

Teachers' Retirement System of the State of Kentucky



The 84th Annual Comprehensive Financial Report

**A Component Unit of the Commonwealth of Kentucky
Fiscal Years Ended June 30, 2024 and 2023**

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Executive Secretary**

This report was prepared by the
Teachers' Retirement System staff.

TABLE OF CONTENTS

Introductory Section

Letter of Transmittal	6
Board of Trustees	12
Administrative Staff and Professional Consultants	13
Organizational Chart	14
GFOA Certificate of Achievement	15
PPCC Public Pension Standards Award	16

Financial Section

Independent Auditor's Report	18
Management's Discussion and Analysis	22
Basic Financial Statements	
Statement of Fiduciary Net Position	26
Statement of Changes in Fiduciary Net Position	28
Combining Statement of Fiduciary Net Position — Other Funds	30
Combining Statement of Changes in Fiduciary Net Position — Other Funds	31
Notes to Financial Statements	33
Required Supplementary Information	
Retirement Annuity Trust	
Schedule of Changes in Net Pension Liability	75
Schedule of Net Pension Liability	77
Schedule of Employer Contributions	78
Schedule of Investment Returns	78
Health Insurance Trust	
Schedule of Changes in Net OPEB Liability	79
Schedule of Net OPEB Liability	81
Schedule of Employer Contributions	82
Schedule of Investment Returns	83
Life Insurance Trust	
Schedule of Changes in Net OPEB Liability	84
Schedule of Net OPEB Liability	86
Schedule of Employer Contributions	86
Schedule of Investment Returns	87
Additional Supporting Schedules	
Schedule of Administrative Expenses	87
Schedule of Professional Services and Contracts	88
Schedule of Contracted Investment Management Expenses	89
Independent Auditor's Report on Internal Control and Compliance	90

Investment Section

Report on Investment Activity	93
Consultant's Letter	94
Retirement Annuity Trust	
Investment Policy Summary, Objectives, Risk Controls and Asset Allocation	95
Distribution of Investments — Fair Value	97
Portfolio Results	99
Schedule of Investment Results	100
Fixed Income Investments	102
Equity Investments	104

Real Estate	105
Alternative Investments	106
Private Equity	106
Timberland	107
Fair Value	108
Investment Summary — Fair Value	111
Schedule of Investment Counselor Fees and Administrative Expenses	112
Ten Largest Holdings by Type	116
Transaction Commissions	118
Proxy Voting and Corporate Behavior	119
Securities Lending	119
Kentucky Investments	119
Professional Service Providers	120
Health Insurance Trust	
Investment Policy, Objectives, Risk Controls and Asset Allocation	121
Distribution of Investments — Fair Value	122
Portfolio Results	123
Schedule of Investment Results	124
Portfolio Fair Value	125
Investment Summary — Fair Value	127
Schedule of Investment Counselor Fees and Administrative Expenses	127
Ten Largest Holdings by Type	129
Professional Service Providers	130
Actuarial Section	
Annual Valuation of the Retirement Annuity Trust	
Actuary’s Certification Letter	133
Summary of Principal Results	135
Membership Data	140
Assets	141
Comments on Valuation	141
Contributions Payable Under the System	141
Comments on Level of Funding	144
Analysis of Financial Experience	145
Accounting Information	146
Schedule of Funding Progress	146
Schedule of Employer Contributions	147
Risk Assessment	147
Sensitivity Analysis	148
Valuation Balance Sheet	150
Solvency Test	151
Development of Actuarial Value of Assets	151
Summary of Receipts & Disbursements	152
Outline of Actuarial Assumptions and Methods	152
Actuarial Cost Method	155
Summary of Main System Provisions	155
Distribution of Active Members	159
Schedule of Active Member Valuation Data	159
Number of Retired Members, Beneficiaries and their Benefits by Age	160
Schedule of Retirees, Beneficiaries and Survivors Added to and Removed from Rolls	160
30-Year Baseline Projections	161

TABLE OF CONTENTS

Annual Valuation of the Health and Life Insurance Trusts	
Actuary’s Certification Letter	164
Summary of Principal Results	166
Membership Data	170
Assets	171
Comments on Valuation	171
Derivation of Experience Gains and Losses	172
Contributions Payable Under the Plans	173
Comments on Level of Funding	174
Accounting Information	175
Schedules of Funding Progress	175
Schedules of Employer Contributions	177
Results of the Valuation	178
Solvency Test	178
Development of the Actuarial Value of Assets	180
Summary of Receipts & Disbursements	182
Statement of Actuarial Assumptions and Methods	183
Summary of Main Plan Provisions	192
Distribution of Active Members	196
Schedule of Total Active Member Valuation Data	196
Eligible Deferred Vested Members	197
All Retirees and Spouses Receiving Health Care Benefits	198
Schedule of Retirees, Beneficiaries and Survivors Added to and Removed from Rolls	198
Sensitivity Analysis — Health Insurance Trust	199
Sensitivity Analysis — Life Insurance Trust	204
30-Year Baseline Projections	207
Statistical Section	
Retirement Annuity Trust	
Additions by Source	217
Deductions by Type	217
Changes in Plan Net Position	217
Health Insurance Trust	
Additions by Source	218
Deductions by Type	218
Changes in Plan Net Position	218
Life Insurance Trust	
Additions by Source	219
Deductions by Type	219
Changes in Plan Net Position	219
Distribution of Active Contributing Members	220
Principal Participating Employers	221
TRS Schedule of Participating Employers	222
Distribution of Retirement and Health Insurance Payments Statewide	223
Distribution of Retirement and Health Insurance Payments Worldwide	224
Growth in Annuitants	225
Schedules of Annuitants by Type of Benefit and Option	225
Retirement Annuity Trust Average Initial Benefit Payments for the Past 10 Years	226
Health Insurance Trust Average Premium Supplements for the Past 10 Years	227
Sick Leave Payments Summary	228

Introductory Section



Letter of Transmittal



Teachers' Retirement System of the State of Kentucky

December 16, 2024

Dear Trustees and Members:

It is my pleasure to submit the 84th Annual Comprehensive Financial Report (ACFR) of the Teachers' Retirement System of the State of Kentucky (TRS), a component unit of the Commonwealth of Kentucky, for the fiscal years ended June 30, 2024, and 2023.

The accompanying reports from the independent auditor and the consulting actuary substantiate the financial integrity and the actuarial soundness of TRS.

Allow me to begin this transmittal letter with my thanks for the support of our elected officials for continuing to fully fund the retirement system for Kentucky's teachers. With their help, we are in the seventh consecutive year of full pension funding for TRS of the actuarially determined employer contribution (ADEC). The importance of the consistent full funding of the retirement plan for Kentucky's teachers cannot be overstated. The funded ratios of the two major funds, as determined by the independent actuary, both improved in the year concluded June 30, 2024. The Retirement Annuity Trust funded ratio was 59.1% compared to 58.6% a year earlier and was the sixth gain in the last eight years. The Health Insurance Trust reached 80.4% from 71.3% a year before, continuing the gains seen since the 2010 Shared Responsibility law (2010 RS HB 540). The Health Insurance Trust has gained every year since the 2010 Shared Responsibility law (2010 RS HB 540) with the exception of one year when an experience study was implemented. Both funds, in the opinion of the actuary, continue to be on track for full funding within the amortization period for each.

As of June 30, 2024, TRS's total funds were, according to the independent auditor, \$29.53 billion, a \$2.45 billion improvement from a year ago.

TRS produced this annual report, which is required by state law and contains the system's annual audit and actuarial valuations, that provides the information necessary for anyone to better understand TRS, which is the largest financial institution in the state. This report contains

numerous examples of how retirement security for Kentucky teachers is being provided at a low cost and with a great economic benefit for those educators and the state's businesses. Many of the retirement dollars are spent in Kentucky across all 120 counties by the 87% of retirees who live here and receive 90% of the annuity benefits paid by TRS. TRS paid \$2.62 billion in total benefits (retirement, health insurance, etc.) during the fiscal year.

This report conforms with the principles of governmental accounting and generally accepted accounting principles. Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with TRS management. To the best of management's knowledge and belief, the enclosed data is accurate in all material aspects and reported in a manner designed to present fairly the financial position and results of operations of TRS for the years ended June 30, 2024, and 2023. Discussion and analysis of net assets and related additions and deductions are presented in Management's Discussion and Analysis in the report's Financial Section.

Management is responsible for maintaining a system of internal controls to establish reasonable assurance that assets are safeguarded, transactions are executed accurately, and financial statements are presented fairly. Limits are inherent in all internal control systems based on the recognition that the costs of such systems should be related to the benefits to be derived. Management believes TRS's controls provide the appropriate balance. The internal controls system includes policies, procedures and an internal audit department reporting to the Board of Trustees.

Profile of TRS

TRS began operations on July 1, 1940, as a cost-sharing, multiple-employer defined benefit plan. The primary purpose of the plan is to provide retirement benefits, including an annuity and retiree health insurance coverage, for education professionals working for local school districts and other public educational agencies in the state.

TRS closed the 2024 fiscal year with 76,014 active members and 60,358 retirees. From the \$2.62 billion paid in total benefits, the average annuity is \$41,384 and, for most TRS retirees, replaces Social Security. TRS usually provides a higher benefit with a comparable normal cost to the federal program.

TRS is an independent agency and instrumentality of the commonwealth. The 11-member Board of Trustees is committed to managing retirement system funds in a prudent, professional manner. In this vein, the actions of the board in recent years have resulted in a reduction of more than \$8 billion in liabilities for the state through decisions related to investing and the implementation of the Shared Responsibility solution that prefunded retiree health care.

An annual operating budget is prepared for the administration of the retirement system and approved by the board. Budget requests also are submitted to the General Assembly for adoption. The agency's administrative expenses, which are among the lowest of U.S. public pension plans, are paid from TRS's investment earnings.

The plan is described in the Notes to Financial Statements in the Financial Section of this report. Also, the Summary of Main System Provisions as Interpreted for Valuation Purposes in the Actuarial Section is useful in understanding benefit and contribution provisions.

Professional consultants are appointed by the board to perform essential services for TRS's effective and efficient operation. Reports from the board's independent auditor and independent actuary are enclosed in this ACFR. TRS's consultants are listed in the Additional Supporting Schedules of the Financial Section and in the Investment Section's Professional Service Providers table and Health Insurance Trust Professional Service Providers table.

Major Initiatives

TRS is efficient, effective and always working to improve the retirement security of Kentucky's teachers. The highest levels of professionalism, integrity, performance and teamwork are required at all levels. The latest affirmation of this, elaborated upon later in this letter, came with the clean independent annual audit that resulted in no findings.

During the year, TRS continued several major initiatives concerning funding, investments, benefit administration and cost containment.

Personalized Medicine

Possibly the initiative that continues best to fit all the previously mentioned goals is TRS's leading-edge personalized medicine program that uses a DNA test to improve the wellness of retirees. The program begun in 2017 now has more than 12,700 enrollees, most of whom are in the Medicare Eligible Health Plan (MEHP). This pharmacogenomics program focuses on making sure that a retiree's medications are safe and will be beneficial from the beginning, avoiding traditional medicine's costly and sometimes harmful trial-and-error process without the benefit of the DNA information. This has resulted in reductions in medical spending and hospitalizations for

those involved. Vital to the project is the link between retirees and doctors provided by the pharmacists of the Know Your Rx Coalition (KYRx), which works with the scientific partner in the program, Coriell Life Sciences. The coalition, a purchasing collaborative founded with TRS, reduces costs for members like TRS while providing personal service to customers. Initial Personalized Medicine results have shown widespread acceptance by prescribing physicians, reductions in medical spending for those involved and reductions in hospitalization and outpatient visits. This program has been expanded to include testing for a specific gene that recently was discovered can help detect a rare, but potentially severe, reaction to some cancer medications.

Retiree Health Care

Kentucky continues to be a national leader in prefunding retiree health care benefits as a result of the Shared Responsibility solution enacted in 2010 through the collective efforts of the board, the education community and elected officials. The plan immediately eliminated \$3.1 billion in actuarial liability from the retired teacher health care plan. Combined with other cost control measures, more than \$5 billion in actuarial accrued liability has been eliminated from the Health Insurance Trust. In more than a decade, the health insurance fund has achieved an 80.4% funded ratio compared to pay-as-you-go status before the law. This remarkable improvement confirms that the health insurance fund is well positioned if all statutory contributions are received and other assumptions are realized. Shared Responsibility's success for the retirement security of current and future retired teachers is a national model. It should be noted that the funded level also has benefited from prescription medication rebates and subsidies that were not anticipated at the outset of Shared Responsibility. If these rebates and subsidies that are in addition to Shared Responsibility contributions are lost, the full funding of the trust – currently projected to be in about four years – could be pushed beyond 2050, according to the actuary.

Beyond Shared Responsibility, the board regularly reviews the health care plan to contain costs and maintain a meaningful benefit for retired teachers. The 2007 move to Medicare Advantage continues to be stable and financially feasible for TRS's retirees and the medical plan.

Cost-saving initiatives have included moving the TRS-sponsored Medicare Part D Employer Group Waiver drug plan from fully insured to a self-funded plan to achieve the greatest federal subsidies. Additionally, as referenced previously, TRS is part of KYRx, which it joined in 2012. Through the coalition, TRS saves money leveraging greater prescription purchasing power, obtaining deeper drug discounts and increasing the rate at which prescriptions

INTRODUCTORY SECTION

were filled with generic drugs to 90% for the fiscal year compared to 73% in 2012. Additionally, coalition pharmacists work with retired teachers and their physicians to maximize prescription dollars for the retiree and TRS, including supporting the personalized medicine program.

These successful efforts, including cost containment measures by staff, allow affordable retiree health care to continue being provided to retirees with premiums at the same levels they were at 20 years ago.

Investing

With a 12.27% year-over-year investment return, the long-term track record for the TRS investment program remains strong, outperforms average plans and provides income that aids progress toward full funding.

From 2008 to June 2024, TRS investment returns resulted in net assets of \$26.1 billion, compared to the average plan's \$20 billion. This outperformance has generated \$6.1 billion to the benefit of Kentucky's teachers and all taxpayers.

For the most recent year, as mentioned, the retirement annuity gained 12.27% while the health trust gained 12.73%, both gross of fees.

As of June 30, 2024, TRS achieved top decile performance for the year and decade and near-top decile for the five-year period (as ranked by Aon covering public plans with assets over \$1 billion). The 10-year return was 7.94% for the annuity trust, while the Health Insurance Trust saw a 7.45% gain for the same timeframe.

This performance — overseen by the board and its Investment Committee and managed by the TRS investment team, all working on teachers' behalf — is important because investment income provides about two thirds of annuity payments made by TRS. Also as noted earlier, these TRS annuities bolster Kentucky's economy as retirees cover the expenses of daily life in the state's cities and towns. The consistent contributions from members and employers are the cornerstone of these investments that provide the benefits upon which retired teachers rely.

This report's Investment Section includes asset allocations, target ranges, market environment discussion and historical performance schedules.

According to KRS 161.430, the board is responsible for investing TRS's assets. The board delegates investment authority to the Investment Committee. The committee works closely with experienced investment managers and TRS's professional staff in evaluating and selecting investment allocations.

The board's investment objectives ensure funds are invested solely in the interest of TRS's members and that investment income is used exclusively to provide benefits to the members and their beneficiaries with reasonable expenses in administering the plan and its trust funds. The investment program also provides a reasonable rate of return with a major emphasis being placed on the protection of the invested assets.

TRS regularly obtains independent reviews and always seeks to improve its investment program and continue the tradition of adhering to best governance practices that lead to reasonable investment returns.

A multiyear program of diversifying the portfolio continued in line with TRS's focus on investment fundamentals, including controls on risk and costs. These efforts are a continuation of a disciplined investment process and long-term focus on retirement security. This focus has generated exceptionally stable returns through TRS's history, and management has every confidence this will continue. TRS's investment program continues to be recognized as a leader in the public pension community for governance structure, trustee education and cost effectiveness.

The year ended June 30, 2024, was characterized by strong equity markets in the final three quarters. Declining long-term interest rates and tightening credit spreads drove U.S. stocks to records as the year closed. Consumers saw stabilizing inflation end the fiscal year at 3% while the economy created over 210,000 jobs per month. The lower interest rates helped push domestic equity up 24.6% and non-domestic up 12.2%, despite uncertainty from conflicts in Ukraine and the Middle East and the U.S. presidential election.

With the understanding that a one-year period is not determinative for a long-term investor like TRS, the performance for longer periods continues TRS's historical record of top-tier performance. Moreover, during the last 30 years, TRS retirement annuity investment returns of 8.1% have bettered the 7.1% assumed rate of return. Net returns, as well, exceeded assumed rates for the annuity and health insurance trusts over the standard measuring periods of one, five and 10 years for both trusts and 20 years for the retirement trust. This record validates policy changes by the board and implemented by the Investment Committee over the last several years. TRS's commitment to best practices, stringent risk controls and emphasis on fundamentals in investing helps ensure long-term retirement security for Kentucky's teachers.

TRS's investment portfolio experienced an increase in fair value during the fiscal year to \$29.03 billion from \$26.44 billion a year ago. The increase was the result of market

conditions and employer and employee contributions of \$1.95 billion that added to the portfolio.

The gross investment gain for all funds was \$3.29 billion. The net appreciation in fair value of investments was \$2.68 billion compared to \$2.1 billion the prior year.

Legislation

During the 2024 regular session, TRS monitored legislation that directly and indirectly impacted TRS, including Senate Bill 188 exempting the TRS Medicare Eligible Health Plan from restrictions that could have increased the cost of the prescription benefit for retirees.

The Executive Branch Budget (2024 RS House Bill 6), which is for the 2024-26 biennium, provides TRS full retirement annuity funding. This consists of about \$1.88 billion in total for the biennium, including the full \$1.75 billion requested in additional funding to address the unfunded retirement annuity liability. The budget represents the seventh and eighth years of full funding for the retirement annuity, with two years of nearly full funding immediately preceding the current streak. This era of additional required funding being provided reversed a roughly decade-long period where the funding was not provided.

Separately, House Bill 1 appropriated \$40 million from the budget reserve trust fund to be applied to the unfunded actuarially accrued liability of the annuity trust.

Benefits Administration

Benefits for retirees are determined by the member’s date of entry in TRS. For convenience, TRS uses four designations for these account types. TRS 1 consists of members who entered before July 1, 2002. TRS 2 consists of members who entered on or between July 1, 2002, and June 30, 2008. TRS 3 consists of members who entered on or between July 1, 2008, and Dec. 31, 2021. TRS 4 consists of members who began on or after Jan. 1, 2022. The designations are used throughout this report.

The year included the ongoing administration of the TRS 4 hybrid retirement plan. The plan is designed for the board to use risk controls to address any unfunded liability that could develop, limiting the state’s responsibility to the payment of fixed statutory contributions.

Internal and External Reviews and Recognition

Independent outside reviews of the retirement system by auditors, the Public Pension Coordinating Council and the Government Finance Officers Association provide the board and TRS staff with important feedback.

TRS responds to legislative and executive inquiries and mandates throughout the year. In connection with pension legislation, TRS received — and responded to — numerous requests from legislators, the executive branch, constituent

groups and others to provide accurate information about TRS. Many of these involved presentations to the Public Pension Oversight Board (PPOB) and General Assembly committees. Subjects included quarterly investment-return and cash-flow updates; sensitivity analyses, the use of sick leave in retirement, the biennial budget request; and annual valuations from the actuary.

The independent review of TRS by the Office of the Auditor for Public Accounts resulted in a clean audit that had no findings. The auditor issued an unqualified opinion on TRS’s financial statements for the fiscal years ended June 30, 2024, and 2023.

The Government Finance Officers Association of the United States and Canada (GFOA) awarded TRS the Certificate of Achievement for Excellence in Financial Reporting for its ACFR for the year ended June 30, 2023. The certificate is a prestigious award recognizing conformance with the highest standards for preparation of state and local government financial reports.

To be awarded a one-year Certificate of Achievement, a government unit must publish an easily readable and efficiently organized annual comprehensive financial report, whose contents conform to program standards. Such ACFRs must satisfy both generally accepted accounting principles and applicable legal requirements.

TRS has received the certificate for 36 consecutive years (fiscal 1988-2023). TRS believes the current report, which is being submitted to GFOA, continues to conform to the Certificate of Achievement program requirements.

The Public Pension Coordinating Council (PPCC) recognized TRS with the Public Pension Standards Award for Funding and Administration for 2024. The award is based on compliance with principles judged to underlie exemplary retirement system achievements in the areas of benefits, actuarial valuation, financial reporting, investments, funding and disclosure. Those principles are acknowledged widely to be marks of excellence in the public pension industry.

The PPCC is a coalition of three national associations that represent public retirement systems and administrators. Combined, these associations serve retirement systems that provide pension coverage for most of the nation’s 18 million employees of state and local government. The associations that form the PPCC are the National Association of State Retirement Administrators, the National Council on Teacher Retirement and the National Conference on Public Employee Retirement Systems.

INTRODUCTORY SECTION

Information Technology

Pathway — TRS’s information technology system that allows members secure online access to account information anytime from anywhere — continued to be successful as TRS maintained and refined the system throughout the year. This included continued use of multifactor authentication.

Communications and Outreach

TRS strives to treat every member fairly, with respect and dignity, and to foster a personal affinity for this system that is theirs. This is a culture that underpins communications and outreach efforts and has been in place for many years. In the fiscal year, TRS continued to reach members in a variety of methods as staff members, including me, delivered communications to members, retirees, the education community, political leaders and the public regarding the value of TRS.

On social media, TRS continued using Facebook and Twitter accounts to communicate information about the system on a timelier basis. Since its beginning, the Facebook account has 5,323 followers and posts that often reach more than 1,000 users — led this past year by more than 6,000 users who saw a post about full funding in the current biennial budget. Facebook posts during the fiscal year were viewed more than 50,000 times. Posts on X (formerly Twitter) were viewed more than 10,200 times.

TRS Kentucky YouTube traffic for videos, on a variety of member benefits and retiree insurance issues, reached more than 6,200 views, with more than a third of those being for a how-to explanation about enrolling in the Medicare-eligible health plan along.

Also, TRS continued seminar offerings for members. Member services webinars hosted hundreds of members in live broadcasts and views of recordings. This is in addition to speaking to hundreds interested in TRS at meetings of constituency groups.

Use of mass email continued to communicate about a host of operations. More than 285,000 emails were delivered representing a rate of 92% and with 48.4% opened. Of the 285,000, only 115 resulted in someone unsubscribing and only 15 were marked spam.

Finally, the 16 TRS counselors met with members in response to 7,468 meeting requests, and 29,606 retirement estimates were provided, including 19,774 created by counselors.

General Administration

TRS continued for the sixth year the option of electronic voting in trustee elections using Pathway. This has been the most significant change in the method of voting since the

first election in 1939. Ballots cast electronically were the second highest ever at 1,655 compared to 1,759 the year before, 1,601 the fourth year, 1,411 the third year, 1,113 the second year and 308 the first year.

Also, TRS continued voting through Pathway in December for the Member Nominating Committee that met early this year for the trustee election.

Funding Progress

Retirement Annuity Trust

Teachers saw the continued benefits of increased funding by the state. The current fiscal year marks the beginning of the fourth biennium of full funding for the annuity trust, following nearly full funding in the 2016-2018 biennium. These marked the first full funding in a decade.

Financial and actuarial reports show, thanks to funding and investment returns, that the fiduciary net position of all TRS funds has improved \$10.81 billion from a decade ago.

Based on board recommendations, the General Assembly establishes, by statute, the contribution levels that are to be made by members and employers to fund TRS’s liabilities. Each year, an independent actuary performs a valuation to determine whether the current levels of contribution will be sufficient to cover the cost of benefits earned by members.

From fiscal 2009 through fiscal 2018, the state had not paid the full actuarially determined contributions necessary to prefund benefits. Over that time, because of not making the additional appropriation, the actuary determined the state’s additionally required contributions have grown to \$1.08 billion (fiscal 2027).

The board always has acted as required by law and recommended employer contributions payable by the state to ensure the state meets its contractual obligations to members. Again, management is appreciative, and teachers can be as well, of the full funding provided in the 2018-2020 budget; in the fiscal 2021 and 2022 budgets; in the 2022-2024 budget; and the 2024-26 budget. The valuation for the Retirement Annuity Trust for the period ending June 30, 2024, reflects TRS’s actuarial asset value of \$25.73 billion and actuarial liabilities of \$43.55 billion. The funded ratio of actuarial assets to liabilities is now 59.1% compared to 58.6% a year earlier. The actuary, in the 30-year projections, anticipates incremental changes over the next several years before larger gains are projected.

The actuary reports: “If contributions by the employer to the system in subsequent fiscal years are less than those required, the assets are expected to become insufficient to pay promised benefits. However, assuming that contributions to the system are made by the employer and

state from year to year in the future at rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the assets to provide the benefits called for under the system may be safely anticipated.”

Annual required employer contributions for the retirement plan are shown in the Schedule of Employer Contributions in the Required Supplemental Information of this report’s Financial Section. Based on the 2024 valuation, the actuary recommends a cumulative increase in employer contributions of 25.54% of pay for fiscal 2027 as detailed in the contribution rates tables in the Summary of Principal Results in this report’s Actuarial Section.

Health Insurance Trust

The Shared Responsibility solution for funding retiree health care, which went into effect on July 1, 2010, provides a method of prefunding retiree health care over the next 20 years. In only 14 years, the Health Insurance Trust has reached 80.4% funding compared to pay-as-you-go status before the law took effect. The results confirm that the Health Insurance Trust is on schedule to be funded fully and that the 2010 solution is working when all parties contribute as the law requires. The Shared Responsibility solution for funding retiree health care will help ensure the retirement security of the state’s teachers. An actuarial valuation of the Health Insurance Trust for the year ended June 30, 2024, indicated that the trust has an unfunded liability of \$789.6 million. Annual required employer contributions for the Health Insurance Trust are provided in the Schedule of Employer Contributions in the Required Supplemental Information of the Financial Section.

The actuary opines “if the contributions to the Health Insurance Trust continue at the current statutorily required levels, the funded ratio of the retiree medical plan will continue to increase, and the ability of the health trust to fund the benefits called for under the retiree medical plan will improve.”

The 2024-2026 budget included full funding as set forth in statute for the retiree Health Insurance Trust. With a one-year exception in 2022, retiree health insurance has received all required appropriations since Shared Responsibility was implemented in 2010.

Also, the board pursues cost containment at both the state and national levels to the benefit of teachers and taxpayers. As referenced previously, should the trust’s revenues lose prescription medication rebates and subsidies that were not anticipated at the outset of Shared Responsibility, the full funding of the trust could be pushed beyond 2050, according to the actuary.

National Involvement

NCTR Executive Committee

I am past-president of the National Council on Teacher Retirement (NCTR). NCTR is a national, nonprofit organization with a mission to promote effective governance and benefits administration in state and local public pension systems in order that adequate and secure retirement benefits are provided to educators and other plan participants. NCTR membership includes 63 state, territorial, local and university pension systems with combined assets in excess of \$2 trillion, serving more than 19 million active and retired teachers, non-teaching personnel and other public employees.

Public Sector HealthCare Roundtable

Additionally, I serve on the board of directors and as president of the Public Sector HealthCare Roundtable. The roundtable is a national coalition of public sector health care purchasers that was formed to ensure that the interests of the public sector are represented properly during the formulation, debate and implementation of federal health care policies. Membership is open to any statewide, regional or local governmental unit that provides health care coverage for public employees and retirees.

Acknowledgments

This report reflects the combined efforts of the TRS staff, under the leadership of the board. The report is intended to provide complete and reliable information that serves as a basis for making management decisions and for determining compliance with legal provisions. It also is used to determine responsible stewardship of the assets contributed by TRS members and their employers.

This report is at <https://trs.ky.gov/financial-reports-information/#ACFR> and is available to system employers. The cooperation of these employers continues to contribute significantly to TRS’s success and forms the vital link between TRS and its active members.

TRS management and staff are committed to the continued operation of an actuarially sound and efficient system. Again, thanks to you, as trustees and members, and elected officials for supporting the full funding that ensures teachers’ retirement security. Everyone’s support is essential to this commitment, and we look forward to continuing that work.

Respectfully submitted,



Gary L. Harbin, CPA
Executive Secretary

Board of Trustees



Brenda McGown
Chair, Retired Teacher Trustee
Bowling Green



Ben Littlepage, Ed.D.
Vice Chair, Active Teacher Trustee
Murray



Paul Bruce
Lay Trustee
Louisville



William Crawford
Appointed Trustee
Louisville



Robbie Fletcher
Ex Officio Trustee
Education Commissioner



Hollis Gritton
Lay Trustee
Union



Mark Metcalf
Ex Officio Trustee
State Treasurer



Laura Schneider
Active Teacher Trustee
Walton



Louis Straub
Appointed Trustee
Louisville



Josh Underwood
Active Teacher Trustee
Tollesboro



Alison Wright
Active Teacher Trustee
Georgetown

Administrative Staff and Professional Consultants

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Robert B. Barnes, JD
*General Counsel and
Deputy Executive Secretary
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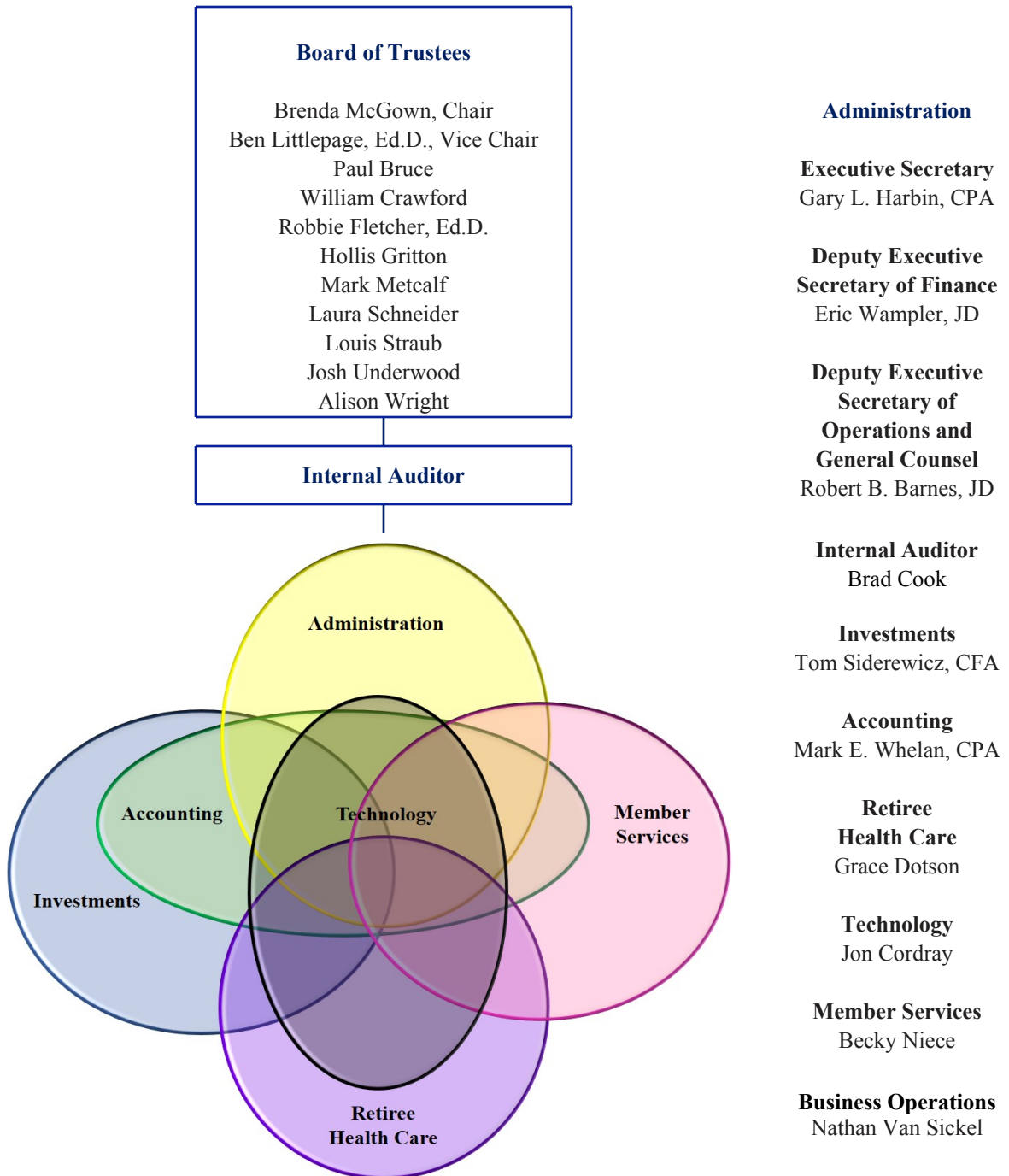
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See the Schedules of Contracted Investment Management Expenses, Transaction Commissions and Professional Service Providers on pages 112-115, 118, 120 and 127-130 for a list of investment fees and external asset managers.

