515		
Domestic stock held in alternative investments					95,701	95,701		
Opportunistic diversified	741,936	428,668	72,029	241,239	2,120,207	1,822,578	152,034	145,595
Total investments by fair value level	**69,672,660**	**40,438,999**	**19,784,851**	**9,448,810**	**79,232,016**	**49,543,099**	**21,986,787**	**7,702,130**
Investments measured at net asset value (NAV):								
Real estate								
Real estate funds	1,269,589				1,146,894			
Alternative investments								
Hedge funds	210,249				225,036			
Private equity	10,328,513				11,934,093			
Opportunistic diversified	7,075,466				5,472,519			
Total investments measured at NAV	**18,883,817**				**18,778,542**			
Investment derivative instruments:								
Options	(5,168)	(225)	(4,943)		(56,292)	(239)	(56,053)	
Rights and warrants	880			880	1,365			1,365
Foreign currency forwards	253,180		253,180		131,885		131,885	
Credit Default Swaps	108		108		214		214	
Equity swaps	(15,230)		(15,230)		18,283		18,283	
Total investment derivative instruments	**233,770**	**$ (225)**	**$ 233,115**	**$ 880**	**95,455**	**$ (239)**	**$ 94,329**	**$ 1,365**
Cash	28,865				5,563			
Total investments and cash	**$ 88,819,112**				**$ 98,111,576**			

Investments Measured at Net Asset Value (NAV) at June 30, 2022 and 2021 (in thousands)								
	June 30, 2022	Unfunded Commitment	Redemption Frequency (if Currently Eligible)	Redemption Notice Period	June 30, 2021	Unfunded Commitment	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Real estate funds total[1]	$ 1,269,589	$ 1,367,937	N/A	N/A	$ 1,146,894	$ 1,179,726	N/A	N/A
Hedge funds								
Credit/Distressed[2]	65,993		Quarterly	Fully redeemed	67,885		Quarterly	65 days
Equity long/short[3]	8,696		Quarterly	Fully redeemed	7,364		Quarterly	Fully redeemed
Market neutral[4]	107,708		Monthly	30 days	96,289		Monthly	30–60 days
Multi-strategy[5]	27,852		Quarterly	Fully redeemed	53,498		Quarterly	90–95 days
Hedge funds total	210,249				225,036			
Private equity total[6]	10,328,513	2,555,085	N/A	N/A	11,934,093	3,414,726	N/A	N/A
Opportunistic diversified total[7]	7,075,466	$ 4,540,107	N/A	N/A	5,472,519	$ 4,067,248	N/A	N/A
Total investments measured at NAV	$ 18,883,817				$ 18,778,542			

[1]**Real estate funds total** — Consisting of 57 opportunistic, international and specialty funds which invest in markets throughout the globe. The primary strategy of these funds is to invest in mispriced, mismanaged and distressed assets with the goal of repositioning the asset as a core investment for sale to institutional investors within a three to five year holding period. These funds are not eligible for redemption. The fair value of these funds is determined using net assets valued one quarter in arrears plus current cash flows.

[2]**Credit/Distressed** — Consisting of two funds, this strategy invests both long and short in securities of companies that have been, or are expected to be, in potential restructuring situations, as well as U.S. and global credit securities with the goal of generating excess yield relative to traditional credit instruments. These investments are valued at NAV per share. 100% of the value of these investments is eligible for redemption within the next six months.

[3]**Equity long/short** — Consisting of one fund, this strategy invests both long and short in U.S. and global equity securities, with the goal of adding growth and minimizing market exposure. This investment is valued at NAV per share. 100% of this investment is eligible for redemption within the next six months.

[4]**Market neutral**— Consisting of two funds, this strategy aims to pursue strategies that are uncorrelated to broader market returns. 100% of the value of these investments is eligible for redemption within the next six months.

[5]**Multi-strategy** — Consisting of two funds, this strategy aims to pursue varying strategies in order to diversify risks and reduce volatility. These investments are valued at NAV per share. 100% of the value of these investments is eligible for redemption within the next six months.

[6]**Private equity total** — Consisting of 204 commingled funds, fund-of-funds and separately managed accounts involving domestic and global buyout and venture capital funds. These are long-term lock up vehicles, typically with 10-year terms plus available extensions. These investments are valued at NAV as reported by the fund/account manager. The unfunded commitments can be called by the managers to make new investments during the investment period, which is roughly the first half of the fund term. Thereafter, the manager can call capital to fund follow-on expenses in support of the existing portfolio investments or to pay fund expenses.

[7]**Opportunistic diversified** — Consisting of 176 commingled funds, co-investments (including bank loans), and direct investments involving domestic and global energy, infrastructure, and specialty finance funds. These are generally long-term lock up vehicles, typically with seven-year terms plus available extensions. These investments are generally valued at NAV as reported by the fund/account manager, with some exceptions for publicly traded securities. The unfunded commitments can be called by the managers to make new investments during the investment period, which is roughly the first half of the fund term. Thereafter, the manager can call capital to fund follow-on expenses in support of the existing portfolio investments or to pay fund expenses.

under the circumstances, which can include the government's own data and takes into account all information about market participant assumptions.

The assignment of Levels, within the hierarchy, is based on the type or class of investment and the pricing transparency of the investment. Assets classified as Level 1 are valued directly from a primary external pricing vendor. Assets classified as Level 2 are priced using an alternative independent pricing source or a pricing model that uses observable inputs in conjunction with trade information. Assets classified in Level 3 are cases where there is limited activity or a lack of an independent pricing source. Certain entities calculate a net asset value (NAV) per share (or its equivalent). For these investments, governmental accounting standards permit establishment of fair value using a practical expedient based on the NAV per share (or its equivalent).

8. Deposit and Investment Risk Disclosure

Investment Authority — The investment authority of the Retirement Board is governed by Section 3307.15 of the R.C. that also requires the Retirement Board to publish its investment policies annually and make copies available to interested parties. This section requires that investments be made with care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

Investments and invested securities lending collateral held at fair value by STRS Ohio at June 30, 2022 and 2021, are summarized on Page 28.

Cash and Short-Term Investments — Cash and short-term investments are combined for reporting purposes and include cash balances of $28,865,000 at June 30, 2022, and $5,563,000 at June 30, 2021, in the *Statements of Fiduciary Net Position*.

Investments and Invested Securities Lending Collateral Held at Fair Value by STRS Ohio at June 30, 2022 and 2021 (summarized and in thousands)

Category	June 30, 2022	June 30, 2021
Cash and short-term investments		
Cash	$ 28,865	$ 5,563
Commercial paper	49,748	287,475
Short-term investment funds	80,000	59,000
U.S. Treasury bills	2,580,556	1,212,972
Total cash and short-term	**2,739,169**	**1,565,010**
Fixed income		
U.S. government agency obligations	27,324	45,112
Corporate bonds	3,728,293	4,604,493
High yield and emerging market fixed income	1,621,529	2,042,733
Mortgages and asset-backed	3,154,375	3,047,228
U.S. government obligations	6,349,042	8,553,834
Total fixed income	**14,880,563**	**18,293,400**
Domestic equities	**22,432,255**	**26,928,103**
International (See Note 9)		
Equities	18,210,363	20,893,064
Corporate bonds held in equity swap	339,646	409,799
U.S. government bonds held in equity swap	200,294	100,073
Asset-backed securities held in equity swap	61,368	
Total international	**18,811,671**	**21,402,936**
Real estate (See Note 10)		
East region	3,534,529	3,056,707
Midwest region	1,304,698	1,216,219
South region	1,205,128	868,348
West region	3,163,216	2,415,261
REITs	1,126,574	1,269,508
Non-core	1,271,814	1,154,698
Total real estate	**11,605,959**	**9,980,741**
Alternative investments (See Note 11)	**18,349,495**	**19,941,386**
Invested securities lending collateral	**1,437,730**	**646,451**
Total investments and invested securities lending collateral	**$ 90,256,842**	**$ 98,758,027**

GASB Statement No. 40 — GASB Statement No. 40, *Deposit and Investment Risk Disclosures*, addresses common deposit and investment risks related to credit risk, concentration of credit risk, interest rate risk and foreign currency risk.

Credit Risk — Credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This risk is measured by ratings assigned by a nationally recognized statistical rating organization. The quality ratings of investments in fixed income as of June 2022 and 2021, are shown in the table on Page 29. U.S. government fixed-income securities or obligations explicitly guaranteed by the U.S. government are not considered to have credit risk.

Custodial Credit Risk — Deposits are exposed to custodial credit risk if they are uninsured and uncollateralized. Custodial credit risk is the risk that, in the event of a failure of the counterparty, STRS Ohio will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of STRS Ohio, and are held by either the counterparty or the counterparty's trust department or agent but not in the name of STRS Ohio.

All investments are held in the name of STRS Ohio or its nominee by the Treasurer of the State of Ohio as custodian. At June 30, 2022 and 2021, the bank statement cash balances were $38,792,000 and $14,311,000, respectively. Bank balances are insured up to $250,000 by the Federal Deposit Insurance Corporation. The remaining bank deposits are covered by collateral held in the name of STRS Ohio's pledging financial institution, as required by state statute.

Interest Rate Risk — Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of the investment. Duration is a measure of a debt investment's exposure to fair value changes arising from changing interest rates. It uses the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price. The longer the maturity, the more the value of the fixed-income investment will fluctuate with interest rate changes. The table on Page 29 shows the maturities of investments in fixed income by weighted-average duration, expressed in years, at June 30, 2022 and 2021.

Concentration of Credit Risk — STRS Ohio is guided by statute and policy in the selection of security investments. No investment in any one organization represents 5% or more of STRS Ohio's total investments as of June 30, 2022 and 2021.

Significant investment guidelines that relate to investment concentration, interest rate risk and foreign currency risk by major asset class are as follows:

Overall Investment Portfolio — The Retirement Board has approved a target risk budget range of 0.60% to 1.20%, with a working range of 0.20% to 1.60%, annualized active management for the total fund. In exchange for assuming this level of active risk, the Board expects active management to add net 0.40% of annualized excess return over moving five-year periods to judge its effectiveness.

Fixed Income — The portfolio will seek diversification by market sector, quality and issuer. The core fixed income portfolio risk budget range is 0.10% to 1.50% using the Bloomberg U.S. Universal Index as the benchmark. The Liquid Treasury portfolio risk budget range is 0.0% to 0.25% during normal market conditions, but will have a board-approved risk budget range of 0.0% to 1.0% using the Bloomberg U.S. Intermediate Treasury Index as the benchmark. Derivative instruments may be used to adjust the exposure to interest rates, individual securities or to various market sectors in the portfolio. Underlying exposure of derivative instruments for fixed-income investments will not exceed 5% of total fund assets. Short sales may be used, but may not exceed 10% of the value of the asset class.

Global Equities — Domestic — The risk budget range for domestic equities is 0.20% to 1.50% using the Russell 3000® Index as the

Credit Quality Ratings
Held at June 30, 2022 and 2021 (in thousands)

Investment Type	Quality Rating	June 30, 2022 Fair Value	June 30, 2021 Fair Value
Commercial paper held in short term	Aaa		$ 39,997
	Aa		103,498
	A	$ 49,748	143,980
Total commercial paper held in short term		**49,748**	**287,475**
U.S. government agency obligations held in fixed income	Aaa	**27,324**	**45,112**
Corporate bonds held in fixed income	Aaa	98,113	99,407
	Aa	371,134	506,938
	A	1,992,266	2,294,122
	Baa	1,245,567	1,504,065
	Ba	5,239	13,237
	NR	15,974	186,724
Total corporate bonds held in fixed income		**3,728,293**	**4,604,493**
Corporate bonds held in equity swap	Aaa		39,661
	Aa	65,014	74,391
	A	235,508	295,747
	Baa	39,124	
Total corporate bonds held in equity swap		**339,646**	**409,799**
High yield and emerging markets fixed income	Aaa	14,838	
	Aa	44,702	52,024
	A	110,150	121,262
	Baa	229,199	244,685
	Ba	496,885	634,558
	B	428,148	586,043
	Caa & below	164,257	232,835
	NR	133,350	171,326
Total high yield and emerging markets fixed income		**1,621,529**	**2,042,733**
Mortgages and asset-backed held in fixed income	Aaa	3,067,348	3,035,102
	Baa	2,986	
	NR	84,041	12,126
Total mortgages and asset-backed held in fixed income		**3,154,375**	**3,047,228**
Asset-backed held in equity swap	Aaa	**61,368**	
Total credit risk debt securities		**8,982,283**	**10,436,840**
U.S. government obligations held in short term		**2,580,556**	**1,212,972**
U.S. government obligations held in fixed income		**6,349,042**	**8,553,834**
U.S. government obligations held in equity swap		**200,294**	**100,073**
Total		**$ 18,112,175**	**$ 20,303,719**

Interest Rate Risk — Duration
Held at June 30, 2022 and 2021 (in thousands)

Investment Type	June 30, 2022 Fair Value	June 30, 2022 Weighted-Average Duration (Years)	June 30, 2021 Fair Value	June 30, 2021 Weighted-Average Duration (Years)
Commercial paper held in short term	$ 49,748	0.15	$ 287,475	0.12
U.S. government agency obligations held in fixed income	27,324	2.67	45,112	2.57
Corporate bonds held in fixed income	3,728,293	6.42	4,604,493	7.23
Corporate bonds held in equity swap	339,646	0.15	409,799	0.17
High yield and emerging markets fixed income	1,621,529	5.04	2,042,733	5.11
Mortgages and asset-backed held in fixed income	3,154,375	5.14	3,047,228	4.22
Asset-backed held in equity swap	61,368	0.05		
U.S. government obligations held in short term	2,580,556	0.20	1,212,972	0.05
U.S. government obligations held in fixed income	6,349,042	6.03	8,553,834	5.21
U.S. government obligations held in equity swap	200,294	0.64	100,073	0.46
Total	**$18,112,175**		**$ 20,303,719**	

benchmark. Derivative instruments may be used in management of the equity portfolio. Underlying exposure of equity derivative instruments will not exceed 10% of total fund assets. Short sales may be used, but may not exceed 10% of the value of the asset class.

Global Equities — International — International assets will be a diversified portfolio including both developed and emerging countries. The risk budget range for international equity is between 0.60% to 2.50% using a blended benchmark of 80% MSCI World ex US Index-Net (50% hedged currency) and 20% MSCI Emerging Markets Index-Net. Derivative instruments may be used in management of the portfolio and underlying exposure of derivative instruments for international investments will not exceed 10% of total fund assets. Short sales may be used, but may not exceed 10% of the value of the asset class.

Real Estate — The real estate portfolio shall be diversified between property type, geographic location and investment structure. The risk budget range for real estate investments is 2.00% to 7.00% using a benchmark of 85% NCREIF Property Index and 15% FTSE NAREIT Equity REITs Index. Investments in non-core real estate, which includes domestic and international opportunity funds and real estate development projects, shall not exceed 30% of total real estate assets. Derivative instruments may be used and will not exceed 1% of total fund assets. STRS Ohio may borrow funds on a secured or unsecured basis and leverage is limited to 50% in aggregate of internally managed real estate assets excluding publicly traded real estate investment trusts (REITs). Short sales may be used, but may not exceed 10% of the value of the asset class.

Alternative Investments — Alternative investments involve separate allocations to private equity and opportunistic/diversified investments. Private equity investments are being managed to exceed a private market benchmark over moving five-year periods. Private equity investments are traded infrequently and, therefore, risk budget concepts are not applicable. Opportunistic/diversified investments are being managed to exceed a blend of private market benchmarks over moving five-year periods. Investments in this category can be liquid or illiquid and, therefore, risk budget concepts are not applicable. Derivative instruments may be used but will not exceed 10% of total fund assets. Fees are net of all external investment management fees and costs, including carried interest and other fund expenses.

Foreign Currency Risk — Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. Forward currency contracts may be used to manage the exposure to foreign currencies. The system's investments exposed to foreign currency risk at June 30, 2022 and 2021, are shown in the table to the right. The investment figures are comprised of numerous portfolios within international equity, debt securities and real estate investments.

Securities Lending — STRS Ohio participates in a domestic and international securities lending program whereby securities are loaned to investment brokers/dealers (borrower). Securities loaned are collateralized by the borrower at 102% of the domestic equity and U.S. dollar-

Fair Value Subject to Foreign Currency Risk Held at June 30, 2022 and 2021 (in thousands)

	June 30, 2022				June 30, 2021			
Foreign Currency Denomination	International	Real Estate	Alternative Investments	High Yield & Emerging Markets Fixed Income	International	Real Estate	Alternative Investments	High Yield & Emerging Markets Fixed Income
Australian Dollar	$ 435,985		$ 68,263		$ 347,563		$ 89,076	
Brazilian Real	127,562			$ 756	214,806			$ 1,114
British Pound Sterling	772,118	$ 1,442	10,093		1,019,421	$ 1,166	28,824	
Canadian Dollar	532,632		30,624		405,219		44,234	
Chilean Peso	14,223				14,839			
Chinese Yuan Renminbi	186,797				220,009			
Colombian Peso	33				484			
Czech Republic Koruna	17,619				16,818			
Danish Krone	166,475				203,426			
Egyptian Pound	917				1,549			2,235
European Union Euro	1,337,493	(6,753)	851,839	(4,441)	1,643,919	39,127	969,556	5,965
Hong Kong Dollar	841,819				940,233			
Hungarian Forint	11,079				26,595			
Indian Rupee	270,477			15	299,236			15
Indonesian Rupiah	70,183				41,230			
Israeli Shekel	17,172				(11,037)			
Japanese Yen	1,057,417	(35,791)			1,300,651	(18,632)		
Kenyan Shilling	2,397				4,402			
Kuwaiti Dinar	6,039				1,791			
Malaysian Ringgit	24,481				24,921			
Mexican Peso	83,910				79,318			
Moroccan Dirham	541,078							
New Taiwan Dollar	116,644				731,892			
New Zealand Dollar	11,717				20,565			
Nigerian Naira	125,685				12,600			
Norwegian Krone					101,780			
Pakistani Rupee					137			
Peruvian Nuevo Sol	23,493							204
Philippines Peso	12,912				30,550			
Polish Zloty	8,668				13,802			
Qatari Rial	3,014				3,246			
Romanian Leu					5,196			
Russian Ruble	25,714				75,363			
Saudi Arabia Riyal	94,117				1,422			
Singapore Dollar	123,335				76,747			
South African Rand	433,418				132,657			
South Korean Won	211,142				715,658			
Swedish Krona	522,074				228,016			
Swiss Franc	87,625				542,052			
Thailand Baht	11,122				94,219			
Turkish Lira					9,292			
Ukranian Hryvnia	26,076							1,084
United Arab Emirates Dirham	4,837				10,370			
Vietnamese Dong	862				11,062			
Zimbabwean Dollar	782				782			
Held In Foreign Currency	**$ 8,360,361**	**$ (41,102)**	**$ 960,819**	**$ (3,670)**	**$ 9,612,801**	**$ 21,661**	**$ 1,131,690**	**$ 10,617**

denominated fixed-income loaned securities' fair value and 105% of the international loaned securities' fair value.

STRS Ohio lends domestic equities, international equities, U.S. Treasuries, agencies and corporate bonds. The collateral received is cash, U.S. Treasuries or related agency securities. STRS Ohio cannot sell or pledge collateral received. If a borrower defaults, then the collateral can be liquidated.

A custodial agent bank administers the program and STRS Ohio receives a fee from the borrower for the use of loaned securities. Cash collateral from securities lending is invested in U.S. government agencies, repurchase agreements, commercial paper, asset-backed securities and corporate obligations.

The credit quality of the invested cash collateral is the same as the credit quality on STRS Ohio direct holdings. There are slight mismatches between the duration of the cash invested and the length of time the securities are on loan. As of June 30, 2022, the weighted average maturity of the invested cash collateral is 23 days. Because much of the cash collateral is invested in floating rate securities, the weighted average number of days interest rates reset is two days as of June 30, 2022. STRS Ohio has minimized its exposure to credit risk due to borrower default by having the custodial agent bank determine daily that the required collateral meets the specified collateral requirements. There are no restrictions on the amount of securities that can be loaned. The fair value of loaned securities was $1.4 billion and $630.2 million as of June 30, 2022 and 2021, respectively. The fair value of the associated invested cash collateral as of June 30, 2022 and 2021, was $1.4 billion and $646.5 million, respectively.

Money-Weighted Rate of Return — The annual money-weighted rate of return expressing investment performance, net of investment expenses and adjusted for the changing amounts actually invested was –3.55% and 29.24% as of June 30, 2022 and 2021, respectively.

9. International Investments

Externally Managed — STRS Ohio has investments in international equity securities through the use of external money managers. It is the intent of STRS Ohio and the money managers to be fully invested; however, cash and short-term fixed-income investments may be held temporarily. The portfolios are managed in accordance with various mandates based on Morgan Stanley Capital International's (MSCI) indexes. Investments are held in both developed and emerging international markets.

Internally Managed:

Developed Markets, Emerging Markets — STRS Ohio actively invests in developed and emerging markets. The portfolio's active management adds value primarily through security selection and country allocation decisions using a variety of portfolio management approaches including quantitative and fundamental techniques. Aggregate exposures to countries, currencies, equity styles, and market capitalization are monitored and managed relative to their benchmark exposures.

Europe, Australia and Far East (EAFE) Index Fund — To increase diversification in international developed markets, STRS Ohio invests in an EAFE Index Fund. The EAFE Index Fund purchases foreign equities, futures and other traded investments to replicate the makeup of the EAFE benchmark, consisting of MSCI World ex-U.S. 50% Hedged Index.

Equity Swaps — Three EAFE and two Emerging Market (EM) swap agreements were contracted during fiscal 2022 with maturity dates in fiscal 2023. In exchange for LIBOR (London Interbank Offered Rate) minus a negotiated spread, STRS Ohio will receive or pay the difference of the change in the total return of the various market indices included in the swap agreements. LIBOR will be discontinued on June 30, 2023 and thereafter Secured Overnight Financing Rate (SOFR) will replace LIBOR. As STRS Ohio swap contracts mature, the new contracts are using SOFR. Fixed-income securities with a notional amount of $691.7 million and $1,018.0 million have been set aside at the global subcustodial account as security as of June 30, 2022 and 2021, respectively.

Forward Contracts — Managers have the ability to add value through currency management. Forward currency contracts are used to minimize the impact of foreign currency fluctuations on the asset positions of foreign investments.

The fair values of international investments held at June 30, 2022 and 2021, are shown below.

Fair Values of International Investments Held at June 30, 2022 and 2021 (in thousands)

	June 30, 2022	June 30, 2021
Externally managed		
International stocks	$ 8,502,827	$ 9,204,019
International currency and liquidity reserves	249,346	258,246
Forward contracts	230,853	58,076
Total externally managed	8,983,026	9,520,341
Internally managed		
Developed markets	5,724,930	6,819,174
Emerging markets	1,864,342	2,419,041
EAFE Index Fund	1,522,457	1,555,218
EAFE equity swaps	642,479	908,095
EM equity swaps	55,711	115,364
Forward contracts	18,726	65,703
Total internally managed	9,828,645	11,882,595
Total international	$ 18,811,671	$ 21,402,936

10. Real Estate Investments

Direct — STRS Ohio properties are diversified among property type, geographic location and investment structure. Direct real estate is actively managed and targeted at 85% of the real estate portfolio. The portfolio is primarily managed internally with direct property investments representing most of the portfolio. Direct real estate investments include office, apartment, industrial and retail space.

Public Real Estate — Public real estate includes publicly traded real estate securities and real estate investment trusts (REITs). REITS are passively and actively managed and targeted at 15% of the real estate portfolio to enhance liquidity and diversification.

Non-Core Real Estate — Non-core real estate investments include opportunistic and international funds that invest in markets throughout the globe. Non-core real estate investments typically carry more risk with higher expected return.

Debt on Real Estate Investments — STRS Ohio uses debt to lower the cash outlay in acquiring real estate assets and to positively impact the performance of the real estate portfolio. STRS Ohio utilizes only direct borrowings that includes both recourse and non-recourse debt, but does not include unused lines of credit. Of the debt on real estate investments, $400 million was recourse debt as of June 30, 2022 and 2021. This debt is recourse to STRS Ohio with a covenant not to mortgage a specific pool of real estate assets. The remainder of the debt on real estate investments of $1.76 billion and $1.68 billion at June 30, 2022 and 2021, respectively, is non-recourse debt, which means that in the event of default, the lender looks to only the real estate holding for repayment of the loan and not the general assets of STRS Ohio.

STRS Ohio's borrowings contain a provision that in the event of default, outstanding amounts may become immediately due depending on the nature of the default.

At June 30, 2022, the recourse loans of $400 million had a maturity date in May 2023. The interest rate on the recourse loans are based on a fixed rate of 1.39%.

Of the non-recourse debt at June 30, 2022, loan maturities range from December 2022 to October 2031. Non-recourse debt at June 30, 2021, had loan maturities ranging from July 2021 to December 2030.

The repayment schedule as of June 30, 2022, and changes in real estate debt as of June 30, 2022 and 2021, are shown in the following tables.

Real Estate Debt Repayment Schedule As of June 30, 2022 (in thousands)

By Fiscal Year	Principal	Interest
2023	$ 498,595	$ 70,611
2024	155,445	57,601
2025	230,198	51,682
2026	846,329	26,123
2027	229,512	8,539
2028–2032	196,664	17,903
Total	**$ 2,156,743**	**$ 232,459**

Real Estate Leases — STRS Ohio implemented GASB Statement 87, *Leases*. The real estate leases are investments meeting the requirements of GASB Statement 72 and are measured at fair value, therefore the recognition and measurement provisions of GASB Statement 87 are not applied.

Certain real estate investments are subject to mortgage debt, which is secured by an assignment of that investment's leases and the lease payments. Some of those leases allow the tenant to terminate its lease if certain events occur, which is accounted for in the fair value of the property.

Changes in Real Estate Debt (in thousands)

As of June 30, 2022	Balance at June 30, 2021	Increase	(Decrease)	Balance at June 30, 2022
Direct borrowings				
Recourse	$ 400,000			$ 400,000
Non-recourse	1,678,574	$ 95,773	$ (17,604)	1,756,743
Total	**$ 2,078,574**	**$ 95,773**	**$ (17,604)**	**$ 2,156,743**

As of June 30, 2021	Balance at June 30, 2020	Increase	(Decrease)	Balance at June 30, 2021
Direct borrowings				
Recourse	$ 400,000			$ 400,000
Non-recourse	1,721,722	$ 43,009	$ (86,157)	1,678,574
Total	**$ 2,121,722**	**$ 43,009**	**$ (86,157)**	**$ 2,078,574**

11. Alternative Investments

Alternative investments involve separate allocations to private equity and opportunistic/diversified investments. Private equity is 100% actively managed and includes, but is not limited to, venture capital and leverage buyouts, mezzanine debt or distressed debt. Private equity investments may be made directly, through funds, fund of funds or as co-investments. Opportunistic/diversified investments are typically actively managed and are tactical in nature with a goal of downside protection during equity bear markets. The category can be liquid or illiquid and investments may be made directly, through funds, fund of funds or as co-investments.

12. Derivative Instruments

Equity and Over-the-Counter Swap Agreements — As discussed in Note 9, STRS Ohio has entered into international equity swap agreements. In addition, STRS Ohio has entered into over-the-counter (OTC) swap agreements for its alternative investments and domestic equities. No funds are exchanged at the inception of the swap agreements; however, STRS Ohio has purchased fixed-income securities equivalent to the initial notional amount of the agreements, which are located in the global subcustodial account as of June 30, 2022 and 2021. In addition, collateral is pledged between the parties during the term of the agreements to account for market movements.

The notional amount of the equity swap contracts was $691.7 million at June 30, 2022, and $1,018.0 million at June 30, 2021. The fair value of the equity swap contracts was $3.4 million at June 30, 2022, and $1.9 million at June 30, 2021, and is included in the *Statements of Fiduciary Net Position*. The notional amount of the OTC swap agreements was $272.0 million at June 30, 2022 and $478.7 million at June 30, 2021. The fair value of the OTC swap contracts was –$18.6 million as of June 30, 2022 and $16.4 million as of June 30, 2021, and is included in the *Statements of Fiduciary Net Position*. The market risk of the swap is the same as if STRS Ohio owned the underlying stocks that comprise the indexes. The revenues and expenses resulting from these agreements have been recorded in the basic financial statements.

Forward Contracts — Forward contracts in various currencies are used to transact and hedge foreign denominated investments at STRS Ohio. Additionally, forward contracts are used to hedge currency exposure as a result of the EAFE equity swap agreements. STRS Ohio is obligated to deliver the foreign currency at a certain dollar price sometime in the future. To fulfill this obligation at maturity, STRS Ohio must obtain the currency in the open market. Before the contract matures, STRS Ohio can enter into an offsetting forward contract that nets out the original contract. These events expose STRS Ohio to currency market risk, which can fluctuate. The fair value of the foreign currency forwards of $253.2 million at June 30, 2022, and $131.9 million at June 30, 2021, is included in the *Statements of Fiduciary Net Position*. STRS Ohio is also subject to the risk that the counterparty will fail to fulfill the contract.

Futures — Index futures are designed to offer lower cost and more efficient alternatives to buying individual stocks that comprise the index. The market and credit risk of the futures were the same as if STRS Ohio had owned the underlying stocks that comprise the index. The realized gain or loss on index futures is included in net appreciation (depreciation) in fair value of investments in the *Statements of Changes in Fiduciary Net Position*.

Additionally, futures were used in the EAFE Index Fund and by external money managers. The system's notional exposure to future and forward contracts at June 30, 2022 and 2021, is shown in the following table.

Notional Exposure to Future and Forward Contracts Held at June 30, 2022 and 2021 (in thousands)

	June 30, 2022	June 30, 2021
Forward contracts		
Externally managed	$ 14,122,652	$ 12,347,367
Internally managed	4,405,256	4,722,217
Total forward contracts	**$ 18,527,908**	**$ 17,069,584**
Future contracts		
EAFE Index Fund	$ 26,795	$ 16,228
MSCI EAFE	144,165	
MSCI Emerging	36,047	
Russell Index Futures	149,023	
S&P Index Futures	994,175	
Externally Managed	110,598	76,527
Total future contracts	**$ 1,460,803**	**$ 92,755**

Options — STRS Ohio writes option contracts on existing stock positions to enhance the return on the stock portfolio. In exchange for a premium, STRS Ohio gives the option buyer the right to buy or sell the underlying stock. Options are also purchased to "cover" existing written open option positions. STRS Ohio did not hold any internal options contracts at June 30, 2022 or 2021. Additionally, options were utilized by external managers with a notional value of $3.8 billion at June 30, 2022 and $4.1 billion at June 30, 2021. The fair value of –$5.2 million at June 30, 2022 and –$56.3 million at June 30, 2021, is included in the *Statements of Fiduciary Net Position*.

Warrants — Warrants allow the right to purchase underlying stock shares at a specified price. Warrants are usually added on as an incentive to an issuer's fixed-income securities. STRS Ohio held warrants with a value of $0.9 million as of June 30, 2022, and $1.4 million at June 30, 2021, and is included in the *Statements of Fiduciary Net Position*.

Fixed-Income Credit Default Swaps — STRS Ohio may manage credit exposure through the use of credit default swaps. A credit default swap is a contract whereby the credit risk associated with an investment is transferred by entering into an agreement with another party who, in exchange for periodic fees, agrees to make payments in the event of a default or other predetermined credit event. One of the main advantages of a credit default swap is it allows for exposure to credit risk while limiting exposure to other risks, such as interest rate and currency risk. STRS Ohio held credit default swaps with a notional value of $25.1 million at June 30, 2022, and $10.7 million at June 30, 2021. The fair value of the credit default swaps was $108,000 at June 30, 2022, and $214,000 at June 30, 2021.

13. Pension Plan for Employees of STRS Ohio

All STRS Ohio employees are required to participate in a contributory retirement plan administered by Ohio Public Employees Retirement System (OPERS). OPERS is a cost-sharing, multiple-employer public employee retirement system that administers three pension plans that include a defined benefit plan, a defined contribution plan and a combined plan. Participation in these plans is a choice members make at the time their employment commences.

In 2012, the Ohio Legislature passed Senate Bill 343 to improve the financial condition of OPERS. In the legislation, members were categorized into three groups with varying provisions of the law applicable to each group. Retirement benefits are specific to each group and members must meet the eligibility requirements based on their age and years of service within the group. The key components to OPERS' pension plan changes are:

- Age and service requirements for retirement increased.
- Final average salary calculation increased to five years from three years.
- Calculation used to determine the benefit amount for service retirement was modified.
- COLA is based on the annual percentage change in the Consumer Price Index with a 3% cap.
- Calculation used for early retirement benefit is determined by OPERS' actuary.

Details about OPERS' plan changes and when they become effective can be found on its website at www.opers.org.

The member and employer contribution rates are 10.0% and 14.0% of covered payroll, respectively. The required employer contributions for the current year and the two preceding years are shown in the table below.

STRS Ohio Required Employer Contributions to OPERS

Year Ended June 30	Annual Required Contribution	Percent Contributed
2020	$7,864,000	100%
2021	$8,083,276	100%
2022	**$8,455,274**	**100%**

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, requires STRS Ohio to record a net pension liability based on its proportionate share of OPERS' total net pension liability. The net pension liability was measured as of Dec. 31, 2021 and 2020, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of those dates. Likewise, STRS Ohio's proportionate share of OPERS' deferred outflows and deferred inflows of resources related to pensions and pension expense are recorded in the *Statements of Fiduciary Net Position* and *Statements of Changes in Fiduciary Net Position* for fiscal years ending June 30, 2022, and June 30, 2021.

For fiscal 2022 and 2021, deferred outflows were $33.2 million and $17.4 million, respectively, and are included in Miscellaneous Receivables; deferred inflows were $38.0 million and $35.8 million, respectively, and net pension liability was $29.0 million and $51.3 million, respectively, and are included in Net Pension and OPEB Liabilities in the *Statements of Fiduciary Net Position*. For fiscal 2022, net pension income was $36.0 million and is included in Other Additions and for fiscal 2021, net pension expense was $22.1 million and is included in Other Deductions in the *Statements of Changes in Fiduciary Net Position*.

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension income, information about the fiduciary net position of OPERS and additions to/deductions from OPERS' fiduciary net position have been determined on the same basis as they are reported by OPERS. For this purpose, benefits and refunds are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

OPERS also provides post-employment health care coverage which is considered an OPEB as described in GASB Statement No. 75. In addition to the legislation that made changes to the pension plan, the OPERS Board approved changes to the retiree health care plan with phased-in implementation dates over the next several years. OPERS has the discretion to direct a portion of employer contributions to fund retiree health care. The R.C. provides statutory authority for employer contributions. The employer rate allocated to post employment health care for the defined benefit plan and combined plan was 0% in calendar 2021 and 2020. The portion of the employer rate allocated to post employment health care for the defined contribution plan was 4% in calendar 2021 and 2020.

For fiscal 2022 and 2021, deferred outflows were $0.0 million and $3.4 million, respectively, and are included in Miscellaneous Receivables; deferred inflows were $12.4 million and $20.9 million respectively, and OPEB asset was $12.0 million and $6.8 million, respectively, and are included in Net Pension and OPEB Liabilities in the *Statements of Fiduciary Net Position*. For fiscal 2022 and 2021, net OPEB income was $10.2 million and is included in Other Additions and for fiscal 2021, net OPEB income was $41.5 million, and is included in Other Deductions in the *Statements of Changes in Fiduciary Net Position*.

For purposes of measuring the net OPEB asset, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB income, information about the OPEB fiduciary net position of OPERS and additions to/deductions from the OPEB fiduciary net position of OPERS have been determined on the same basis as they are reported by OPERS. For this purpose, health care benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Historical trend information showing the progress of OPERS in accumulating sufficient assets to pay pension and OPEB benefits when due is presented in the OPERS *Annual Comprehensive Financial Report*. OPERS issues a publicly available financial report for the plans. The report may be found on its website at www.opers.org.

Schedule of Changes in Employers' Net Pension Liability
Fiscal Years Ending June 30, 2014–2022* (in thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability									
Service cost	$ 1,344,767	$ 1,189,664	$ 1,150,526	$ 1,129,449	$ 1,075,334	$ 1,067,687	$ 1,058,987	$ 1,111,078	$ 1,094,986
Interest	7,158,610	7,171,680	7,108,056	7,036,514	6,974,353	7,611,942	7,472,169	7,272,034	7,137,686
Benefit changes	2,348,518	0	0	0	0	(12,353,691)	0	0	0
Difference between expected and actual experience	(42,146)	451,180	(133,569)	69,329	31,732	(239,322)	527,725	1,355,347	292,708
Changes in assumptions	(2,669,900)	4,433,797	0	0	0	6,494,408	0	0	0
Benefit payments and refunds of employee contributions	(7,466,930)	(7,327,202)	(7,293,669)	(7,298,405)	(7,303,802)	(7,211,006)	(7,317,113)	(6,890,862)	(6,725,017)
Net change in total pension liability	672,918	5,919,118	831,344	936,887	777,617	(4,629,982)	1,741,768	2,847,597	1,800,363
Total pension liability, beginning of year	104,591,406	98,672,288	97,840,944	96,904,057	96,126,440	100,756,422	99,014,654	96,167,057	94,366,694
Total pension liability, end of year	**105,264,325**	**104,591,406**	**98,672,288**	**97,840,944**	**96,904,057**	**96,126,440**	**100,756,422**	**99,014,654**	**96,167,057**
Fiduciary net pension position									
Member contributions	$ 1,806,217	$ 1,706,818	$ 1,670,406	$ 1,623,095	$ 1,580,430	$ 1,537,677	$ 1,372,033	$ 1,259,135	$ 1,193,808
Employer contributions, including other retirement systems	1,932,372	1,803,178	1,746,249	1,702,154	1,634,027	1,590,869	1,545,103	1,594,794	1,508,442
Net investment income	(4,976,660)	21,212,679	2,692,076	4,847,517	6,737,457	9,233,930	372,871	3,671,845	10,534,608
Benefit payments and refunds	(7,466,930)	(7,327,202)	(7,293,669)	(7,298,405)	(7,303,802)	(7,211,006)	(7,317,113)	(6,890,863)	(6,725,017)
Administrative expenses	(66,308)	(65,811)	(65,761)	(64,118)	(63,307)	(63,652)	(67,065)	(61,183)	(60,991)
Net change in fiduciary net pension position	(8,771,309)	17,329,661	(1,250,699)	810,243	2,584,806	5,087,818	(4,094,171)	(426,272)	6,450,850
Fiduciary net pension position, beginning of year	91,805,507	74,475,846	75,726,545	74,916,302	72,371,226	67,283,408	71,377,579	71,843,596	65,392,746
Restatement of fiduciary net pension position**	N/A	N/A	N/A	N/A	(39,730)	N/A	N/A	(39,745)	N/A
Restatement of fiduciary net pension position, beginning of year	N/A	N/A	N/A	N/A	72,331,496	N/A	N/A	71,803,851	N/A
Fiduciary net pension position, end of year	**83,034,199**	**91,805,507**	**74,475,846**	**75,726,545**	**74,916,302**	**72,371,226**	**67,283,408**	**71,377,579**	**71,843,596**
Net pension liability, end of year	**$ 22,230,126**	**$ 12,785,899**	**$ 24,196,442**	**$ 22,114,399**	**$ 21,987,755**	**$ 23,755,214**	**$ 33,473,014**	**$ 27,637,075**	**$ 24,323,461**

*This is a 10-year schedule — however, the information is not required to be presented retroactively. Years will be added to this schedule in future fiscal years until 10 years of information is available.

**For purposes of determining net pension liability and related disclosures, fiduciary net position was not restated for earlier periods to reflect the adoption of GASB 75 in 2018 and GASB 68 in 2015.

Schedule of Employers' Net Pension Liability
Fiscal Years Ending June 30, 2013–2022 (dollar amounts in thousands)

Fiscal Year Ending	Total Pension Liability	Fiduciary Net Position	Net Pension Liability	Ratio of Fiduciary Net Position to Total Pension Liability	Covered Payroll *	Net Pension Liability as a Percentage of Covered Payroll
June 30, 2013	$94,366,694	$65,392,746	$28,973,948	69.3%	$10,765,635	269.1%
June 30, 2014	$96,167,057	$71,843,596	$24,323,461	74.7%	$10,725,329	226.8%
June 30, 2015	$99,014,654	$71,377,579	$27,637,075	72.1%	$10,948,586	252.4%
June 30, 2016	$100,756,422	$67,283,408	$33,473,014	66.8%	$11,099,607	301.6%
June 30, 2017	$96,126,440	$72,371,226	$23,755,214	75.3%	$11,557,147	205.5%
June 30, 2018	$96,904,057	$74,916,302	$21,987,755	77.3%	$11,923,688	184.4%
June 30, 2019	$97,840,944	$75,726,545	$22,114,399	77.4%	$12,296,800	179.8%
June 30, 2020	$98,672,288	$ 74,475,846	$ 24,196,442	75.5%	$12,671,208	191.0%
June 30, 2021	$104,591,406	$91,805,507	$12,785,899	87.8%	$12,929,843	98.9%
June 30, 2022	**$105,264,325**	**$83,034,199**	**$22,230,126**	**78.9%**	**$13,624,858**	**163.2%**

*Includes payroll for Defined Contribution and Alternative Retirement Plan participants.

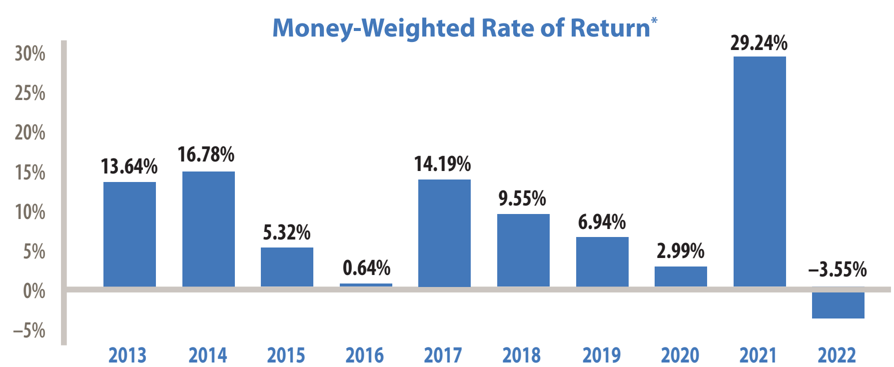
Note: The schedules above include both the DB and DC Plans.

Schedule of Employers' Contributions — Pension
Fiscal Years Ending June 30, 2013–2022 (dollar amounts in thousands)

Fiscal Year	Actuarial Determined Contribution	Employer Contributions*	Contribution Deficiency (Excess)	Covered Payroll**	Contributions as a Percentage of Covered Payroll
2013	$2,910,537	$1,327,862	$1,582,675	$9,917,911	13.39%
2014	$1,489,734	$1,325,141	$164,593	$9,833,028	13.48%
2015	$1,368,602	$1,449,165	$(80,563)	$9,985,181	14.51%
2016	$1,178,129	$1,466,938	$(288,809)	$10,069,269	14.57%
2017	$1,054,862	$1,514,285	$(459,423)	$10,459,706	14.48%
2018	$1,056,430	$1,565,679	$(509,249)	$10,775,526	14.53%
2019	$1,088,328	$1,614,188	$(525,860)	$11,088,785	14.56%
2020	$1,081,662	$1,662,017	$(580,355)	$11,392,013	14.59%
2021	$1,028,799	$1,696,121	$(667,322)	$11,610,016	14.61%
2022	**$1,037,935**	**$1,776,074**	**$(738,139)**	**$12,224,437**	**14.53%**

*Employer contributions are the same as contractually required contributions.
**Excludes payroll from the Defined Contribution and Alternative Retirement Plans in order to report the amount needed to fund defined benefits.

Schedule of Investment Returns — Pension
Fiscal Years Ending June 30, 2013–2022



*The money-weighted rate of return expresses investment performance with consideration of the impact of the timing and amounts invested.

Notes to Required Supplementary Information — Pension
Fiscal Years Ending June 30, 2022 and 2021

Valuation date	June 30, 2022	June 30, 2021
Actuarial cost method	Entry age normal	Entry age normal
Actuarial assumptions:		
Investment rate of return, net of investment expense, including inflation	7.00%	7.00%
Projected salary increases	Varies by service from 2.5% to 8.5%	12.50% at age 20 to 2.50% at age 65
Projected payroll growth	3.00%	3.00%
Inflation assumption	2.50%	2.50%
Cost-of-living adjustments	0.00%	0.00%

The information presented in the required supplemental schedules was determined as part of the actuarial valuations for the dates indicated. See accompanying independent auditors' report.

Schedule of Changes in Employers' Net OPEB Liability (Asset)
Fiscal Years Ending June 30, 2017–2022* (in thousands)

	2022	2021	2020	2019	2018	2017
Total OPEB liability						
Service cost	$ 38,323	$ 284,137	$ 324,526	$ 338,776	$ 633,316	$ 225,094
Interest	196,820	167,884	174,040	164,544	320,157	277,562
Benefit changes	246,059	556,994	428,480	53,985	(3,340,847)	(1,065,891)
Difference between expected and actual experience	(94,797)	(116,611)	(329,525)	(7,285)	(109,227)	262,764
Changes in assumptions	(1,131,159)	130,045	(264,958)	40,616	(2,248,888)	(366,671)
Benefit payments, net of premiums and reimbursements	(95,860)	(340,926)	(408,683)	(489,169)	(517,470)	(489,102)
Net change in total OPEB liability	(840,614)	681,523	(76,120)	101,467	(5,262,959)	(1,156,244)
Total OPEB liability, beginning of year	2,821,321	2,139,798	2,215,918	2,114,451	7,377,410	8,533,654
Total OPEB liability, end of year	**1,980,707**	**2,821,321**	**2,139,798**	**2,215,918**	**2,114,451**	**7,377,410**
Fiduciary net OPEB position						
Health care premiums	0	0	295,779	312,841	329,305	339,056
Government reimbursements	97,713	96,478	81,876	84,789	107,197	79,357
Employer contributions	0	0	0	0	0	0
Net investment income	(261,500)	1,121,699	140,300	244,700	328,965	440,196
Benefit payments, net of premiums**	(193,572)	(183,390)	(490,559)	(489,169)	(517,470)	(565,962)
Administrative expenses	(2,340)	(2,344)	(2,258)	(2,352)	(2,427)	(2,496)
Net change in fiduciary net OPEB position	(359,699)	1,032,443	25,138	150,809	245,570	290,151
Fiduciary net OPEB position, beginning of year	4,929,739	3,897,296	3,872,158	3,721,349	3,475,779	3,185,628
Fiduciary net OPEB position, end of year	**4,570,040**	**4,929,739**	**3,897,296**	**3,872,158**	**3,721,349**	**3,475,779**
Net OPEB liability (asset), end of year	**$ (2,589,333)**	**$ (2,108,418)**	**$ (1,757,498)**	**$ (1,656,240)**	**$ (1,606,898)**	**$ 3,901,631**

*This is a 10-year schedule — however, the information is not required to be presented retroactively. Years will be added to this schedule in future fiscal years until 10 years of information is available.

**Beginning in fiscal 2021, health care premiums are reported against health care benefit payments.

Schedule of Employers' Net OPEB Liability (Asset)
Fiscal Years Ending June 30, 2016–2022* (dollar amounts in thousands)

Fiscal Year Ending	Total OPEB Liability	Fiduciary Net OPEB Position	Net OPEB Liability (Asset)	Ratio of Fiduciary Net OPEB Position to Total OPEB Liability	Covered Payroll	Net OPEB Liability (Asset) as a Percentage of Covered Payroll
June 30, 2016	$8,533,654	$3,185,628	$5,348,026	37.3%	$10,628,269**	50.3%
June 30, 2017	$7,377,410	$3,475,779	$3,901,631	47.1%	$10,767,964**	36.2%
June 30, 2018	$2,114,451	$3,721,349	$(1,606,898)	176.0%	$10,775,526	(14.9)%
June 30, 2019	$2,215,918	$3,872,158	$(1,656,240)	174.7%	$11,088,785	(14.9)%
June 30, 2020	$2,139,798	$3,897,296	$(1,757,498)	182.1%	$11,392,013	(15.4)%
June 30, 2021	$2,821,321	$4,929,739	$(2,108,419)	174.7%	$11,610,016	(18.2)%
June 30, 2022	**$1,980,707**	**$4,570,040**	**$(2,589,333)**	**230.7%**	**$12,224,437**	**(21.2)%**

*This is a 10-year schedule — however, the information is not required to be presented retroactively. Years will be added to this schedule in future fiscal years until 10 years of information is available.

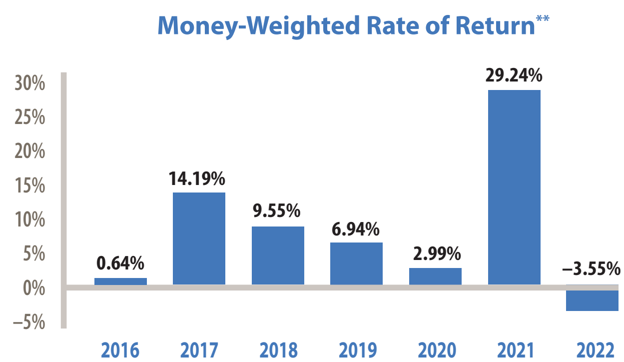
**Covered payroll was based on the prior calendar year projected forward to the fiscal year end period.

Schedule of Employers' Contributions — OPEB
Fiscal Years Ending June 30, 2017–2022* (dollar amounts in thousands)

Fiscal Year	Actuarial Determined Contribution	Employer Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2017	$239,430	$0	$239,430	$10,767,964	0.00%
2018	$0	$0	$0	$10,775,526	0.00%
2019	$0	$0	$0	$11,088,785	0.00%
2020	$0	$0	$0	$11,392,013	0.00%
2021	$0	$0	$0	$11,610,016	0.00%
2022	**$0**	**$0**	**$0**	**$12,224,437**	**0.00%**

*This is a 10-year schedule — however, the information is not required to be presented retroactively. Years will be added to this schedule in future fiscal years until 10 years of information is available.

Schedule of Investment Returns — OPEB
Fiscal Years Ending June 30, 2016–2022*



*This is a 10-year schedule — however, the information is not required to be presented retroactively. Years will be added to this schedule in future fiscal years until 10 years of information is available.

** The money-weighted rate of return expresses investment performance with consideration of the impact of the timing and amounts invested.

Notes to Required Supplementary Information — OPEB
Fiscal Years Ending June 30, 2022 and 2021

Valuation date	June 30, 2022	June 30, 2021
Measurement date	June 30, 2022	June 30, 2021
Amortization method	Level percentage of payroll	Level percentage of payroll
Actuarial cost method	Entry age normal	Entry age normal
Actuarial assumptions:		
Discount rate	7.00%	7.00%
Projected salary increases	Varies by service from 2.5% to 8.5%	12.50% at age 20 to 2.50% at age 65
Payroll increases	3.00%	3.00%
Trend rates	–68.78% to –5.47%; 3.94% ultimate	–16.18 to 29.98% initial; 4.00% ultimate

The information presented in the required supplemental schedules was determined as part of the actuarial valuations for the dates indicated. See accompanying independent auditors' report.

Schedules of Administrative Expenses
For the Years Ending June 30, 2022 and 2021

	2022	2021
Personnel		
Salaries and wages	$ 36,262,210	$ 36,558,973
Retirement contributions	4,775,396	4,816,003
Benefits	6,446,753	6,108,072
Total personnel	**47,484,359**	**47,483,047**
Professional and technical services		
Computer support services	1,081,666	1,320,770
Health care services	694,171	580,744
Actuary	397,636	269,457
Auditing	193,447	140,444
Defined contribution administration fees	1,083,590	1,010,916
Legal	272,618	161,665
Temporary employment services	0	1,750
Total professional and technical services	**3,723,128**	**3,485,747**
Communications		
Postage and courier services	993,825	1,147,302
Printing and supplies	992,995	1,277,786
Telephone	419,728	392,002
Total communications	**2,406,548**	**2,817,090**
Other expenses		
Equipment repairs and maintenance	5,051,952	6,214,821
Building utilities and maintenance	1,487,911	1,269,689
Transportation and travel	46,836	15,500
Recruitment fees	53,741	16,575
Depreciation	5,973,289	5,302,771
Member and staff education	39,941	20,248
Insurance	870,936	757,810
Memberships and subscriptions	103,771	157,478
Ohio Retirement Study Council	1,049,381	236,864
Miscellaneous	356,385	377,342
Total other expenses	**15,034,143**	**14,369,097**
Total administrative expenses	**$ 68,648,178**	**$ 68,154,981**

Note: Above amounts do not include internal investment expenses, which are deducted from investment income and shown in a separate schedule on Page 40.

See accompanying independent auditors' report.

Schedules of Internal Investment Expenses
For the Years Ending June 30, 2022 and 2021

	2022	2021
Personnel		
Salaries and wages	$ 29,978,332	$ 26,656,308
Retirement contributions	3,679,878	3,267,273
Benefits	2,424,191	2,837,898
Total personnel	**36,082,401**	**32,761,479**
Professional and technical services		
Investment research	2,962,887	3,057,113
Financial asset advisors	856,765	760,458
Custody banking fees	2,139,402	2,032,791
Investment quotation systems	2,562,465	2,417,883
Total professional and technical services	**8,521,519**	**8,268,245**
Other expenses		
Printing and supplies	1,242	187
Building utilities and maintenance	234,221	185,100
Travel	93,884	13,617
Staff education	2,806	2,012
Memberships and subscriptions	90,680	92,158
Miscellaneous	114,475	65,602
Total other expenses	**537,308**	**358,676**
Total internal investment expenses	**$ 45,141,228**	**$ 41,388,401**

See accompanying independent auditors' report.

Schedules of External Asset Management Fees
For the Years Ending June 30, 2022 and 2021

	2022	2021
Asset class		
Fixed income	$ 5,742,625	$ 6,085,016
Domestic equities	13,921,574	13,914,131
International equities	37,478,540	32,358,244
Real estate	21,822,733	19,281,840
Alternative investments	175,804,921	178,588,728
Total external asset management fees	**$ 254,770,393**	**$ 250,227,959**

Note: All investment manager fees reported to STRS Ohio, whether directly invoiced or subtracted from the fund on a net basis, are reported as External Asset Management Fees in the *Statements of Changes in Fiduciary Net Position*. External asset management fees are net of management fee offsets. Carried interest, which represents the investment managers' share of the profits, and other fund expenses associated with externally managed real estate and alternative investments are reported in Net Appreciation (Depreciation) in Fair Value of Investments in the *Statements of Changes in Net Position*.

See accompanying independent auditors' report.

Investment Review

For Fiscal Year July 1, 2021, through June 30, 2022
Prepared by STRS Ohio's Investment Department Associates

Economic Environment

Since the coronavirus pandemic recession occurred near the end of fiscal 2020, U.S. economic activity has been turbulent. The economy was affected by lockdowns and other mitigation efforts that attempted to control the initial COVID-19 strain, a soaring recovery once the lockdowns were lifted, additional virus variants that temporarily reintroduced controls on businesses and consumers, supply chain disruptions and, most recently, a Russian invasion of Ukraine that has been countered by Western nations. These issues have forced U.S. and foreign policymakers to adopt flexible fiscal and monetary policies that focused on supporting economic growth. However, by doing so, price inflation in the United States and elsewhere has skyrocketed, leading to 40-year highs in costs for businesses and consumers.

With the coronavirus pandemic easing to acceptable conditions across most of the globe, policymakers have now turned their attention to reining in that soaring inflation before it becomes deeply rooted in future inflation expectations for businesses and consumers. In particular, monetary policymakers are aiming to put the inflation genie back in the bottle before more havoc unfolds. There will likely be a great deal of tightening for monetary policies around the world in coming quarters — a change in those policies that has raised recession risks around the globe. At a minimum, real economic growth in the United States could continue to slow from the 12.5% surge in fiscal 2021 and the trend-like 1.8% growth in fiscal 2022. The rapid recovery and strength shown in the current economic expansion followed a classic V-shaped pattern — unlike the more gradual, slower U-shaped recovery that came after the Great Recession of 2007–2009.

Higher interest rates from more restrictive monetary policy have eaten away at potential growth in interest rate sensitive economic sectors. Residential investment has already begun to soften with the Federal Reserve's forward guidance of tighter monetary policy. The National Association of Realtors' housing affordability index plunged in the early months of calendar 2022 due to soaring mortgage rates and ongoing massive growth in home prices. Home price to income ratios have blown past the peak registered during the height of the housing bubble in late 2005. While mortgage originations have not been as speculative as they were during the housing bubble and the supply of homes remains limited, the higher interest rate environment weighed heavily on housing affordability. Home builders optimism for future activity plunged in the second half of fiscal 2022.