Organizational Chart



GFOA Certificate of Achievement



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Teachers' Retirement System of the State of Kentucky

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

June 30, 2023

Christopher P. Morill

Executive Director/CEO

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Teachers' Retirement System of the State of Kentucky. The TRS has received the Certificate of Achievement for the last 36 consecutive years (fiscal years ended 1988-2023).

PPCC Public Pension Standards Award



Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2024

Presented to

Teachers' Retirement System of the State of Kentucky

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

Presented by the Public Pension Coordinating Council, a confederation of

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

Alan H. Winkle
Program Administrator

The Public Pension Coordinating Council awarded a Public Pension Standards Award for Funding and Administration to the Teachers' Retirement System of the State of Kentucky for 2024 for implementing and maintaining high professional standards in administering the affairs of TRS. The award is based on compliance with principles judged to underlie exemplary retirement system achievements in the areas of benefits, actuarial valuation, financial reporting, investments, funding and disclosure. Those principles are acknowledged widely to be marks of excellence for retirement systems. It represents the highest standards of excellence in the public pension industry.

Financial Section





ALLISON BALL
AUDITOR OF PUBLIC ACCOUNTS

Independent Auditor's Report

To the Board of Trustees
Teachers' Retirement System of the State of Kentucky
Frankfort, Kentucky

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of Teachers' Retirement System of the State of Kentucky (TRS), a component unit of the Commonwealth of Kentucky, as of and for the year ended June 30, 2024, and the related notes to the financial statements, which collectively comprise TRS's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements present fairly, in all material respects, the fiduciary net position of TRS as of June 30, 2024, and the changes in its fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit 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*, 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 TRS and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis-of-Matter (Reporting Entity)

As discussed in Note 1, the financial statements present only TRS, and are not intended to present fairly the financial position of the Commonwealth of Kentucky, or the results of its operations and cash flows of its proprietary fund types in conformity with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

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Board of Trustees
Teachers' Retirement System of the State of Kentucky
Page 2

Responsibilities of Management for the Financial Statements

TRS's 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 TRS'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 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, 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 TRS's internal control. Accordingly, no such opinion is expressed.
- 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 TRS'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.

Board of Trustees
Teachers' Retirement System of the State of Kentucky
Page 3

Other Matter – Comparative Financial Statements

The financial statements of TRS for the year ended June 30, 2023, were audited by another auditor, who expressed an unmodified opinion on those statements on November 15, 2023. In our opinion, the comparative financial statements presented herein as of and for the year ended June 30, 2023 are consistent, in all material respects, with the audited financial statements from which is has been derived.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis (pages 22 through 25), Schedule of Changes in Net Pension Liability - Retirement Annuity Trust (and related notes) (pages 75 through 78), Schedule of Changes in the Net OPEB Liability - Health Insurance Trust (and related notes) (pages 79 through 83), and Schedule of Changes in the Net OPEB Liability - Life Insurance Trust (and related notes) (pages 84 through 87) 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 audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise TRS's basic financial statements. The fiscal year (FY) 2024 additional supporting schedules (pages 87 through 89) are presented for purposes of additional analysis and are not a required part of the basic financial statements. The Schedule of Administrative Expenses, Schedule of Professional Services and Contracts, and Schedule of Contracted Investment Management Expenses are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such 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 Schedule of Administrative Expenses, Schedule of Professional Services and Contracts, and Schedule of Contracted Investment Management Expenses are fairly stated, in all material respects, in relation to the basic financial statements as a whole. The FY 2023 information on the additional supporting schedules (pages 87 through 89) was subjected to the auditing procedures applied in the FY 2023 audit of the basic financial statements by other auditors, whose report on such information stated that it was fairly stated in all material respects in relation to the FY 2023 basic financial statements as a whole.

Board of Trustees
Teachers' Retirement System of the State of Kentucky
Page 4

Other Matters

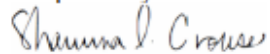
Other Information

Management is responsible for the other information included in the annual comprehensive financial report (ACFR). The other information comprises introductory, investment, actuarial and statistical sections but does not include the financial statements and our auditor's report thereon. Our opinions on the financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon. In connection with our audit of the financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the 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 November 15, 2024, on our consideration of TRS's internal control over financial reporting and on our test 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 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 the TRS's internal control over financial reporting and compliance.

Respectfully Submitted,



Shawna Crouse, CPA

Assistant Auditor of Public Accounts

Frankfort, KY

November 15, 2024

Teachers' Retirement System of the State of Kentucky Management's Discussion and Analysis

This discussion and analysis of the financial performance of Teachers' Retirement System of the State of Kentucky (TRS or system) provides an overview of the Retirement Annuity Trust, the Health Insurance Trust and the Life Insurance Trust for the years ended June 30, 2024, and 2023. It should be read in conjunction with the respective financial statements, which begin on page 26. TRS is the fiduciary of funds held in trust for its members.

Using This Financial Report

Because of the long-term nature of the retirement annuity, health insurance and life insurance trusts, financial statements alone do not provide the complete scope of TRS. The notes, required supplemental information, supporting schedules and other sections of this annual comprehensive financial report (ACFR) relating to investments, actuarial valuations and statistical measures complete that scope.

Information about the activities of the retirement annuity, health insurance and life insurance trusts and the 403(b) Tax-Sheltered Trust as a whole is provided in the Statement of Fiduciary Net Position and Statement of Changes in Fiduciary Net Position (on pages 26-29). The Notes to the Financial Statements are an essential part of the basic financial statements. They provide important background and detailed information about TRS, the plan and the basic financial statements themselves.

The Required Supplementary Information includes historical trend information about the funded status of the retirement annuity, health insurance and life insurance trusts presented as required by accounting standards. The Schedules of Employer Contributions present historical trend information about the required contributions of employers and the contributions made by employers in relation to the requirement. These schedules provide information that contributes to understanding the changes over time in the funded status of the plans. Separate reports prepared by the actuary using a board-adopted funding policy provide a long-term, ongoing plan perspective and the progress made in accumulating sufficient assets to pay benefits and insurance premiums when due.

Teachers' Retirement System as a Whole

In the year ended June 30, 2024, the system's combined fiduciary net position increased by \$2.45 billion — from \$27.08 billion in 2023 to \$29.53 billion in 2024. In 2022, the combined net position totaled \$25.26 billion. The following summaries focus on the fiduciary net position and changes in fiduciary net position of TRS's retirement annuity, health insurance and life insurance trusts.

Summary of Fiduciary Net Position (In millions)

	Retirement Annuity Trust			Health Insurance Trust			Life Insurance Trust		
	2024	2023	2022	2024	2023	2022	2024	2023	2022
Assets									
Cash and investments	\$ 26,032.0	\$ 24,189.3	\$ 22,846.5	\$3,310.9	\$ 2,714.1	\$2,229.8	\$ 101.3	\$ 93.9	\$ 88.3
Receivables	156.2	128.5	122.8	74.5	66.1	57.8	0.4	0.4	0.3
Capital assets	5.7	7.5	9.3						
Total assets	<u>26,193.9</u>	<u>24,325.3</u>	<u>22,978.6</u>	<u>3,385.4</u>	<u>2,780.2</u>	<u>2,287.6</u>	<u>101.7</u>	<u>94.3</u>	<u>88.6</u>
Liabilities	<u>(85.8)</u>	<u>(80.7)</u>	<u>(78.6)</u>	<u>(67.7)</u>	<u>(36.8)</u>	<u>(18.5)</u>	<u>(0.2)</u>	<u>(0.3)</u>	<u>(0.2)</u>
Net position	<u>\$ 26,108.1</u>	<u>\$ 24,244.6</u>	<u>\$ 22,900.0</u>	<u>\$3,317.7</u>	<u>\$ 2,743.4</u>	<u>\$2,269.1</u>	<u>\$ 101.5</u>	<u>\$ 94.0</u>	<u>\$ 88.4</u>

Trust Totals* **			
<i>(In millions)</i>			
	2024	2023	2022
Assets			
Cash and investments	\$ 29,444.2	\$ 26,997.3	\$ 25,164.6
Receivables	231.1	195.0	180.9
Capital Assets	5.7	7.5	9.3
Total assets	29,681.0	27,199.8	25,354.8
Liabilities	(153.7)	(117.8)	(97.3)
Net position	\$ 29,527.3	\$ 27,082.0	\$ 25,257.5

* Trust Totals excludes Other Funds, which consists of the 403(b) Tax-Sheltered Trust, the Supplemental Benefit Fund and the Losey Scholarship Fund. Other Funds had a combined fiduciary net position of \$1.4 million for 2024, \$1.3 million for 2023 and \$1.1 million for 2022.

** Amounts above may not agree to the financial statements due to rounding.

The fiduciary net position of the Retirement Annuity Trust increased by 7.7% (\$26.11 billion compared to \$24.24 billion in 2023). The fiduciary net position in 2022 was \$22.9 billion. Net investment income was about \$2.81 billion in 2024 versus \$2.27 billion in 2023. This compares to a negative \$2.73 billion in 2022.

The fiduciary net position of the Health Insurance Trust increased to \$3.32 billion, with gains of 20.9% each of the last two years primarily due to investment income and contributions being more than the amount of insurance benefits. The 2022 fiduciary net position was \$2.27 billion.

The Summary of Changes in Fiduciary Net Position is presented below followed by discussion of the activities within the different trusts.

Summary of Changes in Fiduciary Net Position

(In millions)

	Retirement Annuity Trust			Health Insurance Trust			Life Insurance Trust		
	2024	2023	2022	2024	2023	2022	2024	2023	2022
Additions									
Member contributions	\$ 385.9	\$ 366.8	\$ 357.0	\$ 155.3	\$ 149.2	\$ 145.7	\$	\$	\$
Employer contributions	1,178.6	1,144.4	1,679.6	224.3	208.8	151.7	3.4	3.2	2.8
Net investment increase (decrease)	2,813.7	2,266.1	(2,727.8)	340.3	243.1	(219.5)	10.3	8.7	(15.7)
Total additions	4,378.2	3,777.3	(691.2)	719.9	601.1	77.9	13.7	11.9	(12.9)
Deductions									
Benefit payments	2,467.0	2,391.3	2,305.9				6.2	6.3	6.2
Refunds	32.9	26.9	26.7						
Administrative expense	14.8	14.5	12.0	2.1	2.0	2.1			
Insurance expenses				143.5	124.8	107.2			
Total deductions	2,514.7	2,432.7	2,344.6	145.6	126.8	109.3	6.2	6.3	6.2
Net increase (decrease)	1,863.5	1,344.6	(3,035.8)	574.3	474.3	(31.4)	7.5	5.6	(19.1)
Fiduciary net position									
Beginning of year	\$24,244.6	\$22,900.0	\$25,935.8	\$2,743.4	\$2,269.1	\$2,300.5	\$ 94.0	\$ 88.4	\$107.5
End of year	\$26,108.1	\$24,244.6	\$22,900.0	\$3,317.7	\$2,743.4	\$2,269.1	\$101.5	\$ 94.0	\$ 88.4

	Trust Totals* **		
	<i>(In millions)</i>		
	2024	2023	2022
Additions			
Member contributions	\$ 541.2	\$ 516.0	\$ 502.7
Employer contributions	1,406.3	1,356.4	1,834.1
Net investment increase (decrease)	3,164.3	2,517.9	(2,963.0)
Total additions	<u>5,111.8</u>	<u>4,390.3</u>	<u>(626.2)</u>
Deductions			
Benefit payments	2,473.2	2,397.6	2,312.1
Refunds	32.9	26.9	26.7
Administrative expense	16.9	16.5	14.1
Insurance expenses	143.5	124.8	107.2
Total deductions	<u>2,666.5</u>	<u>2,565.8</u>	<u>2,460.1</u>
Net increase (decrease)	<u>2,445.3</u>	<u>1,824.5</u>	<u>(3,086.3)</u>
Fiduciary net position			
Beginning of year	<u>\$27,082.0</u>	<u>\$25,257.5</u>	<u>\$28,343.8</u>
End of year	<u>\$29,527.3</u>	<u>\$27,082.0</u>	<u>\$25,257.5</u>

* Trust Totals excludes Other Funds, which consists of the 403(b) Tax-Sheltered Trust, the Supplemental Benefit Fund and the Losey Scholarship Fund.

** Amounts above may not agree to the financial statements due to rounding.

Retirement Annuity Trust Activities

Retirement contributions are calculated by applying a percentage factor to salary with member and employer contributions withheld from each pay check. Members also may pay contributions to repurchase previously refunded service credit or to purchase various types of elective service credit.

In 2024, employer contributions totaled \$1.18 billion, a net increase of \$34.1 million from the prior fiscal year mainly due to increases in the amount required by the actuary for the unfunded liability and contributions for higher teacher salaries. The decrease from 2022 to 2023 resulted primarily from the state’s additional employer contributions in 2022 of \$479 million to pay off previously awarded benefits.

The Retirement Annuity Trust experienced net investment income of \$2.81 billion in 2024 after net investment income of \$2.27 billion for 2023. For 2022, net investment income was a negative \$2.73 billion.

Deductions increased \$82 million in 2024 and \$88.1 million in 2023, which can be attributed to increases in the number of benefit recipients. Members and beneficiaries on the retiree payroll as of June 30, 2024, increased year over year each of the last two years, with a gain of about 800 over the prior year and 1,121 two years ago.

Other Postemployment Benefit (OPEB) Activities

During 2024, the Health Insurance Trust member contributions increased \$6.1 million from 2023, which followed a \$3.5 million increase from 2022. This represented a continuing increase in member’s salaries paid by the local school district employers. Also, during 2024, employer contributions increased \$15.5 million from 2023 as the state made its contribution of the health insurance premiums for members who retired after July 1, 2010, who participate in the Kentucky Employees’ Health Plan (KEHP).

In 2024, the Health Insurance Trust experienced net investment income of \$340.3 million compared to the previous year increase of \$243.1 million net investment income. For 2022, net investment income was a negative \$219.5 million.

The Life Insurance Trust experienced net investment income of \$10.3 million in 2024, compared to net investment income of \$8.7 million in 2023 and a negative \$15.7 million in 2022. Life insurance benefits paid for 2024, 2023 and 2022 were \$6.2 million, \$6.3 million and \$6.2 million respectively.

Funding

For the 2022-2024 biennium, the state budgeted \$1.28 billion of additional employer contributions for the unfunded liability of the Retirement Annuity Trust. The plan fiduciary net position as a percentage of total pension liability measured in accordance with Governmental Accounting Standards Board (GASB) Statement No. 67 was 60.4% as of June 30, 2024, compared to 2023's 57.7%. The separately issued actuary's valuation shows progress of the trust's funded status over the amortization period set by the board funding policy. The additional funding provided in the budget resulted in the actuarially determined employer contribution (ADEC) being made for 2024 and 2023. Assuming that contributions to the retirement trust are made by the state from year to year in the future as recommended by the actuary, TRS should have sufficient assets to provide all benefits due as defined by law to members.

The funding of the health insurance and life insurance trusts is presented in Notes 8 and 9 of these financial statements and the Required Supplementary Information in accordance with GASB Statement No. 74. Current obligations are being met by current funding and the Shared Responsibility solution enacted in 2010 continues to prefund retiree health benefits. The Schedule of Employer Contributions presented in the Required Supplementary Information provides the required contributions for the health and life insurance trusts.

Historical Trends

Accounting standards require that the Statement of Fiduciary Net Position presents assets at fair value; include only benefits and refunds due to plan members and beneficiaries. The standards also require presenting accrued investment and administrative expenses as of the reporting date. Detailed information regarding the funded status — including the key actuarial assumptions, target allocations and the sensitivity of the discount rate — can be found for the Retirement Annuity Trust in Note 4 of the financial statements, in Note 8 for the Health Insurance Trust and in Note 9 for the Life Insurance Trust. The schedules of employer contributions are provided in the Required Supplementary Information.

TRS's independent consulting actuaries are members of the American Academy of Actuaries and experienced in performing valuations for public retirement systems. As mandated by state law, the valuations of the retirement annuity and health insurance trusts are prepared in accordance with principles of practice prescribed by the Actuarial Standards Board consistent with accepted actuarial procedures. Actuarial assumptions used in the valuations are internally consistent and reasonable based on the actual experience of the trusts. An actuarial audit was completed in 2015, which confirmed the accuracy of actuarial procedures and the reasonableness of assumptions. A five-year experience study was completed in 2021, which also confirmed the reasonableness of assumptions based upon the actual experience of the trusts. In 2023, the actuary completed a review of economic assumptions.

This financial report is designed to provide citizens, participating employers, plan members and other users with an overview of TRS's fiscal practices. Direct questions or requests for additional information to TRS Chief Financial Officer Mark Whelan.

Basic Financial Statements
**Statement of Fiduciary Net Position
As of June 30, 2024**

	Retirement Annuity Trust	Health Insurance Trust	Life Insurance Trust	Other Funds	Total
Assets					
Cash	\$ 259,780,594	\$ 158,491,246	\$ 408,935	\$ 190,501	\$ 418,871,276
Prepaid expenses	39,648				39,648
Receivables					
Contributions	50,326,612	12,521,802	55,791		62,904,205
Due from other trusts	10,135,426				10,135,426
State of Kentucky			55,327		55,327
Investment income	73,083,001	7,854,183	328,869	4,439	81,270,492
Investment sales receivable	22,671,447	4,171,118	1,350		26,843,915
Other receivables	26,965	49,992,663			50,019,628
Total receivables	156,243,451	74,539,766	441,337	4,439	231,228,993
Investments at fair value					
Short-term investments	572,635,564	190,546,793	4,919,258	374,263	768,475,878
Fixed income	3,344,709,780	247,128,630	16,758,846	202,656	3,608,799,912
Equity	15,374,903,827	1,823,215,375	62,780,493	595,103	17,261,494,798
Alternative investments	2,079,165,274	246,078,333	6,429,611		2,331,673,218
Real estate	1,712,653,006	156,478,824	7,037,595		1,876,169,425
Additional categories	2,688,094,277	488,999,159	3,048,893		3,180,142,329
Total investments	25,772,161,728	3,152,447,114	100,974,696	1,172,022	29,026,755,560
Capital assets	28,238,153				28,238,153
Accumulated depreciation	(22,508,768)				(22,508,768)
Net capital assets	5,729,385				5,729,385
Total assets	26,193,954,806	3,385,478,126	101,824,968	1,366,962	29,682,624,862
Liabilities					
Accrued expenses and other liabilities	3,447,683	22,931,226	80,086		26,458,995
Due to other trusts		9,944,788	185,760	4,878	10,135,426
State of Kentucky	15,085,250	16,872,140			31,957,390
Investment purchases payable	67,285,796	18,019,114			85,304,910
Total liabilities	85,818,729	67,767,268	265,846	4,878	153,856,721
Net position restricted for pension and other postemployment benefits	<u>\$ 26,108,136,077</u>	<u>\$3,317,710,858</u>	<u>\$101,559,122</u>	<u>\$ 1,362,084</u>	<u>\$ 29,528,768,141</u>

The Combining Statement of Fiduciary Net Position — Other Funds is presented on page 30.

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

**Statement of Fiduciary Net Position
As of June 30, 2023**

	Retirement Annuity Trust	Health Insurance Trust	Life Insurance Trust	Other Funds	Total
Assets					
Cash	\$ 256,046,235	\$ 300,467,448	\$ 490,418	\$ 211,699	\$ 557,215,800
Prepaid expenses	19,774				19,774
Receivables					
Contributions	48,576,918	12,068,376	60,464		60,705,758
Due from other trusts	7,977,383				7,977,383
Investment income	59,043,290	5,424,732	319,147	4,380	64,791,549
Investment sales receivable	12,850,729	1,682,228			14,532,957
Other receivables	40,625	46,973,359			47,013,984
Total receivables	128,488,945	66,148,695	379,611	4,380	195,021,631
Investments at fair value					
Short-term investments	568,572,723	77,221,128	5,069,152	356,519	651,219,522
Fixed income	2,971,945,560	153,143,085	17,942,483	214,946	3,143,246,074
Equity	14,287,643,121	1,406,514,939	56,182,952	493,746	15,750,834,758
Alternative investments	1,915,329,613	220,197,307	4,921,166		2,140,448,086
Real estate	1,777,282,982	159,444,210	6,513,395		1,943,240,587
Additional categories	2,412,438,221	397,083,937	2,795,704		2,812,317,862
Total investments	23,933,212,220	2,413,604,606	93,424,852	1,065,211	26,441,306,889
Capital assets	28,171,057				28,171,057
Accumulated depreciation	(20,705,010)				(20,705,010)
Net capital assets	7,466,047				7,466,047
Total assets	24,325,233,221	2,780,220,749	94,294,881	1,281,290	27,201,030,141
Liabilities					
Accrued expenses and other liabilities	2,966,452	13,062,293	72,653		16,101,398
Due to other trusts		7,823,792	149,111	4,480	7,977,383
State of Kentucky	29,211,585	10,443,709	39,839		39,695,133
Investment purchases payable	48,501,059	5,477,874	3,363		53,982,296
Total liabilities	80,679,096	36,807,668	264,966	4,480	117,756,210
Net position restricted for pension and other postemployment benefits					
	<u>\$ 24,244,554,125</u>	<u>\$ 2,743,413,081</u>	<u>\$ 94,029,915</u>	<u>\$ 1,276,810</u>	<u>\$ 27,083,273,931</u>

The Combining Statement of Fiduciary Net Position — Other Funds is presented on page 30.
The accompanying notes are an integral part of these financial statements.

**Statement of Changes in Fiduciary Net Position
For the Year Ended June 30, 2024**

	Retirement Annuity Trust	Health Insurance Trust	Life Insurance Trust	Other Funds	Total
Additions					
Contributions					
State of Kentucky	\$ 1,085,041,513	\$ 96,418,669	\$ 2,777,522	\$	\$ 1,184,237,704
Other employers	93,640,460	127,901,507	579,250		222,121,217
Members	385,906,512	155,327,151		17,740	541,251,403
Total contributions	1,564,588,485	379,647,327	3,356,772	17,740	1,947,610,324
Investment income (loss)					
Net appreciation (depreciation) in fair value of investments	2,381,075,925	288,185,945	8,920,554	89,132	2,678,271,556
Interest	237,648,164	43,427,659	970,215	35,628	282,081,666
Dividends	250,196,624	17,729,767	692,275	9,033	268,627,699
Rental income, net	24,113,698				24,113,698
Securities lending, gross earnings	38,299,068		682,519	7,531	38,989,118
Gross investment income (loss)	2,931,333,479	349,343,371	11,265,563	141,324	3,292,083,737
Less: investment expense	(81,907,104)	(9,049,993)	(307,517)		(91,264,614)
Less: securities lending expense	(35,732,348)		(642,961)	(7,075)	(36,382,384)
Net investment income (loss)	2,813,694,027	340,293,378	10,315,085	134,249	3,164,436,739
Total additions	4,378,282,512	719,940,705	13,671,857	151,989	5,112,047,063
Deductions					
Benefits	2,466,971,497		6,106,000	66,317	2,473,143,814
Refunds of contributions	32,921,776				32,921,776
Insurance expenses		143,521,932			143,521,932
Administrative expense	14,807,287	2,120,996	36,650	398	16,965,331
Total deductions	2,514,700,560	145,642,928	6,142,650	66,715	2,666,552,853
Net increase (decrease)	1,863,581,952	574,297,777	7,529,207	85,274	2,445,494,210
Net position restricted for pension and other postemployment benefits					
Beginning of year	24,244,554,125	2,743,413,081	94,029,915	1,276,810	27,083,273,931
End of year	\$26,108,136,077	\$3,317,710,858	\$ 101,559,122	\$ 1,362,084	\$29,528,768,141

The Combining Statement of Changes in Fiduciary Net Position — Other Funds is presented on page 31.
The accompanying notes are an integral part of these financial statements.

Statement of Changes in Fiduciary Net Position
For the Year Ended June 30, 2023

	Retirement Annuity Trust	Health Insurance Trust	Life Insurance Trust	Other Funds	Total
Additions					
Contributions					
State of Kentucky	\$ 1,042,434,014	\$ 85,328,285	\$ 2,599,486	\$	\$ 1,130,361,785
Other employers	102,014,792	123,487,533	624,074	218,241	226,344,640
Members	366,774,504	149,209,656		9,575	515,993,735
Total contributions	1,511,223,310	358,025,474	3,223,560	227,816	1,872,700,160
Investment income (loss)					
Net appreciation (depreciation) in fair value of investments	1,883,455,471	211,338,355	7,393,136	49,908	2,102,236,870
Interest	199,435,778	26,865,804	858,773	23,270	227,183,625
Dividends	236,967,990	13,255,682	665,226	7,527	250,896,425
Rental income, net	22,628,975				22,628,975
Securities lending, gross earnings	30,155,932		828,198	10,371	30,994,501
Gross investment income (loss)	2,372,644,146	251,459,841	9,745,333	91,076	2,633,940,396
Less: investment expense	(78,893,843)	(8,407,600)	(285,154)		(87,586,597)
Less: securities lending expense	(27,665,143)		(777,694)	(9,678)	(28,452,515)
Net investment income (loss)	2,266,085,160	243,052,241	8,682,485	81,398	2,517,901,284
Total additions	3,777,308,470	601,077,715	11,906,045	309,214	4,390,601,444
Deductions					
Benefits	2,391,326,201		6,219,000	147,867	2,397,693,068
Refunds of contributions	26,909,781				26,909,781
Insurance expenses		124,866,005			124,866,005
Administrative expense	14,470,733	1,974,318	37,633	895	16,483,579
Total deductions	2,432,706,715	126,840,323	6,256,633	148,762	2,565,952,433
Net increase (decrease)	1,344,601,755	474,237,392	5,649,412	160,452	1,824,649,011
Net position restricted for pension and other postemployment benefits					
Beginning of year	22,899,952,370	2,269,175,689	88,380,503	1,116,358	25,258,624,920
End of year	\$24,244,554,125	\$2,743,413,081	\$ 94,029,915	\$ 1,276,810	\$ 27,083,273,931

The Combining Statement of Changes in Fiduciary Net Position — Other Funds is presented on page 32.
The accompanying notes are an integral part of these financial statements.

**Combining Statement of Fiduciary Net Position — Other Funds
As of June 30, 2024**

	403(b) Tax- Sheltered Trust	Supplemental Benefit Fund	Losey Scholarship Fund	Total
Assets				
Cash	\$ 29,197	\$ 161,304	\$	\$ 190,501
Receivables				
Investment income	1,392		3,047	4,439
Investments at fair value				
Short-term investments	326,682		47,581	374,263
Fixed income			202,656	202,656
Equity			595,103	595,103
Total investments	<u>326,682</u>		<u>845,340</u>	<u>1,172,022</u>
Total assets	<u>357,271</u>	161,304	848,387	1,366,962
Liabilities				
Due to other trusts	94	4,224	560	4,878
Total liabilities	<u>94</u>	<u>4,224</u>	<u>560</u>	<u>4,878</u>
Net position restricted for pension and other postemployment benefits	<u>\$ 357,177</u>	<u>\$ 157,080</u>	<u>\$ 847,827</u>	<u>\$ 1,362,084</u>

**Combining Statement of Fiduciary Net Position — Other Funds
As of June 30, 2023**

	403(b) Tax- Sheltered Trust	Supplemental Benefit Fund	Losey Scholarship Fund	Total
Assets				
Cash	\$ 10,825	\$ 200,874	\$	\$ 211,699
Receivables				
Investment income	1,280		3,100	4,380
Investments at fair value				
Short-term investments	312,005		44,514	356,519
Fixed income			214,946	214,946
Equity			493,746	493,746
Total investments	<u>312,005</u>		<u>753,206</u>	<u>1,065,211</u>
Total assets	<u>324,110</u>	200,874	756,306	1,281,290
Liabilities				
Due to other trusts	83	3,945	452	4,480
Total liabilities	<u>83</u>	<u>3,945</u>	<u>452</u>	<u>4,480</u>
Net position restricted for pension and other postemployment benefits	<u>\$ 324,027</u>	<u>\$ 196,929</u>	<u>\$ 755,854</u>	<u>\$ 1,276,810</u>

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

Combining Statement of Changes in Fiduciary Net Position — Other Funds
For the Year Ended June 30, 2024

	403(b) Tax-Sheltered Trust	Supplemental Benefit Fund	Losey Scholarship Fund	Total
Additions				
Contributions				
Other employers	\$	\$	\$	\$
Member	17,740			17,740
Total contributions	17,740			17,740
Investment income (loss)				
Net appreciation in fair value of investments			89,132	89,132
Interest	17,274	6,895	11,459	35,628
Dividends			9,033	9,033
Securities lending, gross			7,531	7,531
Gross investment income (loss)	17,274	6,895	117,155	141,324
Less: securities lending expense			(7,075)	(7,075)
Net investment income (loss)	17,274	6,895	110,080	134,249
Total additions	35,014	6,895	110,080	151,989
Deductions				
Benefits	1,856	46,461	18,000	66,317
Administrative expense	11	279	108	398
Total deductions	1,867	46,740	18,108	66,715
Net increase (decrease)	33,147	(39,845)	91,972	85,274
Net position restricted for pension and other postemployment benefits				
Beginning of year	324,027	196,929	755,854	1,276,810
End of year	\$ 357,174	\$ 157,084	\$ 847,826	\$ 1,362,084

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

**Combining Statement of Changes in Fiduciary Net Position — Other Funds
For the Year Ended June 30, 2023**

	403(b) Tax- Sheltered Trust	Supplemental Benefit Fund	Losey Scholarship Fund	Total
Additions				
Contributions				
Other employers	\$ 1,203	\$ 217,038	\$	\$ 218,241
Member	9,575			9,575
Total contributions	10,778	217,038		227,816
Investment income (loss)				
Net appreciation in fair value of investments			49,908	49,908
Interest	11,349	1,194	10,727	23,270
Dividends			7,527	7,527
Securities lending, gross			10,371	10,371
Gross investment income (loss)	11,349	1,194	78,533	91,076
Less: securities lending expense			(9,678)	(9,678)
Net investment income (loss)	11,349	1,194	68,855	81,398
Total additions	22,127	218,232	68,855	309,214
Deductions				
Benefits	2,134	127,733	18,000	147,867
Administrative expense	14	771	110	895
Total deductions	2,148	128,504	18,110	148,762
Net increase (decrease)	19,979	89,728	50,745	160,452
Net position restricted for pension and other postemployment benefits				
Beginning of year	304,048	107,201	705,109	1,116,358
End of year	\$ 324,027	\$ 196,929	\$ 755,854	\$ 1,276,810

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

Notes to Financial Statements

**Note 1
Description of Retirement Annuity Trust**

Reporting Entity

The Teachers’ Retirement System of the State of Kentucky (TRS, or system) was created by the 1938 General Assembly, began operations July 1, 1940, and is governed by Kentucky Revised Statutes (KRS) chapter 161 sections 220 through 990. TRS is a blended component unit of the Commonwealth of Kentucky (commonwealth or state) and, therefore, is included in the commonwealth’s financial statements. TRS is a cost-sharing multiple-employer defined benefit plan with a special funding situation established to provide retirement, health and life insurance benefits for specified employees of local school districts and other public educational agencies in the commonwealth.