Business fixed investment recorded moderate 2.4% growth in fiscal 2022 after a vigorous 12.5% gain in fiscal 2021. Orders for capital equipment continued to accelerate in late fiscal 2022 and capital spending plans from companies remain strong, though slightly off their expansion peak. Larger companies continue to outpace smaller ones since the pandemic recession devastated smaller companies. But, even with surveys that focus on larger companies, a notable softening trend developed in the spring of 2022.

By March, the jobs market moved ever closer to the conditions that existed prior to the pandemic. The unemployment rate fell to 3.6% — just above the 3.5% rate before the pandemic — from 5.9% at the beginning of fiscal 2022, while the number of employed rose at the end of fiscal 2022 to a level just 600,000 short of the peak prior to the recession. The difference between nationwide job openings and the number of unemployed remained at record highs while wage pressures continued to grow for companies. Nearly all employment indicators pointed to a continued strong labor market. That left The Conference Board's consumer confidence index at a relatively high level because its survey places a large focus on consumer assessments of employment conditions. However, the University of Michigan's consumer sentiment index plunged to recession-like lows at the end of fiscal 2022 because its survey focuses more on financial market conditions that are being heavily impacted by unacceptable inflation in the United States and elsewhere. Like other economic sectors, the fundamental conditions for real consumer spending (about 70% of the U.S. economy) remained somewhat positive heading into fiscal 2023. The labor market was strong and wage growth robust. Yet, high inflation continues to weaken the magnitude of wage gains.

Commonly cited inflation indicators began to significantly accelerate in the spring of 2021. At the time and for about a half-year later, Federal Reserve officials and most economists attributed much of the surge to global supply chain disruptions following the shutdown and reopening of economies around the world during the coronavirus pandemic. The surge in demand for goods and services from stimulative fiscal and monetary policy around the world put a great deal of pressure on limited supplies of materials and labor. Forty-year highs in inflation followed. Meanwhile, monetary policymakers in the United States treated the inflation surge as transitory, expecting the supply and demand imbalances would ease in fiscal 2022 and return average inflation into an acceptable range around the Federal Reserve's long-term policy target of 2% inflation. When non-traditional inflation measures like Dallas Federal Reserve Bank's trimmed mean personal consumption expenditures (PCE) price index also began to surge in the fall of 2021, monetary policymakers started to fear that unacceptably high inflation could become more established in consumer and business expectations. Soon after, Federal Reserve policymakers provided forward guidance that the days of easy money to protect against intermittent fears of an economic downturn would end and that a concerted effort to lower inflation was about to begin.

As of its June monetary policy meeting, the Federal Reserve has moved up the range on its main policy tool — the short-term federal funds rate — to 1.5%–1.75% from the 0%–0.25% range it moved within for two years ending with mid-March 2022. Most monetary policy officials would like to return policy to a neutral-to-restrictive stance where nominal interest rates exceed the inflation rate. Besides its main policy tool of targeting a stimulative range for the nominal federal funds rate during and after the coronavirus recession, the Federal Reserve more than doubled the level of assets on its balance sheet to nearly $9 trillion, or roughly 35% the size of U.S. nominal economy at the end of fiscal 2022. Prior to the global financial crisis in 2008–2009 and the resulting Great Recession, the Federal Reserve did not actively use quantitative easing as a monetary policy tool to keep longer-term interest rates lower as well. Indeed, assets on its balance sheet were consistently around just 6% of nominal GDP prior to the global financial crisis. The Federal Reserve has already announced a plan to allow assets to run off its balance sheet as they mature. If the program plays out without causing too strong of a surge in long-term interest rates that then leads the central bank to adjust quantitative tightening, then roughly $1.1 trillion in assets would leave the Federal Reserve's balance sheet each year going forward. The forward guidance on this quantitative tightening program along with the course being described for short-term interest rates has already led to an increase in U.S. long-term interest rates.

Fixed Income

Fiscal 2022 was a challenging year for fixed income market returns, as measured by the Bloomberg U.S. Universal Index*, with a return of –10.89%. Fixed income returns were driven by higher interest rates and wider credit spreads. The highest returning sector was asset-backed securities (–4.27%), followed by commercial mortgage-backed securities (–8.89%), U.S. Treasuries (–8.90%), mortgage-backed securities (–9.03%), government related (–9.26%), high yield (–12.81%), investment grade corporates (–14.19%) and emerging markets (–18.02). The Liquid Treasury Portfolio benchmark, the Bloomberg U.S. Intermediate Treasury Index*, had a return of –6.35% for fiscal 2022.

The STRS Ohio fixed-income asset class returned –9.79% versus the benchmark's return of -9.90%. Over the three prior fiscal years, the STRS Ohio fixed-income asset class returned an annual average of –0.45% versus the benchmark's return of –0.74%. The STRS Ohio performance over the prior five fiscal years was 1.20% versus the benchmark's 1.00%. A more complete report of STRS Ohio performance appears on Page 63.

Domestic Equities

The U.S. equity market was a tale of two markets in fiscal 2022. The first half of the fiscal year saw a continuation of the gains seen in fiscal 2021. In the first six months of the year, the market was buoyed by economic stimulus in the United States and continued easing of COVID restrictions. The S&P 500 Index rose in the first half of the fiscal year, closing at an all-time high of 4796.56 on Jan. 3, 2022. The second half of the fiscal year saw a significant increase in inflation, especially in food and energy costs. Prices of oil and food spiked as Russia invaded Ukraine early in the calendar year. Additionally, the Federal Reserve signaled a move toward tightening monetary policy which increased investor expectations of an economic slowdown and resulted in a market correction. The S&P 500 closed the fiscal year at 3785.38, down more than 20% from the market high of January and off 10.6% for the fiscal year.

Performance was strongest for the energy sector as oil prices increased sharply due in part to the war in Ukraine. Besides energy, defensive sectors performed the best as investors sought the safety of less economically sensitive stocks. The safe-haven utilities, consumer staples and healthcare sectors performed well during the year. The communication services sector was the was the worst performer, followed by the economy-driven consumer discretionary, information technology and industrials sectors.

The STRS Ohio domestic equities asset class returned –14.90% versus the Russell 3000® Index benchmark's return of –13.87%. Over the three prior fiscal years, the STRS Ohio domestic equities asset class returned an annualized 10.33% versus the benchmark's return of 9.77%. The STRS Ohio performance over the prior five fiscal years was 11.16% versus the benchmark return of 10.60%. A more complete report of STRS Ohio performance appears on Page 63.

International Equities

The international markets recorded a large negative return in fiscal 2022 due to several factors, including heightened inflationary pressure, the Russian invasion of Ukraine and slower growth in China. The MSCI World ex-US Index (50% hedged) for developed markets decreased 11.1% and the MSCI EM Index for emerging markets decreased 25.3% with both categories performing the weakest in the second half of the fiscal year. Returns for the year were harmed by the contraction of valuation multiples, as interest rates climbed due to elevated inflation.

All countries except one in the developed markets recorded negative returns in U.S. dollar terms. The best performing countries were Portugal (+2.3%), Norway (–0.2%) and United

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Kingdom (–4.0%). The three weakest markets were Ireland (–35.1%), Germany (–30.6%) and Sweden (–30.1%). The U.S. dollar strength overall against developed market currencies contributed to a reduction in returns.

There was more dispersion in returns for the emerging market countries. The three best returns were Czech Republic (+31.0%), Kuwait (+22.8%) and Qatar (+17.4%). The three weakest markets were Russia (–100.0%), Hungary (–42.2%), and South Korea (–38.2%).

The STRS Ohio international asset class returned –11.80% versus the benchmark's return of –14.09%. Over the three prior fiscal years, the STRS Ohio international asset class returned an annualized 3.97% versus the benchmark's return of 3.32%. The STRS Ohio performance over the prior five fiscal years was 4.37% versus the benchmark's return of 4.09%. A more complete report of STRS Ohio performance appears on Page 63.

Real Estate

The total real estate blended benchmark return was 17.30% in fiscal 2022 compared to 7.34% in fiscal 2021. The private real estate market component of the benchmark provided a total return of 21.45% with the public benchmark component for the real estate market (REITs) retreating from a previously very strong year, turning in a –6.25% return. Private real estate markets had strong positive appreciation in fiscal 2022, continuing and improving upon the previous year's positive result which was mostly caused by strong investor appetite for industrial properties.

Income returns for the private market index decreased slightly by nine basis points from 4.19% to 4.10% but, when coupled with the appreciation return of 16.85%, produced a total private market index return of 21.45%. The fundamentals of real estate — supply and demand — drive long-term real estate income returns and, for the most part, continue to be in balance even with the increased investor demand for apartment and industrial properties.

The STRS Ohio total real estate asset class returned 21.96% versus the benchmark's return of 17.30% in fiscal 2022, outperforming the benchmark by 466 basis points. Over the prior three fiscal years, the STRS Ohio real estate total asset class returned an annual average return of 10.45% versus the benchmark's return of 9.74%. The STRS Ohio performance over the past five fiscal years was 9.60% versus the benchmark's 8.66%. A more complete report of STRS Ohio performance appears on Page 63.

Alternative Investments

There are two portfolios within alternative investments: private equity and opportunistic/diversified. Through June 30, 2022, the target allocation for private equity was 7%. The target allocation for opportunistic/diversified was 10%, resulting in a combined target neutral weight for the alternative investments asset class of 17% of total fund through June 30, 2022.

The private equity and opportunistic/diversified portfolios grew primarily due to strong investment returns in fiscal 2022. Capital distributions meaningfully exceeded capital calls during the fiscal year due to investment realizations within the portfolios and active portfolio management. Investment returns were driven largely by fundamental growth across the portfolio, as asset price appreciation in the first half of the fiscal year began to erode in the second half of the fiscal year because of the rising interest rate environment and the war in Ukraine. Fiscal year returns for the alternative investments asset class equaled 18.36%, including 11.80% opportunistic/diversified returns and 23.21% private equity returns.

Alternative investments asset class performance is being managed to exceed private market benchmarks. Through June 30, 2022, the Alternative Investment Blended Benchmark consisted of the Private Equity Benchmark multiplied by 41.2 % plus the Opportunistic/diversified Blended Benchmark multiplied by 58.8%. The Private Equity Benchmark is the Cambridge Associates Private Equity and Venture Capital Index one quarter lagged to be consistent with external fund reporting. The Opportunistic/diversified blended benchmark consists of the actual Opportunistic Investments Portfolio weight multiplied by the Cambridge Associates Private Credit Index one quarter lagged to be consistent with external fund reporting plus the actual weight of the Diversified Investments Portfolio multiplied by the HFRI Fund of Funds Composite Index, which is a monthly index where subsequent revisions will be reflected in the following period. The performance of the alternative investments asset class, the private equity portfolio and the opportunistic/diversified exceeded the Alternative Investments Blended Benchmark, the Private Equity Benchmark and the Opportunistic/diversified Blended Benchmark, respectively, in fiscal 2022. A more complete report of STRS Ohio performance appears on Page 63.

Total Fund

During fiscal 2022, the STRS Ohio total fund returned –3.73% net of all fees versus the benchmark's return of –5.62%. Over the three prior fiscal years, the STRS Ohio total fund returned an annual average of 8.60% net of all fees versus the benchmark's return of 7.58%, while the total fund performance over the prior five fiscal years was 8.44% net of all fees versus the benchmark's 7.79%. During the 10 past fiscal years, the STRS Ohio total fund returned an annual average of 9.19% net of all fees versus the benchmark's return of 8.90%. A more complete report of STRS Ohio total fund performance appears on Page 63.

Statement of Investment Objectives and Policy

Effective May 19, 2022

1.0 Purpose

1.1 The State Teachers Retirement System of Ohio ("STRS Ohio") was established for the benefit of the teachers of the public schools of the State of Ohio. STRS Ohio is dedicated to partnering with STRS Ohio members to provide financial performance and member service to help build financial security for current and future retirees.

1.2 The State Teachers Retirement Board of Ohio (the "Board") is vested with the operation and management of the State Teachers Retirement System of Ohio ("STRS Ohio") (ORC Section 3307.04). The Board has the full power to invest the assets (the "Fund") of STRS Ohio (ORC Section 3307.15). The Board is required to ". . . adopt in a regular meeting, policies, objectives or criteria for the operation of the investment program . . ." (ORC Section 3307.15).

1.3 To fulfill the statutory requirement of ORC Section 3307.15, the Board has adopted this Statement of Investment Objectives and Policies (the "Statement") to govern the investment of the Fund. This Statement summarizes the objectives and policies for the investment of the Fund.

1.4 The Board has approved these objectives and policies after careful consideration of STRS Ohio benefit provisions, and the implications of alternative objectives and policies.

1.5 The Statement has been prepared with five audiences in mind: incumbent, new and prospective Board members; STRS Ohio investment staff; STRS Ohio active and retired members; the Ohio General Assembly and Governor; and agents engaged by the Board to manage and administer the Fund.

1.6 The Board regularly, but in no event less than annually, will assess the continued suitability of this Statement, initiate change as necessary and update this Statement accordingly.

1.7 The Board may authorize its administrative officers and committees to act for it in accord with its policies (ORC Sections 3307.04 and 3307.15). The Board, no less frequently than annually, adopts a resolution delegating to the Executive Director and the Deputy Executive Director — Investments the authority to acquire, dispose, operate and manage the assets of the Fund, subject to the Board's policies and to subsequent approval by the Board. Consequently, the Executive Director, the Deputy Executive Director — Investments and the investment staff are responsible for preparing and maintaining numerous supporting management documents that govern the implementation of Board policies, including, but not limited to, individual investment manager mandates and guidelines, agent agreements and limited partnership documents.

1.8 In carrying out the operation and management of STRS Ohio, the Board, the Executive Director, his/her investment staff and others that are considered fiduciaries as defined in ORC Section 3307.01(K) are subject to various fiduciary responsibilities in ORC Chapter 3307, including those found in ORC Sections 3307.15, 3307.151, 3307.181 and 3307.18. This Statement incorporates, and is subject to, all of the provisions of ORC Chapter 3307.

1.9 The Board acknowledges its responsibilities under ORC Chapter 3307 and to the extent that this Statement is inconsistent with ORC Chapter 3307, Chapter 3307 shall control.

1.95 The Board approved this Statement on May 19, 2022.

2.0 Investment Objective

2.1 Subject to the Ohio Revised Code, the investment objectives for the total fund are:

(a) to earn, over moving 30-year periods, an annualized return that equals or exceeds the actuarial rate of return (ARR) approved by the Board to value STRS Ohio liabilities. The current actuarial rate of return is 7.00%;

(b) to earn a rate of return that equals or exceeds the System's long-term policy index with an acceptable level of risk; and

(c) maintain sufficient liquidity to satisfy cash flow needs.

2.2 The Board believes, based on the assumptions in this Statement, that the investment policies summarized in this Statement will achieve this long-term actuarial objective at an acceptable level of risk. The Board evaluates risk in terms of the probability of not achieving the ARR over a 30-year time horizon.

3.0 Key Document Policy

To assist the Board and the investment staff, the following key documents will be produced or reviewed according to the schedule in Exhibit 1.

Exhibit 1: Key Document Schedule

Key Document	Document Source	Review Schedule
Quarterly Performance Review	Board Consultant	Quarterly
Statement of Investment Objectives and Policy/ Fund Governance	STRS Ohio Investment Staff/ Reviewed by Board Consultant	Annually
Annual Plan (Includes Risk Budget)	STRS Ohio Investment Staff/ Reviewed by Board Consultant	Annually
Actuarial Study	Actuary/STRS Ohio Finance Department	Annually
Asset/Liability Study and Experience Review	STRS Ohio Investment Staff/ STRS Ohio Senior Staff/Board Consultant/Actuary/Board	At least once in every quinquennial period

4.0 Asset Mix Policy, Risk Diversification and Return Expectations

4.1 After careful consideration of the investment objectives, liability structure, funded status and liquidity needs of STRS Ohio, and the return, risk and risk-diversifying characteristics of different asset classes, the Board approved the asset mix policy presented in Exhibit 2 (below). The exhibit also summarizes the Board's return expectations for the asset mix policy and active management.

4.2 Fifty-seven percent of the Fund is targeted for investment in equities, inclusive of domestic, international and private equity investments. Equity investments have provided the highest returns over long time periods, but can produce low and even negative returns over shorter periods.

4.3 The probability of low or negative returns over shorter time periods makes 100% equity policies unsuitable for most pension funds, including STRS Ohio. By investing across multiple equity asset classes, and in lower return but lower volatility fixed-income and real estate, the Board is managing and diversifying total fund risk.

4.4 Forecasts of capital market and active management returns undertaken by the Board's investment consultant indicate that the Board's asset allocation summarized in Exhibit 2 has an expected 10-year annualized return of 6.03% (without net value added). Over a 30-year period, the Board's investment consultant indicates that this asset mix should generate a return above the actuarial rate of return, without net value added by management.

Exhibit 2: Asset Mix Policy and Return Expectations for STRS Ohio Total Fund

Asset Class	Target Allocation[5]	Rebalancing Range	Expected 10-Year Policy Returns[1]	Expected Management Net Returns[2]	Expected Total Return
Equity					
Domestic	**26%**	**21–31%**	**6.60%**	**0.25%**	**6.85%**
International	**22%**	**17–27%**	**6.80%**	**1.00%**	**7.80%**
Alternatives	**19%[4]**	**12–25%[4]**	**7.38%**		**7.38%**
Private Equity	9%[4]	6–14%[4]	8.00%		8.00%
Opportunistic/Diversified	10%[4]	6–14%[4]	5.73%		5.73%
Fixed Income	**22%**	**13–29%**	**1.75%**	**0.35%**	**2.10%**
Core	17%	13–22%			
Liquid Treasury	5%	0–7%			
Real Estate	**10%**	**6–13%**	**5.75%**	**1.00%**	**6.75%**
Liquidity Reserve	**1%**	**0–5%**	**1.00%**		**1.00%**
Total Fund	**100%**		**6.03%**	**0.40%**	**6.43%[3]**

[1]The expected 10-year policy returns are based on the investment consultant's capital market assumptions in the 2022 asset-liability study for each asset class and total fund.

[2]Individual asset class returns (except real estate and alternative investments) are gross value added. The total fund is net of all investment management costs, and real estate and alternative investments is net of all external management fees and costs including carried interest and other fund expenses.

[3]The 10-year total fund return forecast is 6.43% per year, which includes the expected net value added by management and is based on the asset mix policy.

[4]The Private Equity and Opportunistic Diversified target weights and rebalancing ranges are only meant to be general guidelines; the official rebalancing range is at the total alternative investment asset class level.

[5]The target allocation percentage will be effective as of July 1, 2022 and phased-in over a 3 month period, based on the "Phase-In Target Weights" table in the next section.

Phase-in Target Weights

Asset Class	Current	July 1, 2022	Oct. 1, 2022
Domestic Equity	**28%**	**27%**	**26%**
International Equity	**23%**	**22%**	**22%**
Alternatives	**17%**	**19%**	**19%**
Private Equity	7%	9%	9%
Opportunistic/Diversified	10%	10%	10%
Fixed Income	**21%**	**21%**	**22%**
Core	16%	16%	17%
Liquid Treasury	5%	5%	5%
Real Estate	**10%**	**10%**	**10%**
Liquidity Reserve	**1%**	**1%**	**1%**

4.5 From the 2022 Asset-Liability Study, the 6.03% expected asset mix 10-year policy return was developed with reference to the observed long-term relationships among major asset classes. The Board believes this return expectation is reasonable, but recognizes that the actual 10-year asset mix policy return can deviate significantly from this expectation — both positively and negatively. The volatility level associated with this asset mix is approximately 12.90%.

4.6 Fund assets are invested using a combination of passive and active management strategies. Passive management reduces both the possibility for underperformance and the opportunities of outperformance. Active management is expected to earn net 0.40% per annum of additional returns over moving five-year periods. The Board recognizes that unsuccessful active management can reduce total fund returns.

4.7 As of July 1, 2021 the STRS Ohio total fund policy return (blended benchmark) is 28% Russell 3000, 23% International Blended Benchmark, 21% Fixed Income Blended Benchmark, 10% Real Estate Blended Benchmark, 17% Alternative Investments Blended Benchmark and 1% 90 day Treasury Bill. Consistent with the 2022 Asset Liability Study taking effect July 1, 2022, the total fund blended benchmark will change accordingly per the phase-in table on the dates specified. Investment objectives and guidelines for individual asset classes have been approved by the Board and are summarized in the following sections.

4.8 Liquidity reserves are kept at a minimum level, but sufficient to cover the short-term cash flow needs. STRS Ohio investment staff may utilize a derivative overlay to maintain the liquidity reserve level at 1%.

4.9 The Board reviews at least annually its expectations for asset class and active management performance, and assesses how the updated expectations affect the probability that the Fund will achieve the established investment objectives.

5.0 Rebalancing

5.1 Exposures to selected asset classes are actively managed within the rebalancing ranges specified in Exhibit 2. Rebalancing ensures that the Fund's actual asset allocation remains close to the target asset mix policy.

5.2 The Fund's actual asset mix is monitored at least monthly relative to established asset allocation policy targets and ranges. The timing and magnitude of rebalancing are decided with due consideration to the liquidity of the investments and the associated transaction costs.

5.3 In its Annual Investment Plan prepared for the Board, staff explains how it is managing asset class exposures based on short- and intermediate-term capital market forecasts.

5.4 The impact of rebalancing decisions on total fund returns is included in investment performance reports to the Board.

6.0 Passive and Active Management Within Risk Budgets

6.1 STRS Ohio investment staff has been delegated the responsibility for managing the Fund's exposure to passive and active investment strategies, subject to the constraint that active risk does not exceed Board-approved target risk budgets for the total fund and individual asset classes. Active risk will be evaluated compared to risk budgets on an ex-ante basis.

6.2 The Board has approved a target risk budget of 0.60% to 1.20%, with a working range of 0.20% to 1.60%, annualized active management for the total fund. In exchange for assuming this level of active risk, the Board expects active management to add net 0.40% of annualized excess return over moving five-year periods to judge its effectiveness.

6.3 The Board realizes that actual active management returns will likely be above or below the net 0.40% target over any five-year moving period, and therefore will evaluate the success of STRS Ohio active management program within this context. The Board recognizes that any amount of management return in excess of the associated investment costs improves the security of STRS Ohio plan members.

6.4 Passive management uses low cost index funds to access the return streams available from the world's capital markets. Index funds control costs, are useful tools for evaluating active management strategies, capture exposure to the more efficient markets and facilitate rebalancing to the asset mix policy.

6.5 Active management is expected to earn higher returns than those available from index funds by making value-added security selection and asset mix timing decisions. Unsuccessful active management results in below index fund returns.

6.6 Because there are no index fund products for private real estate and alternative investments, these assets must be actively managed. Active versus passive decisions in all asset classes are based upon using the best available information.

7.0 Global Equities — Domestic

7.1 Domestic equity is being managed relative to a Board-approved risk budget range of 0.20% to 1.50%, and is expected to earn at least 0.25% of annualized excess return above the Russell 3000® Index over moving five-year periods.

7.2 Key elements of the strategy:

(a) The portfolio's active management adds value primarily through security selection. Sector tilts by style, economic sectors or market capitalization are managed in accordance with the risk budget for domestic equities.

(b) The portfolio utilizes a variety of portfolio management approaches including quantitative and fundamental techniques to diversify the source of excess return.

(c) The portfolio utilizes a combination of internal and external management, utilizing multiple internal portfolio managers and multiple external manager firms to improve the likelihood of achieving excess returns, to diversify risk and to control costs.

7.3 Short sales may be used in the management of STRS Ohio domestic equity portfolios, but may not exceed 10% of the value of the asset class.

8.0 Global Equities — International

8.1 International equity is being managed relative to a Board-approved risk budget range of 0.60% to 2.50%, and is expected to earn at least 1.00% of annualized excess return above a blended benchmark of 80% MSCI World ex US Index-Net (50% hedged currency) and 20% MSCI Emerging Markets Index-Net over moving five-year periods.

8.2 Key elements of the strategy:

(a) The portfolio's active management adds value primarily through security selection and country allocation decisions. These decisions have been shown to be the principal sources of the excess return in international equity portfolios. Managers also have the ability to add value through currency management.

(b) The portfolio uses a variety of portfolio management approaches including quantitative and fundamental techniques to diversify the source of excess return.

(c) Aggregate exposures to countries, currencies, equity styles and market capitalization are monitored and managed relative to their benchmark exposures.

(d) The portfolio utilizes a combination of internal and external management, with multiple internal portfolio managers and multiple external manager firms to improve the likelihood of achieving excess returns, to diversify risk and to control costs.

(e) STRS Ohio utilizes a 50% hedged benchmark on the developed markets portfolios in order to reduce the overall exposure to currency volatility. With a 50% hedged benchmark, all developed market portfolios are generally hedged around the 50% benchmark level. Active currency positions are taken from time to time in some portfolios at the managers' discretion. This is generally limited to 10 percentage points under or over hedged around the benchmark for the total internal developed portfolios. Three-month currency forwards are the investment instrument generally used for hedges.

8.3 Short sales may be used in the management of STRS Ohio international equity portfolios, but may not exceed 10% of the value of the asset class.

9.0 Fixed Income

9.1 Core Fixed Income Portfolio is being managed relative to a Board-approved risk budget range of 0.10% to 1.50%, and is expected to earn at least 0.35% of annualized excess returns above the Bloomberg U.S. Universal Index over moving five-year periods.

9.2 Core Fixed Income Portfolio is actively managed because active management is generally low cost and market opportunities exist for skilled managers to generate excess returns.

9.3 Key elements of the Core Fixed Income Portfolio strategy:

(a) The portfolio will primarily be managed internally, with multiple external managers utilized in specialized segments of the market such as high yield and emerging market debt.

(b) The portfolio will emphasize issue selection, credit analysis, sector allocations and duration management.

(c) Aggregate exposures to duration, credit and sectors are monitored and managed relative to corresponding exposures in the asset class benchmark.

9.4 Liquid Treasury Portfolio is expected to be managed within a risk budget range of 0.00% to 0.25% during normal market conditions, but will have a Board-approved risk budget range of 0.00% to 1.00%. At times, it may be prudent to manage the portfolio to the upper end of the Board-approved risk budget range to accommodate the liquidity needs of the total fund. Returns are expected to track or slightly exceed the annualized returns of the Bloomberg U.S. Intermediate Treasury Index over moving five-year periods.

9.5 The marketability of this portfolio will remain high to maintain substantial flexibility in meeting the liquidity needs of the total fund including benefit payments, asset allocation rebalancing and diversification.

9.6 Key elements of the Liquid Treasury Portfolio strategy:

(a) The portfolio is internally managed because internal management is generally low cost and provides greater control over the timing of investment decisions in order to meet the rebalancing and cash flow needs of the total fund.

(b) The portfolio will emphasize liquidity, issue selection and minimize transaction costs through achievement of efficient trade execution.

(c) Exposures to duration, credit and sectors are monitored and managed relative to the portfolio benchmark and characteristics.

9.7 Short sales may be used in the management of STRS Ohio fixed-income portfolios, but may not exceed 10% of the value of the asset class.

9.8 The Total Fund Blended Benchmark incorporates the Fixed Income Blended Benchmark which consists of the actual Core Fixed Income Portfolio weight multiplied by the Bloomberg Barclays U.S. Universal Index plus the actual weight of the Liquid Treasury Portfolio multiplied by the Bloomberg Barclays U.S. Intermediate Treasury Index.

10.0 Real Estate

10.1 Real estate investments are being managed relative to a Board-approved risk budget range of 2.00% to 7.00%, and are expected to earn at least 1.00% of annualized excess returns above a blended benchmark over moving five-year periods. The Real Estate Blended Benchmark is 85% NCREIF Property Index and 15% FTSE NAREIT Equity REITs Index.

10.2 Key elements of the strategy:

(a) Eighty-five percent of Real Estate is actively managed. The portfolio is primarily managed internally, with direct property investments representing most of the portfolio. External Managers are used primarily for specialized segments of the market. Risk is diversified by investing across major property types and geographic areas.

(b) Leverage of up to and including 50%, in aggregate, is permitted for internally managed assets (excluding REITs).

(c) Publicly traded REITs are passively and actively managed and targeted at 15% of the real estate portfolio to enhance liquidity and diversification.

(d) Non-core real estate investments are limited to 30% of the real estate portfolio. Investment strategies will be characterized as "opportunistic" based on the market conditions prevailing at the time of investment.

10.3 Short sales may be used in the management of REITs, but may not exceed 10% of the value of the asset class.

11.0 Alternative Investments (Private Equity and Opportunistic/Diversified)

11.1 As of the adoption date of this Statement, Alternative investments involve separate allocations to private equity (7%) and opportunistic/diversified investments (10%) totaling 17%. The Alternative Investment asset class is being managed to exceed private market benchmarks. The Alternative Investment Blended Benchmark consists of the Private Equity Benchmark multiplied by 41.2% plus the Opportunistic/diversified Blended Benchmark multiplied by 58.8%. Effective July 1, 2022 the allocations to Alternative Investments are private equity (9%) and opportunistic/diversified investments (10%), totaling 19%. Beginning July 1, 2022, the Alternative Investment Blended Benchmark will consist of the Private Equity Benchmark multiplied by (47.4%) plus the Opportunistic/diversified Blended Benchmark multiplied by (52.6%).

11.2 Private equity investments are being managed to exceed a private market benchmark over moving 5-year periods. The Private Equity Benchmark is the Cambridge Associates Private Equity and Venture Capital Index one quarter lagged to be consistent with external fund reporting. Private equity investments are traded infrequently and, therefore, risk budget concepts are not applicable.

11.3 Key elements of the private equity strategy:

(a) Private equity investments are 100% actively managed.

(b) Private equity risk is diversified by investing across different types of investments including, but not limited to, venture capital, leverage buyouts, mezzanine debt or distressed debt. Private equity investments may be made directly, through funds, fund-of-funds or as co-investments.

(c) Private equity risk is also diversified by investing across vintage years, industry sectors, investment size, development stage and geography.

(d) Private equity investments are managed by general partners with good deal flow, specialized areas of expertise, established or promising net of fees track records and fully disclosed and verifiable management procedures.

11.4 Opportunistic/diversified investments are being managed to exceed a blend of private market benchmarks over moving 5-year periods. Investments in this category can be liquid or illiquid and, therefore, risk budget concepts are not applicable.

11.5 The Opportunistic/diversified blended benchmark consists of the actual Opportunistic Investments Portfolio weight multiplied by the Cambridge Associates Private Credit Index one quarter lagged to be consistent with external fund reporting plus the actual weight of the Diversified Investments Portfolio multiplied by the HFRI Fund of Funds Composite Index, which is a monthly index where subsequent revisions will be reflected in the following period.

11.6 Key elements of the opportunistic/diversified strategy:

(a) Opportunistic/diversified investments are tactical in nature and typically are actively managed.

(b) Downside protection during equity bear markets can be achieved and asset class risk is diversified by investing across different types of opportunistic/diversified investments.

(c) Opportunistic/diversified investments may be made directly, through funds, fund-of-funds or as co-investments.

12.0 Derivatives

12.1 Derivatives may be used in the management of STRS Ohio total fund, including all asset classes. Derivatives are typically, but not exclusively, futures contracts, equity swaps, credit default swaps, option contracts and option contracts on futures for market indexes. Options on individual securities, baskets of securities and equity-linked notes, and shorting for positioning purposes are further examples. Derivatives are both exchange traded and traded over the counter.

12.2 Derivative exposures must be of a hedging or positioning nature. As a percentage of total fund assets, the underlying exposure of all positioning derivatives will not exceed:

(a) 5% for fixed-income investments;

(b) 10% for domestic equity investments;

(c) 10% for international equity investments; and

(d) 1% for real estate investments.

(e) 10% for alternative investments

Hedging derivatives will not be included in the limits above, but must be disclosed in the semi-annual derivative exposure report.

12.3 Any use of leverage will adhere to asset allocation restrictions and asset class active management risk budget constraints.

13.0 Proxy Voting

13.1 Common stock proxies are valuable and should be voted in the best interest of STRS Ohio active and retired members.

13.2 The Board shall maintain stock proxy voting policies and has directed STRS Ohio investment staff and the proxy voting agents to use these policies as guidelines for voting common stock proxies held by the Fund.

14.0 Ohio Investments

14.1 The Board will give due consideration to investments that enhance the general welfare of the State of Ohio and its citizens provided that assets are invested in the best interest of STRS Ohio active and retired members. Preference will be given to Ohio investments offering competitive returns at risk levels comparable to similar investments currently available to the Board.

14.2 STRS Ohio investment staff shall maintain and implement an Ohio Investment Plan. The plan shall set forth procedures to assure that a special effort will be made by the investment staff to examine and evaluate all legal investment opportunities in the state and, where policy criteria are satisfied, to acquire such investments.

15.0 Broker-Dealers

15.1 Purchases and sales of publicly traded securities shall be executed with broker-dealers from a list reviewed by the Board. In those rare situations where best execution cannot be achieved through a broker-dealer on the list, the Deputy Executive Director — Investments may approve the use of a broker-dealer not on the list.

15.2 Selection shall be based on an evaluation by the STRS Ohio investment staff as to financial soundness, underwriting capabilities, research services, execution capabilities and other factors required by the staff to fulfill its assigned investment responsibilities.

15.3 Specific transactions will be directed to the broker on that list most capable of providing brokerage services necessary to obtain both the best available price and the most favorable execution.

15.4 The Board shall give equal consideration to smaller Ohio-headquartered broker-dealers or smaller broker-dealers with at least one Ohio office and broker-dealers owned and controlled by minorities and/or women, provided the assets are transacted in the best interest of STRS Ohio members.

15.5 The Board has a goal to increase the use of Ohio-qualified broker-dealers for the execution of domestic equity and fixed-income securities transactions, when the services that Ohio-qualified broker-dealers provide are equal in quality, cost, scope and execution capabilities to all broker-dealers approved to transact securities transactions on behalf of the Board.

15.6 Each firm listed shall file with the Board on an annual basis such evidence of financial responsibility as required by the Board. This information shall include, but not be limited to, an audited financial statement.

15.7 When stocks are purchased during underwriting, allocations may be made to dealers not on the approved list provided the managing underwriter is so listed.

15.8 When entering into real estate transactions, the Board shall give equal consideration to Ohio firms providing associated professional services, minority-owned and controlled firms, and firms owned and controlled by women.

16.0 Securities Lending

The Board may operate a securities lending program to enhance the income of the Fund. The program must be operated by a bank trustee who follows the custodial requirements of the Treasurer of the State of Ohio and each security lent must be fully collateralized. Results of the program must be reported to the Board annually.

17.0 Securities Litigation

Involvement in securities litigation is an important responsibility for institutional investors with major public market exposure. The Board shall maintain a policy to determine the appropriate action to be taken when class action litigation is initiated against a company that generates a significant loss for the Board during the class period.

18.0 Security Valuation

Valuation of investments shall be the total of:

(a) The primary closing price on the principal registered stock exchange for all equity securities so listed.

(b) The official closing price as reflected by either the OTCBB (Over the Counter Bulletin Board) or the OTC Markets Group for equity securities not listed on a registered stock exchange.

(c) The current value as determined by a qualified independent service for all bonds, notes and certificates of indebtedness, including accrued income.

(d) Amortized cost for commercial paper, certificates of deposit and repurchase agreements.

(e) Each internally managed real estate property initially valued at acquisitional price. Subsequent valuations completed internally or externally as outlined in the Real Estate Valuation Policy Manual. Full, self-contained appraisals completed by an independent external appraiser no less than every third year.

(f) The most recent external manager valuations for alternative investments and externally managed real estate updated to include current capital activity.

(g) International equity and external fixed income investments are valued by the subcustodian using relevant closing market prices and exchange rates and including accrued income for fixed income investments.

(h) Each internally managed alternative investment initially valued at acquisition price. Subsequent valuations completed internally as outlined in the Alternative Investments Valuation Policy Manual.

19.0 Performance Monitoring and Evaluation

19.1 The Board and its agents use a variety of compliance, verification and performance measurement tools to monitor, measure and evaluate how well STRS Ohio assets are being managed. Monitoring, reporting and evaluation frequencies range from live real time performance, to daily, weekly, monthly, quarterly and annualized performance for periods up to 20 years.

19.2 The Board has developed a performance monitoring and evaluation system that answers two fundamental fiduciary questions:

(a) Are the assets being prudently managed? More specifically, are assets being managed in accordance with established laws, policies and procedures, and are individual investment managers in compliance with their mandates?

(b) Are the assets being profitably managed? More specifically, has performance affected benefit security, has capital market risk been rewarded and has active management risk been rewarded?

19.3 If there is a deviation from Board policies, STRS Ohio investment staff is required to provide the Board with a report explaining how the deviation was discovered, the reasons for the deviation, the impact on Fund performance, if any, and steps taken to mitigate future occurrences.

19.4 Exhibit 3 is an example of one of many reports used by the Board to monitor and evaluate performance of the total fund. Panel one indicates whether the total fund return exceeded the actuarial rate of return. Panel two indicates whether the Fund was rewarded for investing in the capital markets. Panel three indicates whether active management added or detracted from returns.

19.5 Additional reports provide the Board with a multi-level view of investment activities at different levels and over different time horizons. These include:

(a) Performance of the total fund;

(b) Performance of individual asset class strategies;

(c) Performance of internally and externally managed portfolios; and

(d) Performance of individual external managers.

Exhibit 3: EXAMPLE Total Fund Trustee Summary Report, as of June 30, 2021

Experienced Returns	Annualized Rates of Return				
	1 Year	3 Years	5 Years	10 Years	20 Years
Have returns affected funded ratio?					
1. Total fund return*	29.28%	12.62%	12.34%	9.97%	7.87%
2. Actuarial discount rate	7.45%	7.45%	7.51%	7.66%	7.80%
3. Relative performance (1–2)	21.83%	5.17%	4.83%	2.31%	0.07%
Has plan been rewarded for capital market risk?					
4. Total fund blended benchmark return*	27.98%	12.28%	11.85%	9.75%	7.61%
5. Minimum risk/high opportunity cost policy of 91-day T-Bills	0.09%	1.34%	1.17%	0.63%	1.29%
6. Impact of asset mix policy (4–5)	27.89%	10.94%	10.68%	9.12%	6.32%
Has plan been rewarded for active management risk?					
7. Active management return (1–4)*	1.30%	0.34%	0.49%	0.22%	0.26%
8. Net active management return estimated**	1.18%	0.21%	0.36%	0.09%	0.14%

* Gross returns, except for alternative investments and real estate where the return is net of all external investment management fees and costs, including carried interest and other fund expenses.

** Net returns are net of all internal and external investment management fees and costs, including carried interest and other fund expenses.

The STRS Ohio real estate return includes the use of leverage.

The STRS Ohio total fund policy return (blended benchmark) is 28% Russell 3000, 23% International Blended Benchmark, 21% Fixed Income Blended Benchmark, 10% Real Estate Blended Benchmark, 17% Alternative Investments blended benchmark and 1% 90 day Treasury Bill as of July 1, 2021.

Statement of Fund Governance

Effective May 19, 2022

1.0 Purpose

1.1 This Statement of Fund Governance (the "Statement") summarizes the governance structure established by the Board of the State Teachers Retirement Board of Ohio (the "Board") to ensure the prudent, effective and efficient management of the assets of the State Teachers Retirement System of Ohio ("STRS Ohio").

1.2 The fund governance structure was approved by the Board after careful consideration of alternative approaches to governing a very large and growing pension fund within an increasingly complex financial and investment environment.

1.3 The Statement has been prepared with five audiences in mind: incumbent, new and prospective Board members; STRS Ohio investment staff; STRS Ohio active and retired members; the Ohio General Assembly and Governor; and agents engaged by the Board to manage, administer or advise on STRS Ohio's assets ("Fund").

1.4 The Statement summarizes more detailed policy and procedure documents prepared and maintained by STRS Ohio investment staff, and numerous other documents that govern the day-to-day management of STRS Ohio assets.

1.5 The Board regularly assesses the continued suitability of the STRS Ohio fund governance structure, initiates change as necessary and updates this Statement accordingly.

1.6 The Board may authorize its administrative officers and committees to act for it in accord with its policies (Ohio Revised Code [ORC] Sections 3307.04 and 3307.15). The Board, no less frequently than annually, adopts a resolution delegating to the Executive Director and the Deputy Executive Director — Investments the authority to acquire, dispose, operate and manage the assets of the Fund, subject to the Board's policies and to subsequent approval by the Board.

1.7 In carrying out the operation and management of STRS Ohio, the Board, the Executive Director, the investment staff and others that are considered fiduciaries as defined in ORC Section 3307.01(K) are subject to various fiduciary responsibilities in ORC Chapter 3307, including those found in ORC Sections 3307.15, 3307.151, 3307.18 and 3307.181. This Statement incorporates, and is subject to, all of the provisions of ORC Chapter 3307.

1.8 The Board acknowledges its responsibilities under ORC Chapter 3307 and to the extent that this Statement is inconsistent with ORC Chapter 3307, Chapter 3307 shall control.

1.9 The Board approved this Statement on May 19, 2022.

2.0 Governance Principles

2.1 Three principles guided the Board's development of the STRS Ohio fund governance structure:

(a) As STRS Ohio governing fiduciary, the Board is ultimately accountable for all investment decisions. Section 3307.15 of the Ohio Revised Code (the "Code") vests the investment function in the Board and requires the Board to ". . . adopt, in regular meetings, policies, objectives, or criteria for the operation of the investment program . . ." Section 3307.15 of the Code sets forth the fiduciary responsibility of the Board in discharging its duties with respect to the fund.

(b) To ensure STRS Ohio assets are prudently, profitably and efficiently managed on a day-to-day basis, the Board needs to delegate the management and implementation of Board investment policies to qualified managing and operating fiduciaries. Sections 3307.04 and 3307.15 of the Code empower the Board to authorize its committees and administrative officers to act for it in accord with Board policies. The fiduciary responsibility of Board delegates in discharging their duties with respect to the fund is specified in Section 3307.15.

(c) To ensure effective oversight of delegates, the Board requires informative and timely performance reports that reveal if managing and operating fiduciaries have complied with established policies, and indicate how assets under their care have performed relative to Board-approved investment objectives.

3.0 Investment Decisions Retained by the Board

3.1 The Board approves the following investment policies:

(a) Statement of Investment Objectives and Policy, which includes the following:

(i) Total fund risk and return objectives;

(ii) Total fund target asset mix policy;

(iii) Total fund asset mix policy rebalancing ranges;

(iv) Active management risk and return objectives at the total fund and asset class levels; and

(v) Performance measurement criteria and evaluation standards.

(b) Proxy voting;

(c) Ohio investments;

(d) Securities lending;

(e) Broker-dealer selection criteria and procedures;

(f) Ohio-qualified investment managers and brokers; and

(g) Securities litigation.

3.2 Before approving or amending policy decisions, the Board seeks advice, guidance and recommendations from STRS Ohio investment staff, Board-retained investment consultants, and other experts or sources as considered prudent by the Board.

4.0 Investment Decisions Delegated to Investment Staff

4.1 The Board, through the Executive Director, has delegated to qualified STRS Ohio investment staff the following investment management and implementation decisions:

(a) Buying, selling, managing and monitoring individual securities, real assets and/or other investment transactions to achieve the total fund and asset class investment objectives approved by the Board;

(b) Retaining, managing and terminating external investment managers within each asset class as required to achieve the total fund and asset class investment objectives approved by the Board;

(c) Ensuring total fund, asset class and individual manager portfolios comply with established parameters and risk levels; and

(d) Preparing, negotiating and executing external investment manager mandates, guidelines and fee agreements.

4.2 In making these decisions, STRS Ohio investment staff seeks the advice, guidance and recommendations of Board-retained investment consultants, external investment managers, and other experts and sources as considered prudent by STRS Ohio staff.

5.0 Board Oversight

5.1 The Board requires investment staff to prepare and deliver an Annual Investment Plan that explains how STRS Ohio assets will be managed in order to achieve the Board-established investment objectives. This provides the Board a focused opportunity to:

(a) Question and comment on staff's investment management plans;

(b) Request additional information and support about staff's investment intentions; and

(c) Express its confidence in the Annual Investment Plan.

5.2 The Board meets at least quarterly to assess how assets are being managed relative to the Annual Investment Plan, to monitor and evaluate investment performance relative to objectives and to address other investments issues as are warranted.

5.3 The Board approves the criteria and standards for monitoring and evaluating the impact different investment decisions have on total fund, asset class and manager-level performance. Performance is monitored and evaluated with respect to risk and return objectives established by the Board.

(a) Investment risks are monitored and evaluated quarterly by comparing total fund and asset class risk characteristics relative to suitable benchmarks.

(b) Investment returns are monitored monthly and evaluated quarterly by comparing total fund and asset class returns relative to suitable benchmarks.

5.4 Before approving or amending the criteria for monitoring and evaluating investment decisions, the Board seeks advice, guidance and recommendations from STRS Ohio investment staff, Board-retained investment consultants, and other experts and sources as considered prudent by the Board.

Basis of Presentation

Investment fair values and performance information for STRS Ohio are presented differently in this report for various reasons, consistent with the intended purpose of the measurement. Therefore, it is important to understand the methodology used for financial reporting and performance reporting.

In both the Financial and Investments sections, unless otherwise noted, investment fair values are reported in accordance with U.S. Generally Accepted Accounting Principles to most accurately assess the financial condition as of a point in time. The primary difference between the basis for investment performance and that used for financial reporting are the categorization of investments and differences resulting from the timing of recognition of performance for certain investments. Consistent with investment industry practices, private fund investment values and performance are reported with a quarter lag. For financial reporting purposes, adjustments are made to bring the lagged valuations current to the fiscal year-end. Both sets of numbers are relevant but reflect different methodologies and serve different purposes.

Performance returns reported throughout the Financial and Investments sections of this report are prepared using time-weighted rates of return, unless otherwise noted. Total fund net returns are reported and are net of all internal and external investment management fees and costs, including carried interest and other fund expenses. Asset class performance is gross returns, except for alternative investments and real estate where the return is net of all external investment management fees and costs, including carried interest and other fund expense. Returns for periods longer than one year are annualized. The reporting of performance information is consistent with investment industry standards and is presented in a manner consistent with such information presented by the global financial markets, other pension plans and institutional investors. This method of presentation provides timely information that facilitates comparisons to benchmarks and peer results.

Verification and Performance Examination Report

State Teachers Retirement System of Ohio
275 E. Broad Street
Columbus, OH 43215-3771

We have verified whether State Teachers Retirement System of Ohio (the "Asset Owner") has, for the periods from July 1, 2006 through June 30, 2022, established policies and procedures for complying with the Global Investment Performance Standards (GIPS®) related to composite and total fund maintenance and the calculation, presentation, and distribution of performance that are designed in compliance with the GIPS standards, as well as whether these policies and procedures have been implemented on an asset owner-wide basis. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein. We have also examined the Asset Owner's Total Fund for the periods from July 1, 2006 through June 30, 2022.

The Asset Owner's management is responsible for its claim of compliance with the GIPS standards, the design and implementation of its policies and procedures, and for the accompanying Total Fund's GIPS asset owner report. Our responsibilities are to be independent from the Asset Owner and to express an opinion based on our verification and performance examination. We conducted this verification and performance examination in accordance with the required verification and performance examination procedures of the GIPS standards, which includes testing performed on a sample basis. We also conducted such other procedures as we considered necessary in the circumstances.

In our opinion, for the periods from July 1, 2006 through June 30, 2022, the Asset Owner's policies and procedures for complying with the GIPS standards related to composite and total fund maintenance, as well as the calculation, presentation, and distribution of performance, have been, in all material respects:

- Designed in compliance with the GIPS standards, and
- Implemented on an asset owner-wide basis.

Also, in our opinion, the Asset Owner has, in all material respects:

- Constructed the Total Fund and calculated the Total Fund's performance for the periods from July 1, 2006 through June 30, 2022 in compliance with the GIPS standards; and
- Prepared and presented the accompanying Total Fund's GIPS asset owner report for the periods from July 1, 2012 through June 30, 2022 in compliance with the GIPS standards.
- Calculated and presented the Supplemental Information included in the accompanying Total Fund's GIPS asset owner report for the periods from July 1, 2021 through June 30, 2022 in compliance with the GIPS standards.

This report does not relate to or provide assurance on any specific performance report of the Asset Owner other than the Asset Owner's accompanying Total Fund GIPS asset owner report, or on the operating effectiveness of the Asset Owner's controls or policies and procedures for complying with the GIPS standards.

ACA Group

ACA Group, Performance Services Division
August 18, 2022

ACA Group, 1370 Broadway, 12th Floor New York, NY 10018
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State Teachers Retirement System of Ohio
Total Fund
July 1, 2012 through June 30, 2022

Total Fund as of June 30

Fiscal Year	Gross Return (%)	Net Return (%)	Benchmark Return (%)	% of Externally-Managed Assets (%)	Total Composite Assets ($ millions)
2022	-3.61	-3.73	-5.62	36	87,616
2021	29.28	29.16	27.98	34	94,832
2020	3.14	3.01	3.07	31	77,080
2019	7.13	6.99	7.30	30	78,851
2018	9.57	9.43	8.94	30	77,750
2017	14.29	14.15	13.52	29	75,060
2016	0.92	0.78	0.67	30	69,861
2015	5.45	5.33	5.08	28	74,173
2014	16.83	16.71	17.53	28	74,812
2013	13.66	13.54	14.17	25	67,982

State Teachers Retirement System of Ohio ("STRS Ohio") claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. State Teachers Retirement System of Ohio ("STRS Ohio") has been independently verified for the periods from July 1, 2006 through June 30, 2022. An asset owner that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the asset owner's policies and procedures related to total fund and composite maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on an asset owner-wide basis. The Total Fund has had a performance examination for the periods July 1, 2006, through June 30, 2022. The verification and performance examination reports are available upon request.

Accompanying Notes

1. For the purpose of complying with the GIPS standards, the firm is defined as the State Teachers Retirement System of Ohio ("STRS Ohio"), which was established in 1919 by the Ohio General Assembly and is the sponsor and manager of assets for the State Teachers Retirement System of Ohio. The Total Fund was created and incepted in 1919.

2. The Total Fund includes all discretionary assets managed by STRS Ohio for the benefit of participants in the State Teachers Retirement System of Ohio. The strategy reflects an actual asset allocation to the following asset classes as of June 30, 2022: Liquidity Reserves 1.7%, Fixed Income 17.1%, Domestic Equities 26.9%, International Equities 21.8%, Global Equities 0.0%, Real Estate 10.8%, and Alternative Investments 21.7%. The assets of STRS Ohio are managed in accordance with the risk budget for the Total Fund and the individual asset classes. The investment objective for the Total Fund is to earn, over moving

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thirty-year periods, an annualized return that equals or exceeds the actuarial rate of return, approved by the State Teachers Retirement Board ("Board") to value STRS Ohio liabilities. Effective as of the June 30, 2021, actuarial valuation, the actuarial investment return assumption is 7.00%. The Board-approved asset allocation policy from the 2017 Asset Liability Study was adopted after careful consideration of the investment objectives, liability structure, funded status and liquidity needs of STRS Ohio, and the return, risk, and risk-diversifying characteristics of different asset classes. STRS Ohio hires external managers to manage selected portfolios. The percent of externally-managed assets for the Total Fund as of June 30 for the past 10 fiscal years is disclosed on page 1. Descriptions of the asset classes are as follows:

Fixed Income: The Fixed Income asset class is generally fully invested in fixed income instruments and includes a core fixed income portfolio as well as a liquid treasury portfolio. The core fixed income portfolio is reflective of the Bloomberg U.S. Universal Index composed of the following issuers: U.S. Government and related agencies; mortgage-backed and asset-backed issuers; foreign issuers; corporations including investment grade and high yield; and emerging market debtors. The methodology employed places an emphasis on fundamental economic, portfolio, and security analysis to manage sector weightings and maturity distributions. The strategy of the liquid treasury portfolio is to provide liquidity to meet the rebalancing and cash flow needs of the Total Fund. The fixed income asset class seeks diversification by market sector, quality, and issuer. The asset class is primarily managed internally, with external managers utilized in specialist segments of the market such as high yield and emerging market debt. Derivatives may be used to adjust the exposure to interest rates, individual securities, or various market sectors in the fixed income portfolio. Underlying exposure of derivatives for fixed income investments may not exceed 5% of Total Fund assets. As of June 30, 2022, fixed income derivative positions were 0.09% as a percentage of Total Fund assets. STRS Ohio has given its internal and external managers discretionary authority to manage the assets in the account including, but not limited to, futures, options, currency, and swaps. STRS Ohio enters into forward currency contracts for hedging purposes.

Domestic Equities: The Domestic Equities asset class includes domestic and international common stocks traded on U.S. exchanges, American depository receipts (ADRs), real estate investment trust shares (REITs), and domestic equity derivatives (including, but not limited to, futures, stock options, and index options). Sector tilts by style, economic sectors, or market capitalization are managed in accordance with the risk budget for domestic equities. A variety of portfolio management approaches including quantitative and fundamental techniques are used to diversify the source of excess return. The asset class utilizes a combination of active and passive management and multiple internal and external portfolio managers to improve the likelihood of achieving excess returns, diversifying risk, and controlling costs. STRS Ohio will invest no more than 3% of the Total Fund in equities of any one company. Underlying exposure of equity derivatives may not exceed 10% of Total Fund assets. As of June 30, 2022, domestic equity derivative positions were 1.53% as a percentage of Total Fund assets.

International Equities: The International Equities asset class is a diversified portfolio including both developed and emerging countries. Portfolios consist of international equities including international common stocks traded on U.S. exchanges, ADRs and ordinaries, international depository receipts (IDRs), country funds, international equity derivatives (including, but not limited to, stock options and index options), and some short-term debt instruments. The asset class emphasizes quantitative and fundamental management approaches and exposures to security selection and country allocation decisions. Internal and external managers have the ability to add value through currency management. Aggregate exposures to countries, currencies, equity styles and market capitalization are monitored and managed relative to their benchmark exposures and the risk budget. The portfolio utilizes a combination of internal and external management to improve the likelihood of achieving excess returns, diversify risk, and control costs.

Underlying exposure of derivatives for international equities may not exceed 10% of Total Fund assets. As of June 30, 2022, international equity derivative positions were 1.04% as a percentage of Total Fund assets. STRS Ohio has given its internal and external managers discretionary authority to manage the assets in the account including, but not limited to, financial, currency and stock index futures, equity swaps, and options on futures and other securities. STRS Ohio invests in international equity swaps through its internally managed program and this represents the primary exposure of derivatives used in this asset class, at 0.80% of Total Fund assets as of June 30, 2022. The STRS Ohio international equity swaps are unleveraged derivative instruments that are constructed to replicate the effect of investing directly in foreign equity markets. The swap contracts entitle STRS Ohio to receive the US dollar return (including currency fluctuations) of a single market index or basket of indexes. In exchange, STRS Ohio is obligated to pay a short-term cash return. The market risk of the swaps is comparable to owning the underlying stocks that comprise the indexes. STRS Ohio also enters into forward currency contracts for hedging purposes.

Global Equities: The Global Equities portfolio includes domestic and non-U.S.-based equities. This actively managed portfolio employs quantitative techniques and is broadly diversified. It can actively tilt at the country, sector, or stock level depending upon its models' expectations. Underlying exposure of equity derivatives in this portfolio combined with the international equities asset class may not exceed 10% of Total Fund assets. As of June 30, 2022, global equity derivative positions were 0.00% as a percentage of Total Fund assets.

Real Estate: Real estate investments are primarily investments in direct properties which are diversified between property type, geographic location, and investment ownership structure and are internally managed. Typically, higher risk/return strategies such as opportunistic commingled funds, both domestic and international, are managed by external real estate managers and are limited to 30%. Publicly traded real estate securities are passively managed internally and are targeted at 15% of the real estate asset class to enhance liquidity and diversification. Private real estate is 100% actively managed because index funds replicating the real estate broad market are not available. STRS Ohio may borrow funds on a secured or unsecured basis and leverage is limited to 50% of the internally managed direct real estate assets. On June 30, 2022, and 2021, debt as a percentage of these assets was 23.4% and 27.5%, respectively. The debt as a percentage of assets calculation has changed for the periods shown to reflect the portion of debt attributed to STRS Ohio. Derivatives may be used and cannot exceed 1% of total assets. As of June 30, 2022, real estate derivative positions were 0.00% as a percentage of Total Fund assets. Due to the nature of real estate investments, all private real estate is valued using market-based inputs that are comparable but subjective in nature due to the lack of widely observable inputs.