KRS 161.250 provides that the general administration and management of TRS, and the responsibility for its proper operation, is vested in a board of trustees. The Board of Trustees consists of the chief state school officer, the state treasurer, two trustees appointed by the governor and seven elected trustees. Four of the elected trustees are active teachers, two are not members of the teaching profession, and one is an annuitant of the system.

Participants

As of June 30, 2024, a total of 202 employers participated in the plan. Employers are comprised of local school districts, Department of Education agencies, universities, the Kentucky Community and Technical College System and other educational organizations. The state under the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 74 is recognized as a non-employer contributing entity providing the employer matching contributions for members employed by the local school districts and regional educational cooperatives.

According to KRS 161.220, any regular or special teacher, or professional occupying a position requiring certification or graduation from a four-year college or university is eligible to participate in the system. The following table illustrates the classifications of members.

	<u>2024</u>	<u>2023</u>
Active contributing members:		
Vested	49,652	49,569
Non-vested	26,362	26,075
Inactive members, vested	11,957	11,331
Retirees and beneficiaries currently receiving benefits	<u>60,358</u>	<u>59,559</u>
Total members, retirees and beneficiaries	<u><u>148,329</u></u>	<u><u>146,534</u></u>

Because benefits are determined by a member’s entry date, throughout this report, each grouping is referred to by a different name.

- TRS 1 is members who entered before July 1, 2002.
- TRS 2 is members who entered on or between July 1, 2002, and June 30, 2008.
- TRS 3 is members who entered on or between July 1, 2008, and Dec. 31, 2021.
- TRS 4 is members who entered on or after Jan. 1, 2022.

Benefit Provisions

For Members Before July 1, 2008 (TRS 1 and TRS 2): Members become vested when they complete five years of credited service. To qualify for monthly retirement benefits, payable for life, members must either:

1. Attain age 55 and complete five years of Kentucky service, or

2. Complete 27 years of Kentucky service.

Non-university members receive monthly payments equal to 2% (service prior to July 1, 1983) and 2.5% (service after July 1, 1983) of their final average salaries for each year of credited service. Non-university members who became members on or after July 1, 2002, will receive monthly benefits equal to 2% of their final average salary for each year of service if, upon retirement, their total service is less than 10 years. New members after July 1, 2002, who retire with 10 or more years of total service will receive monthly benefits equal to 2.5% of their final average salary for each year of service, including the first 10 years. In addition, non-university members who retire July 1, 2004, and later with more than 30 years of service will have a multiplier for all years over 30 of 3%.

University employees receive monthly benefits equal to 2% of their final average salary for each year of credited service.

The final average salary is the member's five highest annual salaries except members at least age 55 with 27 or more years of service may use their three highest annual salaries. For all members, the annual allowance is reduced by 5% per year from the earlier of age 60 or the date the member would have completed 27 years of service. The minimum annual service allowance for all members is \$440 multiplied by credited service.

For Members On or After July 1, 2008, and Before Jan. 1, 2022 (TRS 3): Members become vested when they complete five years of credited service. To qualify for monthly retirement benefits, payable for life, members must either:

1. Attain age 60 and complete five years of Kentucky service, or
2. Complete 27 years of Kentucky service, or
3. Attain age 55 and complete 10 years of Kentucky service.

The annual retirement allowance for non-university members is equal to: (a) 1.7% of final average salary for each year of credited service if their service is 10 years or less; (b) 2% of final average salary for each year of credited service if their service is greater than 10 years but no more than 20 years; (c) 2.3% of final average salary for each year of credited service if their service is greater than 20 years but no more than 26 years; (d) 2.5% of final average salary for each year of credited service if their service is greater than 26 years but no more than 30 years; (e) 3% of final average salary for years of credited service greater than 30 years.

The annual retirement allowance for university members is equal to: (a) 1.5% of final average salary for each year of credited service if their service is 10 years or less; (b) 1.7% of final average salary for each year of credited service if their service is greater than 10 years but no more than 20 years; (c) 1.85% of final average salary for each year of credited service if their service is greater than 20 years but less than 27 years; (d) 2% of final average salary for each year of credited service if their service is greater than or equal to 27 years.

The final average salary is the member's five highest annual salaries except members at least age 55 with 27 or more years of service may use their three highest annual salaries. For all members, the annual allowance is reduced by 6% per year from the earlier of age 60 or the date the member would have completed 27 years of service.

For Members On or After Jan. 1, 2022 (TRS 4): To qualify for monthly retirement benefits, payable for life, members must either:

1. Attain age 57 and complete 10 years of Kentucky service, or
2. Attain age 65 and complete five years of Kentucky service.

Foundational Benefit

The annual foundational benefit for members is equal to service times a multiplier times final average salary. The final average salary is the member's five highest annual salaries. The annual foundational benefit is reduced by 6% per year from the earlier of age 60 or the date the member would have completed 30 years of service.

The multiplier for non-university members is shown in the following table:

Age	Years of Service			
	5-9.99	10-19.99	20-29.99	30 or more
57-60		1.70%	1.95%	2.20%
61		1.74%	1.99%	2.24%
62		1.78%	2.03%	2.28%
63		1.82%	2.07%	2.32%
64		1.86%	2.11%	2.36%
65 and over	1.90%	1.90%	2.15%	2.40%

The multiplier for university members is shown in the following table:

Age	Years of Service			
	5-9.99	10-19.99	20-29.99	30 or more
57-60		0.70%	0.95%	1.20%
61		0.74%	0.99%	1.24%
62		0.78%	1.03%	1.28%
63		0.82%	1.07%	1.32%
64		0.86%	1.11%	1.36%
65 and over	0.90%	0.90%	1.15%	1.40%

Supplemental Benefit

The annual supplemental benefit is equal to the account balance that includes member and employer contributions and interest credited annually on June 30. Options include annuitizing the balance or receiving the balance or a portion thereof as a lump sum either at the time of retirement or at a later date.

Other Benefits

TRS provides postemployment health insurance benefits to retirees as fully described in Note 8. For members who began participating prior to Jan. 1, 2022, TRS also provides disability benefits for vested members at the rate of 60% of the final average salary. TRS 4 members will receive a disability benefit to be determined by the board through administrative regulation.

A life insurance benefit payable upon the death of a member, also described in Note 9, is \$2,000 for active contributing members and \$5,000 for retired or disabled members for members who began participating before Jan. 1, 2022. For TRS 4 members, the life insurance benefit payable upon the death of a member is \$5,000 for active contributing members and \$10,000 for retired or disabled members.

Cost of living increases as provided by law are 1.5% annually. Additional ad hoc increases and any other benefit amendments are provided if authorized by the General Assembly.

Note 2
Summary of Significant Accounting Policies

Basis of Accounting

The financial statements are prepared on the accrual basis of accounting. Member contributions and employer matching contributions are recognized in the fiscal year due. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

Cash

TRS has seven cash accounts. At June 30, 2024, the retirement annuity cash account totaled \$187.8 million, the control cash account totaled \$71.7 million and the capital project cash account totaled \$274,003 for a total of \$260 million as carrying value of cash in the retirement trust. The health insurance’s Internal Revenue Code sec. 115 (IRC 115) trust cash account totaled \$154.1

FINANCIAL SECTION

million, the health insurance 401(h) cash account totaled \$5 million for a total of \$159.2 million as carrying value of cash in the Health Insurance Trust. The Life Insurance Trust cash account totaled \$484,343. The Supplemental Benefit Fund cash account contained \$161,309. The Voluntary Contribution 403(b) cash account totaled \$29,197. Therefore, the carrying value of cash was \$419.6 million, and the bank balance was \$451.2 million. The variance is primarily due to outstanding checks and items not processed by the bank as of June 30, 2024.

At June 30, 2023, the retirement annuity cash account totaled \$173.4 million, the control cash account totaled \$82.4 million and the capital project cash account totaled \$274,003 for a total of \$256 million as carrying value of cash in the retirement trust. The health insurance's IRC 115 trust cash account totaled \$292.4 million, the health insurance 401(h) cash account totaled \$8.1 million for a total of \$300.5 million as carrying value of cash in the Health Insurance Trust. The Life Insurance Trust cash account totaled \$490,418. The Supplemental Benefit Fund cash account contained \$200,875. Therefore, the carrying value of cash was \$557.2 million, and the bank balance was \$579.2 million. The variance is primarily due to outstanding checks and items not processed by the bank as of June 30, 2023.

Capital Assets

Property and equipment are carried at cost, less accumulated depreciation. Buildings, improvements to land and equipment are capitalized when the acquisition is \$5,000 or greater. Intangible capital assets are capitalized when the cost is \$100,000 or more, except software, which has a threshold of \$500,000. Expenditures for maintenance and repairs are charged to operations as incurred. Depreciation is calculated using the straight-line method, with estimated lives ranging from five to 40 years in the following major classes: office furniture and equipment, five years; other equipment, five years; computer software, 10 years; and TRS office buildings, 40 years. Pathway replaced TRS's legacy computer system and is TRS's primary business information technology system. Pathway was capitalized and is being amortized or depreciated over 10 years.

Investments

Plan investments are reported at fair value. Fair value is the amount that a plan can reasonably expect to receive for an investment in a current sale between a willing buyer and a willing seller. Short-term securities are carried at cost, which approximates fair value. Fixed income and common and preferred stocks are generally valued based on published market prices and quotations from national security exchanges and securities pricing services. Real estate is primarily valued based on appraisals performed by independent appraisers. Other investments, such as private equity, timberland, real estate funds and other additional categories, are valued using the most recent general partner statement at net asset value. Examples of other additional categories are opportunistic credit, high yield bonds and direct lending.

Purchase and sales of debt securities, equity securities and short-term investments are recorded on the trade date. Real estate equity transactions are recorded on the settlement date. Upon sale of investments, the difference between sales proceeds and cost is reflected in the statement of changes in fiduciary net position. Investment expenses consist of investment manager and consultant fees along with fees for custodial services.

Compensated Absences

Expenses for accumulated vacation days and compensatory time earned by TRS's employees are recorded when earned. Upon termination or retirement, employees of TRS are paid for accumulated vacation time limited to 60 days and accumulated compensatory time limited to 240 hours. As of June 30, 2024 and 2023, accrued compensated absences were included in accrued expenses and other liabilities on the statements of fiduciary net position amounting to \$2.5 million and \$2.2 million, respectively.

Risk Management

Destruction of assets, theft, employee injuries and court challenges to administrative policy are among the various risks to which TRS is exposed. In order to cover such risks, TRS carries appropriate insurance policies, such as fire and tornado, employee bonds, fiduciary liability, worker's compensation and equipment insurance.

Other Receivables

In the Retirement Annuity Trust, other receivables consist primarily of installment contract receivables. TRS allows qualified purchases of service credit to be made by installment payments that are not to exceed a five-year period. Revenue is recognized in the initial year of the installment agreement. The June 30, 2024, other receivables in the retirement trust were \$26,965 and \$40,625 in 2023.

In the Health Insurance Trust, other receivables consist primarily of Medicare subsidies and formulary rebates accrued, but not received. The June 30, 2024, other receivables in the health trust were \$50 million and \$47 million in 2023.

Accrued Expenses and Other Payables

TRS's accrued expenses and other payables consist primarily of administrative expenses incurred but not paid at year end and also from the state paying estimated retirement and health insurance contributions from the enacted budget that were in excess of actual contributions required.

Use of Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates. The most significant estimates impacting the financial statements relate to the actuarial assumptions.

Income Taxes

The Retirement Annuity Trust is organized as a tax-exempt retirement plan under the Internal Revenue Code. The 403(b) Tax-Sheltered Trust no longer accepts contributions and will be fully terminated when all lifetime annuities have expired. TRS's management believes that it has operated the plans within the constraints imposed by federal tax law.

Note 3 Contributions and Funds of the Plan

Contributions

Contribution rates are established by Kentucky Revised Statutes. For members who began participating before Jan. 1, 2022, non-university members are required to contribute 12.855% of their salaries to the system; university members are required to contribute 10.4% of their salaries. KRS 161.565 allows each university to reduce the contribution of its members by 2.215%; therefore, university members contribute 8.185% of their salary to TRS. For members employed by local school districts, the state (as a non-employer contributing entity) contributes 13.105% of salary for those who joined before July 1, 2008, and 14.105% for those who joined on or after July 1, 2008, and before Jan. 1, 2022. Other participating employers are required to contribute the percentage contributed by members plus an additional 3.25% of members' gross salaries.

For TRS 4 members, non-university members contribute 14.75% and university members contribute 9.775% of their salaries to the system. Employers of non-university members, including the state (as a non-employer contributing entity), contribute 10.75% of salary. University employers contribute 9.775% of member's salary to the system.

The member and employer contributions consist of retirement annuity contributions and OPEB contributions to the health insurance and life insurance trusts. The member postemployment health insurance contribution is 3.75% of salary. The employer postemployment health insurance contribution is 0.75% of member salaries. Also, employers (other than the state) contribute 3% of members' salaries and the state contributes the net cost of health insurance premiums for new retirees after June 30, 2010, in the non-Medicare eligible group. If a member leaves covered employment before accumulating five years of credited service, accumulated member contributions to the retirement trust are refunded with interest upon the member's request.

Funds of the Plan

Teacher Savings Fund: KRS 161.420(2) establishes the Teacher Savings Fund consisting of contributions paid by university and non-university members. The fund also includes interest authorized by the Board of Trustees from the Guarantee Fund (described below). The accumulated contributions of members that are returned upon withdrawal or paid to the estate or designated beneficiary in the event of death are paid from this fund. Upon retirement, the member's contributions and the matching state contributions are transferred from this fund to the Allowance Reserve Fund, the fund (also described below) from which retirement benefits are paid.

State Accumulation Fund: KRS 161.420(3) establishes the State Accumulation Fund, which receives state appropriations to the system. The state matches an amount equal to members' contributions. State appropriations during the year are based on estimates of members' salaries. At year-end when actual salaries are known, the required state matching also is realized by producing either a receivable from or a payable to the state.

FINANCIAL SECTION

Allowance Reserve Fund: KRS 161.420(4) establishes the Allowance Reserve Fund, which is the source for retirement, disability and survivor benefits paid to TRS members. These benefits are paid from the retired members' contributions until they are exhausted, at which time state matching contributions are used to pay the benefits. After an individual member's contributions and the state matching contributions have been exhausted, retirement benefits are paid from monies transferred from the Guarantee Fund (described below).

Guarantee Fund: KRS 161.420(6) establishes the Guarantee Fund to collect income from investments, state matching contributions of members withdrawn from the system, and state matching contributions for cost-of-living adjustments (COLAs). In addition, it receives money for which disposition is not otherwise provided. This fund provides interest to the other funds, benefits in excess of both members' and state matching contributions, monies for administrative expenses of TRS and deficiencies not covered by the other funds.

Expense Fund: KRS 161.420(1) establishes the Expense Fund for administrative expenses. Investment income transferred to this fund from the Guarantee Fund is used to pay the administrative expenses of TRS. Administrative expenses are allocated among the funds based on benefits paid.

Note 4 Net Pension Liability of Employers

The net pension liability (i.e., the system's liability determined in accordance with GASB Statement No. 67 less the fiduciary net position) as of June 30, 2024 and 2023 follows.

Schedule of Net Pension Liability of Employers (Dollars in thousands)

Fiscal Year Ending June 30	Total Pension Liability A	Plan Fiduciary Net Position B	Employers Net Pension Liability (A-B)	Plan Fiduciary Net Position as a % of Total Pension Liability (B/A)	Covered Payroll C	Net Pension Liability as a % of Covered Payroll [(A-B)/C]
2024	\$ 43,251,404	\$ 26,108,136	\$ 17,143,268	60.4	\$ 4,140,446	414.0
2023	42,029,935	24,244,554	17,785,381	57.7	3,977,280	447.2

Summary of Actuarial Assumptions

A summary of the actuarial assumptions as of the latest actuarial valuation follows.

Valuation date	June 30, 2023
Actuarial cost method	Entry age
Investment rate of return	7.1%, net of pension plan investment expense, including inflation.
Projected salary increases	3 - 7.5%, including inflation
Inflation rate	2.5%
Post-Retirement adjustment	1.5%
Municipal bond index rate	3.94%
Single equivalent interest rate	7.1%

Mortality rates were based on the Pub2010 (Teachers Benefit-Weighted) Mortality Table projected generationally with MP-2020 with various set-forwards, set-backs and adjustments for each of the groups; service retirees, contingent annuitants, disabled retirees and active members. The actuarial assumptions used were based on the results of an actuarial experience study for the 5-year period ending June 30, 2020, adopted by the board on Sept. 20, 2021. The Municipal Bond Index Rate used for this purpose is the June average of the Bond Buyer General Obligation 20-year Municipal Bond Index.

Target Allocations

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

A summary of the target allocation and best estimates of arithmetic real rates of return for each major asset class, as provided by TRS’s investment consultant, follows.

Asset Class	Target Allocation Percentage	Long-Term Expected Real Rate Percentage of Return
Large cap U.S. equity	35.4	5.0
Small cap U.S. equity	2.6	5.5
Developed international equity	15.7	5.5
Emerging markets equity	5.3	6.1
Fixed income	15.0	1.9
High yield bonds	2.0	3.8
Other additional categories	8.0	3.6
Real estate	7.0	3.2
Private equity	7.0	8.0
Cash	2.0	1.6
Total	100.0	

Discount Rate

For 2024 and 2023, the discount rate used to measure the total pension liability was 7.1%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made in full at the current contribution rates and the employer contributions will be made at actuarially determined contribution (ADC) rates for all future fiscal years. Based on those assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The following table presents TRS’s net pension liability for 2024. TRS’s 2024 net pension liability is calculated using the discount rate of 7.1%, as well as what the system’s net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (6.1%) or 1 percentage point higher (8.1%) than the current rate.

2024			
<i>(In thousands)</i>	1% Decrease (6.1%)	Current Discount (7.1%)	1% Increase (8.1%)
Net pension liability	\$ 22,338,043	\$ 17,143,268	\$ 12,815,031

The following table presents TRS’s net pension liability for 2023. TRS’s 2023 net pension liability is calculated using the discount rate of 7.1%, as well as what the system’s net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (6.1%) or 1 percentage point higher (8.1%) than the current rate.

2023

<i>(In thousands)</i>	1% Decrease (6.1%)	Current Discount (7.1%)	1% Increase (8.1%)
Net pension liability	\$ 22,852,220	\$ 17,785,381	\$ 13,563,822

June 30, 2023, is the actuarial valuation date upon which the total pension liability (TPL) is based for 2024. An expected TPL is determined as of June 30, 2024, using standard roll forward techniques. The roll-forward calculation adds the annual normal cost (also called the service cost), subtracts the actual benefit payments and refunds for the plan year and then applies the expected investment rate of return for the year. In addition, the expected TPL as of June 30, 2024, has been determined based on the TPL roll-forward from June 30, 2023. The difference between the two roll-forward amounts as of June 30, 2024, is the experience gain or loss for the year. These procedures are shown in the following table.

TPL Roll Forward 2024
(Dollars in thousands)

	Expected (1)	Actual (2)
(a) Interest Rate	7.1%	7.1%
(b) TPL as of June 30, 2023	\$ 42,029,935	\$ 42,179,888
(c) Entry Age Normal Cost for the Year July 1, 2023 - June 30, 2024	665,383	665,383
(d) Actual Benefit Payments (including refunds) For the year July 1, 2023 - June 30, 2024	2,499,893	2,499,893
(e) TPL as of June 30, 2024 [(b) x (1 + (a))] + (c) - [(d) x (1 + (0.5 x (a)))]	43,090,804	43,251,404
(f) Experience (Gain)/Loss = (e2) - (e1)		160,600

June 30, 2022, is the actuarial valuation date upon which the TPL is based for 2023. An expected TPL is determined as of June 30, 2023, using standard roll-forward techniques for the actual TPL both before and after the assumption changes due to the experience study and the reduction in the assumed investment rate of return. The difference between these two amounts is shown as a change in assumptions. The roll-forward calculation adds the annual normal cost (also called the service cost), subtracts the actual benefit payments and refunds for the plan year and then applies the expected investment rate of return for the year. The expected TPL as of June 30, 2022, has been determined based on the TPL roll-forward from June 30, 2021. The difference between the two roll-forward amounts as of June 30, 2023, is the experience gain or loss. The procedures are shown in the following table.

TPL Roll Forward 2023

(Dollars in thousands)

	Expected (1)	Actual (2)
(a) Interest Rate	7.10%	7.10%
(b) TPL as of June 30, 2022	\$ 40,598,288	\$ 40,970,441
(c) Entry Age Normal Cost for the Year July 1, 2022 - June 30, 2023	654,676	654,676
(d) Actual Benefit Payments (including refunds) For the year July 1, 2022 - June 30, 2023	2,418,236	2,418,236
(e) TPL as of June 30, 2023 [(b) x (1 + (a))] + (c) - [(d) x (1 + (0.5 x (a)))]	41,631,359	42,029,935
(f) Experience (Gain)/Loss = (e2) - (e1)		398,576

Note 5

**Deposits With Financial Institutions and Investments
(Including Repurchase Agreements)**

Legal Provisions for Investments

The following disclosures are meant to help the users of the financial statements for the Teachers' Retirement System of the State of Kentucky (TRS or system) assess the risks TRS takes in investing member funds. The Board of Trustees and the Investment Committee are guided by asset allocation parameters that the board approves through its powers as defined in KRS 161.430.

TRS administers a Retirement Annuity Trust, Health Insurance Trust and Life Insurance Trust in accordance with state and federal law. TRS provides benefits for service and disability retirements; death and survivors; retiree health insurance; and life insurance for Kentucky public education employees and their beneficiaries.

The asset allocation parameters for the retirement annuity and life insurance trusts are set forth in 102 Kentucky Administrative Regulations (KAR) 1:175, sections 2 and 3 as follows:

- There shall be no limit on the amount of investments owned if the investments are guaranteed by the U.S. government.
- Not more than 35% of the assets at fair value shall be invested in corporate debt obligations.
- Not more than 10% of the assets at fair value shall be invested in foreign debt.
- Not more than 65% of the assets at fair value shall be invested in common stocks or preferred stocks.
- Not more than 25% of the assets at fair value shall be invested in a stock portfolio designed to replicate a general stock index.
- Not more than 30% of the assets at fair value shall be invested in the stocks of companies domiciled outside of the United States; any amounts so invested shall be included in the 65% limitation for total stocks.
- Not more than 10% of the assets at fair value shall be invested in real estate. This would include real estate equity, real estate lease agreements and shares in real estate investment trusts.
- Not more than 10% of the assets at fair value shall be invested in alternative investments. This category may include private equity, venture capital, timberland and infrastructure investments.

FINANCIAL SECTION

- Not more than 15% of the assets at fair value shall be invested in any additional category or categories of investments. The board shall approve by resolution such additional category or categories of investments.

The asset allocation parameters for the Health Insurance Trust fund are set forth in 102 KAR 1:178, section 2 as follows:

- In order to preserve the assets and produce the required rate of return while minimizing risk, assets shall be prudently diversified among various classes of investments.
- In determining asset allocation policy, the investment committee and the board shall be mindful of the trust's liquidity and its capability of meeting both short and long-term obligations.

Cash and Cash Equivalents

For cash deposits and cash equivalents, custodial credit risk is the risk that, in the event of a bank failure, TRS's deposits may not be returned to the system. TRS's total cash balance held at J.P. Morgan Chase bank on June 30, 2024, was \$451.2 million. TRS's total cash balance held at J.P. Morgan Chase on June 30, 2023, was \$579.2 million.

Deposits are exposed to custodial credit risk if they are not covered by depository insurance and the deposits are:

- a. uncollateralized,
- b. collateralized with securities held by the pledging financial institution or
- c. collateralized with securities held by the pledging financial institution's trust department or agent but not in the depositor-government's name.

As of June 30, 2024, TRS's cash balance of \$451.2 million was not exposed to custodial credit risk because this amount was collateralized fully with a letter of credit in the amount of \$837 million.

As of June 30, 2023, TRS's cash balance of \$579.2 million was not exposed to custodial credit risk because this amount was collateralized fully with a letter of credit in the amount of \$896 million.

Investments

All of TRS's assets are invested in short-term and long-term debt (bonds and mortgages) securities, equity (stock) securities, real estate, alternative investments and additional categories as permitted by regulation. These assets are reported at fair value.

Investments are governed by the board's policies. The board and the Investment Committee execute their fiduciary responsibilities in accordance with the prudent person rule, as identified in KRS 161.430 (2)(b). The prudent person rule establishes a standard for all fiduciaries to act as a prudent person would be expected to act, with the "care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims."

The following tables represent the fair value of TRS’s investments for June 30, 2024, and 2023.

Schedules of Investments

Retirement Annuity Trust

	Fair Value June 30, 2024	Fair Value June 30, 2023
Short-term investments		
Cash and cash equivalents	\$ 573,009,827	\$ 568,929,242
Subtotal	573,009,827	568,929,242
Fixed Income		
U.S. government	1,176,368,260	1,139,162,191
Agency bonds	161,249,891	94,136,785
Mortgage-backed securities	240,078,003	113,404,191
Asset-backed securities	50,756,369	28,882,848
Commercial mortgage-backed securities	25,435,379	26,589,385
Collateralized mortgage obligations	81,159,339	21,467,875
Municipal bonds	251,982,003	274,771,116
Corporate bonds	1,357,883,192	1,273,746,115
Subtotal	3,344,912,436	2,972,160,506
Equity		
International	5,364,347,801	4,861,620,374
U.S.	10,011,151,129	9,426,516,493
Subtotal	15,375,498,930	14,288,136,867
Real estate	1,712,653,006	1,777,282,982
Private equity	2,079,165,274	1,915,329,613
Additional categories		
Asset-backed securities	2,116,571	
Opportunistic credit	984,215,116	753,842,564
Corporate bonds	807,662,120	752,292,803
Corporate loans	393,777,924	413,242,921
Timberland	495,357,296	485,158,413
U.S. government	4,965,250	7,901,520
Subtotal	2,688,094,277	2,412,438,221
Total*	\$ 25,773,333,750	\$ 23,934,277,431

* This schedule includes the 403(b) Tax Shelter fund and Losey Scholarship fund.

Health Insurance Trust

	Fair Value June 30, 2024	Fair Value June 30, 2023
Short-term investments		
Cash and cash equivalents	\$ 190,546,793	\$ 77,221,128
Subtotal	<u>190,546,793</u>	<u>77,221,128</u>
Fixed income		
U.S. government	78,506,530	43,405,938
Agency bonds	37,978,380	2,989,020
Mortgage-backed securities	3,046,296	3,051,772
Collateralized mortgage obligations	1,777,731	824,263
Municipal bonds	9,078,875	9,109,099
Corporate bonds	116,740,818	93,762,993
Subtotal	<u>247,128,630</u>	<u>153,143,085</u>
Equity		
International	673,063,283	486,604,691
U.S.	1,150,152,092	919,910,248
Subtotal	<u>1,823,215,375</u>	<u>1,406,514,939</u>
Real estate equity	156,478,824	159,444,210
Private equity	246,078,333	220,197,307
Additional categories		
Asset-backed securities	522,328	
Opportunistic credit	166,780,267	119,854,518
Corporate bonds	221,414,109	191,497,563
Corporate loans	93,647,956	79,273,882
U.S. equity	6,634,499	6,457,974
Subtotal	<u>488,999,159</u>	<u>397,083,937</u>
Total	<u>\$ 3,152,447,114</u>	<u>\$ 2,413,604,606</u>

Life Insurance Trust

	Fair Value June 30, 2024	Fair Value June 30, 2023
Short-term investments		
Cash and cash equivalents	\$ 4,919,258	\$ 5,069,152
Subtotal	<u>4,919,258</u>	<u>5,069,152</u>
Fixed income		
U.S. government	7,949,101	8,591,791
Mortgage-backed securities	182,162	199,079
Municipal bonds	2,274,478	2,340,986
Corporate bonds	6,353,105	6,810,627
Subtotal	<u>16,758,846</u>	<u>17,942,483</u>
Equity		
International	21,403,450	19,667,059
U.S.	41,377,043	36,515,893
Subtotal	<u>62,780,493</u>	<u>56,182,952</u>
Real estate equity	7,037,595	6,513,395
Private equity	6,429,611	4,921,166
Additional categories		
Opportunistic credit	2,338,090	2,102,984
U.S. equity	710,803	692,720
Subtotal	<u>3,048,893</u>	<u>2,795,704</u>
Total	<u>\$ 100,974,696</u>	<u>\$ 93,424,852</u>

Custodial Credit Risk

Custodial credit risk for an investment is the risk that, in the event of the failure of a counterparty, TRS 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 the system and are held by either:

- a. the counterparty or
- b. the counterparty's trust department or agent, but not in the system's name.