Alternative Investments: Alternative investments consist of private equity and opportunistic/diversified investments. Private equity investments primarily include venture capital, growth equity, and leveraged buyout opportunities and are 100% actively managed because index funds are not available. Private equity risk is diversified by investing across vintage years, industry sectors, investment size, development stage, and geography, in addition to investing in sector-focused, and international funds. STRS Ohio typically invests as a limited partner in closed-end partnerships. Private equity investments are managed by general partners with strong deal flow, specialized areas of expertise, established or promising net of fees track records, and fully disclosed and verifiable management procedures.

Opportunistic/diversified investments are being managed to exceed a blend of private market benchmarks over moving 5-year periods. Investments in this category can be liquid or illiquid and are tactical in nature. Opportunistic/diversified investments are actively managed because index funds are not available. Downside protection and asset class risk diversification are targeted by investing across different types of opportunistic/diversified investments. Opportunistic/diversified investments may be made directly, through fund-of-funds, or as co-investments.

Due to the nature of alternative investments, substantially all investments in this asset class are valued using market-based inputs that are comparable but subjective in nature due to the lack of widely observable inputs. Underlying exposure of derivatives for alternative investments may not exceed 10% of Total Fund assets. As of June 30, 2022, alternative investment derivative positions were 0.07% as a percentage of Total Fund assets. STRS Ohio utilizes both listed and over-the-counter (OTC) options, futures, and swaps with the

S&P 500 Index as the underlying exposure. These positions are primarily used for hedging purposes with a smaller percentage classified as positioning.

Liquidity Reserves: The liquidity reserves portfolio is intended to obtain a high level of current income consistent with the preservation of principal and liquidity. Investments generally consist of U.S. dollar-denominated short-term securities of corporations that are rated in the highest category (A1/P1 rating) by the rating organizations and in securities that are guaranteed by the U.S. government or one of its related agencies. Credit quality is emphasized for the preservation of principal and liquidity.

3. Returns are net of brokerage commissions, expenses related to trading, and applicable foreign withholding taxes on dividends, interest, and capital gains. All returns are expressed in U.S. dollars.

   Total Fund performance is calculated monthly using the Modified Dietz method. Gross returns are net of transaction costs and gross of management fees, except for alternative investments & real estate where the return is also net of all external investment management fees and costs, including carried interest and other fund expenses. Net returns are net of all internal and external investment management fees and costs, including carried interest and other fund expenses. Costs are reported annually by CEM Benchmarking Inc. (CEM) on a calendar year basis and are reflected in the Board's Trustee Summary Report in the Callan Associates quarterly performance report. Investment management costs include internal investment personnel, professional and technical services and other investment operating expenses, actual external manager fees, custodial banking fees, and allocated overhead and oversight including Information Technology Services (ITS). Investment management costs deducted from the gross return to arrive at the net return have ranged from 11 to 14 basis points per year over the past 10 years.

   Total composite assets reflect investment fair values calculated and reported in a manner consistent with investment industry standards. Policies for valuing investments, calculating performance, and preparing the GIPS Asset Owner Report are available upon request.

4. The Total Fund includes all individual portfolios that are combined into one aggregate portfolio for GIPS compliance purposes. The performance of the combined portfolio reflects the overall mandate of the plan. Because the Total Fund is one aggregate portfolio for all periods, no measure of internal dispersion of annual portfolio returns is presented.

5. The three-year annualized ex-post standard deviation measures the variability of the composite (using Total Fund gross returns) and the benchmark for the 36 months ended at the following dates:

	3-Yr Annualized Standard Deviation (%)	
June 30	Total Fund	Benchmark
2022	10.1	10.1
2021	10.1	9.9
2020	8.8	8.7
2019	6.2	6.0
2018	6.0	5.9
2017	6.2	6.2
2016	6.7	6.8
2015	4.8	5.0
2014	7.7	8.1
2013	8.7	9.0

6. Benchmark returns are provided to represent the investment environment existing during the periods shown. Each asset class utilizes a benchmark, which as of June 30, 2022, is as follows:

Fixed Income: The Fixed Income blended benchmark is calculated daily and is a blend of two benchmarks using the core fixed income actual weighting and the Bloomberg U.S. Universal index[1] using the liquid treasury portfolio actual weighting and the Bloomberg U.S. Intermediate Treasury index[1]. Bloomberg U.S. Universal Index represents the union of the U.S. Aggregate Index, U.S. Corporate High-Yield Index, Investment Grade 144A Index, Eurodollar Index, U.S. Emerging Markets Index, and the non-ERISA eligible portion of the CMBS Index. The Bloomberg U.S. Universal Index covers USD-denominated, taxable bonds that are rated either investment-grade or below investment grade. The Bloomberg U.S. Intermediate Treasury Index consists of U.S dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Maturities are between 1 year and up to 10 years.

Domestic Equities: The Russell 3000® Index[2] measures the performance of the 3,000 largest U.S. companies based on total market capitalization and represents approximately 97% of the investable U.S. equity market.

International Equities: The International blended benchmark is calculated monthly using 80% of the MSCI World ex-U.S. 50% Hedged Index-Net and 20% of the MSCI Emerging Markets Index-Net. The MSCI World ex-U.S. 50% Hedged Index-Net is a free float-adjusted market capitalization index of approximately 887 foreign companies that is designed to measure developed market equity performance, excluding the United States. The 50% hedged index captures the performance of the international equity markets while capping the effects of currency fluctuations on the U.S. dollar to 50%. A forward rate is used to construct the hedge. The MSCI Emerging Markets Index-Net is a free float-adjusted market capitalization index that is designed to measure equity performance in the global emerging markets. The index is rebalanced monthly. MSCI assumes the maximum withholding tax rate applicable to institutional investors.

Global Equities: The MSCI All Country World Index-Net is a free float-adjusted market capitalization index denominated in U.S. dollars of approximately 50 countries and measures the equity performance of U.S., non-U.S. developed, and emerging markets. MSCI assumes the maximum withholding tax rate applicable to institutional investors.

Real Estate: The Real Estate blended benchmark is calculated quarterly and is a blend of two benchmarks using 85% of the National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index and 15% of the FTSE NAREIT Equity REITs Index. The NCREIF Property Index (NPI) publishes an unlevered quarterly return for private, core real estate held by institutional investors. It reflects investment performance for over 10,000 commercial properties. The FTSE NAREIT Equity REITs Index is a float-adjusted market capitalization index of 145 companies that is designed to measure U.S. Equity REIT performance.

Alternative Investments: The Alternative Investment blended benchmark consists of the Private Equity Benchmark multiplied by 41.2% plus the Opportunistic/diversified Blended Benchmark multiplied by 58.8%. The Private Equity Benchmark is the Cambridge Associates Private Equity and Venture Capital Index one quarter lagged to be consistent with external fund reporting. The Opportunistic/diversified blended benchmark consists of the actual Opportunistic Investments Portfolio weight multiplied by the Cambridge Associates Private Credit Index one quarter lagged to be consistent with external fund reporting plus the actual weight of the Diversified Investments Portfolio multiplied by the HFRI Fund of Funds

[1] Source: Bloomberg® and the Bloomberg Indices are service marks of Bloomberg Finance L.P. and its affiliates, including Bloomberg Index Services Limited (“BISL”), the administrator of the index (collectively “Bloomberg”) and have been licensed for use for certain purposes by State Teachers Retirement System of Ohio. Bloomberg is not affiliated with State Teachers Retirement System of Ohio, and Bloomberg does not approve, endorse, review, or recommend this material. Bloomberg does not guarantee the timeliness, accurateness, or completeness of any data or information relating to this material.

[2] The Russell Indices are a trademark of the FTSE International Limited (FTSE) and Frank Russell Company (Russell) and their respective subsidiary undertakings, which are members of the London Stock Exchange Group plc group.

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Composite Index, which is a monthly index where subsequent revisions will be reflected in the following period. For benchmark returns presented prior to July 1, 2021, the Alternative Investments benchmark was the actual investment return of the STRS Ohio Alternative Investment portfolio for total fund blended benchmark purposes.

The Cambridge Private Equity and Venture Capital Index is comprised of 3,541 private equity & venture capital funds, including fully liquidated partnerships, formed between 1981 and 2021. The Cambridge Private Credit Index is comprised of 376 private credit funds, including fully liquidated partnerships, formed between 1986 and 2021. The HFRI Fund of Funds Composite Index is comprised of hedge funds invested with multiple managers through funds or managed accounts.

Liquidity Reserves: The ICE BofA US 3-Month Treasury Bill Index is used.

The Total Fund blended benchmark is calculated monthly using a blend of the asset class benchmarks based on the Total Fund's policy weights for the respective asset classes, as follows:

	July 1, 2021-June 30, 2022
Fixed Income	21%
Domestic Equities	28%
International Equities	23%
Real Estate	10%
Alternative Investments	17%
Liquidity Reserves	1%

Information concerning asset class benchmarks and policy weights for other periods is available upon request.

7. Past performance is not an indicator of future investment performance results.

8. As the Total Fund represents 100% of the assets managed by STRS Ohio, this GIPS Asset Owner Report represents STRS Ohio's list of Total Fund descriptions.

9. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.

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Supplemental Information:

The information in the table below is supplemental to the Total Fund GIPS Asset Owner Report presented on the previous pages. Performance information is for the period July 1, 2021 through June 30, 2022.

Fund/Asset Class	Gross Return (%)	Benchmark Return * (%)	As of June 30, 2022: Number of Portfolios	Assets ($ millions)	% of Fund Assets (%)	% of Externally Managed Assets (%)
Total Fund	-3.61	-5.62	77	87,616	100.0	36
Fixed Income	-9.79	-9.90	9	14,976	17.1	11
Domestic Equities	-14.90	-13.87	17	23,578	26.9	9
International Equities	-11.80	-14.09	19	19,101	21.8	47
Global Equities	-16.48	-15.75	1	6	0.0	0
Real Estate	21.96	17.30	10	9,437	10.8	13
Alternative Investments	18.36	13.59	20	19,032	21.7	94
Liquidity Reserves	0.16	0.17	1	1,485	1.7	0

* Total Fund and asset class benchmarks as of June 30, 2022, are as follows:

Fund/Asset Class	Benchmark
Total Fund	Total Fund blended benchmark
Fixed Income	Fixed Income blended benchmark
Domestic Equities	Russell 3000 Index
International Equities	International blended benchmark
Global Equities	MSCI All Country World Index – Net
Real Estate	Real Estate blended benchmark
Alternative Investments	Alternative Investments blended benchmark
Liquidity Reserves	ICE BofA US 3-Month Treasury Bill Index

Please refer to Note 6 earlier in the report for further discussion of the Total Fund and asset class benchmarks.

Accompanying Notes

Returns are net of brokerage commissions, expenses related to trading, and applicable foreign withholding taxes on dividends, interest, and capital gains. All returns are expressed in U.S. dollars.

Total Fund and asset class returns are calculated as follows:

Total Fund performance is calculated monthly using the Modified Dietz method. Gross returns are net of transaction costs and gross of management fees, except for alternative investments & real estate where the return is also net of all external investment management fees and costs, including carried interest and other fund expenses. Net returns are net of all internal and external investment management fees and costs, including carried interest and other fund expenses. The total fund net return was -3.73% for the year ended June 30, 2022, and the fund outperformed its Total Fund blended benchmark by 1.89% net of all fees and costs over this same period. Costs are reported annually by CEM Benchmarking Inc. on a calendar year basis and are reflected on the Board's Trustee Summary Report in the Callan Associates quarterly performance report. Investment management costs include internal investment personnel, professional and technical services and other investment operating expenses, actual external manager fees, custodial banking fees, and allocated overhead and oversight including Information Technology Services (ITS).

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Fixed Income performance is calculated daily. Performance of the internally-managed portfolios excludes cash returns, as cash is swept daily into the liquidity reserves portfolio. Gross returns are reflected. Gross returns are defined in note 3.

Domestic Equities performance is calculated daily. Performance of the internally-managed portfolios excludes cash returns, as cash is swept daily into the liquidity reserves portfolio. Gross returns are reflected. Gross returns are defined in note 3.

International Equities performance is calculated daily. The performance of all portfolios in this asset class includes cash returns. Gross returns are reflected. Gross returns are defined in note 3.

Global Equities performance is calculated daily. The performance of the portfolio in this asset class includes cash returns. Gross returns are reflected. Gross returns are defined in note 3.

Real Estate performance is calculated daily with private real estate valuation changes reported monthly. Internally managed direct real estate investments are valued by an external appraiser once every three years and by an internal valuation quarterly. Valuations of externally managed commingled real estate funds are determined by the underlying investment manager with supporting financial statements when available generally on a quarter lag. Performance of real estate excludes cash returns, as cash is swept daily into the liquidity reserves portfolio. Gross returns are reflected. Gross returns are defined in note 3.

Alternative Investments performance is calculated monthly using the Modified Dietz method. Alternative investments are valued by the underlying investment manager with supporting financial statements generally on a quarterly basis. Typically there is a one to three-month lag in the fair values used by STRS Ohio but the values are adjusted to reflect the current capital activity. Performance of alternative investments excludes cash returns, as cash is swept daily into the liquidity reserves portfolio. Gross returns are reflected. Gross returns are defined in note 3.

Liquidity Reserves performance is calculated daily.

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Investment Performance
(total returns, annualized on a fiscal-year basis, July 1–June 30)

1-Year Returns (2022)

Asset Category	STRS Ohio Return	Benchmark Return	Benchmark Name
Liquidity Reserves[10]	0.16%	0.17%	ICE BofA U.S. 3-Month Treasury Bill Index
Fixed Income[10]	–9.79%	–9.90%	Fixed-Income Blended Benchmark[3]
Domestic Equities[10]	–14.90%	–13.87%	Russell 3000® Index[1]
International Equities[10]	–11.80%	–14.09%	International Blended Benchmark[2]
Real Estate[10]	21.96%	17.30%	Real Estate Blended Benchmark[4]
Alternative Investments[10]	18.36%	13.59%	Alternative Investments Blended Benchmark[5]
Total Fund[7]	**–3.61%**	**–5.62%**	**Total Fund Blended Benchmark[9]**
Total Fund Net[8]	**–3.73%**		

3-Year Returns (2020–2022)

Asset Category	STRS Ohio Return	Benchmark Return	Benchmark Name
Liquidity Reserves[10]	0.58%	0.63%	ICE BofA U.S. 3-Month Treasury Bill Index
Fixed Income[10]	–0.45%	–0.74%	Fixed-Income Blended Benchmark[3]
Domestic Equities[10]	10.33%	9.77%	Russell 3000® Index[1]
International Equities[10]	3.97%	3.32%	International Blended Benchmark[2]
Real Estate[10]	10.45%	9.74%	Real Estate Blended Benchmark[4]
Alternative Investments[10]	19.31%	–	Alternative Investments Blended Benchmark[6]
Total Fund[7]	**8.73%**	**7.58%**	**Total Fund Blended Benchmark[9]**
Total Fund Net[8]	**8.60%**		

5-Year Returns (2018–2022)

Asset Category	STRS Ohio Return	Benchmark Return	Benchmark Name
Liquidity Reserves[10]	1.08%	1.11%	ICE BofA U.S. 3-Month Treasury Bill Index
Fixed Income[10]	1.20%	1.00%	Fixed-Income Blended Benchmark[3]
Domestic Equities[10]	11.16%	10.60%	Russell 3000® Index[1]
International Equities[10]	4.37%	4.09%	International Blended Benchmark[2]
Real Estate[10]	9.60%	8.66%	Real Estate Blended Benchmark[4]
Alternative Investments[10]	15.88%	–	Alternative Investments Blended Benchmark[6]
Total Fund[7]	**8.57%**	**7.79%**	**Total Fund Blended Benchmark[9]**
Total Fund Net[8]	**8.44%**		

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State Teachers Retirement System of Ohio is defined and created by the Ohio Revised Code, Chapter 3307.15. The STRS Ohio Total Fund performance returns consist of all assets of the fund, including both internally and externally managed accounts. All returns are calculated in U.S. dollars using a time-weighted rate of return. All returns are net of brokerage commissions, expenses related to trading, and applicable foreign withholding taxes on dividends, interest and capital gains. All measurements and comparisons have been made using standard performance evaluation methods, and results are presented in a manner consistent with the investment industry in general and public pension funds in particular.

The Total Fund reflects an actual asset allocation to the following asset classes as of June 30, 2022: Liquidity Reserves 1.7%, Fixed Income 17.1%, Domestic 26.9%, International 21.8%, Real Estate 10.8% and Alternative Investments 21.7%. The investment objective for the Total Fund is to earn, over moving 30-year periods, an annualized return that equals or exceeds the actuarial rate of return, approved by the State Teachers Retirement Board ("Board") to value STRS Ohio liabilities. As of June 30, 2022, the actuarial rate of return was 7.00%.

As part of the Total Fund strategy, certain asset classes may use derivative instruments and/or leverage to gain exposure to certain sectors of the market. Fixed Income: Exposure to derivative instruments may not exceed 5% of Total Fund assets. A variety of derivative instruments may be used to adjust the exposure to interest rates, individual securities or to market sectors in the fixed income asset class; Domestic: Exposure to derivative instruments, including, but not limited to, futures, stock options and index options may not exceed 10% of Total Fund assets; International: Exposure to derivative instruments, including swap agreements, may not exceed 10% of Total Fund assets; Real Estate: Activities may include borrowing funds on a secured or unsecured basis with leverage limited to 50% of the internally managed direct real estate assets. At June 30, 2022 and 2021, debt as a percentage of these assets was 23.4% and 27.5%, respectively. The debt as a percentage of assets calculation has changed for the periods shown to reflect the portion of debt attributed to STRS Ohio. Derivatives may also be used and cannot exceed 1% of Total Fund assets; Alternative Investments: Exposure to derivatives may not exceed 10% of Total Fund assets. Alternative investment managers may use derivatives as components of the funds' investment strategy and to achieve the investment objectives of the fund.

Investment performance is calculated using a time-weighted rate of return. The one-year returns for the fiscal years ended June 30, 2012, through 2022 have been examined by ACA Group, Performance Services Division.

The long-term policy objective for the 10-year period is a projected annualized policy return of 6.8% based on return forecasts by asset class before any value added. The State Teachers Retirement Board expects the net value added to be 0.40% per year.

[1]The Russell® Indices are a trademark of FTSE International Limited (FTSE), Frank Russell Company (Russell®) and their respective subsidiary undertakings, which are members of the London Stock Exchange Group PLC.

[2]The International Blended Benchmark is calculated monthly using 80% of the MSCI World ex-U.S. 50% Hedged Index-Net and 20% of the MSCI Emerging Markets Index-Net.

[3]The Fixed-Income Blended Benchmark is calculated daily and is a blend of two benchmarks using the actual core fixed-income weighting and the Bloomberg U.S. Universal index and the actual weighting of the liquid treasury portfolio weighting and the Bloomberg U.S. Intermediate Treasury Index. Bloomberg® and the Bloomberg Indices are service marks of Bloomberg Finance L.P. and its affiliates, including Bloomberg Index Services Limited ("BISL"), the administrator of the index (collectively, "Bloomberg") and have been licensed for use for certain purposes by State Teachers Retirement System of Ohio. Bloomberg is not affiliated with State Teachers Retirement System of Ohio, and Bloomberg does not approve, endorse, review, or recommend this material. Bloomberg does not guarantee the timeliness, accurateness, or completeness of any data or information relating to this material.

[4]The Real Estate Blended Benchmark is calculated quarterly using 85% NCREIF Property Index (NPI) and 15% FTSE NAREIT Equity REITs Index. Index effective July 1, 2012.

[5]The Alternative Investment Blended Benchmark consists of the Private Equity Benchmark multiplied by 41.2% plus the Opportunistic/Diversified Blended Benchmark multiplied by 58.8% effective July 1, 2021. The Private Equity Benchmark is the Cambridge Associates Private Equity and Venture Capital Index one quarter lagged to be consistent with external fund reporting effective July 1, 2021. The Opportunistic/Diversified blended benchmark consists of the actual Opportunistic Investments Portfolio weight multiplied by the Cambridge Associates Private Credit Index one quarter lagged to be consistent with external fund reporting plus the actual weight of the Diversified Investments Portfolio multiplied by the HFRI Fund of Funds Composite Index, which is a monthly index where subsequent revisions will be reflected in the following period effective July 1, 2021.

[6]The Alternative Investment Blended Benchmark became effective July 1, 2021, so no three or five-year return is displayed. Alternative investment performance history through June 30, 2021, is displayed on Page 64.

[7]Gross returns are net of transaction costs and gross of management fees, except for Alternative Investments and Real Estate where the return is net of all external investment management fees and costs, including carried interest and other fund expenses.

[8]Net returns are net of all internal and external investment management fees and costs, including carried interest and other fund expenses.

[9]The Total Fund Blended Benchmark is calculated and rebalanced monthly using a blend of the asset class benchmarks based on the Total Fund's policy weights in effect during the respective period.

[10]Returns are gross of fees and are supplemental to the Total Fund returns. See Footnote 7 for the gross return definition.

Alternative Investment Performance Through June 30, 2021
(total returns, annualized on a fiscal-year basis, July 1–June 30)

	One Year	Three Years	Five Years	10 Years
Total Private Equity[1, 5]	**64.48%**	**25.96%**	**22.47%**	**17.29%**
Relative Return Objective[2]	45.56%	19.90%	19.05%	16.06%
Total Opportunistic/Diversified[5]	**24.07%**	**5.64%**	**6.69%**	**6.08%**
Relative Return Objective[3]	42.78%	17.57%	16.73%	13.57%
Total Alternative Investments[5]	**44.99%**	**15.83%**	**14.52%**	**11.84%**
Blended Relative Return Objective[4]	43.91%	18.55%	17.77%	14.79%

[1]Total Private Equity includes publicly traded common stock that was distributed or exchanged from private equity and venture capital funds.

[2]Through June 30, 2021, the Private Equity Relative Return Objective is calculated monthly and is the Russell 3000 Index plus 1%, effective July 1, 2012. Prior to July 1, 2012, the Private Equity Relative Return Objective was 3% above the Russell 3000 Index.

[3]Through June 30, 2021, the Opportunistic/Diversified Relative Return Objective is calculated monthly and is the Russell 3000 Index minus 1%.

[4]Through June 30, 2021, the Alternative Investments Blended Relative Return Objective is calculated monthly using a blend of the Private Equity and Opportunistic/Diversified Relative Return Objectives based on the policy weights in effect during the respective periods. The Alternative Investments Blended Relative Return Objective is based on 41.2% of the Russell 3000 Index plus 1% and 58.8% of the Russell 3000 Index minus 1% effective July 1, 2019.

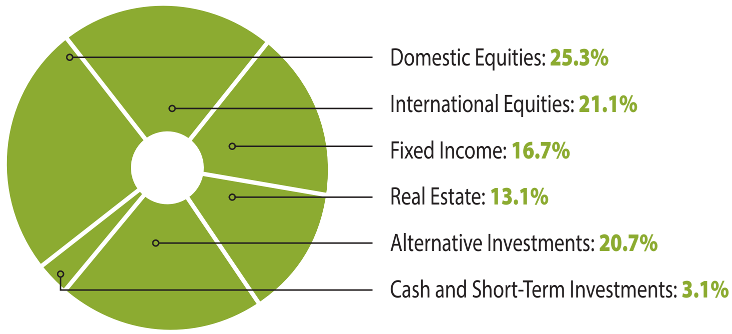
[5]Total alternative investment returns are net of external investment management fees, including carried interest and other fund expenses.

Summary of Investments and Cash
As of June 30, 2022 and 2021 (dollar amounts in thousands)

	June 30, 2022	Percentage of Assets	June 30, 2021	Percentage of Assets
Cash and short-term investments				
Cash	$ 28,865	0.0%	$ 5,563	0.0%
Commercial Paper	49,748	0.1%	287,475	0.3%
Short-term investment funds	80,000	0.1%	59,000	0.1%
U.S. Treasury bills	2,580,556	2.9%	1,212,972	1.2%
Total cash and short-term investments	**2,739,169**	**3.1%**	**1,565,010**	**1.6%**
Fixed income				
U.S. government agency obligations and U.S. government obligations	6,376,366	7.2%	8,598,946	8.8%
Corporate bonds	3,728,293	4.2%	4,604,493	4.7%
High yield and emerging market	1,621,529	1.8%	2,042,733	2.1%
Mortgages and asset-backed	3,154,375	3.5%	3,047,228	3.1%
Total fixed income	**14,880,563**	**16.7%**	**18,293,400**	**18.7%**
Domestic equities	**22,432,255**	**25.3%**	**26,928,103**	**27.4%**
International				
Equities	18,210,363	20.5%	20,893,064	21.3%
Corporate bonds held in equity swap	339,646	0.3%	409,799	0.4%
U.S. government bonds held in equity swap	200,294	0.2%	100,073	0.1%
Asset-backed securities held in equity swap	61,368	0.1%	0	0.0%
Total international	**18,811,671**	**21.1%**	**21,402,936**	**21.8%**
Real estate				
East region	3,534,529	4.0%	3,056,707	3.1%
Midwest region	1,304,698	1.5%	1,216,219	1.2%
South region	1,205,128	1.4%	868,348	0.9%
West region	3,163,216	3.6%	2,415,261	2.5%
REITs	1,126,574	1.3%	1,269,508	1.3%
Non-core	1,271,814	1.4%	1,154,698	1.2%
Total real estate	**11,605,959**	**13.1%**	**9,980,741**	**10.2%**
Alternative investments	**18,349,495**	**20.7%**	**19,941,386**	**20.3%**
Total investments and cash	**$ 88,819,112**	**100.0%**	**$ 98,111,576**	**100.0%**

Investment schedule excludes invested securities lending collateral.

Investment Distribution by Fair Value — as of June 30, 2022



Ohio Investment Profile — as of June 30, 2022
(in thousands)

STRS Ohio continues to engage in quality Ohio investments. As of June 30, 2022, STRS Ohio investments in companies with headquarters in Ohio are valued at more than $1.2 billion.

Fixed income	$ 169,435
Domestic equities	698,888
Real estate	47,110
Alternative investments	283,877
Total Ohio-headquartered investments	**$ 1,199,310**

Schedule of Domestic Stock Brokerage Commissions Paid
(for the year ended June 30, 2022)

Brokerage Firm	Shares Traded*	Commissions Paid	Average Cents Per Share
Nomura (Instinet LLC)	58,203,974	$ 1,630,779.51	2.8
ITG, Inc.	31,737,715	938,162.70	3.0
JP Morgan Securities LLC	38,826,002	837,061.06	2.2
Liquidnet Inc.	11,812,029	472,481.16	4.0
RBC Capital Markets LLC	11,746,420	469,856.80	4.0
Cantor Fitzgerald & Company	11,368,060	454,722.40	4.0
Barclays Capital Inc.	9,599,369	350,906.62	3.7
BTIG LLC	8,515,435	340,617.40	4.0
Piper Jaffray & Company	8,048,090	321,923.60	4.0
Credit Suisse Securities (USA) LLC	7,073,969	282,958.76	4.0
Goldman Sachs & Co LLC	10,232,170	240,761.94	2.4
Jefferies LLC	8,553,829	218,713.79	2.6
Bernstein (Sanford C.) & Company LLC	8,143,340	211,337.83	2.6
Citi Capital Markets Inc.	4,982,218	176,023.92	3.5
Cowen & Company LLC	6,379,412	164,950.72	2.6
Mark J. Muller Equities Inc.	4,130,715	158,328.60	3.8
Morgan Stanley & Company LLC	3,801,218	149,448.72	3.9
UBS Securities LLC	4,554,785	132,164.26	2.9
Cabrera Capital Markets LLC	3,483,025	120,981.00	3.5
KeyBanc Capital Markets	3,267,447	91,658.78	2.8
Others (includes 23 brokerage firms and external managers)	112,772,466	2,098,899.90	1.9
Totals	**367,231,688**	**$ 9,862,740**	**2.7**

*Includes option equivalent shares.
Excludes commissions on futures trading.