The cash reserve of TRS is maintained primarily in high quality short-term investments through the Dreyfus Institutional Cash Advantage Fund. This fund invests in a diversified portfolio of high quality, short-term debt securities, and the fund is rated AAA by S&P, Moody's and Fitch. The fund's portfolio is structured within the confines of Rule 2a-7 under the Investment Company Act of 1940. Permissible investments within this fund include commercial paper; U.S. Treasury and agency obligations; certificates of deposit; bankers' acceptances; repurchase agreements; and time deposits.

Whenever repurchase agreements are ordered by TRS under the terms of master repurchase agreements with various brokers, the terms are dictated by TRS. The repurchase agreements and their supporting collateral are held by the custodial agent's correspondent bank in an account identified by the custodian's name and TRS's nominee name. This account is unique to TRS. The master repurchase agreements require that the supporting collateral have a fair value of at least 102% of the value of the repurchase agreements.

As of June 30, 2024, cash collateral reinvestment securities acquired through securities lending for the Retirement Annuity Trust by TRS's custodian amounted to \$1.14 billion in relation to the \$1.11 billion securities lent consistent with the lending agreement

FINANCIAL SECTION

with the custodian. Cash collateral reinvestment securities lending for the Life Insurance Trust by TRS's custodian amounted to \$5.6 million in relation to the \$5.5 million securities lent consistent with the lending agreement with the custodian. The custodian also is the lending agent and counterparty.

Interest Rate Risk

Interest rate risk on investments is the possibility that changes in interest rates will reduce the fair value of TRS's investments. In general, the longer the period until an investment matures, the greater the risk of a negative impact on fair value resulting from changes in interest rates.

As of June 30, 2024, and 2023, the Retirement Annuity Trust, Health Insurance Trust and Life Insurance Trust had the following investment fair value and weighted average maturities.

Retirement Annuity Trust						
Investment Type	2024			2023		
	Fixed Income	Additional Categories	Average Maturity (years)	Fixed Income	Additional Categories	Average Maturity (years)
U.S. government	\$1,176,368,260	4,965,250	10.9	\$1,139,162,191	7,901,520	10.05
Agency bonds	161,249,891		15.25	94,136,785		3.87
Mortgage-backed securities	240,078,003		17.77	113,404,191		15.29
Asset-backed securities	50,756,369	2,116,571	18.42	28,882,848		18.17
Commercial mortgage-backed securities	25,435,379		17.53	26,589,385		18.30
Collateralized mortgage obligations	81,159,339		20.72	21,467,875		7.42
Municipal bonds	251,982,003		10.56	274,771,116		10.43
Corporate bonds	1,357,883,192	807,662,120	7.81	1,273,746,115	752,292,803	8.83
Corporate loans		393,777,924	4.38		350,424,229	4.18
Total	\$3,344,912,436	\$1,208,521,865	9.66	\$2,972,160,506	\$1,110,618,552	9.07

Health Insurance Trust						
Investment Type	2024			2023		
	Fixed Income	Additional Categories	Average Maturity (years)	Fixed Income	Additional Categories	Average Maturity (years)
U.S. government	\$ 78,506,530	\$	6.15	\$ 43,405,938	\$	5.57
Agency bonds	37,978,380		17.15	2,989,020		0.53
Mortgage-backed securities	3,046,296		14.56	3,051,772		15.62
Asset-backed securities		522,328	17.38			
Collateralized mortgage obligations	1,777,731		7.08	824,263		6.33
Municipal Bonds	9,078,875		6.59	9,109,099		7.47
Corporate bonds	116,740,818	221,414,109	5.34	93,762,993	191,497,563	4.40
Corporate loans		93,647,956	4.51		63,569,209	4.33
Total	\$ 247,128,630	\$ 315,584,393	6.20	\$ 153,143,085	\$ 255,066,772	4.64

Life Insurance Trust

Investment Type	2024			2023		
	Fixed Income	Additional Categories	Average Maturity (years)	Fixed Income	Additional Categories	Average Maturity (years)
U.S. government	\$ 7,949,101	\$	8.37	\$ 8,591,791	\$	9.42
Mortgage-backed securities	182,162		10.48	199,079		11.43
Municipal bonds	2,274,478		5.71	2,340,986		6.70
Corporate bonds	6,353,105		9.93	6,810,627		10.38
Total	\$ 16,758,846	\$	8.62	\$ 17,942,483	\$	9.45

In addition to the above securities, TRS held short-term cash investments in the Dreyfus Institutional Cash Advantage Fund, at the Bank of New York Mellon (BNYM), with a total fair value of \$768.5 million and a weighted average maturity of 44 days. Average maturity is used as a measure of a security’s exposure to interest rate risk due to fluctuations in market interest rates. Mortgage-backed securities and collateralized mortgage obligations typically are amortizing investments with an average life and interest rate risk significantly less than suggested by the legal maturity. Mortgage-backed securities, which generally are prepayable, and other callable bonds are subject to adverse changes in average life in response to market interest rate changes. The schedule above reflects only the legal maturity of all such bonds.

Interest rate risk is the risk that changes in interest rates will affect adversely the fair value of an investment. This risk is managed by using the effective duration or option adjusted methodology to quantify the risk of interest rate changes. This methodology takes into account options on bonds and scales the risk of price changes on bonds depending upon the degree of changes in rates and the slope of the yield curve. The control of interest rate risk is not set forth in a particular policy; however, the system manages interest rate risk in practice by establishing appropriate benchmarks for its various portfolios.

Mortgage-backed securities are securities representing pass-through interests in the cash flows from pools of mortgage loans on single-family or multi-family residential properties. All of the mortgage-backed securities owned by TRS were securitized and are guaranteed by Fannie Mae, Freddie Mac or Government National Mortgage Association (GNMA). The average life of a mortgage-backed security depends upon the level of prepayments experienced in the underlying pool of loans. Market interest rates are a primary determinant of prepayment levels. Lower-than-anticipated market rates generally lead to higher-than-anticipated prepayments and a shorter average life; higher-than-anticipated market rates generally lead to lower-than-anticipated prepayments and a longer average life. The Retirement Annuity Trust held \$240.1 million in mortgage-backed securities as of June 30, 2024, compared to \$113.4 million as of June 30, 2023. The Health Insurance Trust held \$3 million in mortgage-backed securities as of June 30, 2024, compared to \$3.1 million as of June 30, 2023. The Life Insurance Trust held \$182,162 in mortgage-backed securities as of June 30, 2024, compared to \$199,079 as of June 30, 2023.

Collateralized mortgage obligations are bonds that are collateralized by whole loan mortgages, mortgage pass-through securities or stripped mortgage-backed securities. Income is derived from payments and prepayments of principal and interest generated from collateral mortgages. Cash flows are distributed to different investment classes in accordance with collateralized mortgage obligations’ established payment order. The Retirement Annuity Trust held \$81.2 million in collateralized mortgage obligations as of June 30, 2024, compared to \$21.5 million as of June 30, 2023. The Health Insurance Trust held \$1,777,731 in collateralized mortgage obligations as of June 30, 2024, compared to \$824,263 as of June 30, 2023.

Asset-backed securities are bonds or notes backed by loan paper or accounts receivables originated by banks, credit card companies or other credit providers and are considered to be moderately sensitive to changes in interest rates. The originator of the loan or accounts receivable paper sells it to a specially created trust, which repackages it as securities. Asset-backed securities have been structured as pass-throughs and as structures with multiple bond classes. The Retirement Annuity Trust held \$52.9 million in asset-backed securities as of June 30, 2024, compared to \$28.9 million as of June 30, 2023. The Health Insurance Trust held \$522,328 in asset-backed securities as of June 30, 2024, compared to \$0 as of June 30, 2023.

Commercial mortgage-backed securities represent interests in the cash flows from pools of mortgage loans on commercial properties. The interests in a securitized pool of loans are divided generally into various tranches based upon planned payment order and level of seniority. TRS’s commercial mortgage-backed securities consist of highly rated, relatively senior tranches. The average maturity of TRS’s commercial mortgage-backed securities in the schedule above reflects the legal maturity of these holdings. Most of the tranches held are earlier in the planned payment order than the legal maturity suggests. The Retirement

FINANCIAL SECTION

Annuity Trust held \$25.4 million in commercial mortgage-backed securities investments as of June 30, 2024, compared to \$26.6 million as of June 30, 2023.

Credit Risk

Credit risk is the risk that an issuer or counterparty to an investment will not fulfill its obligations. The following schedules list TRS's fixed income investment fair value (net of cash equivalents) according to credit ratings as of June 30, 2024, and 2023.

2024 Retirement Annuity Trust

Rating	Fixed Income	Additional Categories	Total	Percent
U.S. government	\$ 1,176,368,260	\$ 4,965,250	\$ 1,181,333,510	25.94
AAA	147,113,433		147,113,433	3.23
AA	811,810,517		811,810,517	17.83
A	547,038,476	4,861,678	551,900,154	12.12
BBB	536,909,983	72,879,326	609,789,309	13.39
BB	10,565,314	541,404,068	551,969,382	12.12
B		451,704,513	451,704,513	9.92
CCC		48,690,063	48,690,063	1.07
CC		325,386	325,386	0.01
C				
D		486,109	486,109	0.01
Not rated	115,106,453	83,205,472	198,311,925	4.36
Total	\$ 3,344,912,436	\$ 1,208,521,865	\$ 4,553,434,301	100.00

2023 Retirement Annuity Trust

Rating	Fixed Income	Additional Categories	Total	Percent
U.S. government	\$ 1,139,162,191	\$ 7,901,520	\$ 1,147,063,711	28.09
AAA	173,792,573		173,792,573	4.26
AA	553,239,834		553,239,834	13.55
A	515,146,109	391,717	515,537,826	12.63
BBB	523,350,414	54,030,118	577,380,532	14.14
BB	6,913,711	495,507,018	502,420,729	12.31
B		437,919,734	437,919,734	10.72
CCC		49,603,809	49,603,809	1.21
CC		249,000	249,000	0.01
C				
D		1,545,507	1,545,507	0.04
Not rated	60,555,674	63,470,129	124,025,803	3.04
Total	\$ 2,972,160,506	\$ 1,110,618,552	\$ 4,082,779,058	100.00

2024 Health Insurance Trust

Rating	Fixed Income	Additional Categories	Total	Percent
U.S. government	\$ 78,506,530	\$	\$ 78,506,530	13.95
AAA	5,055,949		5,055,949	0.90
AA	72,812,681		72,812,681	12.94
A	60,577,319		60,577,319	10.77
BBB	26,808,929	16,423,662	43,232,591	7.68
BB		135,200,349	135,200,349	24.03
B		122,691,955	122,691,955	21.80
CCC		17,753,427	17,753,427	3.15
CC		145,280	145,280	0.03
C				
D		114,634	114,634	0.02
Not rated	3,367,222	23,255,086	26,622,308	4.73
Total	\$ 247,128,630	\$ 315,584,393	\$ 562,713,023	100.00

2023 Health Insurance Trust

Rating	Fixed Income	Additional Categories	Total	Percent
U.S. government	\$ 43,405,938	\$	\$ 43,405,938	10.63
AAA	5,556,616		5,556,616	1.36
AA	32,828,981		32,828,981	8.04
A	45,451,797	129,206	45,581,003	11.16
BBB	25,899,753	12,253,523	38,153,276	9.35
BB		111,590,871	111,590,871	27.34
B		105,144,906	105,144,906	25.76
CCC		14,778,120	14,778,120	3.62
CC		234,000	234,000	0.06
C				
D				
Not rated		10,936,146	10,936,146	2.68
Total	\$ 153,143,085	\$ 255,066,772	\$ 408,209,857	100.00

2024 Life Insurance Trust

Rating	Fixed Income	Additional Categories	Total	Percent
U.S. government	\$ 7,949,101	\$	\$ 7,949,101	47.43
AAA	184,458		184,458	1.10
AA	2,630,170		2,630,170	15.69
A	1,020,935		1,020,935	6.09
BBB	3,683,356		3,683,356	21.98
BB	761,788		761,788	4.55
B				
Not Rated	529,038		529,038	3.16
Total	\$ 16,758,846	\$	\$ 16,758,846	100.00

2023 Life Insurance Trust

Rating	Fixed Income	Additional Categories	Total	Percent
U.S. government	\$ 8,591,791	\$	\$ 8,591,791	47.88
AAA	679,711		679,711	3.79
AA	2,738,115		2,738,115	15.26
A	1,093,660		1,093,660	6.10
BBB	4,147,116		4,147,116	23.11
BB	692,090		692,090	3.86
B				
Not Rated				
Total	\$ 17,942,483	\$	\$ 17,942,483	100.00

Total fair value of the Retirement Annuity Trust's fixed income portfolio was \$4.55 billion on June 30, 2024. The Health Insurance Trust's fixed income portfolio was valued at \$562.7 million on June 30, 2024. Total fair value of the Life Insurance Trust's fixed income portfolio was \$16.8 million on June 30, 2024. Standard & Poor's (S&P) rating system is used in the above charts. For securities where an S&P rating is not provided, another nationally recognized system is used and translated to the S&P rating system.

In addition to the above categories, the Retirement Annuity Trust held \$573 million in short-term investments through the Dreyfus Institutional Cash Advantage Fund. The Health Insurance Trust held \$190.5 million in the Dreyfus Institutional Cash Advantage Fund. The Life Insurance Trust held \$4.9 million in the Dreyfus Institutional Cash Advantage Fund. The credit risk associated with this fund is minimal as the securities held are required to maintain the highest possible short-term credit ratings by Moody's and S&P. In addition, investments in U.S. government and agency securities also are highly rated securities since they are backed by the U.S. government. Notation is made that the ratings of securities are subject to change.

The Retirement Annuity Trust's policy on credit rating is set forth in 102 KAR 1:175.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. Losses from credit risk are heightened if a significant portion of resources are invested with a single issuer. In compliance with 102 KAR 1:175, the Retirement Annuity Trust has not invested more than 5% of assets at fair value in any single issuer.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will affect adversely the fair value of an investment or a deposit. TRS holdings do not include foreign currency. The foreign currency tables shown are a comparative measure of the value of TRS's foreign investments, like stocks, expressed in U.S. dollars using the conversion rate for that currency on the day the fiscal year ended. As of June 30, 2024, TRS's exposure to foreign currency risk consisted of \$5.51 billion in the Retirement Annuity Trust, \$778.2 million in the Health Insurance Trust and \$21.1 million in the Life Insurance Trust.

The majority of foreign investments are held in commingled funds managed by UBS Global Asset Management, Baillie Gifford, Baring Asset Management and BlackRock. In addition to the commingled funds investing in foreign securities, the Retirement Annuity Trust held \$1.12 billion associated with foreign interests in American depository receipt investments. These American depository receipts are securities that are issued by a U.S. bank in place of the foreign stock shares held in trust by that bank, thereby facilitating the trading of foreign shares in U.S. markets. The cross-listed equity, in the amount of \$450.4 million, represent securities domiciled in foreign countries, but are listed and traded on U.S. exchanges. Other foreign securities and investments consist of debt securities and alternative investment opportunities.

The Retirement Annuity Trust’s policy regarding foreign equity is that not more than 30% of the assets at fair value shall be invested in the stocks of companies domiciled outside of the United States. Any amounts so invested shall be included in the 65% limitation for total stocks under 102 KAR 1:175 Section 2(e).

The following tables represent in U.S. dollars the fair value of investments that are subject to foreign currency risk as a result of cash contributions to each portfolio manager as of June 30, 2024, and 2023.

Retirement Annuity Trust

	2024	2023
Commingled	\$ 3,365,967,147	\$ 3,419,653,286
Alternatives	308,205,040	288,041,664
American depository receipts	1,118,427,704	898,528,480
Cross-listed equity	450,407,373	416,869,084
Bonds	64,977,943	69,579,525
Additional categories (Fixed income)	154,919,461	130,166,338
Additional categories (Opportunistic)	51,102,553	59,967,536
Total	\$ 5,514,007,221	\$ 5,282,805,913

Health Insurance Trust

	2024	2023
Commingled	\$ 637,418,413	\$ 176,735,816
Alternatives	48,220,555	44,970,500
Cross-listed equity	24,848,927	24,522,404
Bonds	944,770	929,210
American depository receipts	4,254,698	3,064,662
Additional categories (Fixed income)	54,654,178	38,968,074
Additional categories (Opportunistic)	7,827,731	8,970,760
Total	\$ 778,169,272	\$ 298,161,426

Life Insurance Trust

	2024	2023
Commingled	\$ 20,276,780	\$ 18,632,074
Alternatives	627,174	585,914
Cross-listed equity	111,757	445,716
American depository receipts	116,733	82,283
Total	\$ 21,132,444	\$ 19,745,987

FINANCIAL SECTION

TRS's investments subject to foreign currencies and categorized in the preceding tables are illustrated further in the following tables by each country and its currency. As previously stated, TRS holdings do not include foreign currency. The amounts shown are the fair value in U.S. dollars of TRS's foreign investments. These foreign investments are made with U.S. dollars in the custody of American financial institutions. Foreign holdings not readily identifiable to a specific country are listed in the various category, which includes investment receivables, payables and new issues.

Retirement Annuity Trust					
Currency	2024	2023	Currency	2024	2023
Argentine peso	\$ 482,415	\$ 3,745,139	Korean won	\$ 151,693,045	\$ 121,139,877
Australian dollar	155,368,857	122,545,872	Kuwaiti dinar	1,462,422	1,393,325
Bermudian dollar	25,961,156	25,646,337	Liberian dollar	31,829,384	8,606,275
Brazilian real	101,395,067	189,427,302	Malaysian ringgit	6,455,304	5,925,745
British pound sterling	604,600,630	562,799,745	Mexican peso	68,703,220	86,960,085
Canadian dollar	240,938,926	228,265,564	Netherlands Antillean guilder	27,281,505	58,692,934
Cayman Islands dollar	76,854,720	55,516,980	New Zealand dollar	4,024,384	4,060,842
Chilean peso	24,216,855	34,532,810	Norwegian krone	109,466,239	117,059,225
Chinese yuan	215,253,817	230,226,800	Panamanian balboa	5,894,653	6,842,893
Colombian peso	9,748,422	20,528,381	Philippine peso	2,590,671	2,689,042
Czech koruna	672,456	477,133	Polish zloty	5,714,039	3,165,484
Danish krone	131,693,808	117,977,259	Qatari riyal	1,463,337	1,446,234
Egyptian pound	139,755	165,073	Russian ruble	245	301
Euro	1,852,135,395	1,799,896,439	Saudi riyal	7,414,470	6,752,614
Gibraltar pound	1,342,614	1,783,106	Singapore dollar	39,096,792	43,230,003
Guernsey pound	19,252,534	21,534,472	South African rand	69,523,039	87,862,340
Hong Kong dollar	96,757,397	133,387,146	Swedish krona	106,240,870	87,214,257
Hungarian forint	424,218	335,122	Swiss franc	225,896,843	209,313,511
Indian rupee	123,301,558	90,559,191	Taiwan new dollar	177,090,398	77,929,562
Indonesian rupiah	17,250,453	16,123,347	Thai baht	8,263,183	8,920,904
Israeli new shekel	6,522,067	18,900,297	Turkish lira	2,328,865	1,254,165
Japanese yen	722,241,984	632,034,559	United Arab Emirates dirham	2,101,499	2,026,440
Jersey pound	31,129,518	27,582,047	Various	1,788,192	6,329,734
			Total	<u>\$ 5,514,007,221</u>	<u>\$ 5,282,805,913</u>

Health Insurance Trust

Currency	2024	2023	Currency	2024	2023
Argentine peso	\$ 299,059	\$ 75,338	Kuwaiti dinar	\$ 1,453,518	436,334
Australian dollar	33,056,321	8,650,271	Liberian dollar	2,189,304	2,576,523
Bermudian dollar	4,622,085	2,692,231	Malaysian ringgit	2,932,188	740,806
Brazilian real	7,967,916	2,722,645	Mexican peso	5,477,441	2,741,437
British pound sterling	67,239,555	23,024,709	Netherlands Antillean guilder	1,270,746	1,322,998
Canadian dollar	64,245,186	27,939,627	New Zealand dollar	1,057,174	353,234
Cayman Islands dollar	11,749,194	7,697,318	Norwegian krone	3,478,306	977,089
Chilean peso	744,251	226,521	Panamanian balboa	1,484,717	1,671,845
Chinese yuan	15,002,759	8,695,471	Philippine peso	1,172,382	416,479
Colombian peso	303,258	121,878	Polish zloty	2,588,560	917,195
Czech koruna	228,148	74,195	Qatari riyal	1,465,128	438,340
Danish krone	15,157,700	3,608,514	Russian ruble	281	70
Egyptian pound	186,323	58,267	Saudi riyal	7,370,778	2,084,647
Euro	204,389,530	108,859,158	Singapore dollar	5,497,961	1,634,530
Gibraltar pound	547,989	423,381	South African rand	5,262,270	2,107,217
Hong Kong dollar	37,825,597	12,158,439	Swedish krona	14,840,880	4,335,880
Hungarian forint	440,219	106,767	Swiss franc	39,921,862	12,378,667
Indian rupee	40,646,801	8,243,704	Taiwan new dollar	38,552,825	8,209,243
Indonesian rupiah	2,912,315	1,020,251	Thai baht	2,885,641	1,042,844
Israeli new shekel	2,746,203	815,845	Turkish lira	2,318,242	508,578
Japanese yen	99,787,132	27,576,850	United Arab Emirates dirham	2,091,747	629,333
Jersey pound	1,508,479	1,460,840	Various	(4,715)	
Korean won	23,256,016	6,385,917			
			Total	<u>\$ 778,169,272</u>	<u>\$ 298,161,426</u>

Life Insurance Fund

Currency	2024	2023	Currency	2024	2023
Australian dollar	\$ 1,014,870	\$ 787,747	Kuwaiti dinar	\$ 41,503	\$ 39,542
Brazilian real	225,409	433,796	Malaysian ringgit	84,183	67,915
British pound sterling	1,787,976	1,724,878	Mexican peso	152,985	165,540
Canadian dollar	1,488,111	1,644,239	New Zealand dollar	30,452	30,883
Cayman Islands dollar	7,992	9,252	Norwegian krone	107,282	117,759
Chilean peso	20,457	20,624	Philippine peso	29,673	32,063
Chinese yuan	350,525	453,645	Polish zloty	55,592	40,834
Colombian peso	8,747	11,287	Qatari riyal	41,529	41,044
Czech koruna	6,737	6,557	Russian ruble	7	6
Danish krone	578,418	461,227	Saudi riyal	210,419	191,636
Egyptian pound	3,966	4,685	Singapore dollar	154,273	169,951
Euro	5,335,587	5,202,798	South African rand	151,419	189,940
Hong Kong dollar	1,195,125	1,213,576	Swedish krona	540,291	471,165
Hungarian forint	12,039	9,511	Swiss franc	1,009,452	863,941
Indian rupee	1,186,833	770,001	Taiwan new dollar	1,254,114	832,148
Indonesian rupiah	83,549	93,222	Thai baht	82,758	95,825
Israeli new shekel	87,331	97,685	Turkish lira	55,121	30,625
Japanese yen	3,011,274	2,703,254	United Arab Emirates dirham	59,640	57,510
Jersey pound		48,555	Various		1
Korean won	666,805	611,120			
			Total	\$ 21,132,444	\$ 19,745,987

Fair Value Measurement

A retiree pension defined benefit plan holds significant amounts of investments that are measured at fair value on a recurring basis. TRS categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles (GAAP) in the United States of America. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and is not necessarily indicative of risk.

Level 1 inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for an asset or liability. Level 2 inputs may include quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets of liabilities in non-active markets; and inputs other than quoted prices that are observable for the assets or liabilities, either directly or indirectly. Level 3 inputs are unobservable inputs for an asset or liability such as property appraisals, third-party valuations and public market comparables of similar assets where applicable. Investments measured at fair value using the net asset value (NAV) per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy. The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3 inputs.

Schedules of Fair Value

These category descriptions that immediately follow refer to the investments shown in the fair value level hierarchy schedules shown after these descriptions.

Cash and Cash Equivalents: Cash equivalents are short-term, highly liquid investments that readily are convertible to known amounts of cash and so near to their maturity that they present insignificant risk of changes in value because of changes in interest rates. This category is comprised of short-term investments via the Dreyfus Institutional Cash Advantage Fund and cash. Cash equivalents can be valued with inputs from quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date and, therefore, are classified as Level 1 assets.

Equity and Fixed Income Securities: Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets issued by pricing vendors for these securities. Debt and equity securities classified in Level 2 of the fair value hierarchy may use inputs such as market quotations, yields, maturities, call features and ratings or may be valued using a matrix pricing technique that values securities based on their relationship to benchmark quoted prices. Debt securities classified in Level 3 are securities whose stated market price is unobservable by the market place and, instead, are priced by the issuers or industry groups for these securities.

Real Estate: Real estate falls into the Level 3 classification of the fair value hierarchy. Much of TRS's real estate consists of owned properties leased to various commercial enterprises. The fair value measurement for real estate is determined by professional appraisals every five years.

Additional Categories: Investments in this category do not fit the regular parameters for the Retirement Annuity Trust in 102 KAR 1:175. They fall into the allowable 15% of assets invested in any additional categories approved by the board. Corporate bonds falling within the Level 1 classification are valued using prices quoted in active markets issued by pricing vendors for these securities. Corporate bonds listed in Level 2 may use inputs such as market quotations, yields, maturities, call features and ratings or may be valued using a matrix pricing technique that values securities based on their relationship to benchmark quoted prices. Corporate loans at Level 3 are valued by third-party pricing vendors such as Markit or Reuters.

Timberland: Timberland investments are managed investments regarding the acquiring, growing and disposing of timber on timberland owned by TRS. The adviser contracts with outside appraisers to generate annual fair value estimates. The outside appraisers utilized the cost, sales comparison and income capitalization approaches to estimate the fair value of the timber and timberland. The adviser challenges the reasonableness of the assumptions used and reviews the methodology to ensure the estimated fair value complies with GAAP. These funds are not available for redemption; instead, distributions are made to TRS as the underlying assets are sold.

Commingled Funds: These funds hold European loans, international equity and domestic equity. Commingled funds are valued at the net asset value held at the end of the period based upon the fair value of the underlying investments.

Private Equity: Private equity funds invest in equity and debt securities issued by private and publicly held companies in connection with leveraged buyouts, recapitalizations and expansion opportunities. Three of these funds are redeemable, but the majority do not allow redemptions. Alternatively, TRS receives distributions as the underlying assets of the funds liquidate, usually over a five- to 10-year liquidation period. Exchange quotations are not available readily for these investments. The fair value for most of these funds is determined using the net asset value one quarter in arrears, plus current quarter cash flows.

Private Real Estate: Three private real estate investments are open-ended. The remaining investments are not redeemable; rather, TRS receives distributions as the underlying assets liquidate, usually over a five- to 10-year liquidation period. Exchange quotations for these investments are not available readily. Most private real estate fair value is determined using the net assets valued one quarter in arrears, plus current quarter cash flows.

Private Opportunistic Credit: One private opportunistic credit fund is redeemable. The remainder are closed funds that issue distributions as the underlying assets of the fund liquidate, usually over a five- to 10-year liquidation period. The fair value for most of these funds is determined using the net assets valued one month in arrears, plus current period cash flows.

Retirement Annuity Trust
Schedule of Investments at Fair Value Level — 2024

	Level 1 Inputs	Level 2 Inputs	Level 3 Inputs	Fair Value
Cash and cash equivalents	\$ 573,009,827			\$ 573,009,827
Fixed income				
Agency bonds		161,249,891		161,249,891
Asset-backed securities		50,756,369		50,756,369
Collateralized mortgage obligations		81,159,339		81,159,339
Commercial mortgage-backed securities		25,435,379		25,435,379
Corporate bonds		1,357,883,192		1,357,883,192
Mortgage-backed securities		240,078,003		240,078,003
Municipal bonds		251,982,003		251,982,003
U.S. government	1,172,507,649	3,860,611		1,176,368,260
Subtotal	1,172,507,649	2,172,404,787		3,344,912,436
Equities				
International	1,535,932,745	1,874,836,671		3,410,769,416
U.S.	9,489,067,616	171,253		9,489,238,869
Subtotal	11,025,000,361	1,875,007,924		12,900,008,285
Real estate			399,885,046	399,885,046
Additional categories				
Corporate bonds	140,410	807,029,943	491,767	807,662,120
Corporate loans		182,008	302,605,916	302,787,924
U.S. government	4,965,250			4,965,250
Timberland		3,387,298	491,969,998	495,357,296
Asset-backed securities		2,116,571		2,116,571
Subtotal	5,105,660	812,715,820	795,067,681	1,612,889,161
Total investments at fair value level	\$ 12,775,623,497	\$ 4,860,128,531	\$ 1,194,952,727	\$ 18,830,704,755
At Net Asset Value (NAV)				
Commingled European loan funds				\$ 90,990,000
Commingled international equity funds				1,953,578,385
Commingled domestic equity funds				521,912,260
Private equity funds				2,079,165,274
Private real estate funds				1,312,767,960
Private opportunistic credit funds				984,215,116
Total investments measured at NAV				6,942,628,995
Total investments at fair value				<u>\$ 25,773,333,750</u>

Schedule of Investments at Net Asset Value (NAV) — 2024

	June 30, 2024	Unfunded Commitments	Redemption Frequency	Redemption Notice
Commingled European loan	\$ 90,990,000	\$	Daily	30 days
Commingled international equity	1,953,578,385		Daily	1-30 days
Commingled domestic equity	521,912,260		Daily	1-30 days
Private equity				
Open-ended	509,115,271	128,749,913	Quarterly, annually	90 days
Closed-ended	1,570,050,003	1,170,315,778	N/A	N/A
Private real estate				
Open-ended	806,737,838		Quarterly	45-90 days
Closed-ended	506,030,122	515,082,415	N/A	N/A
Private opportunistic credit				
Open-ended	825,837,823	38,500,000	Semiannually	75 days
Closed-ended	158,377,293	54,836,385	N/A	N/A
Total investments at NAV	<u>\$ 6,942,628,995</u>			

Regarding the open-ended private equity and open-ended private opportunistic credit, a few restrictions remain that would prevent redemption at this time. For open-ended private equity, one fund has recently committed an additional \$50 million that has a 3-year lock-up period expiring March 31, 2027. In open-ended private opportunistic credit, one fund has a NAV of \$74.8 million with a three-year lock-up period expiring Nov. 11, 2025, while another has a NAV of \$117.8 million with a three-year lock-up period expiring July 17, 2026.