Schedule of International Stock Brokerage Commissions Paid
(for the year ended June 30, 2022)

Brokerage Firm	Traded Value USD*	Commissions Paid USD	Basis Points of Traded Value
CLSA Americas, LLC	$ 1,757,941,387	$ 963,549	5.5
JP Morgan Securities LLC	1,764,820,266	636,505	3.6
Nomura Securities International Inc.	342,938,311	374,980	10.9
UBS Securities LLC	842,234,711	319,622	3.8
Stifel, Nicolaus & Company Inc.	231,468,155	310,714	13.4
HSBC Securities (USA) Inc.	772,424,067	292,227	3.8
Macquarie Capital (USA) Inc.	542,972,725	202,449	3.7
Goldman Sachs & Co LLC	115,651,830	163,792	14.2
Bernstein (Sanford C.) & Company LLC	107,953,560	133,488	12.4
Auerbach Grayson & Company LLC	92,156,133	116,974	12.7
Morgan Stanley & Company LLC	71,231,282	100,701	14.1
Jefferies LLC	244,442,759	91,101	3.7
Daiwa Capital Markets America Inc.	67,606,771	81,155	12.0
Credit Suisse Securities (USA) LLC	107,046,806	71,588	6.7
BMO Capital Markets Corp.	99,917,232	67,387	6.7
CICC US Securities, Inc.	65,483,182	64,693	9.9
BNP Paribas	46,483,120	64,336	13.8
Kepler Capital Markets Inc.	38,027,100	55,501	14.6
Citi Capital Markets Inc.	42,142,500	50,421	12.0
Mizuho Securities (USA) Inc.	36,160,201	43,344	12.0
Others (includes 24 brokerage firms and external managers)	11,514,121,345	4,183,577	3.6
Totals	**$ 18,903,223,443**	**$ 8,388,106**	**4.4**

*Shares traded exclude transactions with $0 commissions paid.

Schedule of Largest Investment Holdings* (as of June 30, 2022)

Domestic Equities — Top 20 Holdings

	Shares	Fair Value
Microsoft Corp.	4,345,757	$1,116,120,769
Apple Computer Inc.	7,899,898	$1,080,074,054
Amazon Com Inc.	5,301,216	$563,042,151
Alphabet Inc. Class C	174,491	$381,690,338
Alphabet Inc.	158,682	$345,809,335
Unitedhealth Group Inc.	520,039	$267,107,631
Mastercard Inc. Class A	797,444	$251,577,632
Johnson & Johnson	1,364,563	$242,223,577
Nvidia Corp.	1,439,500	$218,213,804
Tesla Inc.	320,959	$216,140,209
Exxon Mobil Corp.	2,492,588	$213,465,235
Berkshire Hathaway Inc. Class B	739,191	$201,813,926
Merck & Co. Inc.	2,053,869	$187,251,236
Facebook Inc.-A	1,068,469	$172,290,625
JPMorgan Chase & Co.	1,519,909	$171,156,952
Thermo Electron Corp.	304,274	$165,305,978
ServiceNow Inc.	343,870	$163,517,062
Eli Lilly & Co.	499,081	$161,817,032
ChevronTexaco Corp.	1,009,231	$146,116,463
Procter & Gamble Co.	973,885	$140,034,923

International Equities — Top 20 Holdings

	Shares	Fair Value
Roche Holding AG (Switzerland)	970,006	$322,761,175
Taiwan Semicon Man (Taiwan)	18,166,132	$290,819,407
Nestle SA (Switzerland)	2,270,026	$264,241,602
Novo Nordisk A/S (Denmark)	1,876,391	$207,651,106
Novartis AG (Switzerland)	2,385,901	$201,493,807
Shell Plc. (United Kingdom)	7,624,884	$197,828,459
SAP SE (Germany)	1,720,593	$156,369,174
Samsung Electronics Co. LTD (South Korea)	3,462,176	$151,990,166
Hitachi (Japan)	3,105,100	$147,146,839
AIA Group LTD (Hong Kong)	11,551,771	$125,205,095
Air Liquide SA (France)	868,129	$116,279,821
Sanofi (France)	1,141,594	$114,979,822
ASML Holding (Netherlands)	237,488	$113,179,284
Anglo American (United Kingdom)	3,057,726	$109,064,184
TotalEnergies SE (France)	1,978,684	$104,196,158
Diageo Plc. (United Kingdom)	2,403,957	$103,072,439
Deutsche Telekom NPV (Germany)	4,939,945	$97,845,973
Equinor ASA (Norway)	2,704,016	$93,753,453
Sony Group Corp. (Japan)	1,138,157	$92,950,954
BNP Paribas (France)	1,846,665	$87,581,493

Fixed Income — Top 20 Holdings

	Par Value	Fair Value
U.S. Treasury N/B, 0.750%, 1/31/2028, Aaa	$152,028,000	$133,903,412
U.S. Treasury N/B, 1.250%, 8/31/2024, Aaa	$122,489,000	$118,000,927
U.S. Treasury N/B, 0.625%, 12/31/2027, Aaa	$122,487,000	$107,319,665
U.S. Treasury N/B, 1.375%, 11/15/2031, Aaa	$115,896,000	$100,521,671
U.S. Treasury N/B, 2.000%, 11/15/2026, Aaa	$104,777,000	$100,176,634
U.S. Treasury N/B, 1.125%, 2/29/2028, Aaa	$108,923,000	$97,928,585
U.S. Treasury N/B, 1.125%, 2/28/2027, Aaa	$104,589,000	$95,813,329
U.S. Treasury N/B, 0.125%, 2/15/2024, Aaa	$99,005,000	$94,580,714
U.S. Treasury N/B, 0.250%, 8/31/2025, Aaa	$99,000,000	$90,639,141
U.S. Treasury N/B, 1.875%, 2/15/2032, Aaa	$96,912,000	$87,796,215
U.S. Treasury N/B, 0.625%, 8/15/2030, Aaa	$103,691,000	$85,966,319
U.S. Treasury N/B, 0.875%, 11/15/2030, Aaa	$101,124,000	$85,370,777
U.S. Treasury N/B, 1.125%, 2/15/2031, Aaa	$98,020,000	$84,220,622
U.S. Treasury N/B, 0.625%, 3/31/2027, Aaa	$93,146,000	$83,132,805
U.S. Treasury N/B, 0.250%, 3/15/2024, Aaa	$84,379,000	$80,555,576
U.S. Treasury N/B, 0.250%, 9/30/2025, Aaa	$86,933,000	$79,407,862
U.S. Treasury N/B, 2.000%, 8/15/2025, Aaa	$80,683,000	$78,167,960
U.S. Treasury N/B, 3.000%, 11/15/2045, Aaa	$84,049,000	$78,099,906
U.S. Treasury N/B, 1.750%, 6/30/2024, Aaa	$79,855,000	$77,936,608
U.S. Treasury N/B, 1.500%, 11/30/2028, Aaa	$84,750,000	$76,963,594

*A complete list of investment holdings is available from STRS Ohio.

Schedule of External Managers (as of June 30, 2022)

Domestic Equities

Chartwell Investment Partners
Fuller & Thaler Asset Management
Intech
Neuberger Berman
Weatherbie Capital

International Equities

Acadian Asset Management
Alliance Bernstein
American Century
Arrowstreet Capital
Genesis Asset Managers
Lazard Asset Management
MFS Investment Management
Wellington Management
Wellington Small Cap

Fixed Income

BNY Mellon
Fidelity Institutional Asset Management
JPMorgan
MFS Investment Management
Pacific Investment Management Company
Payden & Rygel
PGIM

Real Estate

Ares Management UK Limited
Ares Real Estate Management Holdings, LLC
BCMR-GP LLC
Benson Elliot Capital Management LLP
BentallGreenOak
Blackstone Real Estate Advisors Europe, LP
Blackstone Real Estate Advisors LP
Carlyle Investment Management LLC
CBRE Global Investment Partners Asia, Pte. Ltd.
CBRE Global Investors
CLSA Capital Partners Singapore PTE Ltd.
Fortress Japan Opportunity Management LLC
Fortress Real Estate Opportunities Advisors LLC
GreenOak Asia III GP, Ltd.
GreenOak Europe III GP, Ltd.
HSRE Core Fund GP, LLC
HSREP GP VII, LLC
Invesco Avisers Inc.
JP Morgan Funds Limited
LaSalle Investment Management (Asia) Pte. Ltd.
PAG Holdings
Patria Brazil Real Estate Fund General Partner II, Ltd.
Patria Brazil Retail Property Fund General Partner, Ltd.
PCCP LLC
PGIM Real Estate Luxembourg S.A.
Pramerica Investment Management Limited
SCREP V Management, LLC
SCREP VI Management, LLC
SCREP VII Management, LLC
SP V Manager, LLC
Strategic Partners Fund Solutions Advisors LP
Westbrook Realty Management V, LP
Westbrook Realty Management VI, LP
Westbrook Realty Management VII, LP
Westbrook Realty Management VIII, LP
Westbrook Realty Management IX, LP
Westbrook Realty Management X, LP
Westbrook Realty Management XI, LP

Alternative Investments

Adams Capital Management, Inc.
Advanced Technology Ventures
Advent International Corporation
Advisor Group, Inc.
AlbaCore Capital LLP
Allspring Global Investments
Angelo, Gordon & Co.
Apollo Management
ArcLight Capital Partners, LLC
Arcmont Asset Management
Ares Management, LLC
Arrowmark
Asia Alternatives Management LLC
Atalaya Capital Management LP
Audax Group, LP
Avenue Capital Group
Avenue Capital Management
Avenue Capital Management II, LP
Axiom Asia Private Capital
Bain Capital, LLC
Baker Capital Corp.
BC Partners Holdings Limited
Beacon Capital Partners, LLC
Benefit Street Partners, LLC
Blue Chip Venture Company, Ltd.
Bridgepoint Capital, Ltd.
Brookside Capital, LLC
CB Health Ventures, LLC
Cardinal Partners
Cerberus Capital Management, LP
Christofferson, Robb & Co.
Clayton, Dubilier & Rice, LLC
Clearlake Capital Group
Commonfund Capital, Inc
Community Bancorp LLC
Comvest
Crestline Management, L.P.
CVC Capital Partners Limited
Davidson Kempner Advisors, Inc.
Dragoneer Investment Group
Duff Ackerman & Goodrich
Dyal Capital Partners
EnCap Investments LP
EQT Partners
Essex Woodlands Health Ventures
Fairview Management Group, LLC
Fortress Investment Group, LLC
Francisco Partners
Friedman, Fleischer & Lowe, LLC
General Catalyst Partners
Genstar Capital Partners, LLC
Goldman, Sachs & Co.
Golub Capital
Grosvenor Capital Management, LLC
GTCR LLC
H.I.G. Capital Management
Hancock Capital Investment Management, LLC
HarbourVest Partners, LLC
Heartland Industrial Partners
Hellman & Friedman LLC
Hermes GPE LLP
HPS Investment Partners, LLC
HSBC Group
ICONIQ Capital, LLC
Infinity Q Capital Management
Jade Capital Management, LLC
King Street Advisors, LLC
Kohlberg Kravis Roberts & Co. LP
Leonard Green & Partners, LP
Levine Leichtman Capital Partners, Inc.
Lightspeed China Partners
Lime Rock Partners, LLC
Man Asset Management Limited
Manulife Financial Corporation
Meritage Holdings, LLC
MHR Fund Management LLC
Monitor Clipper Partners, Inc.
Moonrise Capital LP
Morgenthaler Ventures
MV Management XIV, LLC
MV Management XV, LLC
NB Alternative Advisers LLC
New Enterprise Associates (NEA)
NISA
Oak HC/FT Management Company, LLC
Oakley Capital Partners
Oaktree Capital Management, LLC
Ohio Innovation Fund
Onex Falcon
Owl Rock Capital Advisors
Oxford Finance, LLC
Paine Schwartz Paine, LLC
Panda Energy International, Inc.
PineBridge Investments
Primus Venture Partners, Inc.
Providence Equity Partners, Inc.
Quad Partners LLC
Redpoint Omega III, LLC
Renaissance Technologies
Resolution Life Group
Reverence Capital Partners LLC
RJA Asset Management
SciBeta
Sculptor Capital Management Inc.
Semaphore
Silver Lake Partners
Siris
Sixth Street Advisors, LLC
Stone Point Capital LLC
Summit Partners
TA Associates, Inc.
TCW Group
Texas Pacific Group
The Blackstone Group
The Carlyle Group
The Riverside Company
Thoma Bravo, LLC
Tiger Iron Capital
TowerBrook Capital Partners, LP
Truebridge Capital Partners, LLC
TSCOF SPV GP, LLC
TSG Consumer Partners (FKA: Shansby Group)
Twin Brook Capital Partners
Two Sigma Advisers
Varagon Capital Partners
Veritas Capital Fund Management, LLC
Vista Equity Partners Management, LLC
Vitruvian Partners LLP
Warburg Pincus LLC
WL Ross & Co, LLC (Invesco)

Classic Values, Innovative Advice

Certification

October 20, 2022

State Teachers Retirement System of Ohio
275 East Broad Street
Columbus, Ohio 43215

This report presents the most recent annual actuarial valuation as of June 30, 2022 of the State Teachers Retirement System of Ohio ("STRS Ohio"), and has been prepared in accordance with Ohio Revised Code Section 3307.51(A), which requires the board to have prepared annually by or under the supervision of an actuary an actuarial valuation of the pension assets, liabilities, and funding requirements of the STRS defined benefit plan. In preparing our report, we relied on information, some oral and some written, supplied by STRS Ohio. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for funding purposes meet the requirements of the Actuarial Standards of Practice, in particular Standards Nos. 4, 27, 35 and 44.

Included in the report are the following supporting schedules prepared by Cheiron to be included in the Financial, Actuarial and Statistical sections of the STRS Ohio *Annual Comprehensive Financial Report*:

– Financial/Required Supplementary Information
  - Schedule of Changes in Employers' Net Pension Liability
  - Schedule of Employers' Net Pension Liability
  - Schedule of Employers' Contributions — Pension
  - Notes to Required Supplementary Information — Pension
  - Sensitivity of the Net Pension Liability to the Discount Rate Assumption

– Actuarial
  - Schedule of Valuation Data — Active Members
  - Schedule of Valuation Data — Retirees/Beneficiaries
  - Benefit Recipients Added to and Removed from the Rolls
  - Solvency Test
  - Analysis of Financial Experience

– Statistical
  - Actuarial Funded Ratio & Funding Period
  - Selected Funding Information — Defined Benefit Plan
  - Number of Benefit Recipients by Type
  - Summary of Active Membership Data
  - Benefit Payments by Type

Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared for STRS Ohio for the purposes described herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

Gene Kalwarski, FSA, FCA, MAAA, EA
Principal Consulting Actuary

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Bonnie Rightnour, FSA, MAAA, EA
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This section presents the results of the annual valuation of the assets and liabilities of the State Teachers Retirement System of Ohio (STRS Ohio) as of June 30, 2022, prepared by its actuary, Cheiron, in accordance with Section 3307.51 of Chapter 3307 of the Ohio Revised Code.

Summary of Actuarial Assumptions and Methods

The assumptions below have been adopted by the State Teachers Retirement Board after consulting with the actuary. The board has adopted a funding policy that establishes the framework and specific objectives to monitor the system's funding status.

Mortality Rates — Post-Retirement: Pub-2010 Teachers Healthy Annuitant Mortality Table, adjusted 110% for males, projected forward generationally using mortality improvement scale MP-2020. (Updated effective June 30, 2022.) Sample mortality rates are as follows.

Mortality Rates — Post-Retirement		
Age	Male	Female
50	0.11%	0.07%
55	0.25%	0.19%
60	0.39%	0.29%
65	0.65%	0.45%
70	1.18%	0.77%
75	2.23%	1.46%
80	4.23%	2.82%
85	7.96%	5.39%
90	14.59%	10.09%
95	24.55%	18.03%
100	35.87%	28.16%

Mortality Rates — Pre-Retirement: Pub-2010 Teachers Employee Table adjusted 95% for females, projected forward generationally using mortality improvement scale MP-2020. (Updated effective June 30, 2022.) Sample mortality rates are as follows.

Mortality Rates — Pre-Retirement		
Age	Male	Female
25	0.02%	0.01%
30	0.02%	0.01%
35	0.03%	0.02%
40	0.04%	0.03%
45	0.07%	0.05%
50	0.11%	0.07%
55	0.17%	0.10%
60	0.26%	0.15%

Mortality Rates — Post-Retirement Disabled: Pub-2010 Teachers Disabled Annuitant Table projected forward generationally using mortality improvement scale MP-2020. (Updated effective June 30, 2022.)

Sample mortality rates prior to improvement are as follows:

Mortality Rates — Post-Retirement Disabled		
Age	Male	Female
45	1.01%	0.99%
50	1.61%	1.48%
55	2.11%	1.74%
60	2.50%	1.96%
65	3.04%	2.26%
70	3.90%	2.86%
75	5.19%	4.00%

Active Retirement Rates: The following rates of retirement are assumed for members eligible to retire with a reduced benefit. (Updated effective June 30, 2022.)

Defined Benefit Plan – Reduced Rates					
Age	Male	Female	Age	Male	Female
50-51	2.0%	2.0%	59	11.0%	10.0%
52	3.0%	3.0%	60	6.5%	9.0%
53	5.0%	5.0%	61	8.0%	10.0%
54	9.0%	9.0%	62	8.0%	11.0%
55	12.0%	13.0%	63	10.0%	12.0%
56-57	10.0%	11.0%	64	15.0%	25.0%
58	8.0%	10.0%			

The following rates of retirement are assumed for members once they are eligible to retire with an unreduced benefit. (Updated effective June 30, 2022.)

Defined Benefit Plan – Unreduced Rates					
Age	Male	Female	Age	Male	Female
55	23%	18%	66	23%	28%
56	20%	20%	67	22%	26%
57	18%	20%	68	20%	25%
58	22%	22%	69	21%	25%
59	23%	26%	70-71	22%	25%
60	21%	28%	72	24%	25%
61-62	20%	28%	73	20%	25%
63	20%	30%	74	23%	28%
64	24%	30%	75+	100%	100%
65	28%	36%			

Combined Plan Retirement Rates		
Age	Male	Female
60	10%	10%
61-63	10%	15%
64	18%	20%
65	25%	30%
66	10%	25%
67-68	10%	15%
69-74	15%	15%
75	100%	100%

Inactive Vested Retirement Rates: 5% at each early retirement age through age 64 and 100% at age 65, or the first age at which unreduced benefits are available. (The assumed rates were adopted effective June 30, 2017, and reaffirmed effective June 30, 2022.)

Disability Rates: Select rates are shown below. (Updated Rates effective June 30, 2022.)

Disability Rates	
Age	**Unisex Rate**
Under 30	0.007%
30	0.007%
35	0.021%
40	0.035%
45	0.070%
50	0.126%
55	0.154%
60	0.175%
65 and Over	0.175%

Termination Rates: Termination rates based on service, for causes other than death, disability, or retirement. (Updated Rates effective June 30, 2022.)

Vested Terminations*		
Age	**Male**	**Female**
20	6.00%	6.00%
25	6.00%	6.00%
30	2.70%	3.55%
35	2.05%	2.00%
40	1.75%	1.40%
45	1.60%	1.25%
50	1.95%	1.60%
55	4.00%	3.60%
60	4.00%	3.60%

*Termination rates stop at first retirement eligibility.

Non-Vested Terminations		
Service	**Male**	**Female**
Under 1 Year	40.00%	35.00%
1 to 2 Years	16.00%	15.00%
2 to 3 Years	12.00%	8.00%
3 to 5 Years	9.00%	8.00%

Percent Electing a Deferred Termination Benefit: 80% of future terminating members of the Defined Benefit and Combined Plans are assumed to elect a deferred termination benefit. The remaining 20% are assumed to take an immediate lump-sum. (Updated effective June 30, 2022.)

95% of current terminated vested members of the Defined Benefit and Combined Plans are assumed to elect a deferred termination benefit. The remaining 5% are assumed to take a lump-sum on the valuation date. (Updated effective June 30, 2022.)

Percent Married: For valuation purposes, 80% of male members and 60% of female members are assumed to be married. Male members are assumed to be three years older than their spouses, and female members are assumed to be one year younger than their spouses. (The assumed age difference adopted effective June 30, 2017 and reaffirmed effective June 30, 2022.)

Dependents for Survivor's Benefit: The spouse is the only assumed beneficiary for the survivor's benefit.

Investment Return Rate: 7.00% per annum, compounded annually and net of all expenses. (Adopted effective June 30, 2021, and reaffirmed effective June 30, 2022)

Salary Increase Rates: Total salary increases, as shown below for selected attained service. (Updated effective June 30, 2022.)

Salary Increase Rates	
Service	**Rate**
<1	8.50%
1	8.20%
2	8.00%
3	7.00%
4	6.50%
5	6.30%
10	5.50%
15	4.50%
20	3.50%
25	3.00%
30+	2.50%

Payroll Growth Rate: 3.00% per annum. (Adopted effective June 30, 2017, and reaffirmed effective June 30, 2022.)

Defined Contribution Plan: The Defined Contribution account balance is added to the Actuarial Liability and the Actuarial Value of Assets. If a member retires and elects to have the Defined Contribution Account balance paid as an annuity, then the account balance is transferred to the Defined Benefit Plan and the annuity is valued as part of the Defined Benefit Plan.

Changes in Assumptions Since Last Valuation: Demographic assumptions were reviewed and adopted by the Board on February 17, 2022 as part of an experience study performed (report dated and accepted March 11, 2022) covering the period from July 1, 2015, to June 30, 2021, with changes going into effect June 30, 2022. For a description of the prior assumptions, refer to the Actuarial Valuation Report as of June 30, 2021 dated October 2021.

Rationale for Assumptions: For rationale on the current assumptions, please refer to the Experience Study Report, dated March 11, 2022.

Actuarial Value of Assets: The actuarial value of assets is based on the market value of assets with a four-year phase-in of actual investment return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the Actuarial Value of Assets (adjusted for receipts and disbursements during the year). The actual investment return for this purpose is determined net of all investment and administrative expenses. The actuarial value is further adjusted, if necessary, to be within 9% of the market value.

Actuarial Funding Method: The funding method for the valuation of liabilities used for this valuation is the Entry Age Normal (EAN) method. Under this funding method, a normal cost rate is determined as a level percentage of pay for each active participant. The normal cost rate multiplied by payroll equals the total normal cost for each participant. The normal cost contributions (employer and participant) will pay for projected benefits at retirement for each active participant.

The actuarial liability is the difference between the present value of future benefits and the present value of future normal costs. The difference between this actuarial liability and the actuarial value of assets is the unfunded actuarial liability (UAL).

The portion of the actuarial liability in excess of plan assets, the UAL, is amortized to develop an additional cost that is added to each year's employer normal cost. Under this funding method, actuarial gains and losses are directly reflected in the size of the unfunded actuarial liability. The amortization method is described below.

Amortization Method: The actuarially determined contribution (ADC) is determined as the sum of (a) the employer normal cost rate, and (b) a level percentage of payroll required to amortize the unfunded actuarial accrued liability over the 30-year closed period that began July 1, 2015.

Benefit Recipients Added to and Removed From the Rolls, 2013–2022

Fiscal Year Ended	Beginning Number of Benefit Recipients	Beginning Annual Allowances (in thousands)	Benefit Recipients Added	Payments Added (in thousands)	Benefit Recipients Removed	Payments Removed (in thousands)	Ending Number of Benefit Recipients	Ending Annual Allowance (in thousands)
2013	143,256	$5,815,407	8,493	$441,942	2,528	$67,167	149,221	$6,190,182
2014	149,221	$6,190,182	5,550	$283,768	2,563	$76,415	152,208	$6,397,535
2015	152,208	$6,397,535	9,027	$490,598	3,119	$86,952	158,116	$6,801,181
2016	158,116	$6,801,181	2,675	$177,665	2,853	$82,684	157,938	$6,896,162
2017	157,938	$6,896,162	3,254	$155,702	3,153	$96,555	158,039	$6,955,309
2018	158,039	$6,955,309	3,847	$128,494	4,464	$134,381	157,422	$6,949,422
2019	157,422	$6,949,422	4,894	$178,255	4,898	$156,522	157,418	$6,971,155
2020	157,418	$6,971,155	4,363	$165,151	4,874	$165,609	156,907	$6,970,697
2021	156,907	$6,970,697	5,524	$225,426	5,510	$186,702	156,921	$7,009,421
2022	**156,921**	**$7,009,421**	**4,995**	**$350,311**	**5,691**	**$191,805**	**156,225**	**$7,167,927**

Schedule of Valuation Data — Active Members, 2013–2022

Valuation Date	Number of Active Members	Annualized Salaries (in thousands)	Annual Average Pay	% Increase in Average Pay
2013	169,945	$9,118,036	$53,653	–0.5%
2014	169,295	$9,148,438	$54,038	0.7%
2015	164,925	$9,057,095	$54,916	1.6%
2016	169,212	$9,562,236	$56,510	2.9%
2017	168,132	$9,842,388	$58,540	3.6%
2018	170,327	$10,581,345	$62,124	6.1%
2019	170,004	$10,849,863	$63,821	2.7%
2020	167,838	$11,192,069	$66,684	4.5%
2021	166,427	$11,404,226	$68,524	2.8%
2022	**174,036**	**$12,144,257**	**$69,780**	**1.83%**

Schedule of Valuation Data — Retirees/Beneficiaries, 2013–2022

Valuation Date	Number of Retirees/Beneficiaries	Annual Allowances (in thousands)	Average Annual Allowances	% Increase in Annual Allowances
2013	149,221	$6,190,182	$41,483	6.4%
2014	152,208	$6,397,535	$42,032	3.3%
2015	158,116	$6,801,181	$43,014	6.3%
2016	157,938	$6,896,162	$43,664	1.4%
2017	158,039	$6,955,309	$44,010	0.9%
2018	157,422	$6,949,422	$44,145	–0.1%
2019	157,418	$6,971,155	$44,284	0.3%
2020	156,907	$6,970,697	$44,426	0.0%
2021	156,921	$7,009,421	$44,668	0.6%
2022	**156,225**	**$7,167,927**	**$45,882**	**2.3%**

Solvency Test, 2013–2022 (dollar amounts in thousands)

Valuation Date	Accrued Liability For: (1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Members (Employer-Financed Portion)	Actuarial Value of Assets*	Portion of Accrued Liabilities Covered by Valuation Assets: (1)	(2)	(3)
2013	$10,962,886	$68,075,440	$15,328,367	$62,590,786	100%	76%	0%
2014	$11,477,457	$69,776,259	$14,913,341	$66,657,175	100%	79%	0%
2015	$11,473,309	$74,340,699	$13,200,646	$68,655,999	100%	77%	0%
2016	$12,498,469	$74,282,592	$13,975,362	$70,114,637	100%	78%	0%
2017	$13,668,834	$69,723,394	$12,734,213	$72,216,212	100%	84%	0%
2018	$15,440,336	$68,911,073	$12,552,648	$73,115,358	100%	84%	0%
2019	$16,454,187	$68,412,083	$12,974,674	$74,411,836	100%	85%	0%
2020	$17,591,257	$67,500,051	$13,580,980	$76,357,681	100%	87%	0%
2021	$18,479,943	$69,479,780	$16,631,683	$83,761,394	100%	94%	0%
2022	**$19,639,924**	**$69,451,575**	**$16,172,825**	**$85,141,846**	**100%**	**94%**	**0%**

*Includes Defined Contribution Plan.

Analysis of Financial Experience

Gains and Losses in Unfunded Actuarial Liability Resulting From Differences Between Assumed Experience and Actual Experience (in thousands)

Type of Activity	Gain (loss) for year ended June 30: 2022	2021	2020	2019	2018
Investment income. If there is greater investment income than assumed, there is a gain. If less, there is a loss.	$ (136,350)	$ 5,216,481	$ 532,022	$ 3,515	$ (253,993)
Payroll growth. If more contributions from payroll growth are received than expected, there is a gain. If less, there is a loss.	0	0	0	0	0
Salary increases. If there are smaller salary increases than assumed, there is a gain. If greater increases, there is a loss.	(103,250)	236,539	177,622	207,875	180,810
Retirement and other separation experience. If members retire from service at an older age or with a lower final average salary than assumed, there is a gain. If separation claims are less than expected, there is a gain. If new members don't enter the system as expected, there is a loss.	(443,876)	(287,427)	(112,488)	(325,891)	(285,353)
Death after retirement. If retirees live shorter than expected, there is a gain. If retirees live longer than assumed, there is a loss.	269,162	208,369	110,833	152,788	(9,495)
Final plan reselection. If the account value from defined contribution accounts is greater than the reestablished defined benefit account balance, there is a gain.	0	0	0	0	0
Gain (or loss) during year from financial experience	(414,314)	5,373,962	707,989	38,287	(368,031)
Actuarial gain (or loss) due to assumption changes/plan amendments	321,382	(4,433,797)	0	0	236,418
Composite gain (or loss) during the year	**$ (92,932)**	**$ 940,165**	**$ 707,989**	**$ 38,287**	**$ (131,613)**

Summary of Benefit and Contribution Provisions — Defined Benefit Plan

Eligibility for Membership

Immediate upon commencement of employment.