FINANCIAL SECTION

Retirement Annuity Trust Schedule of Investments at Fair Value Level — 2023

	Level 1 Inputs	Level 2 Inputs	Level 3 Inputs	Fair Value
Cash and cash equivalents	\$ 568,929,242	\$	\$	\$ 568,929,242
Fixed income				
Asset-backed securities		28,882,848		28,882,848
Agency bonds		94,136,785		94,136,785
Commercial mortgage-backed securities		26,589,385		26,589,385
Collateralized mortgage obligations		21,467,875		21,467,875
Corporate bonds		1,273,746,115		1,273,746,115
Mortgage-backed securities		113,404,191		113,404,191
Municipal bonds		274,771,116		274,771,116
U.S. government	1,135,361,577	3,800,614		1,139,162,191
Subtotal	1,135,361,577	1,836,798,929		2,972,160,506
Equity				
International	2,030,127,648	1,745,797,429		3,775,925,077
U.S.	8,997,878,455			8,997,878,455
Subtotal	11,028,006,103	1,745,797,429		12,773,803,532
Real estate			401,370,072	401,370,072
Additional categories				
Corporate bonds	876,478	751,416,325		752,292,803
Corporate loans		174,867	258,999,362	259,174,229
Timberland		\$ 3,990	\$ 485,154,423	485,158,413
U.S. government	7,901,520			7,901,520
Subtotal	8,777,998	751,595,182	744,153,785	1,504,526,965
Total investments at fair value level	\$ 12,741,074,920	\$ 4,334,191,540	\$ 1,145,523,857	\$ 18,220,790,317
At NAV				
Commingled European loan funds				\$ 91,250,000
Commingled international equity funds				1,085,695,297
Commingled domestic equity funds				428,638,038
Private equity funds				1,915,329,613
Private real estate funds				1,375,912,910
Private opportunistic loan funds				62,818,692
Private opportunistic credit funds				753,842,564
Total investments measured at NAV				5,713,487,114
Total investments at fair value				<u>\$ 23,934,277,431</u>

Health Insurance Trust
Schedule of Investments at Fair Value Level — 2024

	Level 1 Inputs	Level 2 Inputs	Level 3 Inputs	Fair Value
Cash and cash equivalents	\$ 190,546,793			\$ 190,546,793
Fixed income				
Agency bonds		37,978,380		37,978,380
Collateralized mortgage obligations		1,777,731		1,777,731
Corporate bonds		116,740,818		116,740,818
Mortgage-backed securities		3,046,296		3,046,296
Municipal bonds		9,078,875		9,078,875
U.S. government	78,506,530			78,506,530
Subtotal	78,506,530	168,622,100		247,128,630
Equities				
International	25,335,302	647,727,981		673,063,283
U.S.	1,150,152,092			1,150,152,092
Subtotal	1,175,487,394	647,727,981		1,823,215,375
Additional categories				
Corporate bonds	85,601	221,328,508		221,414,109
Corporate loans		182,008	93,465,948	93,647,956
U.S. equity	6,634,499			6,634,499
Asset-backed Securities		522,328		522,328
Subtotal	6,720,100	222,032,844	93,465,948	322,218,892
Total Investments by Fair Value Level	\$ 1,451,260,817	\$ 1,038,382,925	\$ 93,465,948	\$ 2,583,109,690
At NAV				
Private equity funds				\$ 246,078,333
Private opportunistic credit funds				166,780,267
Private real estate funds				156,478,824
Total Investments Measured at the NAV				569,337,424
Total Investments Measured at Fair Value				<u>\$ 3,152,447,114</u>

Schedule of Investments at NAV — 2024

	June 30, 2024	Unfunded Commitments	Redemption Frequency	Redemption Notice
Private real estate				
Open-ended	\$ 89,585,554	\$ 25,000,000	Quarterly	45-90 days
Closed-ended	66,893,270	89,652,033	N/A	N/A
Private equity				
Closed-ended	246,078,333	184,110,343	N/A	N/A
Private opportunistic credit				
Open-ended	148,192,600	2,000,000	Semiannually	75 days
Closed-ended	18,587,667	8,149,787	N/A	N/A
Total investments at NAV	<u>\$ 569,337,424</u>			

Regarding the open-ended private opportunistic credit, a few restrictions remain that would prevent redemption at this time. In open-ended private opportunistic credit, one fund has a NAV of \$19.2 million with a three-year lock-up period expiring Nov. 11, 2025, while another has a NAV of \$18.1 million with a three-year lock-up period expiring July 17, 2026.

Health Insurance Trust
Schedule of Investments at Fair Value Level — 2023

	Level 1	Level 2	Level 3	Fair Value
Cash and cash equivalents	\$ 77,221,128	\$	\$	\$ 77,221,128
Fixed income				
Agency bonds		2,989,020		2,989,020
Collateralized mortgage obligations		824,263		824,263
Corporate bonds		93,762,993		93,762,993
Mortgage-backed securities		3,051,772		3,051,772
Municipal bonds		9,109,099		9,109,099
U.S. government	43,405,938			43,405,938
Subtotal	43,405,938	109,737,147		153,143,085
Equity				
International	24,887,225	461,717,466		486,604,691
U.S.	919,910,248			919,910,248
Subtotal	944,797,473	461,717,466		1,406,514,939
Additional categories				
Corporate bonds	161,913	191,335,650		191,497,563
Corporate loans		174,867	63,394,342	63,569,209
U.S. equity	6,457,974			6,457,974
Subtotal	6,619,887	191,510,517	63,394,342	261,524,746
Total investments at fair value level	\$ 1,072,044,426	\$ 762,965,130	\$ 63,394,342	\$ 1,898,403,898
At NAV				
Private equity funds				\$ 220,197,307
Private opportunistic loan funds				\$ 15,704,673
Private opportunistic credit funds				\$ 119,854,518
Private real estate funds				159,444,210
Total investments measured at NAV				515,200,708
Total investments at fair value				<u>\$ 2,413,604,606</u>

Life Insurance Trust
Schedule of Investments at Fair Value Level — 2024

	Level 1	Level 2	Level 3	Fair Value
Cash and cash equivalents	\$ 4,919,258	\$	\$	\$ 4,919,258
Fixed income				
Corporate bonds		6,353,105		6,353,105
Mortgage-backed securities		182,162		182,162
Municipal bonds		2,274,478		2,274,478
U.S. government	7,949,101			7,949,101
Subtotal	<u>7,949,101</u>	<u>8,809,745</u>		<u>16,758,846</u>
Equity				
International	111,756	21,291,694		21,403,450
U.S.	41,377,043			41,377,043
Subtotal	<u>41,488,799</u>	<u>21,291,694</u>		<u>62,780,493</u>
Additional categories				
U.S. equity	710,803			710,803
Subtotal	<u>710,803</u>			<u>710,803</u>
Total investments at fair value level	<u>\$ 55,067,961</u>	<u>\$ 30,101,439</u>	<u>\$</u>	<u>\$ 85,169,400</u>
At NAV				
Private equity funds				\$ 6,429,611
Private real estate funds				7,037,595
Private opportunistic credit funds				2,338,090
Total investments measured at NAV				<u>15,805,296</u>
Total investments at fair value				<u><u>\$ 100,974,696</u></u>

Schedule of Investments at NAV — 2024

	June 30, 2024	Unfunded Commitments	Redemption Frequency	Redemption Notice
Private equity				
Closed-ended	\$ 6,429,611	\$ 4,060,685	N/A	N/A
Private real estate				
Closed-ended	2,599,750	3,385,882	N/A	N/A
Open-ended	4,437,845	\$	Quarterly	45 days
Private opportunistic credit				
Open-ended	2,338,090	178,500	Semiannually	75 days
Total investments at NAV	<u>\$ 15,805,296</u>			

Life Insurance Trust
Schedule of Investments at Fair Value Level — 2023

	Level 1	Level 2	Level 3	Fair Value
Cash and cash equivalents	\$ 5,069,152	\$	\$	\$ 5,069,152
Fixed income				
Corporate bonds		6,810,627		6,810,627
Mortgage-backed securities		199,079		199,079
Municipal bonds		2,340,986		2,340,986
U.S. government	8,591,791			8,591,791
Subtotal	<u>8,591,791</u>	<u>9,350,692</u>		<u>17,942,483</u>
Equity				
International	445,716	19,221,343		19,667,059
U.S.	36,515,893			36,515,893
Subtotal	<u>36,961,609</u>	<u>19,221,343</u>		<u>56,182,952</u>
Additional categories				
U.S. equity	692,720			692,720
Subtotal	<u>692,720</u>			<u>692,720</u>
Total investments at fair value level	<u>\$ 51,315,272</u>	<u>\$ 28,572,035</u>	<u>\$</u>	<u>\$ 79,887,307</u>
Investments at NAV				
Private equity funds				\$ 4,921,166
Private real estate funds				6,513,395
Private opportunistic credit funds				2,102,984
Total investments measured at NAV				<u>13,537,545</u>
Total investments at fair value				<u>\$ 93,424,852</u>

Securities Lending

KRS 161.430 empowers the board with fiduciary responsibility for TRS funds. The system operates a securities lending program in which it temporarily lends securities to qualified agents in exchange for a net fee and high-quality collateral. The types of securities lent are U.S. government and agency securities; selected domestic bonds; and domestic and international stocks. TRS's custodian, BNYM, acts as lending agent in exchanging securities for collateral. The collateral has a value of not less than 102% of the fair value of the lent securities, plus any accrued, unpaid distributions. The collateral may consist of both cash and non-cash collateral. The non-cash collateral may include, but not be limited to, debt obligations and securities, equity securities, corporate bonds and convertible securities.

Securities lending transactions are accounted for in accordance with GASB Statement No. 28. During the year ended June 30, 2024, only the Retirement Annuity Trust fund and the Life Insurance Trust fund had securities lending transactions. The following schedules detail the net income earned in the Retirement Annuity Trust fund and the Life Insurance Trust fund from securities lending for the fiscal years ended June 30, 2024, and 2023.

Securities Lending Net Earnings

	Retirement Annuity*		Life Insurance	
	2024	2023	2024	2023
Gross earnings (interest and fees)	\$38,306,599	\$30,166,303	\$682,519	\$828,198
Gross borrower rebates	(34,639,396)	(26,607,262)	(626,014)	(756,056)
Bank fees	(1,100,027)	(1,067,559)	(16,947)	(21,638)
Net earnings	<u>\$2,567,176</u>	<u>\$2,491,482</u>	<u>\$39,558</u>	<u>\$50,504</u>

* This schedule includes the Losey Scholarship fund.

Cash collateral is invested in guaranteed, short-term obligations of the U.S. government, select government agencies and repurchase agreements with qualified agents. TRS cannot pledge or sell collateral securities received unless the borrower defaults. BNYM as the lending agent also indemnifies TRS from any financial loss associated with a borrower’s default and collateral inadequacy. The Statement of Fiduciary Net Position does not report securities lending transactions collateralized by letters of credit or by securities that the governmental entity does not have the ability to pledge or sell, unless the borrower defaults.

As of June 30, 2024, the average days to maturity for loans in the Retirement Annuity Trust was one day, and the weighted average investment maturity of cash collateral investments was one day. The trust had no credit risk exposure to borrowers because the amounts owed to borrowers exceeded the amounts the borrowers owed the trust, and no losses resulted during the period.

Security lending programs can entail interest rate risk and credit risk. TRS minimizes interest rate risk by limiting the term of cash collateral investments to several days.

The credit risk is controlled by investing cash collateral in securities with qualities similar to the credit worthiness of lent securities.

The following table presents the fair value of the underlying securities and the value of the collateral pledged at June 30, 2024, and 2023.

Retirement Annuity Trust

2024

Type of Securities Lent	Fair Value	Cash Collateral Received	Non-Cash Collateral Value Received	Total Collateral Received
Fixed income	\$ 238,118,376	\$ 147,228,923	\$ 96,391,867	\$ 243,620,790
Equity	872,881,961	757,297,947	135,505,302	892,803,249
Total	<u>\$ 1,111,000,337</u>	<u>\$ 904,526,870</u>	<u>\$ 231,897,169</u>	<u>\$ 1,136,424,039</u>

2023

Type of Securities Lent	Fair Value	Cash Collateral Received	Non-Cash Collateral Value Received	Total Collateral Received
Fixed income	\$ 156,962,966	\$ 20,520,408	\$ 139,676,351	\$ 160,196,759
Equity	774,911,630	573,245,216	217,578,251	790,823,467
Total	<u>\$ 931,874,596</u>	<u>\$ 593,765,624</u>	<u>\$ 357,254,602</u>	<u>\$ 951,020,226</u>

Life Insurance Trust

2024

Type of Securities Lent	Fair Value	Cash Collateral Received	Non-Cash Collateral Value Received	Total Collateral Received
Fixed income	\$ 1,419,531	\$ 1,174,960	\$ 277,253	\$ 1,452,213
Equity	4,108,816	4,127,573	51,087	4,178,660
Total	<u>\$ 5,528,347</u>	<u>\$ 5,302,533</u>	<u>\$ 328,340</u>	<u>\$ 5,630,873</u>

2023

Type of Securities Lent	Fair Value	Cash Collateral Received	Non-Cash Collateral Value Received	Total Collateral Received
Fixed income	\$ 1,760,859	\$	\$ 1,795,453	\$ 1,795,453
Equity	12,411,525	4,067,643	8,464,558	12,532,201
Total	<u>\$ 14,172,384</u>	<u>\$ 4,067,643</u>	<u>\$ 10,260,011</u>	<u>\$ 14,327,654</u>

Annual Money-Weighted Rate of Return

A money-weighted rate of return is an expression of investment performance that is net of TRS’s investment fees and expenses, adjusted for the changing amounts actually invested. The following table reflects the money-weighted rates of return.

Annual Rate of Return Net of Investment Fees and Expenses

	2024	2023
Retirement Annuity Trust	11.91 %	10.24 %
Health Insurance Trust	12.37 %	11.52 %
Life Insurance Trust	11.18 %	9.63 %

Note 6

Retirement Plans for TRS Employees

Full-time employees of TRS participate in either TRS or Kentucky Employees Retirement System (KERS). Both plans are multiple-employer cost-sharing defined benefit retirement annuity and other postemployment benefits plans. All TRS employees in positions requiring a four-year degree are covered under TRS. The contribution rates and required employer matching are the same as state agency employers in TRS. These rates, the plan description and funding policy are disclosed fully in the notes to the financial statements.

The annual required contributions for TRS employee members in TRS for the fiscal years 2024 and 2023 were \$1.5 million and \$1.4 million, respectively. TRS contributed 100% of the required contribution each year.

All other TRS employees are covered under the KERS non-hazardous employees’ plan. The plan provides for retirement, disability and death benefits to plan members. Retirement benefits may be extended to beneficiaries of plan members under certain circumstances. Per KRS 61.565(2), contribution rates shall be determined by the Kentucky Retirement Systems board (KRS board) on the basis of an annual actuarial valuation. Rates may be amended by the KRS board as needed.

Members of KERS who joined prior to July 1, 2008, are required to contribute 5% of their annual creditable compensation, and members who joined on or after July 1, 2008, contribute 6%. As the employer, TRS is required to contribute the annual actuarially determined rate of the creditable compensation (or the rate approved by legislators). TRS is required to contribute 9.97% plus a monthly amount determined by the KERS actuary for TRS's portion of the total unfunded liability over a set period regardless of covered payroll. TRS's total contributions to KERS were \$919,143 and \$887,844 for fiscal 2024 and 2023. TRS contributed 100% of the required contributions for each year.

Note 7 **Description of Other Funds**

403(b) Tax-Sheltered Annuity Plan

Plan Description

TRS has administered a salary deferral program as permitted by section 403(b) of the Internal Revenue Code. Under this program members voluntarily deferred a portion of their compensation within the limits established by the applicable laws and regulations. The board subsequently discontinued offering the program. Members who were not receiving annuities were able to transfer their accounts into other tax-sheltered plans. As of June 30, 2024, two members remained who are receiving annuities under the plan. Effective Jan. 1, 2022, the board restated the plan to allow TRS 4 members and employers to make voluntary contributions to the plan to comply with the requirements of the legislation that created TRS 4. As of June 30, 2024, 17 TRS 4 members participated in the voluntary plan, and the combined balance of those accounts was \$28,009, compared to nine members with a combined balance of \$9,725 at June 30, 2023.

Basis of Accounting

The Tax-Sheltered Annuity Plan financial statements are prepared using an accrual basis of accounting.

Method Used to Value Investments

The short-term investments are reported at cost, which approximates fair value.

Supplemental Benefit Fund

The Supplemental Benefit Fund is a qualified governmental excess benefit arrangement as described in Section 415 of the Internal Revenue Code. In accordance with KRS 161.611 and KRS 161.420(8), TRS is authorized to provide a supplemental retirement benefit fund for the sole purpose of enabling the employer to apply the same formula for determining benefits payable to all members of TRS employed by the employer, whose benefits under the system are limited by Section 415 of the Internal Revenue Code of 1986 as amended. Funding of benefits payable under this fund are provided by the employer and are segregated from funds that are maintained by TRS for payment of regular benefits.

Junita Losey Scholarship Fund

Junita Losey, a retired teacher, designated TRS as a residuary beneficiary of her estate and expressed a desire that TRS establish a scholarship program for Kentucky students studying to be teachers. Ms. Losey died in 1997, and her estate provided a scholarship bequest to TRS. The scholarship bequest has at all times been segregated from funds that are maintained by TRS for payment of regular benefits. The board's Scholarship Committee meets each December to consider scholarship standards and administration of the bequest.

Note 8 **Other Postemployment Benefits (OPEB) — Health Insurance Trust**

Plan Description

In addition to the retirement annuity plan described in Note 1, KRS 161.675 requires TRS to provide access to postemployment healthcare benefits for eligible members and dependents. The TRS Health Insurance Trust is funded by employer and member

contributions. Changes made to the medical plans provided through the trust may be made by the TRS Board of Trustees, the Kentucky Department of Employee Insurance and the General Assembly.

Medical coverage through TRS is funded by a combination of contributions from employees, the state and other employers. Coverage is provided through an account established pursuant to 26 U.S.C. sec. 401(h) and a 115 trust fund that went into effect on July 1, 2010. The insurance trust fund includes employer and retired member contributions required under KRS 161.550 and KRS 161.675(4)(b).

To be eligible for medical benefits, the member must have retired either for service or disability and a required amount of service credit. The TRS medical plan offers members who are not eligible for Medicare and under age 65 coverage through the Kentucky Employees Health Plan (KEHP) administered by the Kentucky Department of Employee Insurance. Once retired members and eligible spouses attain age 65 and or are eligible for Medicare, coverage is obtained through the Medicare Eligible Health Plan (MEHP) administered by TRS.

Contributions are made on behalf of TRS retired members toward payment of health insurance premiums. The amount of the member's contribution is based on a table approved by the TRS board. Retired members pay premiums in excess of the monthly contribution. The amount of insurance premiums paid by retirees for fiscal years 2024 and 2023 were \$62.9 million and \$63.3 million, respectively. The Commonwealth of Kentucky bears risk for excess claims expenses that exceed the premium equivalents charged for the KEHP.

At June 30, 2024, TRS insurance covered 41,000 retirees and 6,322 dependents, and at June 30, 2023, TRS insurance covered 41,055 retirees and 6,555 dependents. The medical plan has 202 participating employers with 76,014 and 75,644 active members contributing at June 30, 2024, and 2023, respectively.

Retiree health care premiums and other income received reduces the amount of expenditures reported in the deductions section in the Statement of Changes in Fiduciary Net Position for the Health Insurance Trust. These expenditures are summarized in the following table.

	2024	2023
MEHP group expenditures	\$ 244,030,540	\$ 222,852,822
KEHP group expenditures	119,207,504	110,701,357
Subtotal	363,238,044	333,554,179
Less: amounts paid by retirees	(62,939,581)	(63,329,256)
Less: formulary rebates	(71,191,589)	(63,433,922)
Less: Medicare subsidies and other recovery income	(85,584,941)	(81,924,996)
Net insurance expenditures	\$ 143,521,932	\$ 124,866,005

Net OPEB Liability of Employers

The net OPEB liability [i.e., the system's liability determined in accordance with GASB Statement No. 74 less the fiduciary net position (FNP)] for the Health Insurance Trust as of June 30, 2024, and 2023 is shown in the following table.

Net OPEB Liability of Employers
(Dollars in thousands)

Fiscal Year Ending June 30	Total OPEB Liability (TOL)* A	Plan Fiduciary Net Position B	Employers Net OPEB Liability (NOL) (A-B)	Plan Fiduciary Net Position (FNP) as a % of Total OPEB Liability (B/A)	Covered Payroll C	Net OPEB Liability as a % of Covered Payroll [(A-B)/C]
2024	\$ 5,546,693	\$ 3,317,711	\$ 2,228,982	59.8	\$ 4,140,446	53.8
2023	5,179,049	2,743,413	2,435,636	53.0	3,977,280	61.2

*The TOL includes the additional consideration for the current treatment of KEHP implicit subsidies that may be needed in the future. This is an additional liability from Health Insurance Trust accrued liabilities.

Actuarial Assumptions

A summary of the actuarial assumptions as of the latest actuarial valuation follows.

Valuation date	June 30, 2023
Investment rate of return	7.1%, net of OPEB plan investment expense, including inflation
Projected salary increases	3.0 - 7.5%, including wage inflation
Inflation rate	2.5%
Real wage growth	0.25%
Wage inflation	2.75%
Municipal bond index rate	3.94%
Discount rate	7.1%
Single equivalent interest rate	7.1%, net of OPEB plan investment expense, including price inflation
Health care cost trends	
Medical trend	6.5% for fiscal year 2024, decreasing to an ultimate rate of 4.5% by fiscal year 2031
Medicare Part B premiums	5.92% for fiscal year 2024, with an ultimate rate of 4.5% by 2035

Mortality rates were based on the Pub2010 (Teachers Benefit-Weighted) Mortality Table projected generationally with MP-2020 with various set-forwards, set-backs and adjustments for each of the groups; service, retirees, contingent annuitants, disabled retirees and active members. The demographic actuarial assumptions for retirement, disability incidence, withdrawal, rates of plan participation and rates of plan election used in the June 30, 2023, valuation were based on the results of the most recent actuarial experience study for the system, which covered the five-year period ending June 30, 2020, adopted by the board on September 20, 2021. The remaining actuarial assumptions (e.g., initial per capita costs, health care cost trends) used in the June 30, 2023, valuation of the health trust were based on a review of recent plan experience done concurrently with the June 30, 2023, valuation. The health care cost trend rate assumption was updated for the June 30, 2023, valuation and was shown as an assumption change in the total OPEB liability (TOL) roll-forward while the change in initial per capita claims costs were included with experience in the TOL roll-forward. The Municipal Bond Index Rate used for this purpose is the June average of the Bond Buyer General Obligation 20-year Municipal Bond Index published weekly by the Board of Governors of the Federal Reserve System.

Target Allocations

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

The target allocation and best estimates of arithmetic real rates of return for each major asset class, as provided by TRS’s investment consultant, are summarized in the following table.

Asset Class	Target Allocation Percentage	Long-Term Expected Real Rate Percentage of Return
U.S. large cap equity	35.4	5.0
U.S. small cap equity	2.6	5.5
Developed international equity	15.0	5.5
Emerging markets equity	5.0	6.1
Fixed income	9.0	1.9
High yield bonds	8.0	3.8
Other additional categories	9.0	3.7
Real estate	6.5	3.2
Private equity	8.5	8.0
Cash	1.0	1.6
Total	100.0	

Discount Rate

The discount rate used to measure the TOL as of the measurement date was 7.1%. The projection of cash flows used to determine the discount rate was performed in accordance with GASB Statement No. 74. The projection’s basis was an actuarial valuation performed as of June 30, 2023. In addition to the actuarial methods and assumptions of the June 30, 2023, actuarial valuation, the following actuarial methods and assumptions were used in the projection of cash flows:

- Total payroll for the initial projection year consists of the payroll of the active membership present on the valuation date. In subsequent projection years, total payroll was assumed to increase annually at a rate of 2.75%.
- The KEHP group retiree health care costs for members retired on or after July 1, 2010, were assumed to be paid by either the state or the retirees themselves.
- As administrative expenses, other than the administrative fee of \$8.00 per member per month (PMPM) paid to KEHP by TRS, were assumed to be paid in all years by the employer as they come due, they were not considered.
- Cash flows occur midyear.
- Future contributions to the Health Insurance Trust were based upon the contribution rates defined in statute and the projected payroll of active employees. Per KRS 161.540(1)(e) and 161.550(4), when the health trust achieves a sufficient funded status, as determined by TRS’s actuary, the following health trust statutory contributions are to be decreased, suspended or eliminated:
 - Employee contributions
 - School district and university employer contributions
 - State contributions for KEHP premium subsidies payable to retirees who retire after June 30, 2010

To reflect these adjustments, open group projections were used and assumed an equal, pro rata reduction to the current statutory amounts in the years if the health trust is projected to achieve a funded ratio of 100% or more. Here, the current statutory amounts are adjusted to achieve total contributions equal to the actuarially determined contribution, as determined by the prior year’s valuation and in accordance with the health trust’s funding policy. As the specific methodology to be used for the adjustments has yet to be determined, there may be differences between the projected results and future experience. This also may include any changes to retiree contributions for KEHP coverage pursuant to KRS 161.675(4)(b).

- In developing the adjustments to the statutory contributions in future years, the following was assumed:
 - Liabilities and cash flows are net of expected retiree contributions and any implicit subsidies attributable to coverage while participating in KEHP.
 - For the purposes of developing estimates for new entrants, active headcounts were assumed to remain flat for all future years.

Based on these assumptions, the Health Insurance Trust’s FNP was not projected to be depleted.

FINANCIAL SECTION

The FNP projections are based upon the health trust's financial status on the valuation date; the indicated set of methods and assumptions; and the requirements of GASB Statement No. 74. As such, the FNP projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing basis, reflecting the impact of future members. Therefore, the results of these tests do not necessarily indicate whether or not the health trust will actually run out of money, the financial condition of the trust, or the trust's ability to make benefit payments in future years.

These paragraphs require disclosure of the sensitivity of the NOL to changes in the health care cost trend rates and the discount rate for the Health Insurance Trust. The following exhibits present the NOL of the trust, calculated using the health care cost trend rates, as well as what the trust's NOL would be if it were calculated using a health care cost trend rate that is 1% lower or 1% higher than the current rate. Similarly, the exhibits present the NOL of the trust, calculated using the single equivalent interest rate (SEIR), as well as what the NOL would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current SEIR.

Schedule of Net OPEB Liability and Health Care Cost Trend Rates 2024

(In thousands)

		Health Care Cost Trend Rates		
		1% Decrease	Current	1% Increase
Discount Rate	1% Increase (8.1%)	\$	\$ 1,622,126	\$
	Current (7.1%)	1,505,651	2,228,982	3,127,709
	1% Decrease (6.1%)		2,961,188	

Schedule of Net OPEB Liability and Health Care Cost Trend Rates 2023

(In thousands)

		Health Care Cost Trend Rates		
		1% Decrease	Current	1% Increase
Discount Rate	1% Increase (8.1%)	\$	\$ 1,859,473	\$
	Current (7.1%)	1,753,458	2,435,636	3,285,081
	1% Decrease (6.1%)		3,132,761	

The TOL of the Health Insurance Trust for 2024 is based upon an actuarial valuation performed as of the valuation date, June 30, 2023. An expected TOL is determined as of June 30, 2024, using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2023, subtracts the actual benefit payments (net of retiree contributions, if applicable) for the year, applies interest at the discount rate for the year and then adds the annual normal cost (also called the service cost). If applicable, actuarial gains and losses arising from the difference between estimates and actual experience (excluding amounts related to benefit changes and changes in assumptions or other inputs) are reconciled to the TOL as of the measurement date. Last, any changes of assumptions or other inputs are reflected. The procedure used to determine the TOL of the health trust, as of June 30, 2024, is shown in the following table.

TOL Roll-Forward 2024

(In thousands)

	Expected	Actual
(a) TOL as of June 30, 2023*	\$ 5,179,049	\$ 5,023,491
(b) Actual benefit payments and refunds for July 1, 2023-June 30, 2024	(143,522)	(143,522)
(c) Interest on TOL = [(a) x (0.071)] + [(b) x (0.0355)]	362,617	351,573
(d) Service cost for July 1, 2023-June 30, 2024 at the end of the year	130,757	130,757
(e) Changes of benefit terms		
(f) Changes of assumptions**	184,394	184,394
	5,713,295	5,546,693
(g) TOL rolled forward to June 30, 2024 = (a) + (b) + (c) + (d) + (e) + (f)		
(h) Difference between expected and actual experience (gain) loss		\$ (166,602)

* The TOL used in the roll-forward as of June 30, 2023, is calculated using the discount rate as of the prior measurement date.

** The health care trend rates and morbidity factors, were updated to reflect future anticipated experience.

The TOL of the Health Insurance Trust for 2023 is based upon an actuarial valuation performed as of the June 30, 2022, valuation date. An expected, TOL was determined as of June 30, 2023, using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2022, subtracts the actual benefit payments (net of retiree contributions, if applicable) for the year, applies interest at the discount rate for the year and then adds the annual normal cost (also called the service cost). If applicable, actuarial gains and losses arising from the difference between estimates and actual experience (excluding amounts related to benefit changes and changes in assumptions or other inputs) are reconciled to the TOL as of the measurement date. Last, any changes of assumptions or other inputs are reflected. The procedure used to determine the TOL of the health trust, as of June 30, 2023, is shown in the following table.

TOL Roll-Forward 2023

(In thousands)

	Expected	Actual
(a) TOL as of June 30, 2022*	\$ 4,751,706	\$ 4,660,037
(b) Actual benefit payments and refunds for July 1, 2022-June 30, 2023	(124,866)	(124,866)
(c) Interest on TOL = [(a) x (0.071)] + [(b) x (0.0355)]	332,938	326,430
(d) Service cost for July 1, 2022-June 30, 2023 at the end of the year	120,458	120,458
(e) Changes of benefit terms		
(f) Changes of assumptions**	196,990	196,990
	5,277,226	5,179,049
(g) TOL rolled forward to June 30, 2023 = (a) + (b) + (c) + (d) + (e) + (f)		
(h) Difference between expected and actual experience (gain) loss		\$ (98,177)

* The TOL used in the roll-forward as of June 30, 2022, is calculated using the discount rate as of the prior measurement date.

** The health care trend rates, as well as the TRS 4 retirement decrements, were updated to reflect future anticipated experience.

Note 9
Other Postemployment Benefits (OPEB) — Life Insurance Trust

Plan Description

TRS administers the Life Insurance Trust as provided by KRS 161.655 to provide life insurance benefits to retired and active members. This benefit is financed by actuarially determined contributions from the 202 participating employers. The benefit is \$5,000 for members who are retired for service or disability and \$2,000 for active contributing members who began participating before Jan. 1, 2022. For TRS 4 members, the life insurance benefit payable upon the death of a member is \$5,000 for active contributing members and \$10,000 for retired or disabled members.

Net OPEB Liability of Employers

The net OPEB liability (NOL) (i.e., the system’s liability determined in accordance with GASB Statement No. 74 less the fiduciary net position) for the life insurance fund as of June 30, 2024, and 2023 follows.

Schedule of Net OPEB Liability of Employers
(Dollars in thousands)

Year Ended June 30	Total OPEB Liability (TOL) A	Plan Fiduciary Net Position B	Employers Net OPEB Liability (NOL) (A-B)	Plan Fiduciary Net Position (FNP) as a % of Total OPEB Liability (B/A)	Covered Payroll C	Net OPEB Liability as a % of Covered Payroll [(A-B)/C]
2024	\$ 126,072	\$ 101,559	\$ 24,513	80.6	\$ 4,140,446	0.6
2023	122,254	94,030	28,224	76.9	3,977,280	0.7

Actuarial Assumptions

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below.

Valuation date	June 30, 2023
Investment rate of return	7.1%, net of OPEB plan investment expense, including inflation.
Projected salary increases	3 - 7.5%, including wage inflation
Inflation rate	2.5%
Real wage growth	0.25%
Wage inflation	2.75%
Municipal bond index rate	3.94%
Discount rate	7.1%
Single equivalent interest rate	7.1%, net of OPEB plan investment expense, including price inflation

Mortality rates were based on the Pub2010 (Teachers Benefit-Weighted) Mortality Table projected generationally with MP-2020 with various set-forwards set-backs and adjustments for each of the groups: service, retirees, contingent annuitants, disabled retirees and active members. The demographic actuarial assumptions for retirement, disability incidence, withdrawal, rates of plan participation and rates of plan election used in the June 30, 2023, valuation were based on the results of the most recent actuarial experience study for the system, which covered the five-year period ending June 30, 2020, adopted by the board on September 20, 2021. The Municipal Bond Index Rate used for this purpose is the June average of the Bond Buyer General Obligation 20-year Municipal Bond Index published weekly by the Board of Governors of the Federal Reserve System.

Target Allocations

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

target allocation and best estimates of arithmetic real rates of return for each major asset class, as provided by TRS’s investment consultant, are summarized in the following table.

Asset Class	Target Allocation Percentage	Long-Term Expected Real Rate Percentage of Return
U.S. equity	40.0	5.2
International equity	15.0	5.5
Emerging markets equity	5.0	6.1
Fixed income	21.0	1.9
Real estate	7.0	3.2
Private equity	5.0	8.0
Additional categories	5.0	4.0
Cash	2.0	1.6
Total	100.0	

Discount Rate

The discount rate used to measure the total OPEB liability (TOL) as of the measurement date was 7.1%. The projection of cash flows used to determine the discount rate was performed in accordance with GASB Statement No. 74. The projection’s basis was an actuarial valuation performed as of June 30, 2023. In addition to the actuarial methods and assumptions of the June 30, 2023, actuarial valuation, the following actuarial methods and assumptions were used in the projection of the life insurance cash flows:

- Total payroll for the initial projection year consists of the payroll of the active membership present on the valuation date. In subsequent projection years, total payroll was assumed to increase annually at a rate of 2.75%.
- The employer will contribute the ADC in accordance with the Life Insurance Trust’s funding policy (Schedule E) determined by a valuation performed on a date two years prior to the beginning of the fiscal year in which the ADC applies.
- As administrative expenses were assumed to be paid in all years by the employer as they come due, they were not considered.
- Active employees do not contribute to the plan.
- Cash flows occur midyear.

Based on these assumptions, the Life Insurance Trust’s fiduciary net position (FNP) was not projected to be depleted.

The FNP projections are based upon the Life Insurance Trust’s financial status on the valuation date; the indicated set of methods and assumptions; and the requirements of GASB Statement No. 74. As such, the FNP projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing basis, reflecting the impact of future members. Therefore, the results of these tests do not necessarily indicate whether the Life Insurance Trust actually will run out of money, the financial condition of the trust, or the trust’s ability to make benefit payments in future years.

These paragraphs require disclosure of the sensitivity of the NOL to changes the discount rate for the Life Insurance Trust. The schedules below presents the NOL of the trust calculated using the SEIR, as well as what the trust’s NOL would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current SEIR.

Schedule of Net OPEB Liability 2024
(In thousands)

1% Decrease (6.1%)	Current Discount Rate (7.1%)	1% Increase (8.1%)
\$42,041	\$24,513	\$10,327

Schedule of Net OPEB Liability 2023
(In thousands)

1% Decrease (6.1%)	Current Discount Rate (7.1%)	1% Increase (8.1%)
\$45,402	\$28,224	\$14,326

FINANCIAL SECTION

The TOL of the Life Insurance Trust for 2024 is based upon an actuarial valuation performed as of the valuation date, June 30, 2023. An expected TOL is determined as of June 30, 2024, using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2023, subtracts the actual benefit payments (net of retiree contributions, if applicable) for the year, applies interest at the discount rate for the year and then adds the annual normal cost (also called the service cost). If applicable, actuarial gains and losses arising from the difference between estimates and actual experience (excluding amounts related to benefit changes and changes in assumptions or other inputs) are reconciled to the TOL as of the measurement date. Last, any changes of assumptions or other inputs are reflected. The procedure used to determine the TOL of the Life Insurance Trust, as of June 30, 2024, is shown in the following table.

TOL Roll-Forward 2024 (In thousands)

	<u>Expected</u>	<u>Actual</u>
(a) TOL as of June 30, 2023*	\$ 122,254	\$ 122,611
(b) Actual benefit payments and refunds for July 1, 2023-June 30, 2024	(6,106)	(6,106)
(c) Interest on TOL = [(a) x (0.071)] + [(b) x (0.0355)]	8,463	8,489
(d) Service cost for July 1, 2023-June 30, 2024	1,078	1,078
(e) Changes of benefits terms		
(f) Changes of assumptions	—	—
(g) TOL rolled forward to June 30, 2024 =(a)+(b)+(c)+(d)+(e)+(f)	\$ 125,689	\$ 126,072
(h) Difference between expected and actual experience (gain) loss		<u>\$ 383</u>

* The TOL used in the roll-forward as of June 30, 2023, is calculated using the discount rate as of the prior measurement date.

The TOL of the Life Insurance Trust for 2023 is based upon an actuarial valuation performed as of the June 30, 2022, valuation date. An expected TOL is determined as of June 30, 2023, using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2022, subtracts the actual benefit payments (net of retiree contributions, if applicable) for the year, applies interest at the discount rate for the year and then adds the annual normal cost (also called the service cost). If applicable, actuarial gains and losses arising from the difference between estimates and actual experience (excluding amounts related to benefit changes and changes in assumptions or other inputs) are reconciled to the TOL as of the measurement date. Last, any changes of assumptions or other inputs are reflected. The procedure used to determine the TOL of the trust, as of June 30, 2023, is shown in the following table.

TOL Roll-Forward 2023 (In thousand)

	<u>Expected</u>	<u>Actual</u>
(a) TOL as of June 30, 2022*	\$ 119,484	\$ 119,197
(b) Actual benefit payments and refunds for July 1, 2022-June 30, 2023	(6,219)	(6,219)
(c) Interest on TOL = [(a) x (0.071)] + [(b) x (0.0355)]	8,263	8,242
(d) Service cost for July 1, 2022-June 30, 2023	1,035	1,035
(e) Changes of benefits terms		
(f) Changes of assumptions**	(1)	(1)
(g) TOL rolled forward to June 30, 2023 =(a)+(b)+(c)+(d)+(e)+(f)	\$ 122,562	\$ 122,254
(h) Difference between expected and actual experience (gain) loss		<u>\$ (308)</u>

* The TOL used in the roll-forward as of June 30, 2022, is calculated using the discount rate as of the prior measurement date.

** Tier 4 retirement decrements were updated to reflect future anticipated experience.

Required Supplementary Information

Retirement Annuity Trust

Schedule of Changes in Net Pension Liability

(In thousands)

	2024	2023	2022	2021	2020
Total pension liability					
Service cost	\$ 665,383	\$ 654,676	\$ 621,689	\$ 563,188	\$ 552,625
Interest	2,895,379	2,796,631	2,724,644	2,581,630	2,517,671
Difference between expected and actual experience	160,600	398,576	42,986	32,475	10,661
Changes of assumptions	—	—	—	3,072,848	—
Benefit payments	(2,466,971)	(2,391,326)	(2,305,853)	(2,235,241)	(2,167,239)
Refunds of contributions	(32,922)	(26,910)	(26,745)	(25,374)	(28,472)
Net change in total pension liability	1,221,469	1,431,647	1,056,721	3,989,526	885,246
Total pension liability — beginning	42,029,935	40,598,288	39,541,567	35,552,041	34,666,795
Total pension liability — ending (a)	43,251,404	42,029,935	40,598,288	39,541,567	35,552,041
Plan net position					
Contributions — state	1,085,042	1,042,434	1,570,118	1,060,257	1,048,193
Contributions — other employers	93,640	102,015	109,467	86,720	86,088
Contributions — members	385,907	366,775	356,967	327,833	324,664
Net investment income	2,813,693	2,266,085	(2,727,776)	6,017,186	1,094,023
Benefit payments	(2,466,971)	(2,391,326)	(2,305,853)	(2,235,241)	(2,167,239)
Administrative expense	(14,807)	(14,471)	(12,005)	(12,602)	(12,167)
Refunds of contributions	(32,922)	(26,910)	(26,745)	(25,374)	(28,472)
Net change in plan net position	1,863,582	1,344,602	(3,035,827)	5,218,779	345,090
Plan net position — beginning	24,244,554	22,899,952	25,935,779	20,717,000	20,371,910
Plan net position — ending (b)	26,108,136	24,244,554	22,899,952	25,935,779	20,717,000
Net pension liability — ending (a)-(b)	<u>\$ 17,143,268</u>	<u>\$ 17,785,381</u>	<u>\$ 17,698,336</u>	<u>\$ 13,605,788</u>	<u>\$ 14,835,041</u>

See accompanying independent auditor's report.

Schedule of Changes in Net Pension Liability
(In thousands)

	2019	2018	2017	2016	2015
Total pension liability					
Service cost	\$ 542,970	\$ 1,104,102	\$ 1,332,587	\$ 1,120,893	\$ 1,015,080
Interest	2,448,387	2,063,109	1,964,107	2,027,457	2,029,372
Difference between expected and actual experience	93,650	(222,473)	199,471	(58,035)	
Changes of assumptions	—	(14,167,315)	(2,321,327)	4,030,834	1,511,960
Benefit payments	(2,094,364)	(2,004,617)	(1,918,612)	(1,833,199)	(1,741,456)
Refunds of contributions	(32,403)	(31,073)	(26,305)	(27,748)	(23,033)
Net change in total pension liability	958,240	(13,258,267)	(770,079)	5,260,202	2,791,923
Total pension liability — beginning	33,708,555	46,966,822	47,736,901	42,476,699	39,684,776
Total pension liability — ending (a)	34,666,795	33,708,555	46,966,822	47,736,901	42,476,699
Plan net position					
Contributions — state	1,051,452	969,698	981,417	484,987	480,073
Contributions — other employers	71,583	78,973	79,303	80,468	79,506
Contributions — members	321,172	319,127	313,625	313,044	308,160
Net investment income	1,085,189	1,953,214	2,475,753	(245,215)	862,179
Benefit payments	(2,094,364)	(2,004,617)	(1,918,612)	(1,833,199)	(1,741,456)
Administrative expense	(12,352)	(11,388)	(10,314)	(8,636)	(8,869)
Refunds of contributions	(32,403)	(31,073)	(26,305)	(27,748)	(23,033)
Net change in plan net position	390,277	1,273,934	1,894,867	(1,236,299)	(43,440)
Plan net position — beginning	19,981,633	18,707,699	16,812,832	18,049,131	18,092,571
Plan net position — ending (b)	20,371,910	19,981,633	18,707,699	16,812,832	18,049,131
Net pension liability — ending (a)-(b)	\$ 14,294,885	\$ 13,726,922	\$ 28,259,123	\$ 30,924,069	\$ 24,427,568

See accompanying independent auditor's report.

Net Pension Liability

The total pension liability contained in the following schedule was provided by TRS’s actuary, Cavanaugh Macdonald Consulting. The net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the system.

Changes of Benefit Terms. The TRS 4 benefit tier was added for members joining the system on and after Jan. 1, 2022.

Changes of assumptions. In the 2020 experience study, rates of withdrawal, retirement, disability, mortality and salary increase were adjusted to more closely reflect actual experience. The expectation of mortality was changed to the Pub2010 Mortality Tables (Teachers Benefit-Weighted) projected generationally with MP-2020 with various set forwards, set-backs and adjustments for each of the groups: service retirees, contingent annuitants, disabled retirees and actives. The assumed long-term investment rate of return was changed from 7.5% to 7.1% and the price inflation assumption was lowered from 3% to 2.5%.

In the 2016 valuation, rates of withdrawal, retirement, disability, mortality and salary increase were adjusted to more closely reflect actual experience. In the 2016 valuation and later, the expectation of retired life mortality was changed to the RP-2000 Mortality Tables projected to 2025 with projection scale BB, set forward two year for males and one year for females rather than the RP-2000 Mortality Tables projected to 2020 with projection scale AA, which was used prior to 2016.

In the 2011 valuation, rates of withdrawal, retirement, disability and mortality were adjusted to more closely reflect actual experience. In the 2011 valuation and later, the expectation of retired life mortality was changed to the RP-2000 Mortality Tables projected to 2020 with projection scale AA, set back one year for females rather than the 1994 Group Annuity Mortality Tables which was used prior to 2016. For the 2011 valuation through the 2013 valuation, an interest smoothing methodology was used to calculate liabilities for purposes of determining the actuarially determined contributions.

Schedule of Net Pension Liability
(Dollars in thousands)

	2024	2023	2022	2021	2020
Total pension liability	\$43,251,404	\$42,029,935	\$40,598,288	\$39,541,567	\$35,552,041
Plan net position	26,108,136	24,244,554	22,899,952	25,935,779	20,717,000
Net pension liability	<u>17,143,268</u>	<u>17,785,381</u>	<u>17,698,336</u>	<u>13,605,788</u>	<u>14,835,041</u>
Ratio of plan net position to total pension liability	60.36 %	57.68 %	56.41 %	65.59 %	58.27 %
Covered payroll	\$4,140,446	\$3,977,280	\$3,876,491	\$3,638,905	\$3,569,262
Net pension liability as a percentage of covered payroll	414.04 %	447.17 %	456.56 %	373.90 %	415.61 %
	2019	2018	2017	2016	2015
Total pension liability	\$34,666,795	\$33,708,555	\$46,966,822	\$47,736,901	\$42,476,699
Plan net position	20,371,910	19,981,633	18,707,699	16,812,832	18,049,131
Net pension liability	<u>14,294,885</u>	<u>13,726,922</u>	<u>28,259,123</u>	<u>30,924,069</u>	<u>24,427,568</u>
Ratio of plan net position to total pension liability	58.76 %	59.28 %	39.83 %	35.22 %	42.49 %
Covered payroll	\$3,497,216	\$3,455,660	\$3,415,432	\$3,390,539	\$3,455,008
Net pension liability as a percentage of covered payroll	408.75 %	397.23 %	827.40 %	912.07 %	707.02 %

See accompanying independent auditor’s report.

Schedule of Employer Contributions
(Dollars in thousands)

Fiscal Year Ended June 30	Covered Payroll	Actual Employer Contributions	Actuarially Determined Employer Contributions	Annual Contribution Excess (Deficiency)	Actual Contributions as a % of Covered Payroll
2024	\$ 4,140,446	\$ 1,178,682	\$ 1,178,682	\$ —	28.47
2023	3,977,280	1,144,449	1,144,449	—	28.77
2022	3,876,491	1,679,585	1,200,385	479,200	43.33
2021	3,638,905	1,146,977	1,146,977		31.52
2020	3,569,262	1,134,281	1,134,281		31.78
2019	3,497,216	1,123,035	1,123,035		32.11
2018	3,455,660	1,048,671	1,083,466	(34,795)	30.35
2017	3,415,432	1,060,720	1,076,617	(15,897)	31.06
2016	3,390,539	565,455	999,270	(433,815)	16.68
2015	3,455,008	559,579	913,654	(354,075)	16.20

See accompanying independent auditor’s report.

Actuarial Methods and Assumptions

The actuarially determined contribution rates in the Schedule of Employer Contributions are calculated as of June 30 on the three years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in the most recent year of the schedule.

Actuarial cost method	Entry age
Amortization period	Level percentage of payroll, closed
Remaining amortization period	22.9 years
Asset valuation method	5-year smoothed fair value
Inflation	2.5%
Salary increase	3.0 to 7.5%, including inflation
Investment rate of return	7.1%, net of pension plan investment expense, including inflation

Schedule of Investment Returns

Percentage shown is annual money-weighted rate of return, net of investment expense.

2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
11.91%	10.24%	(10.91)%	29.6%	5%	5.56%	10.50%	15.00%	(1.32)%	4.96%

See accompanying independent auditor’s report.

Health Insurance Trust

Schedule of Changes in Net OPEB Liability
(In thousands)

	2024	2023	2022	2021
Total OPEB liability				
Service cost	\$ 130,757	\$ 120,458	\$ 109,082	\$ 84,727
Interest	362,617	332,938	311,875	326,008
Changes of benefit terms				
Difference between expected and actual experience	(166,602)	(98,177)	(68,928)	(490,732)
Changes of assumptions	184,394	196,990	60,667	516,431
Benefit payments	(143,522)	(124,866)	(107,201)	(130,648)
Net change in OPEB liability	<u>367,644</u>	<u>427,343</u>	<u>305,495</u>	<u>305,786</u>
Total OPEB liability — beginning	<u>5,179,049</u>	<u>4,751,706</u>	<u>4,446,211</u>	<u>4,140,425</u>
Total OPEB liability — ending (a)	<u>5,546,693</u>	<u>5,179,049</u>	<u>4,751,706</u>	<u>4,446,211</u>
Plan net position				
Contributions — state	96,419	85,328	31,349	78,217
Contributions — other employers	127,902	123,488	120,416	106,670
Contributions — active members	155,327	149,210	145,682	128,117
Net investment income	340,293	243,051	(219,500)	503,201
Benefit payments	(143,522)	(124,866)	(107,201)	(130,648)
Administrative expense	(2,121)	(1,974)	(2,074)	(1,728)
Other				
Net change in plan net position	<u>574,298</u>	<u>474,237</u>	<u>(31,328)</u>	<u>683,829</u>
Plan net position — beginning	<u>2,743,413</u>	<u>2,269,176</u>	<u>2,300,504</u>	<u>1,616,675</u>
Plan net position — ending (b)	<u>3,317,711</u>	<u>2,743,413</u>	<u>2,269,176</u>	<u>2,300,504</u>
Net OPEB liability — ending (a) - (b)	<u>\$ 2,228,982</u>	<u>\$ 2,435,636</u>	<u>\$ 2,482,530</u>	<u>\$ 2,145,707</u>

Schedule is intended to show information for 10 years. Future years will be displayed as they become available.
See accompanying independent auditor's report.

Schedule of Changes in Net OPEB Liability
(In thousands)

	2020	2019	2018	2017
Total OPEB liability				
Service cost	\$ 82,572	\$ 93,792	\$ 95,382	\$ 95,625
Interest	341,430	366,254	355,491	333,990
Changes of benefit terms				8,926
Difference between expected and actual experience	(585,090)	(661,228)	(210,450)	
Changes of assumptions	106,575	45,659	56,483	
Benefit payments	(145,869)	(163,666)	(161,082)	(178,500)
Net change in OPEB liability	(200,382)	(319,189)	135,824	260,041
Total OPEB liability — beginning	4,340,807	4,659,996	4,524,172	4,264,131
Total OPEB liability — ending (a)	4,140,425	4,340,807	4,659,996	4,524,172
Plan net position				
Contributions — state	77,191	76,382	80,959	75,497
Contributions — other employers	107,434	106,764	106,143	104,879
Contributions — active members	133,471	131,677	130,778	128,819
Net investment income	32,475	74,385	76,841	95,453
Benefit payments	(145,869)	(163,666)	(161,082)	(178,500)
Administrative expense	(2,047)	(1,803)	(1,748)	(1,539)
Other				
Net change in plan net position	202,655	223,739	231,891	224,609
Plan net position — beginning	1,414,020	1,190,281	958,390	733,781
Plan net position — ending (b)	1,616,675	1,414,020	1,190,281	958,390
Net OPEB liability — ending (a) - (b)	<u>\$ 2,523,750</u>	<u>\$ 2,926,787</u>	<u>\$ 3,469,715</u>	<u>\$ 3,565,782</u>

Schedule is intended to show information for 10 years. Future years will be displayed as they become available.
See accompanying independent auditor's report.

Net OPEB Liability

The net OPEB liability contained in the following schedule was provided by TRS’s actuary, Cavanaugh Macdonald Consulting. The net OPEB liability is measured as the total OPEB liability less the amount of the fiduciary net position of the system.

Changes of benefit terms.

June 30, 2024 (Valuation Date: June 30, 2023)

- None

Changes of assumptions.

June 30, 2024 (Valuation Date: June 30, 2023)

- The health care trend rates, as well as morbidity factors, were updated to reflect future anticipated experience.

Schedule of Net OPEB Liability
(Dollars in thousands)

Valuation Year June 30	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability	Plan Fiduciary Net Position as a % of Total OPEB Liability	Covered Payroll	Net OPEB Liability as a % of Covered Payroll
2024	\$ 5,546,693	\$ 3,317,711	\$ 2,228,982	59.8 %	\$ 4,140,446	53.8 %
2023	5,179,049	2,743,413	2,435,636	53.0	3,977,280	61.2
2022	4,751,706	2,269,176	2,482,530	47.8	3,876,491	64.0
2021	4,446,211	2,300,504	2,145,707	51.7	3,638,905	59.0
2020	4,140,425	1,616,675	2,523,750	39.1	3,569,262	70.7
2019	4,340,807	1,414,020	2,926,787	0.3	3,497,216	83.7
2018	4,659,996	1,190,281	3,469,715	0.3	3,455,660	100.4
2017	4,524,172	958,390	3,565,782	21.2	3,415,432	104.4

Schedule is intended to show information for 10 years. Future years will be displayed as they become available. See accompanying independent auditor’s report.

Schedule of Employer Contributions

GASB 74 (Dollars in thousands)

	2024	2023	2022	2021	2020
Statutorily required contributions					
Employer	\$ 127,902	\$ 123,488	\$ 120,416	\$ 106,670	\$ 107,434
State					
Pre-65 health insurance premiums	70,379	60,958	56,312	55,061	54,034
SEEK 0.75%	26,040	24,370	23,507	23,156	23,157
Total state	96,419	85,328	79,819	78,217	77,191
Total	\$ 224,321	\$ 208,816	\$ 200,235	\$ 184,887	\$ 184,625
Actual contributions					
Employer	\$ 127,902	\$ 123,488	\$ 120,416	\$ 106,670	\$ 107,434
State	96,419	85,328	31,349	78,217	77,191
Total	224,321	208,816	151,765	184,887	184,625
Contribution deficiency (excess)	\$ —	\$ —	\$ 48,470	\$ —	\$ —
Percent of statutorily required contributed	100.0	100.0	75.8	100.0	100.0
Covered payroll	\$ 4,140,446	\$ 3,977,280	\$ 3,876,491	\$ 3,638,905	\$ 3,569,262
Actual contributions as a percentage of covered payroll	5.42	5.25	3.92	5.08	5.17

	2019	2018	2017	2016	2015
Statutorily required contributions					
Employer	\$ 106,764	\$ 106,143	\$ 104,879	\$ 104,271	\$ 77,656
State					
Pre-65 health insurance premiums	53,707	58,535	53,454	52,542	46,233
SEEK 0.75%	22,675	22,424	22,043	21,825	21,375
Total state	76,382	80,959	75,497	74,367	67,608
Total	\$ 183,146	\$ 187,102	\$ 180,376	\$ 178,638	\$ 145,264
Actual contributions					
Employer	\$ 106,764	\$ 106,143	\$ 104,879	\$ 104,271	\$ 77,656
State	76,382	80,959	75,497	74,367	67,608
Total	183,146	187,102	180,376	178,638	145,264
Contribution deficiency (excess)	\$ —	\$ —	\$ —	\$ —	\$ —
Percent of shared responsibility contributed	100.0	100.0	100.0	100.0	100.0
Covered payroll	\$ 3,497,216	\$ 3,455,660	\$ 3,415,432	\$ 3,390,539	\$ 3,455,008
Actual contributions as a percentage of covered payroll	5.24	5.41	5.28	5.27	4.20

See accompanying independent auditor's report.

Actuarial Methods and Assumptions

The Health Insurance Trust is funded based on statutorily determined amounts as described in Note 8. The Schedule of Employer Contributions details the statutorily determined amounts for the Health Trust.

Schedule of Investment Returns

Percentage shown is annual money-weighted rate of return, net of investment expense.

2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
12.4%	11.5%	-9.70%	31.10%	2.30%	6.1%	8.44%	14.37%	(2.20)%	1.38%

See accompanying independent auditor's report.

Life Insurance Trust

Schedule of Changes in Net OPEB Liability

(In thousands)

	2024	2023	2022	2021
Total OPEB liability				
Service cost	\$ 1,078	\$ 1,035	\$ 943	\$ 1,289
Interest	8,463	8,263	8,337	8,926
Changes of benefit terms				
Difference between expected and actual experience	383	(308)	(4,123)	122
Changes of assumptions		(1)		(5,792)
Benefit payments	(6,106)	(6,219)	(6,178)	(6,120)
Net change in OPEB liability	3,818	2,770	(1,021)	(1,575)
Total OPEB liability — beginning	122,254	119,484	120,505	122,080
Total OPEB liability — ending (a)	126,072	122,254	119,484	120,505
Plan Net Position				
Contributions — state	2,778	2,599	2,194	1,852
Contributions — other employers	579	624	561	286
Net investment income	10,315	8,683	(15,582)	24,075
Benefit payments	(6,106)	(6,219)	(6,178)	(6,120)
Administrative expense	(37)	(38)	(41)	(34)
Net change in plan net position	7,529	5,649	(19,046)	20,059
Plan net position — beginning	94,030	88,381	107,427	87,368
Plan net position — ending (b)	101,559	94,030	88,381	107,427
Net OPEB liability — ending (a) - (b)	\$ 24,513	\$ 28,224	\$ 31,103	\$ 13,078

Schedule is intended to show information for 10 years. Future years will be displayed as they become available.
See accompanying independent auditor's report.

Schedule of Changes in Net OPEB Liability

(In thousands)

	2020	2019	2018	2017
Total OPEB liability				
Service cost	\$ 1,299	\$ 1,271	\$ 1,068	\$ 1,067
Interest	8,563	8,256	8,026	7,761
Changes of benefit terms				
Difference between expected and actual experience	705	(204)	(717)	
Changes of assumptions				
Benefit payments	(5,317)	(5,153)	(5,453)	(5,151)
Net change in OPEB liability	5,250	4,170	2,924	3,677
Total OPEB liability — beginning	116,830	112,660	109,736	106,059
Total OPEB liability — ending (a)	122,080	116,830	112,660	109,736
Plan Net Position				
Contributions — state	\$ 1,543	\$ 1,209	897	882
Contributions — other employers	253	212	161	168
Net investment income	5,167	5,058	1,111	915
Benefit payments	(5,317)	(5,153)	(5,453)	(5,151)
Administrative expense	(36)	(30)	(31)	(28)
Net change in plan net position	1,610	1,296	(3,315)	(3,214)
Plan net position — beginning	85,758	84,462	87,777	90,991
Plan net position — ending (b)	87,368	85,758	84,462	87,777
Net OPEB liability — ending (a) - (b)	<u>\$ 34,712</u>	<u>\$ 31,072</u>	<u>\$ 28,198</u>	<u>\$ 21,959</u>

Schedule is intended to show information for 10 years. Future years will be displayed as they become available. See accompanying independent auditor's report.

Net OPEB Liability

The net OPEB liability contained in the following schedule was provided by TRS's actuary, Cavanaugh Macdonald Consulting. The net OPEB liability is measured as the total OPEB liability less the amount of the fiduciary net position of the system.

Changes of benefit terms.

June 30, 2024 (Valuation Date: June 30, 2023)

- None

Changes of assumptions. None

Schedule of Net OPEB Liability

(Dollars in thousands)

Valuation Year June 30	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability	Plan Fiduciary Net Position as a % of Total OPEB Liability	Covered Payroll	Net OPEB Liability as a % of Covered Payroll
2024	\$ 126,072	\$ 101,559	\$ 24,513	80.6	\$4,140,446	0.6
2023	122,254	94,030	28,224	76.9	3,977,280	0.7
2022	119,484	88,381	31,103	74.0	3,876,491	0.8
2021	120,505	107,427	13,078	89.2	3,638,905	0.4
2020	122,080	87,368	34,712	71.6	3,569,262	1.0
2019	116,830	85,758	31,072	73.4	3,497,216	0.9
2018	112,660	84,462	28,198	75.0	3,455,660	0.8
2017	109,736	87,777	21,959	80.0	3,415,432	0.6

Schedule is intended to show information for 10 years. Future years will be displayed as they become available. See accompanying independent auditor's report.

Schedule of Employer Contributions

(Dollars in thousands)

Valuation Year June 30	Actuarially Determined Employer Contribution	Contributions in Relation to the Actuarially Determined Contribution	Annual Contribution Deficiency/ (Excess)	Covered Payroll	Actual Contributions as a % of Covered Payroll
2024	\$ 3,311	\$ 3,357	\$ (46)	\$ 4,140,446	0.08
2023	3,269	3,223	46	3,977,280	0.08
2022	2,736	2,755	(19)	3,876,491	0.07
2021	2,252	2,138	114	3,638,905	0.06
2020	1,843	1,796	47	3,569,262	0.05
2019	1,082	1,421	(339)	3,497,216	0.04
2018	1,075	1,058	17	3,455,660	0.03
2017	1,065	1,050	15	3,415,432	0.03
2016	1,058	1,038	20	3,390,539	0.03
2015	1,050	1,020	30	3,455,008	0.03

See accompanying independent auditor's report.

Actuarial Methods and Assumptions

The actuarially determined contribution rates in the schedule of employer contributions are calculated as of June 30, 2021 valuation date. The following actuarial methods and assumptions were used to determine contribution rates reported in the most recent year of the schedule.

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll
Amortization period	23 years, closed
Asset valuation method	5-year smoothed fair value
Inflation	2.5%
Real wage growth	0.25%
Wage inflation	2.75%
Salary increase	3.0 to 7.5%, including wage inflation
Discount rate	7.1%

Schedule of Investment Returns

Percentage shown is annual money-weighted rate of return, net of investment expense.

2024	2023	2022	2021	2020	2019
11.18%	9.63%	(14.96)%	28.17%	6.32%	6.49%

TRS began separate reporting of its Life Insurance Trust effective Feb. 1, 2018. Previously, it was reported as part of the pension fund's gross and net performance. This schedule will show more history of the trust as it becomes available.
See accompanying independent auditor's report.