Service Retirement

Eligibility : Effective Aug. 1, 2015, the service credit requirements for an unreduced benefit are as follows:

Unreduced Benefit for Retirement	Minimum Age and Years of Service
Through 7/1/2015	Any age and 30 years; or age 65 and 5 years
8/1/2015–7/1/2017	Any age and 31 years; or age 65 and 5 years
8/1/2017–7/1/2019	Any age and 32 years; or age 65 and 5 years
8/1/2019–7/1/2021	Any age and 33 years; or age 65 and 5 years
8/1/2021–7/1/2023	Any age and 34 years; or age 65 and 5 years
8/1/2023 and later	Any age and 35 years; or age 65 and 5 years

Amounts effective Aug. 1, 2015: Annual amount equal to 2.2% of final average salary for the five highest years of earnings, multiplied by all years of service.

Amounts on or before July 1, 2015: Annual amount equal to the greater of (a) 2.2% of final average salary for the three highest years of earnings, multiplied by years of total Ohio service credit, or 2.5% of final average salary for the three highest paid years if the member has 35 or more years of contributing service credit multiplied by years of total contributing service credit, except that for years of contributing service credit in excess of 30, the following percentages apply:

Year	Percentage
31	2.5%
32	2.6%
33	2.7%
34	2.8%
35	2.9%
36	3.0%
37	3.1%
38	3.2%
39	3.3%

or (b) $86 multiplied by years of service credit.

Transition Benefit: For members who were eligible to retire on July 1, 2015, the annual amount will be greater of (a) the benefit amount calculated upon retirement under the current benefit formula, or (b) the benefit amount the member would have received if he/she retired on July 1, 2015.

Annual salary is subject to the limit under IRS Section 401(a) (17) of the Internal Revenue Code.

For retirements prior to August 1, 2015, if the member has less than 30 years of service at retirement and is younger than age 65, the following reduction factors apply:

Age	Years of Ohio Service	% of Base Amount
58	25	75%
59	26	80
60	27	85
61		88
	28	90
62		91
63		94
	29	95
64		97
65	30 or more	100

Reduction factors for early retirement: For retirements on or after Aug. 1, 2015, the age and service credit requirements for an actuarially reduced benefit are as follows:

Actuarially Reduced Benefit for Retirement	Minimum Age and Years of Service
Through 7/1/2015	Age 55 and 25 years; or age 60 and 5 years
8/1/2015–7/1/2017	Any age and 30 years; or age 55 and 26 years; or age 60 and 5 years
8/1/2017–7/1/2019	Any age and 30 years; or age 55 and 27 years; or age 60 and 5 years
8/1/2019–7/1/2021	Any age and 30 years; or age 55 and 28 years; or age 60 and 5 years
8/1/2021–7/1/2023	Any age and 30 years; or age 55 and 29 years; or age 60 and 5 years
8/1/2023 and later	Any age and 30 years; or age 60 and 5 years

The actuarially reduced benefit reflects a reduction for each year that the member retires before meeting eligibility for an unreduced benefit.

Disability Retirement

Eligibility : Membership before July 30, 1992, and election of this benefit, completion of five or more years of qualifying service credit, under age 60 and permanently incapacitated for the performance of duty.

Amount

(1) Annuity with a reserve equal to the member's accumulated contributions, plus

(2) The difference between (1) and the greater of 2% of the average salary during the five highest paid years times total service plus years and months from date of disability to age 60. Maximum allowance is 75% of final average salary. Minimum allowance is 30% of final average salary. Disability benefits commencing before Aug. 1, 2015, were based on a three-year final average salary.

Disability Allowance

Eligibility: For membership after July 29, 1992, or membership before July 30, 1992, and election of this benefit, completion of five or more years of qualifying service credit and permanently incapacitated for the performance of duty. Membership on or after July 1, 2013, completion of 10 years of qualifying service credit and permanently incapacitated for the performance of duty.

Amount: 2.2% of the average salary during the five highest paid years times total service. Maximum allowance is 60% of final average salary. Minimum allowance is 45% of final average salary. The disability allowance payment terminates at age 65 (or later if payment begins after age 60). After termination of the disability allowance, the member may apply for service retirement. Disability benefits commencing before Aug. 1, 2015, were based on a three-year final average salary.

Death After Retirement

Lump-sum payment of $1,000 upon death after service or disability retirement.

Survivor Benefits

Eligibility: For membership before July 1, 2013, upon death after at least 1-1/2 years of credit with at least 1/4 year of such service in the 2-1/2 years preceding death or upon death of a disability benefit recipient. For membership on or after July 1, 2013, upon death after at least five years of qualifying service credit and died not later than one year after the date service terminated or upon the death of a disability benefit recipient.

Qualified survivors will receive the highest benefit from among the following for which they are eligible: dependent-based benefit, service-based benefit, and retirement-based benefit.

Qualified survivors are the spouse, dependent children, and/or dependent parents over age 65.

Dependent-based benefit: Monthly survivor benefits are determined according to the number of qualified survivors. These benefits are payable as a percentage of final average salary. The percentages are as follows:

Number of Qualified Dependents	% of Final Average Salary
1	25%
2	40%
3	50%
4	55%
5 or more	60%

Service-based benefit: If a member has 20 or more years of service before death, monthly survivor benefits are determined according to the number of years of service credit. These benefits are payable as a percentage of final average salary. The percentages are as follows:

Years of Service	% of Final Average Salary
20	29%
21	33%
22	37%
23	41%
24	45%
25	48%
26	51%
27	54%
28	57%
29 or more	60%

Retirement-based benefit: If a member dies after meeting service retirement eligibility, the monthly survivor benefit is determined as if the member had actually retired and provided the maximum joint and survivor benefit to the qualified survivor (Option 1). Early retirement reduction applies if the member is not eligible for unreduced benefit.

The primary beneficiary may withdraw the deceased member's account in lieu of receiving monthly benefits if there are no children who are qualified survivors.

Lump-Sum Withdrawal Option

In lieu of any other pension or survivor benefits, a member who leaves the system can receive his or her member contributions with interest in a lump sum payment according to the following schedule:

Credited Service	Lump-Sum Amount
Less than three years	Member contributions with 2% interest
Three or more years but less than five years	Member contributions with 3% interest
Five or more years	150% of member contributions with 3% interest

The board has the authority to modify the interest credited to member contributions.

Plans of Payment

Benefits can be paid under the following forms of payment:

- Single Life Annuity;
- Joint and Survivor Annuity — 100%, 50% or other; with or without reversion to Single Life Annuity; with one or multiple beneficiaries;
- Annuity certain and;
- Partial lump-sum option — from six to 36 times the monthly Single Life Annuity as a lump-sum with the remainder as an annuity.

Cost-of-Living Adjustment (COLA)

For members retiring on or after Aug. 1, 2013, the 2% COLA would be paid beginning on the fifth anniversary of the retirement benefit. Future annual increases are calculated on the base benefit and are not compounded.

Effective July 1, 2017, the COLA was reduced to zero.

Effective July 1, 2022, an ad-hoc COLA of 3% of the base benefit was granted to eligible benefit recipients to begin on the anniversary of their retirement benefit in fiscal year 2023 as long as they retired prior to July 1, 2018.

Health Care

Retirees, their spouses and dependents are eligible for a comprehensive medical expense health care plan as may be offered by the Retirement Board, subject to changes in terms and conditions from time to time.

Contributions

By Members: 14% of salary.

By Employers: 14% of salaries of their employees who are members.

Rehired Retirees: Rehired retirees who return to employment after retirement and their employers both contribute to the System. These contributions fund an additional benefit payable after termination of employment. The contributions and interest are paid as a lump-sum or converted to an additional annuity.

Summary of Benefit and Contribution Provisions — Combined Plan

Eligibility for Membership

New members hired on or after July 1, 2001, may elect in writing to participate in the Combined Plan.

Service Retirement

Eligibility: Age 60 with five years of service.

Amount: The balance in the member's defined contribution account plus an annual amount equal to 1% of final average salary for the five highest paid years multiplied by years of total Ohio service credit.

Before Aug. 1, 2015, the final average salary was the average of the member's three highest salary years.

Annual salary is subject to the limit under Section 401(a)(17) of the Internal Revenue Code.

Vesting

Eligibility: Completion of five years of service for the defined benefit portion. Member contributions and earnings are 100% vested at all times.

Amount: A member who terminates with five or more years of service credit can receive the actuarial equivalent present value of the defined benefit formula. Before age 50, a withdrawal must include both the defined benefit and defined contribution portions of the account.

Early Retirement

Eligibility: Before age 60 with five years of service.

Amount: The normal retirement benefit commencing at age 60. At age 50 or after, a member may elect to withdraw the full value of his or her defined contribution account and receive the withdrawal value of the defined benefit in a single sum, or leave the defined benefit on account for a benefit payable at age 60. The member may withdraw the defined benefit portion of the account only if he or she is also withdrawing the defined contribution account.

Optional Forms of Payment of Defined Benefit Portion

The greater of a lump sum of the actuarial equivalent of the defined benefit formula benefit or member contributions to the defined benefit portion. If a member withdraws the defined contribution account before age 50, the defined benefit portion is paid in a lump sum.

Joint and Survivorship Options — Options 1 through 4 described in the Defined Benefit Plan provisions are available, as well as the PLOP. All alternative forms of payment are the actuarial equivalent of the Single Life Annuity benefit payable at age 60.

Optional Forms of Payment of Member's Defined Contribution Account

The actuarial equivalent of the member's defined contribution account can be paid on or after age 50 as a lifetime annuity. Options 1 through 4, described in the Defined Benefit Plan provisions, are also available. The monthly annuity must be $100 or more to receive the member's defined contribution account in the form of an annuity.

The vested amount of the member's defined contribution account upon termination of employment can be paid as a single lump sum. If a member takes a lump sum of the defined benefit formula benefit, the member must simultaneously withdraw the lump-sum value of the member's defined contribution account in a single lump sum.

Disability Benefits

Eligibility: Completion of five or more years of qualifying service credit and permanently incapacitated from the performance of duty. For membership on or after July 1, 2013, completion of 10 years of qualifying service credit with STRS Ohio.

Amount: 2.2% of the average salary during the five highest paid years times total service. Maximum allowance is 60% of final average salary and the minimum is 45%. All contributions and investment gains in the member's defined contribution account are used to fund the benefit. At age 65, the disability allowance converts to a service retirement benefit with a 2.2% formula. Alternatively, the member's defined contribution account is available.

Survivor Benefits

Eligibility: For membership before July 1, 2013, upon death after at least 1-1/2 years of qualifying service credit with at least 1/4 year of such service in the 2-1/2 years preceding death or upon death of a disability benefit recipient. For membership on or after July 1, 2013, upon death at least five years of qualifying service credit and died no later than one year after service terminated or upon death of a disability benefit recipient.

Amount: Qualified survivors have the option of receiving dependent-based, service-based or retirement-based benefits described under the Defined Benefit Plan. Both employer contributions and the member's contributions and any investment gains in the member's defined contribution account are used to fund the benefit. Survivors also have the option to withdraw the defined contribution and defined benefit portions of the Combined Plan account.

Health Care

Retirees, their spouses and dependents are eligible for a comprehensive medical expense health care plan as may be offered by the Retirement Board, subject to changes in terms and conditions from time to time.

Cost-of-Living Adjustment (COLA)

For disability and survivor benefits, the benefit is increased each year by 2% of the base benefit. For benefits beginning on or after Aug. 1, 2013, the 2% COLA would be paid beginning on the fifth anniversary of the benefit effective date. Future benefits are calculated on the base benefit and are not compounded.

Effective July 1, 2017, the COLA has been reduced to zero.

Effective July 1, 2022, an ad-hoc COLA of 3% of the base benefit was granted to eligible benefit recipients to begin on the anniversary of their retirement benefit in fiscal year 2023 as long as they retired prior to July 1, 2018.

Contributions

By Members: 14% of salary.

12% of salary is deposited into the member's defined contribution account and 2% is applied to the defined benefit portion of the Combined Plan.

By Employers: 14% of salaries of their employees who are Combined Plan members.

Summary of Benefit and Contribution Provisions — Defined Contribution Plan

Eligibility for Membership

New members hired on or after July 1, 2001, may elect in writing to participate in the Defined Contribution Plan.

Service Retirement

Eligibility: Termination after age 50.

Amount: The balance in the member's defined contribution account.

Vesting

Eligibility: Members vest 20% per year in employer contributions and all gains and losses on those contributions. Member contributions and earnings are 100% vested immediately.

Amount: The balance in the member's defined contribution account.

Early Retirement

Eligibility: Termination before age 50.

Amount: The balance in the member's defined contribution account.

Optional Forms of Payment

The actuarial equivalent of the member's defined contribution account can be paid on or after age 50 as a lifetime annuity. Options 1 through 4, described in the Defined Benefit Plan provisions, are also available. The monthly annuity must be $100 or more to receive the member's defined contribution account in the form of an annuity.

Disability Benefits

Eligibility: None based on disability.

Amount: The balance in the member's defined contribution account. At age 50, other payment options are available, but employment must first be terminated.

Survivor Benefits

Eligibility: Upon death.

Amount: The balance in the member's defined contribution account. A spouse may either continue to manage the member's defined contribution account or withdraw the account.

Optional Forms of Payment

The actuarial equivalent of the member's defined contribution account can be paid on or after age 50 as a lifetime annuity. Options 1 through 4, described in the Defined Benefit Plan provisions, are also available. The monthly annuity must be $100 or more to receive the member's defined contribution account in the form of an annuity.

Cost-of-Living Adjustment (COLA)

Not available.

Health Care

Not available.

Contributions

By Members: 14% of salary is deposited into the member's defined contribution account.

By Employers: Effective July 1, 2017, 9.53% of salary was deposited into the member's defined contribution account. 4.47% of salaries are used to amortize the Unfunded Actuarial Liability of the Defined Benefit Plan.

In addition, 4.47% of the salaries of Alternative Retirement Plan members was used to fund the Unfunded Actuarial Liability of the Defined Benefit Plan.

Effective July 1, 2022, 11.09% of salary is deposited into the member's Defined Contribution account and 2.91% of salaries are used to help pay for unfunded liabilities.

CHEIRON Classic Values, Innovative Advice

Certification

October 2022

State Teachers Retirement System of Ohio
275 East Broad Street
Columbus, Ohio 43215

This report presents the most recent annual actuarial valuation as of June 30, 2022 and disclosure information under the Governmental Accounting Standards Board (GASB) Statement Nos. 74 and 75 for the Other Postemployment Benefits (OPEB) Plan provided by the State Teachers Retirement System of Ohio (STRS Ohio). This report is for the use of STRS Ohio and their auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report is not appropriate for other purposes, including the measurement of funding requirements for the Plan. This report has been prepared in accordance with Ohio Revised Code Section 3307.51(E), which requires the board to have prepared annually a report giving a full accounting of the revenues and costs related to the provision of benefits under section 3307.39 of the Revised Code.

The actuary prepared the following supporting schedules including the Financial and Actuarial Sections of the *Annual Comprehensive Financial Report*:

– Financial/Required Supplementary Information
  - Schedule of Changes in Employers' Net OPEB Liability
  - Schedule of Employers' Net OPEB Liability
  - Schedule of Employers' Contributions – OPEB
  - Notes to Required Supplementary Information – OPEB
  - Sensitivity of the Net OPEB Liability to the Discount Rate and Trend Rate Assumptions

– Actuarial
  - Retiree Health Care Benefits Solvency Test
  - Key methods and assumptions used in Retiree Health Care Benefits Actuarial Valuation
  - Summary of Membership Data

In preparing our report, we relied on information (some oral and some written) supplied by STRS Ohio. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for funding purposes meet the requirements of the Actuarial Standards of Practice, in particular Standards Nos. 6, 27, 35 and 44.

Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, changes in healthcare assumptions, and changes in plan provisions or applicable law. This report does not reflect future changes in benefit, recoveries, or administrative costs that may be required as a result of the Inflation Reduction Act, the 2021 Consolidated Appropriation Act, related legislation, or regulations.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared for STRS Ohio for the purposes described herein and for the use by the auditors in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any such other user.

Margaret A. Tempkin, FSA, MAAA, EA
Principal Consulting Actuary

Gaelle Gravot, FSA, MAAA
Principal Consulting Actuary

A separate annual valuation of the retiree health care coverage provided by STRS Ohio was performed as of June 30, 2022, by Cheiron.

Summary of Actuarial Assumptions and Methods — Health Care Fund

The assumptions for this valuation were selected based on recent experience and expectations for the future. Demographic assumptions were reviewed and adopted by the board on Feb. 17, 2022, as part of an experience study performed (report dated and accepted March 11, 2022) covering the period from July 1, 2015, to June 30, 2021, with changes going into effect June 30, 2022.

Expected Return on Assets: 7.00%

Municipal Bond Yield: 3.54% as of June 30, 2022; Bond Buyer 20-Bond GO Index as of June 30, 2022.

Discount Rate: 7.00%, based on a blend of 3.54% municipal bond yield rate and the expected return on invested plan assets. The assets are sufficient to cover all expected benefits, thus the long-term rate of return is used.

Payroll Increase Rate: 3.00% per year for purposes of attributing individual costs under the Entry Age actuarial cost method.

Salary Increase Rate: Varies by service from 2.5% to 8.5%.

Per Person Health Care Cost Trend Rates:

	Medical		Prescription Drug	
Year	Pre-65	65+	Pre-65	65+
2022	7.50%	-68.78%	9.00%	-5.47%
2023	7.00%	20.85%	10.00%	12.63%
2024	6.50%	0.87%	8.50%	7.87%
2025	5.20%	-8.60%	5.20%	5.59%
2026	5.16%	-0.10%	5.16%	5.18%
2027	5.12%	5.14%	5.12%	5.14%
2028	5.09%	5.11%	5.09%	5.11%
2029	5.05%	5.07%	5.05%	5.07%
2030	5.01%	5.03%	5.01%	5.03%
2031	4.97%	4.99%	4.97%	4.97%
2032	4.97%	4.97%	4.97%	4.97%
2033	4.63%	4.63%	4.63%	4.63%
2034	4.45%	4.45%	4.45%	4.45%
2035	4.35%	4.35%	4.35%	4.35%
2036	4.28%	4.28%	4.28%	4.28%
2037	4.23%	4.23%	4.23%	4.23%
2038	4.19%	4.19%	4.19%	4.19%
2039	4.17%	4.17%	4.17%	4.17%
2040	4.14%	4.14%	4.14%	4.14%
2041	4.04%	4.04%	4.04%	4.04%
2042+	3.94%	3.94%	3.94%	3.94%

Changes Since the Last Valuation: Salary increase rates were updated based on the 2021 experience study and were changed from age based to service based. Health care trends were updated to reflect emerging claims and recoveries experience.

Percent of Retirees Electing Health Care Coverage: 65% of future eligible service retirees and 65% of future eligible disabled retirees are assumed to elect health care coverage. 100% of Combined Plan and 20% of Defined Benefit Plan future inactive vested participants are assumed to cash out. 30% of inactive vested participants who do not cash out are assumed to elect health care coverage. Current and future participants for whom the value of the benefits received is less than their contribution are assumed to drop coverage.

Benefit Elections: Below is a summary of medical plan election rates for future retirees by Medicare status.

Pre-Medicare Medical Plans	Benefit Election Rate
Medical Mutual/Aetna Basic PPO	93.3%
AultCare PPO	3.3%
Paramount Health Care HMO	3.4%

Medicare Medical Plans	Benefit Election Rate
Aetna Medicare Advantage	95.6%
Medical Mutual/Aetna Basic PPO	2.8%
AultCare PPO	0.8%
Paramount Health Care HMO	0.8%

Spousal Coverage: Of those future retirees who elect to continue health coverage, 20% were assumed to have an eligible spouse who also opts for health care coverage at that time.

Dependent Age: For current retirees, the actual spouse date of birth was used when available. For future retirees, male retirees are assumed to be three years older than their partners, and female retires are assumed to be one year younger than their partners.

Administrative Expenses: Health plan administrative expenses are included in the per capita claims costs.

Average Annual Claims and Expense Assumptions: The July 1, 2022–June 30, 2023, claims costs were developed based on the average of the 2022 and 2023 premium rates STRS Ohio pays its vendors, the average Wakely's projected 2022 and 2023 Employer Group Waiver Program (EGWP) Recoveries that STRS Ohio is expected to receive for calendar 2022 and calendar 2023 prescription filled dates and an estimate of the Rx rebates PMPM for the non-Medicare population-based of $75. The following claims costs are shown for selected ages.

Average Claim and Expense Assumptions								
	Medical Pre-Medicare		Prescription Drug Pre-Medicare		Medical Medicare		Prescription Drug Medicare	
Age	Male	Female	Male	Female	Male	Female	Male	Female
40	$3,489	$6,330	$886	$1,099	$296	$266	$1,848	$1,771
50	$6,037	$7,545	$1,461	$1,551	$540	$486	$3,378	$3,237
60	$9,833	$10,874	$2,228	$2,107	$558	$502	$3,490	$3,344
65	$11,563	$10,939	$2,641	$2,387	$284	$261	$1,779	$1,734
70	$12,678	$12,129	$3,136	$2,725	$343	$295	$2,002	$1,815
80	$15,241	$14,911	$4,267	$3,478	$496	$414	$1,768	$1,683

Retiree Contributions: In 2022, non-Medicare and Medicare AMA retirees receive a subsidy of 2.1% per year of service to a maximum of 30 years. In 2023, retirees will receive a subsidy of 2.2%.

Beginning in 2024, the STRS Ohio subsidy dollar amount for non-Medicare plans will be frozen at the current 2023 levels. Annual increases in the STRS Ohio subsidy dollar amount for Medicare plans will be based on the annual percentage increase in the Aetna Medicare Advantage Plan (medical and Rx), limited to a maximum of 6%.

For those who retire on or after August 2023, the first five years of service do not count towards the subsidy, so subsidy percentages are shifted five years, and those with less than 20 years of service receive no subsidy.

A weighted average total cost across the medical plans is used as the STRS Ohio subsidy and is shown below. The amount is assumed to increase with health trend.

Weighted Average Premiums	
Pre-65 retirees	$13,558.47
Retirees age 65+	$3,213.28

Medicare Part D Subsidy: Expected to be negative in calendar 2023. The Part D subsidy is not included in the fiscal 2023 rates, meaning the cost of the Part D subsidy is entirely born by the system.

Medicare Part B Premium Subsidy: Service retirees, disabled retirees and surviving spouses who are enrolled in an STRS Ohio medical plan and who participate in Medicare Part B receive $30.00 monthly reimbursement towards the Part B premiums.

Health Care Solvency Test, 2015–2022 (dollar amounts in thousands)

	Accrued Liability For:				Portion of Accrued Liability Covered by Fair Value of Assets:		
Actuarial Valuation Date	(1) Active Members	(2) Inactive Members	(3) Retirees, Survivors & Dependents	Fair Value of Assets	(1)	(2)	(3)
Jan 1, 2015	$1,742,597	$15,459	$2,918,167	$3,454,000	100%	100%	58%
Jan 1, 2016	$1,830,799	$19,435	$3,303,997	$3,258,197	100%	100%	43%
Jan. 1, 2017	$2,596,979	$18,783	$3,271,404	$3,222,093	100%	100%	19%
Jan. 1, 2018	$777,500	$2,424	$1,636,026	$3,691,399	100%	100%	178%
June 30, 2018	$784,921	$1,965	$1,327,565	$3,721,349	100%	100%	221%
June 30, 2019	$872,892	$2,251	$1,340,775	$3,872,158	100%	100%	224%
June 30, 2020	$930,668	$2,279	$1,206,851	$3,897,296	100%	100%	246%
June 30, 2021	$1,137,505	$2,989	$1,680,827	$4,929,739	100%	100%	225%
June 30, 2022	**$816,952**	**$3,987**	**$1,159,768**	**$4,570,040**	**100%**	**100%**	**323%**

Summary of Membership Data

Valuation Date	Jan. 1, 2017	Jan. 1, 2018	June 30, 2018	June 30, 2019	June 30, 2020	June 30, 2021	June 30, 2022
Active members	169,205	168,132	170,327	170,004	167,838	166,424	**174,031**
Inactive members	17,011	17,694	18,384	18,762	19,415	20,430	**20,190**

STRS Ohio Health Care Program Enrollees

	June 30, 2018	June 30, 2019	June 30, 2020	June 30, 2021	Added	Terminated	June 30, 2022
Retirees	97,830	96,235	94,456	93,045	2,427	4,178	**91,294**
Disabled retirees	3,823	3,639	3,469	3,277	73	295	**3,055**
Survivors	4,766	4,498	4,377	4,237	380	474	**4,143**
Spouses and dependents (excluding children)	14,913	14,154	13,321	12,605	496	1,233	**11,868**
Total	**121,332**	**118,526**	**115,623**	**113,164**	**3,376**	**6,180**	**110,360**
Annual allowance (in thousands)	$348,743	$326,560	$320,907	$348,642	$11,190	$69,122	**$290,710**

Valuation Date	Jan 1, 2018	June 30, 2018	June 30, 2019	June 30, 2020	June 30, 2021	June 30, 2022
Average per health care participant annual benefit	$273	$667	$772	$976	$768	**$869**

The objective of the statistical section is to provide financial statement users with historical perspective, context and detail to assist in using the information in the financial statements and the notes to the financial statements to better understand and assess STRS Ohio's economic condition.