Additional Supporting Schedules

**Schedule of Administrative Expenses
For the Year Ended June 30, 2024 and 2023**

	2024	2023
Salaries	\$ 9,253,137	\$ 8,720,717
Other personnel costs	893,481	793,003
Professional services and contracts	497,956	566,604
Utilities	87,920	91,979
Rentals	21,275	17,738
Maintenance	70,735	68,477
Postage and related services	557,762	553,724
Printing	182,322	121,430
Insurance	177,425	195,171
Miscellaneous services	172,033	173,737
Telecommunications	31,243	22,318
Computer services	32,024	31,419
Supplies	25,944	25,314
Depreciation	1,803,758	2,055,970
Travel	48,705	47,500
Dues and subscriptions	125,281	135,220
Miscellaneous commodities	60,132	51,400
Office systems and equipment	2,676,885	2,604,647
Compensated absences	247,313	207,211
Total	\$ 16,965,331	\$ 16,483,579

See accompanying independent auditor's report.

**Schedule of Professional Services and Contracts
For the Year Ended June 30, 2024 and 2023**

	Nature of Service	2024	2023
Cavanaugh Macdonald Consulting	Actuarial	\$ 211,302	\$ 237,871
Blue & Co.	Auditing	96,600	96,720
Milliman	Auditing		54,200
Ice Miller	Attorney	18,686	9,239
Stoll Keenon and Ogden	Attorney	2,138	12,137
Williams & Jensen	Attorney	67,230	45,000
Wyatt, Tarrant & Combs	Attorney		9,437
MulloyBorland	Communications	102,000	102,000
Total		<u>\$ 497,956</u>	<u>\$ 566,604</u>

See accompanying independent auditor's report.

**Schedule of Contracted Investment Management Expenses
Year Ended June 30, 2024**

	Retirement Annuity Trust*	Health Insurance Trust	Life Insurance Trust	Total
Equity managers	\$ 18,602,954	\$ 635,729	\$ 31,119	\$ 19,269,802
Fixed income managers	573,146			573,146
Real estate	19,431,581	2,686,359	126,004	22,243,944
Additional categories	10,487,453	1,792,440	1,927	12,281,820
Alternative investments	26,413,248	3,324,191	72,173	29,809,612
Custodian	684,924	179,276	62,457	926,657
Consultant	544,736			544,736
Legal and research	224,303			224,303
Other (administrative and operational)	4,944,759	431,998	13,837	5,390,594
Total	\$ 81,907,104	\$ 9,049,993	\$ 307,517	\$ 91,264,614

* Does not include expenses for the 403(b) Tax-Sheltered Trust and Losey Scholarship Fund.
See accompanying independent auditor's report.

**Schedule of Contracted Investment Management Expenses
Year Ended June 30, 2023**

	Retirement Annuity Trust*	Health Insurance Trust	Life Insurance Trust	Total
Equity managers	\$ 19,128,270	\$ 544,385	\$ 32,157	\$ 19,704,812
Fixed income managers	534,711			534,711
Real estate	16,538,710	2,285,720	115,600	18,940,030
Additional categories	10,261,835	1,567,032	1,788	11,830,655
Alternative investments	26,148,410	3,477,929	76,086	29,702,425
Custodian	676,584	186,517	46,130	909,231
Consultant	493,850			493,850
Legal and research	269,676			269,676
Other (administrative and operational)	4,841,797	346,017	13,393	5,201,207
Total	\$ 78,893,843	\$ 8,407,600	\$ 285,154	\$ 87,586,597

* Does not include expenses for the 403(b) Tax-Sheltered Trust and Losey Scholarship Fund.
See accompanying independent auditor's report.



ALLISON BALL
AUDITOR OF PUBLIC ACCOUNTS

Report On Internal Control Over Financial Reporting And
On Compliance And Other Matters Based On An Audit Of Financial
Statements Performed In Accordance With Government Auditing Standards

Independent Auditor's Report

To the Board of Trustees
Teachers' Retirement System of the State of Kentucky
Frankfort, Kentucky

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Teachers' Retirement System of the State of Kentucky (TRS) as of and for the year ended June 30, 2024, and the related notes to the financial statements, which collectively comprise TRS's basic financial statements, and have issued our report thereon dated November 15, 2024.

Report on Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered TRS's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of TRS's internal control. Accordingly, we do not express an opinion on the effectiveness of TRS's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

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Report On Internal Control Over Financial Reporting
And On Compliance And Other Matters Based On An Audit Of Financial Statements
Performed In Accordance With *Government Auditing Standards*
(Continued)

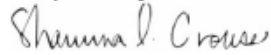
Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether TRS's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Respectfully Submitted,



Shawna Crouse, CPA
Assistant Auditor of Public Accounts
Frankfort, KY

November 15, 2024

Investment Section



Report on Investment Activity

This report is prepared by the investment staff of the Teachers' Retirement System of the State of Kentucky (TRS).

The basis of presentation for this section is data made available through Broadridge Investment Accounting systems, the Bank of New York Mellon and Segal Marco Advisors. Rates of return are time-weighted and are gross of fees unless otherwise indicated.

Returns of periods longer than one year are annualized.

Investment Committee

Hollis Gritton

Chair

Brenda McGown

Vice Chair

Paul Bruce

Member

William Crawford

Member

Ben Littlepage

Member

Louis Straub

Member

Josh Underwood

Member

Bevis Longstreth

Investment Adviser to TRS
Kentucky Investment Committee

George Philip

Investment Adviser to TRS
Kentucky Investment Committee

Executive Investment Staff

Gary L. Harbin, CPA

Executive Secretary

Tom Siderewicz, CFA

Chief Investment Officer

Philip L. Webb

Director of Investment Accounting

Consultant's Letter



October 1, 2024

To the members of the Board of Trustees and participants of the Teachers' Retirement System of Kentucky:

The Teachers' Retirement System of the State of Kentucky (TRS) investment program produced a total return of 12.3% for the fiscal year ended June 30, 2024, ranking in the top 10th percentile of a universe of U.S. public pension plans with assets greater than \$1 billion. Despite this strong absolute return and peer ranking, the investment program lagged the return of the Policy Benchmark by 1.5 percentage points for the fiscal year. The public equity portfolio contributed to the strong absolute results due to easing inflation data, signs of economic resilience, and rallies from mega cap technology stocks. The relative performance was mainly driven by the private equity portfolio's performance relative to its benchmark (i.e., public equity market proxy plus a premium) and overweight to the real estate allocation relative to policy. The investment program has produced strong performance relative to peers over the long term, ranking near the top of the public pension fund universe over the trailing 10-year period (8th percentile ranking).

Over the past fiscal year, the equity markets performed well as economic data exceeded expectations. Inflation, as measured by the Consumer Price Index, rose by 3.0% annually in June 2024, which was down from the 3.4% recorded in December 2023. U.S. gross domestic product grew at an annual pace of 3.0% in June 2024, which was higher than economists' forecast. Within the global equity market, growth stocks significantly outperformed value stocks led by mega cap technology stocks, which performed strongly over the past 12 months. Given more exposure to the technology sector, the U.S. equity market performed better than the non-U.S. equity market. The TRS U.S. equity portfolio advanced 22.5% for the fiscal year, while the international equity portfolio returned 8.6%.

In the bond market, the 10-year U.S. Treasury yield ended the fiscal year at 4.36%, 55 basis points higher than the beginning of the fiscal year. The TRS fixed income portfolio returned 3.6% for the fiscal year and outperformed the Bloomberg U.S. Government/Credit Index by approximately 90 basis points. The additional categories asset class, which is generally comprised of alternative fixed income, private credit and below investment grade bonds, produced a positive return of 9.7% for the fiscal year as credit spreads tightened.

The real estate market struggled during the fiscal year due to an increase in the cost of debt. TRS's real estate allocation returned -5.2% in the fiscal year but outperformed its benchmark by 2.6 percentage points. Over the past 10 years, TRS has diversified its alternatives portfolio across different private equity and infrastructure strategies, resulting in a fiscal year return of 7.8% on a time-weighted basis.

We would like to thank the Board of Trustees, Investment Committee, and Investment Staff for their confidence. We appreciate the opportunity to assist TRS in meeting its investment goals.

Respectfully,

Patrick J. Kelly, CFA, CAIA
Partner

Brandon J. Patterson, CAIA
Associate Partner

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Investment advice and consulting services provided by Aon Investments USA Inc.

Retirement Annuity Trust

Investment Policy Summary

The TRS Board of Trustees has a statutory obligation under KRS 161.430 to invest the members' assets in a manner consistent with the fiduciary standards set forth in the prudent person rule. Consistent with this statute, 102 Kentucky Administrative Regulation (KAR) 1:175 establishes investment policies for this trust. In conjunction with these standards, the board has recognized certain principles that guide investment-related decisions. First, the board will preserve the long-term corpus of the fund. Second, the board will seek to maximize total investment return within prudent risk parameters. Third, the board will act in the exclusive interest of the members and beneficiaries of the system. This broad summary is a reference point for management of retirement assets and outlines the investment philosophy and practice of TRS.

Investment Objectives

TRS invests the members' funds in several diverse classes of assets, including equities, bonds and real estate. This diversification helps us earn the highest possible long-term rate of return within appropriate risk levels. In turn, this enables TRS to pay guaranteed benefits to members and their beneficiaries at the lowest possible cost to participating employers and taxpayers. Generally, the retirement system's liabilities will not be paid for as many as 30 to 40 years. Therefore, as a long-term investor, TRS holdings can withstand some short-term volatility. The Retirement Annuity Trust's long-term investment objective is to achieve an annualized rate of return of 7.1%.

Risk Controls

The TRS investment program faces various risks; however, the primary risk to TRS is that the assets will not support liabilities over long periods of time. In order to control this risk and any other risks, the board has taken the following steps on an ongoing basis:

- Actuarial valuations are performed each year to evaluate the funding objectives of TRS. In addition, every 10 years an external audit of the actuary is conducted to ensure that the assumptions made and calculation methods used are resulting in properly computed liabilities of the system. Also, every two years, the actuary conducts a review of economic assumptions and incorporates any changes into valuations.
- Asset-liability modeling studies are conducted approximately every five years. These studies ensure that the portfolio design is structured to meet the liabilities of TRS.
- In accordance with 102 KAR 1:175, the Investment Committee adopts and regularly reviews detailed investment strategies for implementation of the investment policy.

Asset Allocation

Operating within relevant regulatory limitations, TRS's investment consultant annually presents for approval to the Investment Committee target percentages and ranges for the system's various asset classes. These regulatory limitations include both the Retirement Annuity Trust and the Life Insurance Trust. Annually approved asset allocation parameters serve to balance TRS's liquidity requirements, volatility tolerance and return requirements to meet both short-term and long-term obligations. TRS's assets are diversified across a variety of asset classes, investment management styles and individual securities in order to reduce volatility and enhance the potential of the investment portfolio to achieve the system's long-term goals.

Asset allocation decisions for pension plans are dependent on the unique characteristics of a particular plan. Factors such as liability requirements, the level of funding and statutory investment restrictions are considerations within the context of the asset allocation decision-making process. Consequently, asset allocations may differ between various pension plans due to their unique circumstances.

The information that follows shows the system's asset allocation by fair value for the Retirement Annuity Trust and the Life Insurance Trust as of June 30, 2024, and June 30, 2023, as well as the target and strategic range for each asset class for fiscal 2024.

INVESTMENT SECTION

Retirement Annuity Trust

	June 30, 2024*	Percent	June 30, 2023**	Percent
Cash equivalents***	\$ 286,144,069	1.1	210,929,901	0.9
Fixed income	3,416,568,455	13.3	3,121,066,788	13.0
Domestic equity	10,401,242,211	40.3	9,877,444,011	41.3
International equity	5,125,820,975	19.9	4,567,321,913	19.1
Real estate	1,712,653,006	6.6	1,777,282,982	7.4
Private equity	2,079,165,274	8.1	1,915,329,613	8.0
Additional categories	2,750,894,420	10.7	2,464,149,018	10.3
Totals	<u>\$ 25,772,488,410</u>	<u>100</u>	<u>\$ 23,933,524,225</u>	<u>100</u>

* Includes Tax Shelter Annuity value of \$326,682

** Includes Tax Shelter Annuity value of \$312,005

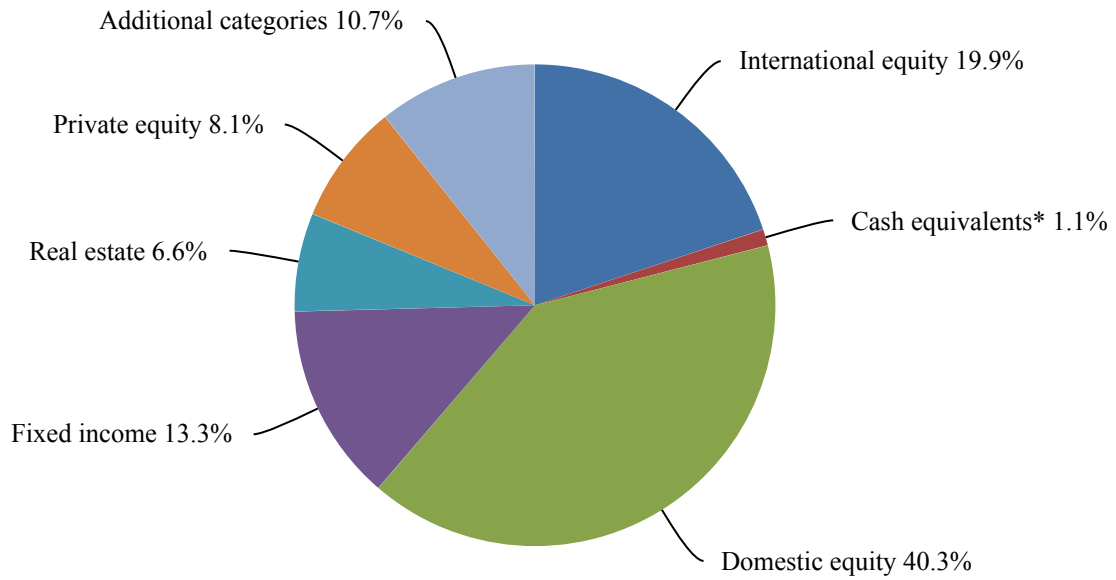
*** Reflects only cash balances not allocated to other asset classes. Any uninvested manager cash balances are represented in the asset class of the respective managers.

Life Insurance Trust

	June 30, 2024	Percent	June 30, 2023	Percent
Cash equivalents*	170,725	0.2	704,838	0.7
Fixed income	20,416,399	20.2	21,733,703	23.3
Domestic equity	42,374,138	41.9	37,386,108	40.0
International equity	21,291,694	21.1	19,221,343	20.6
Real estate	7,037,595	7.0	6,513,394	7.0
Alternative investments	6,429,611	6.4	4,921,166	5.3
Additional categories	3,254,534	3.2	2,944,300	3.1
Totals	<u>\$ 100,974,696</u>	<u>100</u>	<u>\$ 93,424,852</u>	<u>100</u>

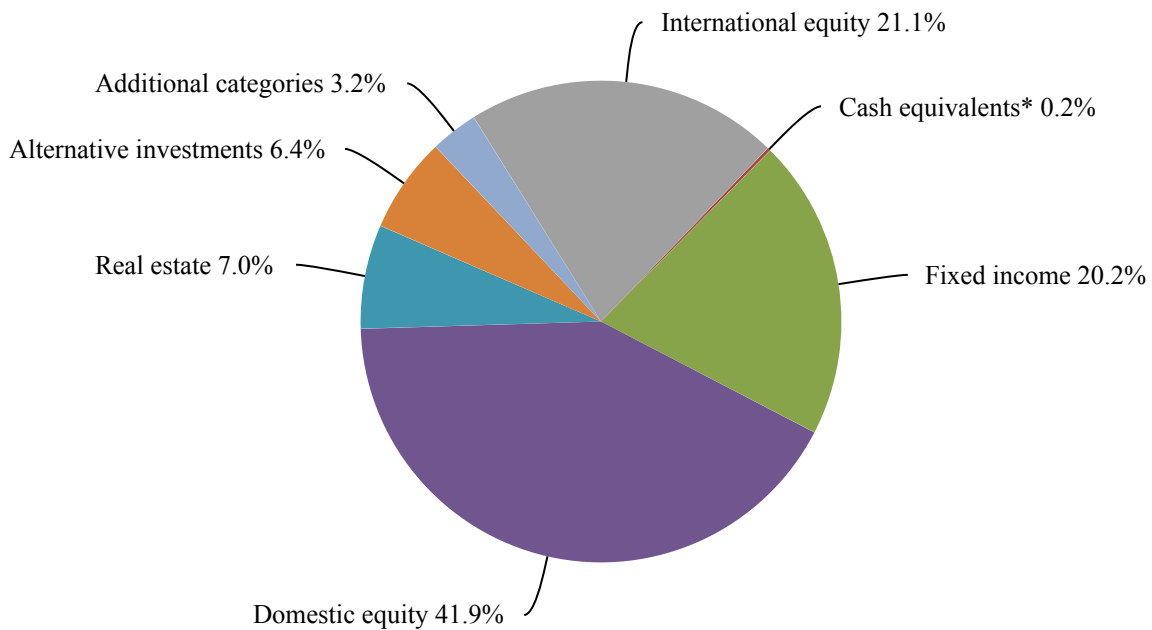
* Reflects only cash balances not allocated to other asset classes. Any uninvested manager cash balances are represented in the asset class of the respective managers.

**Retirement Annuity Trust
Distribution of Investments — Fair Value as of June 30, 2024**



* Reflects only cash balances not allocated to other asset classes. Any uninvested manager cash balances are represented in asset class of the respective managers.

**Life Insurance Trust
Distribution of Investments — Fair Value as of June 30, 2024**



* Reflects only cash balances not allocated to other asset classes. Any uninvested manager cash balances are represented in asset class of the respective managers.

Retirement Annuity Trust
Asset Class Strategic Weighting by Fair Value

	Regulatory Limits	Strategic Range	Target	June 30, 2024
Cash equivalents*		1-5%	2%	1.1%
Fixed income		8-22	15	13.3
Government/agency/other	Unlimited			7.9
Corporate	35%			5.4
Equity	65%	53-65	59	60.2
Domestic large cap		29-40	33	34.9
Domestic mid cap		1-5	3	3.1
Domestic small cap		1-3	2	2.3
International***	30%	16-27	21	19.9
Real estate	10%	4-10	7	6.6
Alternative investments	10%	4-10	7	8.1
Additional categories**	15%	4-15	10	10.7
Total			<u>100%</u>	<u>100%</u>

* Reflects only cash balances not allocated to other asset classes. Any uninvested manager cash balances are represented in the asset class of the respective managers.

** Includes timberland

*** As of June 30, 2024, 23.7% of total international equity was invested in emerging markets.

Life Insurance Trust
Asset Class Strategic Weighting by Fair Value

	Strategic Range	Target	June 30, 2023
Cash equivalents	0-10%	2%	0.2%
Fixed income	15-25%	21	20.2
Equity	52-65%	60	63.0
Domestic large cap	34-45%	40	35.5
Domestic mid cap			5.1
Domestic small cap			1.3
International	18-28%	20	21.1
Real estate	0-10%	7	7.0
Alternative investments	0-8%	5	6.4
Additional categories	0-10%	5	3.2
Total		<u>100%</u>	<u>100.0%</u>

Portfolio Results

The Retirement Annuity Trust returns were generated by the Segal Marco Advisors performance reporting system using a time-weighted rate of return calculation based upon fair value. For the fiscal year, the Retirement Annuity Trust portfolio generated a total return of 12.27%, trailing the policy benchmark return of 13.81%. Domestic equity rose 22.47% versus 23.52% for the Standard & Poor's 1500 Index, while international equity rose 8.62% versus 12.17% for the MSCI All Country World ex-U.S. Index. Fixed income investments rose 3.53% versus a 2.74% rise for the Bloomberg Barclay's U.S. Government/Credit Index. Less traditional asset classes such as real estate, private equity, timberland and alternative credit are beginning to contribute meaningfully to total return as those programs are expanded.

General partner profit sharing, known as carried interest, for the Retirement Annuity Trust for fiscal year 2024 was a \$7.5 million, consisting by asset class of \$11.1 million in private equity, a decline of \$5 million in private real estate and \$1.4 million in private credit.

General partner profit sharing, known as carried interest, for the Life Insurance Trust for fiscal year 2024 was \$8,962, consisting by asset class of \$61,790 in private equity and a decline of \$52,828 in real estate.

The tables below detail historical performance for the Retirement Annuity Trust and the Life Insurance Trust and their component asset classes for the period ended June 30, 2024.

Retirement Annuity Trust
Schedule of Investment Results — Gross

	1-Year	3-Year*	5-Year*	10-Year*	20-Year*
Total plan	12.27	3.52	8.81	7.94	7.57
Policy benchmark**	13.81	4.94	9.16	8.09	
Equity	17.84	3.73	11.41	9.6	8.63
Domestic equity	22.47	6.94	14.01	11.80	10.05
S&P 1500 Index	23.52	9.43	14.59	12.50	10.27
All cap equity	17.23	7.61	15.75		
Russell 3000 Index	23.12	8.05	14.14		
Large cap equity	24.65	7.95	14.84	12.27	10.25
S&P 500 Index	24.56	10.01	15.05	12.86	10.29
Mid cap equity	12.04	0.61	7.99	8.87	
S&P 400 Index	13.57	4.47	10.27	9.14	
Small cap equity	11.16	0.22	8.48	8.43	
S&P 600 Index	8.66	-0.26	8.06	8.24	
International equity	8.62	-2.74	6.18	5.05	
MSCI AC World ex U.S. Index	12.17	0.97	6.05	4.34	
Fixed income	3.53	-2.51	0.44	1.96	3.87
Bloomberg Barclay's U.S. Government/Credit Index	2.74	-3.11	-0.07	1.51	3.21
Total real estate	-5.11	6.35	6.06	8.57	8.05
In-house real estate equity	5.8	5.14	4.42	7.11	7.83
CPI plus 2%	5.04	7.07	6.25	4.87	4.61
Core real estate	-9.41	5.78	5.64	8.08	
NCREIF ODCE Index (VW)	-9.26	1.90	3.16	6.41	
Non-core real estate	-6.00	9.33	9.10	12.03	
NCREIF Property Index	-5.53	2.33	3.39	6.07	
Private equity	7.76	11.84	14.21	13.15	
Mature private equity	6.30	11.36	13.03	11.42	
S&P 500 Index plus 3%	28.29	13.31	18.50	16.24	
Private equity < 5 years	9.11	14.01	16.83		
Additional categories					
Non Timberland	9.68	3.98	4.93	4.56	
BofA Merrill Lynch U.S. High Yield Master II Index	10.46	1.65	3.71	4.21	
Timberland	7.55	7.56	4.17	4.11	
NCREIF Timberland Index	9.84	10.99	7.18	5.89	
Cash (unallocated)	5.69	3.14	2.15	1.53	1.76
90-day Treasury Bill	5.40	3.03	2.16	1.50	1.54
Total 30-year trust return*	8.10				

* Rates of return are time-weighted based upon fair value. Returns are annualized for periods longer than one year.

** Overall fund performance is compared to a board-approved benchmark, first established in July 2008, that represents the returns of appropriate benchmarks for the various asset classes weighted by the midpoint of the strategic range for the current fiscal year.

Life Insurance Trust
Schedule of Investment Results — Gross

	1-Year	3-Year*	5-Year*
Total plan	11.53	1.75	7.63
Policy benchmark **	12.67	4.43	8.89
Total equity	17.4	2.23	10.35
Domestic equity	20.98	4.23	13.04
S&P 1500 Index	23.52	9.43	14.59
All-cap equity	17.13	7.62	17.56
Russell 3000	23.12	8.05	14.14
Large-cap equity	23.09	4.27	13.24
S&P 500 Index	24.56	10.01	15.05
Mid-cap equity	13.32	3.59	9.89
S&P 400 Index	13.57	4.47	10.27
Small-cap equity	8.46	-0.24	8.43
S&P 600 Index	8.66	-0.26	8.06
International equity	10.82	-1.42	5.20
MSCI AC World Ex US	12.17	0.97	6.05
Fixed income	3.35	-2.47	1.08
Barclay's Govt./Credit Index	2.74	-3.11	-0.07
Real estate	-5.27	9.93	9.14
Core real estate	-6.37	9.67	8.90
NCREIF ODCE (VW)	-9.26	1.9	3.16
Non-core real estate	-2.41	10.24	
NCREIF Property Index	-5.53	2.33	3.39
Private equity < 5 years	9.77	13.92	18.93
Additional categories:	10.61	4.40	5.41
B of A Merrill Lynch High Yield Master II	10.46	1.65	3.71
Cash (Unallocated)	5.62	3.28	2.23
90-day Treasury Bill	5.40	3.03	2.16

* Rates of return are time-weighted based upon fair value. Returns are annualized for periods longer than one year.

** Overall fund performance is compared to a board-approved benchmark that represents the returns of appropriate benchmarks for the various asset classes weighted by the midpoint of the strategic range for the current fiscal year.

Retirement Annuity Trust
Schedule of Investment Results — Net of Investment Fees and Expenses

2024	11.91 %
2023	10.24
2022	-10.91
2021	29.57
2020	5.47
2019	5.56
2018	10.50
2017	15.00
2016	-1.32
2015	4.96

Life Insurance Trust
Schedule of Investment Results — Net of Investment Fees and Expenses

2024	11.18 %
2023	9.63
2022	-14.96
2021	28.16
2020	6.32
2019	6.49

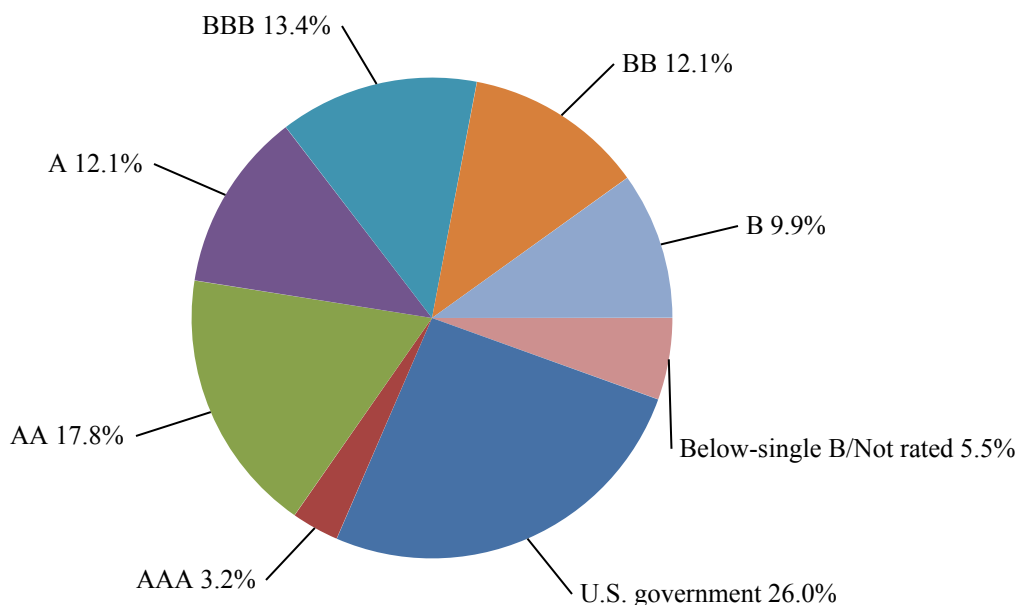
Fixed Income Investments

As of June 30, 2024, the Retirement Annuity Trust had about \$3.4 billion in fixed income, which is 13.3% of total assets. The fund’s fixed income investments as of June 30, 2024, maintained the average investment grade rating required by administrative regulation.

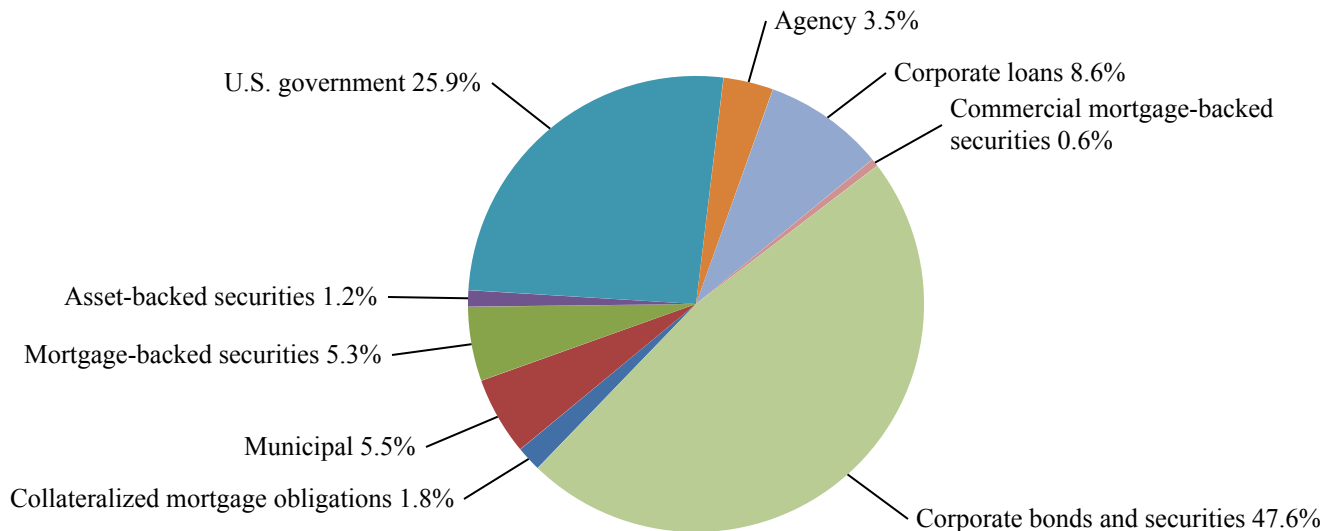
In addition, the trust had \$2.75 billion, which is 10.7% of total assets, in other debt-related investments under a regulatory provision that allows for up to 15% of assets in additional categories approved by the board. Investments under this authorization included four high-yield bond portfolios and two syndicated bank loan portfolios. Several alternative credit portfolios also are under this additional categories provision, including distressed-debt and specialty-lending funds and a multiple strategy opportunistic credit portfolio. Timberland is also included in this category of investments.

The credit quality distribution for the annuity trust is illustrated below. This chart includes fixed income as well as the high-yield bonds, alternative credit portfolios and the syndicated bank loan portfolios that are included in additional categories. Also illustrated below is the distribution of fixed income assets by sector.

Fixed Income Quality Distribution By Rating



Fixed Income Sector Distribution



Fixed Income Market Overview

The Retirement Annuity Trust’s investment-grade fixed income portfolios gained 3.53% for the year ended June 30, 2024, outpacing the trust’s fixed income benchmark, the Bloomberg U.S. Government/Credit Index, which returned 2.75%. The outperformance was driven by TRS’s overweighting in corporate bonds, which provided a higher coupon than government bonds of similar duration. Credit sensitive investments performed very well in the fiscal year as risk premiums fell, driving up corporate bond prices.

The first quarter saw mixed signals on the health of the economy. Those included an uptick in inflation, a downgrade to the U.S. debt rating and uncertainty about U.S. government funding. The prospect of a “higher-for-longer” interest rates led to increased market volatility and fixed income declines later in the quarter.