The schedules on Pages 81–82 show financial trend information that assists users in understanding and assessing how STRS Ohio's financial position has changed over time. The financial trend schedules presented are:

- Changes in Fiduciary Net Position
- Net Position by Plan
- Benefit Expenses by Type

Demographic and economic information begins on Page 83. This information is intended to assist users in understanding the environment in which STRS Ohio operates and to provide information that facilitates comparisons of financial statement information over time and among governments. The demographic and economic information presented is:

- Actuarial Funded Ratio and Funding Period
- Selected Funding Information — Defined Benefit Plan
- Number of Benefit Recipients by Type
- Summary of Active Membership Data

Operating information, which begins on Page 85, is intended to provide contextual information about STRS Ohio's operation to assist in using financial statement information. The operating information presented is:

- Benefit Payments by Type
- Average Benefit Payments for Service Retirees
- Average Benefit Subsidy Payments for Retirees Enrolled in Health Care Program
- Number of Reporting Employers by Type
- Principal Participating Employers

Changes in Fiduciary Net Position
Years Ending June 30, 2013–2022 (in thousands)

Defined Benefit Plan

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Additions:										
Member contributions	$ 1,042,959	$ 1,134,899	$ 1,188,062	$ 1,289,809	$ 1,443,374	$ 1,479,151	$ 1,515,445	$ 1,554,973	$ 1,585,509	$ 1,672,407
Employer contributions	1,327,862	1,325,141	1,449,165	1,466,938	1,514,285	1,565,679	1,614,188	1,662,017	1,696,121	1,776,074
Transfers from Defined Contribution Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14,941	22,933	24,051
Net investment income (loss)	7,984,266	10,418,170	3,644,151	361,567	9,098,570	6,625,382	4,768,116	2,674,947	20,620,798	(4,661,499)
Other	54,681	168,250	123,557	55,441	54,649	43,248	63,435	39,288	60,129	104,114
Total additions	10,409,768	13,046,460	6,404,935	3,173,755	12,110,878	9,713,460	7,961,184	5,946,166	23,985,490	(1,084,853)
Deductions:										
Benefit payments	6,152,335	6,504,676	6,662,232	7,090,037	6,989,165	7,052,642	7,040,052	7,023,096	7,048,431	7,123,033
Refunds	186,459	198,972	198,700	205,223	190,517	219,453	218,601	225,545	221,018	244,859
Administrative expenses	58,613	60,136	60,270	61,038	62,592	62,775	63,858	65,405	65,363	65,860
Total deductions	6,397,407	6,763,784	6,921,202	7,356,298	7,242,274	7,334,870	7,322,511	7,314,046	7,334,812	7,433,752
Net increase (decrease)	4,012,361	6,282,676	(516,267)	(4,182,543)	4,868,604	2,378,590	638,673	(1,367,880)	16,650,678	(8,518,605)
Net position held in trust, beginning of year	60,693,621	64,705,982	70,988,658	70,432,646	66,250,103	71,118,707	73,457,567	74,096,240	72,728,360	89,379,038
Prior period adjustment GASB 68 2015; GASB 75 2018	N/A	N/A	(39,745)	N/A	N/A	(39,730)	N/A	N/A	N/A	N/A
Beginning of year restated	N/A	N/A	70,948,913	N/A	N/A	71,078,977	N/A	N/A	N/A	N/A
Net position held in trust, end of year	**$64,705,982**	**$70,988,658**	**$70,432,646**	**$66,250,103**	**$71,118,707**	**$73,457,567**	**$74,096,240**	**$72,728,360**	**$89,379,038**	**$80,860,433**

Defined Contribution Plan

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Additions:										
Member contributions	$ 52,331	$ 58,909	$ 71,073	$ 82,224	$ 94,303	$ 101,279	$ 107,650	$ 115,433	$ 121,309	$ 133,810
Employer contributions	30,027	29,083	32,002	34,164	36,969	39,103	41,944	44,944	46,928	52,184
Net investment income (loss)	74,076	116,674	27,694	11,304	135,360	112,075	79,401	17,129	591,881	(339,212)
Transfers between retirement plans	(16,738)	(14,033)	(9,931)	(11,440)	(15,034)	(14,003)	(17,413)	N/A	N/A	N/A
Total additions	139,696	190,633	120,838	116,252	251,598	238,454	211,582	177,506	760,118	(153,218)
Deductions:										
Refunds	20,033	21,369	29,930	26,847	31,324	31,706	39,753	45,028	57,753	74,987
Transfers to Defined Benefit Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14,941	22,933	24,051
Administrative expenses	837	854	913	1,033	1,060	532	259	356	448	448
Total deductions	20,870	22,223	30,843	27,880	32,384	32,238	40,012	60,325	81,134	99,486
Net increase (decrease)	118,826	168,410	89,995	88,372	219,214	206,216	171,570	117,181	678,984	(252,704)
Net position held in trust, beginning of year	567,702	686,528	854,938	944,933	1,033,305	1,252,519	1,458,735	1,630,305	1,747,486	2,426,470
Net position held in trust, end of year	**$ 686,528**	**$ 854,938**	**$ 944,933**	**$ 1,033,305**	**$ 1,252,519**	**$ 1,458,735**	**$ 1,630,305**	**$ 1,747,486**	**$ 2,426,470**	**$ 2,173,766**

Health Care Fund

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Additions:										
Employer contributions	$ 99,179	$ 98,330	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Health care premiums	261,903	277,477	306,569	339,927	339,056	329,305	312,841	295,779	N/A	N/A
Net investment income (loss)	402,110	524,484	180,566	17,001	440,197	328,965	244,700	140,300	1,121,699	(261,500)
Government reimbursements	41,200	46,132	61,127	58,812	79,357	107,197	84,789	81,876	96,478	97,713
Total additions	804,392	946,423	548,262	415,740	858,610	765,467	642,330	517,955	1,218,177	(163,787)
Deductions:										
Health care benefit payments	599,818	629,465	672,615	676,993	565,962	517,470	489,169	490,559	183,390	193,572
Administrative expenses	2,555	2,495	2,569	2,655	2,497	2,427	2,352	2,258	2,344	2,340
Total deductions	602,373	631,960	675,184	679,648	568,459	519,897	491,521	492,817	185,734	195,912
Net increase (decrease)	202,019	314,463	(126,922)	(263,908)	290,151	245,570	150,809	25,138	1,032,443	(359,699)
Net position held in trust, beginning of year	3,059,976	3,261,995	3,576,458	3,449,536	3,185,628	3,475,779	3,721,349	3,872,158	3,897,296	4,929,739
Net position held in trust, end of year	**$ 3,261,995**	**$ 3,576,458**	**$ 3,449,536**	**$ 3,185,628**	**$ 3,475,779**	**$ 3,721,349**	**$ 3,872,158**	**$ 3,897,296**	**$ 4,929,739**	**$4,570,040**

Beginning in fiscal 2021, health care premiums are reported against health care benefit payments.

Net Position by Plan
Years Ending June 30, 2013–2022 (in thousands)

Fiscal Year	Defined Benefit Plan	Defined Contribution Plan	Health Care Fund	Total Net Position
2013	$64,705,982	$686,528	$3,261,995	$68,654,505
2014	$70,988,658	$854,938	$3,576,458	$75,420,054
2015	$70,432,646	$944,933	$3,449,536	$74,827,115
2016	$66,250,103	$1,033,305	$3,185,628	$70,469,036
2017	$71,118,707	$1,252,519	$3,475,779	$75,847,005
2018	$73,457,567	$1,458,735	$3,721,349	$78,637,651
2019	$74,096,240	$1,630,305	$3,872,158	$79,598,703
2020	$72,728,360	$1,747,486	$3,897,296	$78,373,142
2021	$89,379,038	$2,426,470	$4,929,739	$96,735,247
2022	**$80,860,433**	**$2,173,766**	**$4,570,040**	**$87,604,239**

Benefit Expenses by Type
Years Ending June 30, 2013–2022 (in thousands)

Fiscal Year	Service Retirement	Disability	Survivor	Other	Total
2013	$5,792,657	$211,755	$124,656	$23,267	$6,152,335
2014	$6,135,563	$211,945	$121,089	$36,079	$6,504,676
2015	$6,280,983	$211,425	$121,533	$47,055	$6,660,996
2016	$6,714,014	$212,614	$124,808	$38,601	$7,090,037
2017	$6,612,638	$210,649	$123,959	$41,919	$6,989,165
2018	$6,673,049	$206,969	$124,756	$47,868	$7,052,642
2019	$6,669,115	$201,726	$123,971	$45,240	$7,040,052
2020	$6,697,443	$195,253	$124,030	$6,370	$7,023,096
2021	$6,716,896	$189,145	$123,823	$18,567	$7,048,431
2022	**$6,777,083**	**$181,521**	**$124,048**	**$40,381**	**$7,123,033**

Actuarial Funded Ratio and Funding Period, 2013–2022 (dollar amounts in thousands)

As of June 30	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Funding Period
2013	$62,590,786	$94,366,694	$31,775,908	66.3%	40.2 years
2014	$66,657,175	$96,167,057	$29,509,882	69.3%	29.5 years
2015	$68,655,999	$99,014,654	$30,358,655	69.3%	28.4 years
2016	$70,114,637	$100,756,422	$30,641,785	69.6%	26.6 years
2017	$72,216,212	$96,126,440	$23,910,228	75.1%	18.4 years
2018	$73,115,358	$96,904,057	$23,788,698	75.5%	17.8 years
2019	$74,411,836	$97,840,944	$23,429,109	76.1%	16.6 years
2020	$76,357,681	$98,672,288	$22,314,607	77.4%	14.9 years
2021	$83,761,394	$104,591,406	$20,830,012	80.1%	14.0 years
2022	**$85,141,846**	**$105,264,325**	**$20,122,479**	**80.9%**	**11.5 years**

Selected Funding Information — Defined Benefit Plan, 2013–2022

		Employer Contribution Rate					
As of June 30	Member Contribution Rate	Employer Normal Cost	Health Care	Unfunded Actuarial Accrued Liability	Total Employer Rate	Interest Rate Assumption	Payroll Growth Assumption
2013	11.00%	1.03%	1.00%	11.97%	14.00%	7.75%	3.50%
2014	12.00%	–0.17%	0.00%	14.17%	14.00%	7.75%	3.50%
2015	13.00%	–1.54%	0.00%	15.54%	14.00%	7.75%	3.50%
2016	14.00%	–3.05%	0.00%	17.05%	14.00%	7.75%	3.50%
2017	14.00%	–3.16%	0.00%	17.16%	14.00%	7.45%	3.00%
2018	14.00%	–3.09%	0.00%	17.09%	14.00%	7.45%	3.00%
2019	14.00%	–3.17%	0.00%	17.17%	14.00%	7.45%	3.00%
2020	14.00%	–2.95%	0.00%	16.95%	14.00%	7.45%	3.00%
2021	14.00%	–1.77%	0.00%	15.77%	14.00%	7.00%	3.00%
2022	**14.00%**	**–2.91%**	**0.00%**	**16.91%**	**14.00%**	**7.00%**	**3.00%**

Number of Benefit Recipients by Type, 2013–2022

As of June 30	Service Retirement	Disability	Beneficiaries Receiving Optional Allowances	Survivor	Total
2013	127,797	5,890	9,621	5,913	149,221
2014	130,521	5,825	9,945	5,917	152,208
2015	136,019	5,736	10,437	5,924	158,116
2016	135,638	5,640	10,767	5,893	157,938
2017	135,446	5,498	11,135	5,960	158,039
2018	134,718	5,314	11,486	5,904	157,422
2019	134,465	5,183	11,880	5,890	157,418
2020	133,766	4,986	12,309	5,846	156,907
2021	133,532	4,789	12,830	5,770	156,921
2022	**132,765**	**4,549**	**13,199**	**5,712**	**156,225**

Summary of Active Membership Data, 2013–2022 (dollars in thousands)

Defined Benefit Plan

	Females				Males				Total			
As of June 30	Active Members	Annual Salaries	Average Age	Average Service	Active Members	Annual Salaries	Average Age	Average Service	Active Members	Annual Salaries	Average Age	Average Service
2013	117,359	$6,116,458	43.27	12.17	47,698	$2,765,389	44.24	11.97	165,057	$8,881,847	43.55	12.11
2014	116,748	$6,128,826	43.18	12.19	47,280	$2,762,322	44.23	12.07	164,028	$8,891,148	43.49	12.15
2015	113,852	$6,059,671	42.75	11.81	45,474	$2,715,670	43.91	11.84	159,326	$8,775,341	43.08	11.82
2016	116,728	$6,404,312	42.96	12.01	46,532	$2,849,489	44.11	12.02	163,260	$9,253,801	43.29	12.02
2017	115,925	$6,600,162	43.25	12.42	46,131	$2,913,921	44.41	12.39	162,056	$9,514,083	43.58	12.41
2018	117,692	$6,881,822	43.54	12.68	46,246	$2,999,599	44.72	12.69	163,938	$9,881,421	43.87	12.68
2019	117,646	$7,082,124	43.75	12.98	45,833	$3,062,544	45.06	13.08	163,479	$10,144,667	44.12	13.01
2020	116,250	$7,323,611	44.02	13.46	44,845	$3,136,140	45.31	13.62	161,095	$10,459,751	44.38	13.50
2021	115,321	$7,477,668	43.94	13.69	44,247	$3,162,389	45.29	13.90	159,568	$10,640,057	44.31	13.75
2022	**120,980**	**$7,908,975**	**43.96**	**13.40**	**45,715**	**$3,291,630**	**45.39**	**13.69**	**166,695**	**$11,200,606**	**44.35**	**13.48**

Combined Plan

	Females				Males				Total			
As of June 30	Active Members	Annual Salaries	Average Age	Average Service	Active Members	Annual Salaries	Average Age	Average Service	Active Members	Annual Salaries	Average Age	Average Service
2013	3,819	$180,102	40.30	7.51	1,069	$56,086	42.72	6.97	4,888	$236,188	40.83	7.39
2014	4,126	$196,090	40.22	7.61	1,141	$61,201	42.56	7.13	5,267	$257,291	40.73	7.51
2015	4,367	$213,263	40.41	7.78	1,232	$68,491	42.85	7.25	5,599	$281,754	40.95	7.66
2016	4,657	$234,432	40.48	7.95	1,295	$74,004	42.82	7.55	5,952	$308,436	40.99	7.86
2017	4,754	$250,040	40.88	8.35	1,322	$78,265	43.20	7.93	6,076	$328,305	41.38	8.26
2018	5,005	$271,250	41.02	8.64	1,384	$84,633	43.28	8.18	6,389	$355,883	41.51	8.54
2019	5,102	$288,624	41.14	9.04	1,423	$90,315	43.51	8.56	6,525	$378,939	41.66	8.94
2020	5,260	$310,026	41.34	9.40	1,483	$97,061	43.53	8.87	6,743	$407,087	41.82	9.28
2021	5,337	$327,699	41.25	9.81	1,522	$103,238	43.52	9.20	6,859	$430,937	41.75	9.67
2022	**5,745**	**$360,039**	**41.28**	**9.73**	**1,596**	**$111,143**	**43.51**	**9.30**	**7,341**	**$471,182**	**41.76**	**9.64**

Total Active Membership

	Females				Males				Total			
As of June 30	Active Members	Annual Salaries	Average Age	Average Service	Active Members	Annual Salaries	Average Age	Average Service	Active Members	Annual Salaries	Average Age	Average Service
2013	121,178	$6,296,561	43.17	12.02	48,767	$2,821,475	44.20	11.86	169,945	$9,118,036	43.47	11.98
2014	120,874	$6,324,915	43.08	12.03	48,421	$2,823,523	44.19	11.95	169,295	$9,148,438	43.40	12.01
2015	118,219	$6,272,934	42.66	11.66	46,706	$2,784,161	43.89	11.72	164,925	$9,057,095	43.01	11.68
2016	121,385	$6,638,743	42.86	11.86	47,827	$2,923,493	44.08	11.90	169,212	$9,562,236	43.21	11.87
2017	120,679	$6,850,202	43.15	12.26	47,453	$2,992,186	44.38	12.26	168,132	$9,842,388	43.50	12.26
2018	122,697	$7,153,072	43.43	12.52	47,630	$3,084,232	44.68	12.56	170,327	$10,237,304	43.78	12.53
2019	122,748	$7,370,749	43.64	12.81	47,256	$3,152,858	45.01	12.94	170,004	$10,523,607	44.02	12.85
2020	121,510	$7,633,638	43.90	13.28	46,328	$3,233201	45.25	13.47	167,838	$10,866,839	44.28	13.33
2021	120,658	$7,805,368	43.82	13.52	45,769	$3,265,627	45.23	13.74	166,427	$11,070,995	44.21	13.58
2022	**126,725**	**$8,269,014**	**43.84**	**13.23**	**47,311**	**$3,402,773**	**45.33**	**13.54**	**174,036**	**$11,671,787**	**44.24**	**13.32**

Note: Members enrolled in STRS Ohio's Defined Contribution Plan and reemployed retirees are not reflected in the above figures. Totals may differ due to rounding.

Benefit Payments by Type
As of June 30, 2022

Age Last Birthday	Number	Annual Allowance (in thousands)	Average Annual Allowance
Service Retirees			
Under 60	3,488	$ 190,438	$ 54,598
60–64	10,745	523,719	48,741
65–69	25,613	1,253,533	48,941
70–74	36,655	1,861,111	50,774
75–79	26,811	1,333,074	49,721
Over 79	29,453	1,232,910	41,860
Total	**132,765**	**$ 6,394,785**	**$ 48,166**
Disability Benefit Recipients			
Under 60	924	$ 33,566	$ 36,327
60–64	588	23,751	40,393
65–69	595	25,771	43,313
70–74	958	41,136	42,940
75–79	746	31,026	41,590
Over 79	738	25,277	34,251
Total	**4,549**	**$ 180,528**	**$ 39,685**
Beneficiaries Receiving Optional Allowances			
Under 60	12	$ 569	$ 47,442
60–64	106	4,526	42,701
65–69	489	20,748	42,430
70–74	1,558	67,260	43,171
75–79	2,217	91,988	41,492
Over 79	8,817	279,677	31,720
Total	**13,199**	**$ 464,770**	**$ 35,213**
Survivor Benefit Recipients			
Under 60	1,347	$ 18,671	$ 13,861
60–64	360	8,066	22,406
65–69	590	14,925	25,296
70–74	901	24,152	26,806
75–79	870	22,885	26,305
Over 79	1,644	39,145	23,811
Total	**5,712**	**$ 127,844**	**$ 22,382**
Grand Total	**156,225**	**$ 7,167,927**	**$ 45,882**

Average Benefit Payments for Service Retirees
July 1–June 30, 2013–2022

		Years of Service Credit						
		5–9	10–14	15–19	20–24	25–29	30+	Average/Total
2013	Average monthly benefit	$482	$945	$1,714	$2,407	$3,144	$4,796	$3,886
	Average final average salary	$33,742	$47,370	$62,954	$68,669	$75,864	$79,557	$74,643
	Number of recipients	203	280	541	724	1,198	5,113	8,059
2014	Average monthly benefit	$488	$951	$1,681	$2,419	$3,268	$4,808	$3,885
	Average final average salary	$36,506	$48,294	$61,904	$70,372	$78,726	$81,516	$76,213
	Number of recipients	157	225	417	549	817	3,703	5,868
2015	Average monthly benefit	$524	$960	$1,729	$2,410	$3,132	$4,722	$3,795
	Average final average salary	$42,757	$49,494	$64,257	$69,568	$75,754	$80,543	$75,610
	Number of recipients	149	269	514	683	1,246	4,400	7,261
2016	Average monthly benefit	$540	$989	$1,562	$2,440	$3,359	$5,052	$3,805
	Average final average salary	$45,268	$52,092	$59,616	$71,777	$81,463	$87,829	$79,495
	Number of recipients	92	147	347	500	686	1,990	3,762
2017	Average monthly benefit	$505	$1,150	$1,619	$2,453	$3,253	$4,534	$3,460
	Average final average salary	$44,471	$60,384	$62,461	$74,083	$80,735	$83,139	$77,032
	Number of recipients	75	119	237	282	366	1,204	2,283
2018	Average monthly benefit	$483	$1,067	$1,690	$2,416	$3,325	$4,861	$3,454
	Average final average salary	$37,558	$54,811	$63,271	$71,915	$81,491	$88,886	$78,110
	Number of recipients	80	111	304	344	406	1,030	2,275
2019	Average monthly benefit	$584	$1,088	$1,778	$2,480	$3,300	$4,764	$3,637
	Average final average salary	$45,300	$57,695	$66,023	$72,714	$80,278	$86,760	$79,278
	Number of recipients	75	127	279	380	447	1,475	2,783
2020	Average monthly benefit	$528	$1,056	$1,714	$2,575	$3,475	$4,993	$3,647
	Average final average salary	$42,644	$54,055	$64,370	$74,930	$81,607	$90,582	$80,375
	Number of recipients	72	129	275	437	423	1,212	2,548
2021	Average monthly benefit	$522	$1,127	$1,840	$2,594	$3,483	$5,079	$3,863
	Average final average salary	$41,664	$56,775	$66,971	$75,035	$83,495	$91,401	$82,509
	Number of recipients	85	169	276	437	471	1,677	3,115
2022	**Average monthly benefit**	**$541**	**$1,103**	**$1,766**	**$2,661**	**$3,456**	**$5,240**	**$3,879**
	Average final average salary	**$44,765**	**$56,101**	**$66,494**	**$76,999**	**$86,626**	**$95,466**	**$84,914**
	Number of recipients	**116**	**155**	**253**	**459**	**521**	**1,566**	**3,070**

Average Benefit Subsidy Payments for Retirees Enrolled in Health Care Program, 2013–2022

		Years of Service Credit						
		5–9*	10–14*	15–19	20–24	25–29	30+	Average/Total
FY 2013	Average monthly subsidy	$34	$39	$152	$203	$262	$347	$310
	Number of recipients	1,427	1,553	4,359	6,386	11,554	76,616	101,895
FY 2014	Average monthly subsidy	$34	$40	$153	$203	$260	$335	$302
	Number of recipients	1,325	1,447	4,497	6,532	11,948	79,367	105,116
FY 2015	Average monthly subsidy	$34	$39	$160	$210	$265	$337	$306
	Number of recipients	1,198	1,288	4,409	6,564	12,141	80,871	106,471
FY 2016	Average monthly subsidy	$36	$47	$165	$214	$269	$329	$302
	Number of recipients	1,167	1,301	4,172	6,746	12,700	84,633	110,719
FY 2017	Average monthly subsidy	$37	$52	$162	$207	$260	$307	$284
	Number of recipients	1,074	1,170	4,017	6,610	12,494	83,345	108,710
FY 2018	Average monthly subsidy	$34	$48	$158	$198	$247	$289	$268
	Number of recipients	950	1,019	4,019	6,489	12,262	82,257	106,996
FY 2019	Average monthly subsidy	$32	$45	$158	$200	$250	$282	$265
	Number of recipients	854	914	3,935	6,316	12,030	82,370	106,419
FY 2020	Average monthly subsidy	$32	$46	$159	$198	$248	$281	$264
	Number of recipients	772	836	3,827	6,144	11,813	80,980	104,372
FY 2021	Average monthly subsidy	$32	$48	$160	$199	$249	$281	$265
	Number of recipients	683	734	3,708	6,013	11,589	79,575	102,302
FY 2022	**Average monthly subsidy**	**$31**	**$48**	**$155**	**$192**	**$235**	**$269**	**$254**
	Number of recipients	**580**	**649**	**3,583**	**5,865**	**11,376**	**78,506**	**100,559**

*Members who retired before Jan. 1, 2004, with less than 15 years of service credit have access to the STRS Ohio Health Care Program, but pay the full cost of their premium. Members who retire on or after Jan. 1, 2004, and before Aug. 1, 2023, must have at least 15 years of qualifying service credit to access coverage. Members who retire on or after Aug. 1, 2023, must have at least 20 years of qualifying service credit to access coverage. The subsidy amounts listed for years of service credit less than fifteen years are reflective of the Medicare Part B Premium reimbursements, which currently require a minimum of five years of service credit, and some other subsidy situations.

Number of Reporting Employers by Type, 2013–2022

Fiscal Year Ended	City School Districts	Local School Districts	County Educational Service Centers	Exempted Village School Districts	Joint Vocational Schools	Colleges and Universities	County Boards of Developmental Disabilities	Community Schools	Other	Total
2013	194	369	55	49	49	36	67	322	12	1,153
2014	194	371	55	49	49	36	65	352	12	1,183
2015	194	370	53	49	49	36	64	337	12	1,164
2016	194	369	52	49	49	36	62	329	12	1,152
2017	194	369	52	49	49	36	61	323	12	1,145
2018	194	369	52	49	49	36	61	318	12	1,140
2019	194	369	52	49	49	36	59	302	11	1,121
2020	194	369	52	49	49	36	59	302	12	1,122
2021	194	368	52	49	49	36	56	299	12	1,115
2022	**194**	**368**	**51**	**49**	**49**	**36**	**54**	**307**	**13**	**1,121**

Principal Participating Employers for the Year Ended June 30, 2022

Employer	Covered Members	Prior Year Rank	Percentage of Membership
The Ohio State University	5,744	1	2.44%
Columbus City Schools	5,374	2	2.28%
Cleveland Metropolitan Schools	3,978	3	1.69%
Cincinnati Public Schools	3,718	4	1.58%
University of Cincinnati	3,517	5	1.49%
ESC Council of Governments	3,206	9	1.36%
Akron Public Schools	2,939	8	1.25%
Kent State University	2,800	6	1.19%
Toledo Public Schools	2,699	7	1.14%
ESC of Northeast Ohio	2,503	10	1.06%
All Others (see table below)	199,338		84.53%
Total Covered Members	**235,816***		**100.00%**

*Covered members include any participant in STRS Ohio who made contributions through a reporting employer during the fiscal year. Part-time teachers working in multiple school districts are included within each school's payroll data and, consequently, are reported more than once. Participating employers include every publicly funded school in Ohio employing a licensed teacher. A complete listing of participating employers is available upon request. Years prior to the current year are not reflected since the participating employers do not change substantially from year to year.

Employers — All Other Categories for the Year Ended June 30, 2022

Reporting Employer Type	Covered Members
City School Districts	72,001
Local School Districts	61,432
Colleges and Universities	24,098
Community Schools	10,568
County Educational Service Centers	10,312
Exempted Village School Districts	8,620
Joint Vocational Schools	8,038
Other	3,405
County Boards of Developmental Disabilities	864
Total	**199,338**

Note: Reporting employers includes the Defined Benefit, Defined Contribution and Health Care Plans.

STRS Ohio Plays a Critical Role in Supporting and Sustaining the State of Ohio

Ohio's pension systems share one common goal: to provide retirement security for the thousands of public servants who have made a career out of serving others.

STRS Ohio is one of Ohio's five statewide public pension systems and plays a critical role in supporting and sustaining the State of Ohio. Together, Ohio's statewide public retirement systems serve over a million of the state's citizens, both working and retired. The five systems provide a stable source of revenue for local economies, paying more than $17 billion annually in pension and health care benefits.

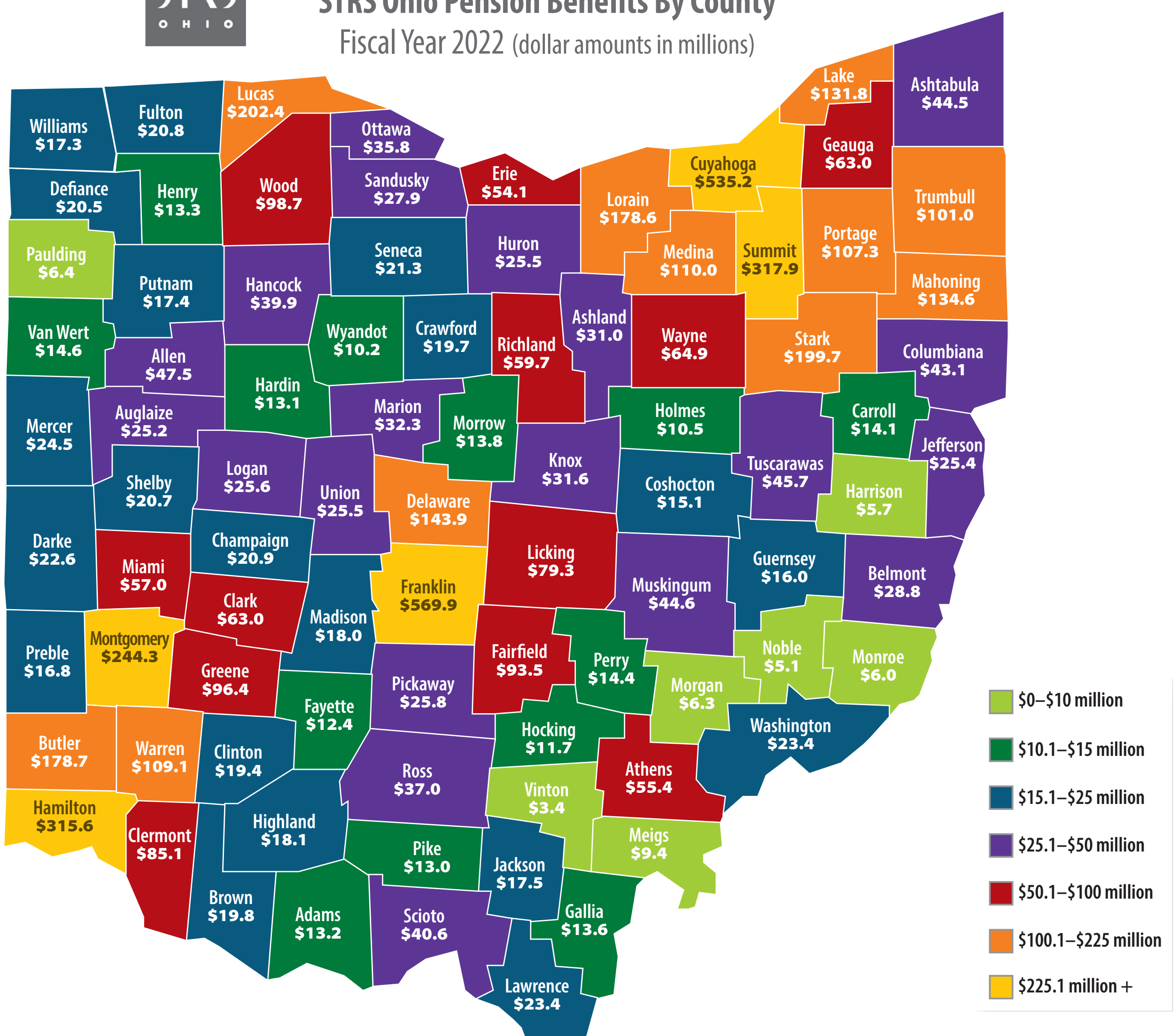
These pension systems are major economic drivers for the state; are administratively efficient and economical; and provide a stable retirement income for public workers in Ohio, thereby reducing the burden on taxpayers and Social Security. In fact, these earned pensions represent good public policy for helping to maintain financial security for Ohio's older citizens.

STRS OHIO

Economic Impact on the State of Ohio

STRS Ohio Pension Benefits By County

Fiscal Year 2022 (dollar amounts in millions)



$5.7 BILLION
STRS Ohio benefits distributed among Ohio's **88** counties

8 OUT OF **10**
STRS Ohio benefit recipients **live in Ohio**

$1.2 BILLION
STRS Ohio **investments** with companies headquartered in **Ohio**

State Teachers Retirement System of Ohio
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