The Fed increased rates by 0.25% in July and made no change in September. The FOMC reaffirmed its dedication to returning inflation to the 2% target and suggested a more restrictive stance than previously anticipated was possible. Treasury yields rose steadily, with the 10-year increase of 0.78% ending at 4.59%. The yield curve became less inverted as investors sought higher income for longer maturities. The Bloomberg U.S. Government/Credit Index fell 3%, while the Bloomberg U.S. Corporate High Yield Index returned 0.5%, as lower-rated bonds outperformed during the quarter.

Fixed income surged in the second quarter, fueled by moderating economic data, cooling inflation and investor expectations of a soft landing for the U.S. economy. The Bloomberg U.S. Aggregate Bond Index gained 6.8% in the quarter. Longer duration assets responded to the rate environment and the potential for rate cuts in 2024 with sharply positive results in the quarter. The U.S. 10-year Treasury yield fell 0.71% during the period to end at 3.9%. Across risk sectors, spreads tightened and assets rallied amid falling rates. The Bloomberg U.S. Government/Credit Index returned 6.63% in the quarter, while the Bloomberg U.S. Corporate High Yield Index returned 7.2% buoyed by continued strength in corporate fundamentals across these segments.

The public fixed income market posted mixed results in the third quarter with yields increasing amid strong economic data and moderating expectations of future rate cuts. The broad fixed income market declined with shorter duration bonds outperforming longer maturity bonds, representing a trend change from late calendar 2023.

During the quarter, investors reacted to persistent inflation, a strong labor market and stable economic conditions. U.S. Treasury yields experienced a steady increase across the curve, with the 10-year yield rising by 0.32% to end at 4.2%. The Bloomberg U.S.

INVESTMENT SECTION

Government/Credit Index fell 0.72%. Risk assets weathered rising rates, with lower-rated bonds outperforming. The Bloomberg U.S. Corporate Investment Grade Index declined 0.4%, while the Bloomberg U.S. Corporate High Yield Index returned 1.5%.

In the fourth quarter, the lack of monetary policy changes and persistently tight spreads among corporate debt led to marginally positive returns for broad fixed income indexes. Longer duration asset prices declined modestly as long-term Treasury yields rose throughout the quarter. Yields of shorter-dated Treasuries remained higher than longer-dated issues as the inverted yield curve marked a record 24 months. Inflationary conditions improved as highlighted by the personal consumption expenditures deflator reading of 2.6% in May.

While policy rates were unchanged, the fixed income market experienced volatility due to uncertainty around rate cuts and inflation data. U.S. Treasury yields experienced a steady increase across the curve, with the 10-year yield rising by 0.16% to end the quarter at 4.4%. The Bloomberg U.S. Government/Credit Index posted modestly positive returns of 0.05% in the quarter. Risk assets weathered rising rates, with lower-rated bonds outperforming the broad market. The Bloomberg U.S. Corporate Investment Grade Index declined 0.1%, while the Bloomberg U.S. Corporate High Yield Index returned 1.1%.

Equity Investments

As of June 30, 2024, the Retirement Annuity Trust's public equity investments had a fair value of \$15.5 billion, representing 60.2% of total assets.

The domestic side of the public equity portfolio had a fair value of \$10.4 billion as of June 30, 2024, representing 40.4% of assets. The trust's U.S. equity portfolio returned 22.47% for the year and underperformed its policy benchmark, the Standard & Poor's (S&P) 1500, by 1.05 percentage points. The S&P 1500 consists of three well-known component indices based upon market capitalization: the S&P 500 Large Cap, the S&P 400 Mid Cap and the S&P 600 Small Cap. Twelve portfolios comprise the trust's domestic equity holdings. Three are internal passively managed index portfolios benchmarked to the S&P 400, S&P 500 and S&P 600. The other nine are managed externally by six different asset managers, with each portfolio representing a specific strategy and measured against an appropriate benchmark. The collective array of portfolios provides diversification by market capitalization, manager, style and strategy.

The Retirement Annuity Trust's international equity holdings as of June 30, 2024, had a fair value of \$5.1 billion, representing 19.9% of assets. The international equity portfolio returned 8.62%, an underperformance of 3.55 percentage points from its policy benchmark, the MSCI All Country World ex-U.S. Index that represents the markets of 22 developed countries and 24 emerging market countries. Five external asset managers manage the Retirement Annuity Trust's six international equity portfolios, one of which is a passively managed international index fund.

Equity Investments Overview

The fiscal year opened with several economic factors at play. Investors in the first quarter grappled with an uptick in inflation, a downgrade to the U.S. debt rating, labor disputes and government funding uncertainty. These components led to a "higher-for-longer" outlook for interest rates, resulting in increased volatility and global equity market declines of 3.4%. Among investors, focus increased on the financial health of the U.S. consumer. Although wage growth exceeded expectations, concerns about a potential decline in consumer spending rose because of rising energy costs, rising mortgage rates and a resumption of student loan payments – after a multi-year pause. The Federal Open Market Committee (FOMC) paused rate hikes during its September meeting, marking only the second pause since March 2022. The Consumer Price Index (CPI) increased to 3.7% from 3% in the previous quarter, driven by rising energy prices. U.S. equity markets declined during the quarter as the performance of mega-cap companies was mixed and only the communications services and energy sectors gained. Large-cap stocks fared better than mid- and small-cap, while small-cap value stocks significantly outperformed growth stocks. On the international front, emerging markets also fell but outperformed its U.S. counterpart, while developed international markets lagged American counterparts. The U.S. Dollar Total Weighted Index appreciated.

In the second quarter, U.S. equity returns were positive as growth outpaced value within large-cap stocks, while small-cap stocks performed better than large-cap stocks. The manufacturing Purchasing Managers' Index (PMI) remained in contractionary territory at 47.4%, indicating cautious economic activities. In addition, wholesale prices, as measured by the Producer Prices Index, declined 0.2% year over year. Meanwhile, the services PMI being in expansionary territory and corporate earnings growth showed signs of economic resilience. In December, the Bureau of Labor Statistics revised downward both the previously announced October and November job gains, with job growth concentrated across a few industries. Investors continued to focus on inflation. After peaking in calendar 2022, inflation declined to levels closer to target ranges during 2023. The annual CPI level of 3.4% represented a significant drop compared to the CPI measure of 6.5% in December 2022. Internationally, developed international markets outpaced the first fiscal quarter with small-cap stocks outperforming large-cap stocks, while emerging

market equities lagged developed markets in the second quarter. Within developed international markets, Japan showed a strong equity market as investor confidence improved in response to shifts in monetary policy. France and Germany also were among countries with significant stock market gains. China's performance remained subdued because of lackluster consumer demand combined with elevated risks within its real estate sector. In contrast, other emerging market countries – including Brazil, India and Taiwan – saw equity market gains. The U.S. Dollar Total Weighted Index depreciated.

During the third quarter, U.S. equity markets gained significantly largely due to the further interest in and development of artificial intelligence. Large-cap stocks outperformed small-cap stocks, with growth stocks as the most significant contributors. Investors monitored comments from members of the FOMC as inflation persisted above target ranges. CPI increased 3.5% compared to 5% for prior year's quarter. The view that the future interest rate cuts could be smaller was reinforced by inflation readings above consensus estimates in February and March and higher-than-expected job gains. Internationally, developed international markets gained with the MSCI EAFE returning 5.8%, while emerging market equity lagged developed markets with the MSCI Emerging Market Index returning 2.4%. The Swiss National Bank reduced policy rates in the quarter, while other central banks maintained policy rate levels. While China continued to target economic growth around 5%, the debt incurred by local government entities created uncertainty for the country's economic growth outlook. Concerns for the health of the Chinese property sector continued to weigh on investor's sentiment, although Chinese PMI data released in the quarter indicated that manufacturing and services entered into expansionary territory. The U.S. Dollar Total Weighted Index appreciated.

In the fourth quarter, positive equity performance was driven primarily by large-cap stocks linked to the continued relevancy of artificial intelligence. In contrast, small-cap stocks declined. The FOMC shifted toward a more accommodative policy stance. Although inflation remained above the Federal Reserve's 2% target, the 5-year break-even inflation rate, which reflects the difference between nominal and real Treasury yields, decreased to 2.28% by the end of the quarter, from 2.44% in the third. The unemployment rate saw a 0.3 percentage point increase, bringing it to 4.1% and signaling a potential warning sign for the economy that could lead to a rate cut. However, the Fed kept the Fed Funds Rate in the 5.25% to 5.5% range, citing insufficient evidence for a rate cut. Internationally, non-U.S. stocks underperformed U.S. equity, with the MSCI EAFE Index declining slightly. The European Central Bank cut rates for the first time since 2019, as inflation in the Eurozone began to ease. In emerging markets, Taiwan Semiconductor Manufacturing Co. accounted for a quarter of the gains during the timeframe. On the downside, concerns over potential reforms following Mexico's presidential election results challenged the U.S.'s southern neighbor. The U.S. Dollar Total Weighted Index appreciated.

In summary, U.S. equity gained notably, driven particularly by large-cap stocks tied to the adoption of and interest in artificial intelligence. Large-cap stocks saw substantial gains with the Magnificent Seven (Nvidia, Meta Platforms, Tesla, Amazon, Alphabet, Microsoft and Apple) being key contributors to overall market gains, while small-cap stocks generally lagged. Growth stocks significantly outperformed value stocks. The U.S. economy's strength, resilient labor markets and solid corporate earnings provided support for domestic equity, though persistent inflation and high interest rates continued to be central concerns for investors. Internationally, non-U.S. equity underperformed its American counterparts. Developed markets, particularly in Europe, saw modest returns, hindered by concerns over regional inflation and slowing growth. Developed markets, particularly in Europe and Japan, faced challenges but also showed pockets of resilience. Central bank policy shifts and inflationary pressures impacted European equity, but Japan stood out with stronger performance following its first rate hike in over a decade. Emerging markets also experienced mixed outcomes, as, for example, India saw strong results while China was weighed down by concerns over local debt and weaker-than-expected government stimulus. Additionally, the impact of global inflation, geopolitical tensions and fluctuating commodity prices influenced investor sentiment in both developed and emerging markets, leading to a year of uneven performance for international equity.

Real Estate

The Retirement Annuity Trust's real estate investments had a fair value of \$1.71 billion as of June 30, 2024, representing 6.6% of total assets. The trust's real estate investments seek attractive long-term returns, generate reliable cash flow, provide diversification and serve to reduce overall portfolio volatility. TRS's combined real estate investments declined 5.11% for the fiscal year, compared to a 0.13% decline the previous year. The In-House Real Estate Equity Fund, gained 5.8%, beating the 5.04% return of its benchmark, the Consumer Price Index plus 2%. But core funds declined 9.41%, slightly trailing the NCREIF ODCE's decline of 9.26%. TRS's non-core funds dropped 6%, falling short of the NCREIF Property Index's (NPI) 5.53% decline.

The trust's real estate exposure is provided through 25 portfolios. The fund maintains an internally managed portfolio of directly owned properties under long-term leases with high-credit quality tenants. TRS Kentucky also is invested in three commingled, evergreen core real estate funds. Two are managed by Prudential Real Estate Investors (PRISA) and TA Realty (TA Core

INVESTMENT SECTION

Property Fund). These funds are core real estate equity funds, which invest primarily in existing, income-producing properties with strong cash flows and the potential for capital appreciation. The third is invested in Carlyle Property Investors, a core-plus commingled fund. The funds are diversified across several property types, including office, retail, industrial, apartment, self-storage and hotel.

Additionally, the annuity trust is invested in 21 real estate limited partnerships: Carlyle Realty Partners VI, Carlyle Realty Partners VII, Carlyle Realty Partners VIII, Carlyle Realty Partners IX, Blackstone Real Estate Partners VII, Blackstone Real Estate Partners VIII, Blackstone Real Estate Partners IX, Blackstone Real Estate Partners X, Rockwood Capital Real Estate IX, Rockwood Capital Real Estate X, Rockwood Capital Real Estate XI, Rockwood Capital Real Estate XII, TA Realty Associates XI, TA Realty Associates XII, TA Realty Associates XIII, Angelo Gordon Net Lease Realty III, Angelo Gordon Net Lease Realty IV, Angelo Gordon Realty Value XI, Landmark Real Estate Partners VII, Landmark Real Estate Partners VIII and Landmark Real Estate Partners IX.

Real Estate Overview

U.S. real estate fundamentals remained relatively healthy in fiscal 2024 despite a deceleration in some areas amid inflation, rising interest rates and shifts in consumer behavior. Industrial and multifamily real estate exhibited resilience even with increased vacancies. Retail fundamentals remained tight, and the office sector continued to face significant structural challenges.

Despite some deceleration in demand, U.S. industrial fundamentals remained resilient over the past 12 months. Vacancies increased around 1.35%, ending the fiscal year at mid-6% range. Annual rent growth decelerated to a still healthy 4%. This slowdown can be attributed to increased competition from new supply in some markets combined with weak, but improved, demand.

The U.S. multifamily market saw historic demand in the fiscal year's second half. Buoyed by a strong labor market and income growth, net absorption reached 170,000 units in the fiscal fourth quarter. Despite this demand, supply was slightly greater, including a record 186,000 units delivered in the second quarter.

The U.S. office market continued to face significant, post-pandemic challenges with signs of potential stabilization at fiscal year end. Tenant demand for the high-quality buildings pushed net absorption up 2 million square feet (msf) in the second quarter, breaking a two-year streak of occupancy declines. The vacancy rate reached a record 14% as the office market's occupancy losses reached nearly four times those recorded during the Great Recession.

The U.S. retail market remained tight as limited new deliveries and steady demand kept space available for lease at near record lows of 4%. Over the fiscal year, approximately 60 msf of retail space was delivered, 40% below the 10-year average.

While transaction volume and pricing have remained depressed, the fourth quarter began to show signs of improvement. Investment activity and pricing both broke a streak of declines as debt market conditions improved, showing better pricing and liquidity with evidence of spread compression. U.S. sales volume totaled \$93 billion for the quarter, down just 2% year-over-year and the slowest decline since the second half of 2022. The fourth fiscal quarter volume increased 14% in volume over the third quarter.

Alternative Investments

As of June 30, 2024, the Retirement Annuity Trust's alternatives portfolio of private equity investments had a market value of \$2.08 billion, representing 8.1% of the trust's assets.

Private Equity

The annuity trust has exposure to venture, buyout, infrastructure, energy, mezzanine and several other private equity sectors via participation in limited partnerships as well as investments in funds of funds. The trust has a robust private equity investment program, which is intended to continue growing with a disciplined plan of commitments each year. The trust looks to diversify its private equity portfolio by manager, country, strategy and vintage year. Vintage year diversification is achieved with disciplined levels of commitments over time. A commitment to any given partnership shall not exceed 20% of the partnership's total commitments.

The board, Investment Committee and staff understand that private equity investments (along with many other forms of alternative assets) are illiquid and have a long-term holding period. When added to a portfolio with other publicly traded assets, this asset class can help to diversify and reduce risk for the Retirement Annuity Trust's overall portfolio while enhancing returns. Private equity returns for the first several years of a partnership's life routinely are negative due to the J-curve effect (initial losses

followed by significant gains). Positive returns typically are realized only several years into a partnership's existence, during the harvesting period.

Private Equity Market Overview

Elevated interest rates have had a negative impact on the private equity environment, particularly because of a lack of liquidity for underlying portfolio companies. In calendar 2023, exits dropped from their 2021 highs to the averages seen in the previous 10 years. The last half of fiscal 2024 followed with some of the lowest exit values over the past decade. The secondary space continues to be a bright spot in private equity as many investors were able to achieve partial or full liquidity through selling holdings in the secondary market.

Timberland

As of June 30, 2024, the Retirement Annuity Trust owned about 225,000 acres of timberland outright and about 26,000 acres in a timberland joint venture located across four southern states. Timberland is, by nature, a long-term investment as the anticipated time horizon in this asset category generally is a minimum of 10 to 15 years. Timberland provides valuable diversification, current income and a balance against inflation. Due to the low correlation of returns with other asset classes, timberland investments generally lessen the overall volatility of the annuity trust's portfolio. Timberland should earn real returns comparable to traditional equity investments with volatility between equity and fixed income over the long term.

The trust diversifies its timberland investments by geography, species of trees and maturity of timber stands. Investment returns from timberland primarily are driven from net cash flow generated from the sale of trees (referred to as stumpage sales) and capital appreciation from the biological growth of the trees. These return factors depend to some degree upon the direction of forest commodity prices (paper goods and lumber products). Gains also can be seen from the timely sale of timberland from the conversion of timberland into higher and better uses, such as vacation property sales.

Timberland Market Overview

The fiscal year saw timber return gains with the NCREIF Timberland Index returning 9.84%. Appreciation accounted for 7.37% of the return, while income was 2.34%. The appreciation component was strong across the Southern, Northwest and Lake States regions as many appraisers noted higher bare land values and used lower discount rates in their appraisal methodology.

U.S. housing starts remained well below the levels needed to meet underlying demand as higher interest rates contributed to the lack of affordable housing.

Additionally, the market continued to see increased interest and demand for value-add opportunities across timber portfolios. The primary drivers of the demand have been carbon, solar and carbon capture and storage. Alternative sources of revenue continue to be a recognized driver.

INVESTMENT SECTION

Retirement Annuity Trust Fair Value as of June 30, 2024

Internally managed		Carlyle Property Investors	\$	182,387,937
Cash equivalents (unallocated)	\$ 286,144,069	Landmark Real Estate Partners VII		6,541,265
Fixed income		Landmark Real Estate Partners VIII		27,790,446
Broad Market Bond	683,903,742	Landmark Real Estate Partners IX		781,625
Intermediate Bond	431,306,398	Prudential PRISA		419,401,066
Internal Bond	156,416,794	Rockwood Capital Real Estate IX		4,613,111
Long Term Bond	742,709,642	Rockwood Capital Real Estate X		19,411,732
403(b) Tax-Sheltered Trust	326,682	Rockwood Capital Real Estate XI		62,065,781
Equity		Rockwood Capital Real Estate XII		6,305,707
S&P 400 Stock Index	797,796,136	TA Realty Core Property		204,948,834
S&P 500 Stock Index	2,770,092,085	The Realty Associates XI		363,979
S&P 600 Stock Index	348,638,523	The Realty Associates XII		62,987,953
In-house Real Estate	399,885,046	The Realty Associates XIII		31,513,085
In-house High Yield	219,488,131	Alternative investments		
Subtotal	\$6,836,707,248	Actis Global IV		25,834,000
Externally managed		Alinda Infrastructure II		285,963
Fixed income		Alpine Investors Co-Investment VIII		53,394,467
Galliard Capital Management Core Fixed	692,883,130	Alpine Investors Secondaries VII		38,774,789
Fort Washington Core Fixed Income	709,022,067	Apax Credit Opportunities		4,925,995
Domestic equity		Apax VIII		3,774,408
Baillie Gifford US Equity Growth	368,950,092	Apax IX		39,398,692
Fort Washington Focused Equity	600,528,722	Apax X		55,605,517
State Street US Premier Growth Equity	988,351,290	Apax XI		1,340,200
Todd Asset Intrinsic Value Opportunity	644,630,919	Apax Digital		62,980,304
Todd Asset Large Cap Intrinsic Value	1,339,226,719	Apax Digital II		12,157,612
UBS Alpha Equity	521,912,260	Audax Mezzanine III		1,394,865
UBS Value Oriented (Global)	880,925,869	Audax Mezzanine IV		8,568,237
Wellington Large Cap Equity	901,157,335	Audax Mezzanine V		14,878,544
Wellington Mid Cap Equity	—	Audax Private Equity IV		82,927
Wellington Small Cap Equity	239,032,262	Audax Private Equity V		17,295,932
International equity		Audax Private Equity VI-A		41,200,461
Baillie Gifford International	1,222,136,018	Baillie Gifford Private Companies II		42,549,221
Barings All Country World Ex US	778,646,581	CapitalSouth Partners III		350,050
BlackRock MSCI ACWI Ex US IMI Index	652,700,653	Carlyle Asia Partners V		44,432,784
Todd Asset International Intrinsic Value	1,195,738,403	Carlyle Europe Partners IV		14,194,606
Todd Asset International Intrinsic	101,667,516	Carlyle Europe Partners V		41,258,802
UBS All Country World Ex US Equity	1,174,931,804	Carlyle Partners VIII		25,799,916
Real estate		Carlyle Renewable and Sustainable Energy		42,940,720
Angelo Gordon Net Lease Realty III	42,866,054	Carlyle Renewable and Sustainable Energy II		5,873,033
Angelo Gordon Net Lease Realty IV	46,814,357	Fort Washington VIII		23,411,009
Angelo Gordon Realty Value XI	17,618,630	Fort Washington IX		38,829,490
Blackstone Partners VII	7,748,310	Fort Washington IX-K		36,506,814
Blackstone Partners VIII	34,948,339	Fort Washington X		32,388,151
Blackstone Partners IX	55,710,941	Fort Washington X-S		27,628,875
Blackstone Partners X	15,962,264	Fort Washington XI		4,953,037
Carlyle Realty Partners VI	4,051,774	Fort Washington XI-K		10,402,708
Carlyle Realty Partners VII	10,785,132	Fort Washington Opportunities IV		17,806,535
Carlyle Realty Partners VIII	23,893,844	Fort Washington Opportunities IV-K		23,470,052
Carlyle Realty Partners IX	23,255,794	Fort Washington II		4,975,835
		Fort Washington II-K		17,907,225

INVESTMENT SECTION

Gavea Investments V	\$ 2,980,610	Oaktree Mezzanine IV	\$ 2,605,985
Hellman & Friedman Capital VII	4,321,937	Oaktree Mezzanine V	32,745,834
Hellman & Friedman Capital VIII	57,616,210	Public Pension Capital	170,566,305
IFM Global Infrastructure	261,872,320	Riverstone/Carlyle Energy and Power IV	30,604
J.P. Morgan Global Maritime	334,086	Riverstone Energy and Power V	1,967,938
J.P. Morgan Global Transport Income	76,676,645	Riverstone Energy and Power VI	23,272,397
KKR European III	935,392	Silver Lake Alpine II	42,924,944
KKR European IV	34,076,852	Silver Lake Alpine VII	11,169,396
KKR European V	51,871,068	Stepstone Pioneer Capital III	3,349,491
KKR Americas XII	58,376,017	Additional categories	
KKR Health II	13,263,114	Avenue Special Situations VI	10,070,099
Landmark Equity Partners XIV	1,005,792	Barings European Loan	90,990,000
Landmark Equity Partners XV	5,784,925	Columbia High Yield Bond	169,286,088
Landmark Equity Partners XVI	32,489,596	Deerpath Capital Direct Lending	74,819,144
Landmark Equity Partners XVII	15,041,613	Fort Washington High Yield Bond	293,455,332
Lexington Capital Partners VII	2,714,691	Highbridge Specialty Loan III	703,198
Lexington Capital Partners VIII	18,907,259	Lord Abbett High Yield Core	111,085,968
Lexington Capital Partners IX	50,931,885	Marathon European Credit Opportunities III	35,613,819
Lexington Capital Partners X	23,594,072	Marathon TRS Credit	633,238,544
Macquarie MIP VI	18,529,922	Molpus Lake Superior Timberlands	441,487,297
Manulife Cropland States	27,195,402	Molpus Seven States	53,869,998
NGP ETP IV	8,435,000	Monroe Capital Private Credit	117,780,135
NGP Natural Resources X	4,079,771	Oaktree European Capital Solutions	15,407,377
NGP Natural Resources XI	25,484,771	Oaktree European Dislocation	81,357
NGP Natural Resources XII	27,904,002	Oaktree Opportunities IX	30,577,602
NGP Natural Resources XIII	7,089,340	Oaktree Opportunities X	12,475,763
Oaktree European Principal III	7,592,541	Oaktree Opportunities Xb	53,448,078
Oaktree European Principal IV	51,125,554	Shenkman Capital Management	387,016,490
Oaktree European Principal V	62,717,441	Subtotal	<u>\$ 18,935,781,162</u>
Oaktree Mezzanine III	12,775		
		Total*	\$ 25,772,488,410

* Includes 403(b) Tax-Sheltered Trust of \$326,682

INVESTMENT SECTION

Life Insurance Trust Fair Value as of June 30, 2024

Internally managed		Rockwood Capital Real Estate Partners XI	365,093
		Rockwood Capital Real Estate Partners	48,505
Cash equivalents (unallocated)	\$ 170,725	TA Realty Core Property	2,394,038
		The Realty Associates XII	629,879
Fixed income		The Realty Associates XIII	242,407
Broad Market Bond	20,416,399		
		Alternative investments	
Equity		AlpInvest Co-Investment VIII	533,984
S & P 400 Stock Index	5,181,172	AlpInvest Secondaries VII	387,829
S & P 500 Stock Index	30,821,917	Apax X	556,060
S & P 600 Stock Index	1,315,583	Audax Mezzanine V	148,786
		Baillie Gifford Private Companies II	224,520
Additional categories		Carlyle Renewable and Sustainable	429,410
In-House High Yield Bond	916,444	Fort Washington PE Opportunities IV	276,499
		Fort Washington PE Opportunities IV-K	310,450
Subtotal	\$ 58,822,240	Fort Washington Small Market II	207,327
		Fort Washington X	462,692
Externally managed		Fort Washington X-S	394,699
		Fort Washington XI	141,515
Domestic equity		Landmark Equity Partners XVII	150,416
Baillie Gifford US Equity Growth	2,805,317	Lexington Capital Partners IX	509,361
Fort Washington Focused Equity	2,250,149	Lexington Capital Partners X	235,941
		Oaktree European Principal V	627,174
International equity		Oaktree Mezzanine V	327,456
Baillie Gifford International	2,767,030	Silver Lake Alpine II	393,806
BlackRock All Country World ex US IMI	18,524,664	Silver Lake Partners VII	111,686
		Additional categories	
Real estate		Marathon TRS Credit	\$ 2,338,090
Angelo Gordon Net Lease Realty IV	468,143	Subtotal	42,152,456
Angelo Gordon Realty Value XI	135,528		
Blackstone Partners X	122,787	Total	\$100,974,696
Carlyle Property Investors	2,043,807		
Carlyle Realty Partners IX	581,395		
Landmark Real Estate Partners IX	6,013		

**Retirement Annuity Trust
Investment Summary — Fair Value
as of June 30, 2024**

	Fair Value June 30, 2023	Acquisitions	Appreciation (Depreciation)	Sales Redemptions, Maturities & Paydowns	Fair Value June 30, 2024	Percent
Cash equivalents	\$ 568,572,723	\$ 5,052,409,357		\$ 5,048,346,516	\$ 572,635,564	2.2
Fixed income	2,971,945,560	2,119,266,846	(7,047,378)	1,739,455,248	3,344,709,780	13.0
Real estate	1,777,282,982	183,321,070	(147,346,437)	100,604,609	1,712,653,006	6.6
Alternative investments	1,915,329,613	526,686,022	160,124,480	522,974,841	2,079,165,274	8.1
Equity	14,287,643,121	3,149,166,390	2,252,433,051	4,314,338,735	15,374,903,827	59.7
Additional categories	2,412,438,221	774,879,570	122,912,209	622,135,723	2,688,094,277	10.4
Total	\$ 23,933,212,220	\$ 11,805,729,255	\$ 2,381,075,925	\$ 12,347,855,672	\$ 25,772,161,728	100.0

**Life Insurance Trust
Investment Summary — Fair Value
as of June 30, 2024**

	Fair Value June 30, 2023	Acquisitions	Appreciation (Depreciation)	Sales Redemptions, Maturities & Paydowns	Fair Value June 30, 2024	Percent
Cash equivalents	\$ 5,069,152	\$ 7,612,423		\$ 7,762,317	\$ 4,919,258	4.9
Fixed income	17,942,483		(167,444)	1,016,193	16,758,846	16.6
Equity	56,182,952	923,838	8,786,379	3,112,676	62,780,493	62.2
Real estate	6,513,395	1,302,436	(542,214)	236,022	7,037,595	7.0
Alternative investments	4,921,166	1,697,325	588,754	777,634	6,429,611	6.3
Additional categories	2,795,704	76,449	255,079	78,339	3,048,893	3.0
Total	\$ 93,424,852	\$ 11,612,471	\$ 8,920,554	\$ 12,983,181	\$ 100,974,696	100.0

Retirement Annuity Trust
Schedule of Investment Counselor Fees and Administrative Expenses
For the Year Ended June 30, 2024

(Dollars in thousands)

Investment counselor fees	Assets Under Management	Expense
Equity manager(s)	\$ 11,610,537	\$ 18,603
Fixed income manager(s)	1,401,905	573
Real estate	1,312,768	19,432
Additional categories	2,531,406	10,487
Alternative investments	2,079,165	26,413
Subtotal	\$ 18,935,781	\$ 75,508
Administrative expenses		6,399
Total		\$ 81,907
	Basis Points*	31.8

* One basis point is one hundredth of 1% or the equivalent of 0.0001. Total basis points is weighted. Basis points for administrative expenses are calculated against the \$23.9 billion in assets under management for the trust.

Life Insurance Trust
Schedule of Investment Counselor Fees and Administrative Expenses
For the Year Ended June 30, 2024

(Dollars in thousands)

Investment counselor fees	Assets Under Management	Expense
Equity manager(s)	\$ 26,347	\$ 31
Real estate	7,037	126
Alternative investments	6,430	72
Additional categories	2,338	2
Subtotal	\$ 42,152	\$ 231
Administrative expenses		77
Total		\$ 308
	Basis Points*	30.5

* One basis point is one hundredth of 1% or the equivalent of 0.0001. Total basis points is weighted. Basis points for administrative expenses are calculated against the \$93.4 million in assets under management for the trust.

Retirement Annuity Trust
Schedule of Investment Counselor Fees and Administrative Expenses
For the Year Ended June 30, 2024

Investment counselor fees		TA Realty Core Property	1,501,023
Fixed income		The Realty Associates X	—
Fort Washington Core Fixed Income	\$ 269,864	The Realty Associates XI	37,679
Galliard Capital Core Fixed Income	303,282	The Realty Associates XII	1,013,572
Total fixed income	573,146	The Realty Associates XIII	1,196,996
Domestic equity		Total real estate	19,431,581
Baillie Gifford US Equity Growth	675,668	Alternative investments	
Fort Washington Focused Equity	2,011,349	Actis Global IV	408,975
State Street US Premier Growth Equity	800,000	Alinda Infrastructure II	—
Todd Asset Management	955,591	Alpine Investors Co-Investment VIII	410,519
UBS Global Asset Management	2,596,929	AlpInvest Secondaries VII	303,199
Wellington Management Company	2,166,417	Apax Credit Opportunities	118,507
Total domestic equity	9,205,954	Apax VIII	34,831
International equity		Apax IX	354,601
Baillie Gifford EAFE	4,125,193	Apax X	578,567
Barings All Country World ex US	3,101,967	Apax XI	1,269,817
BlackRock MSCI ACWI Ex US IMI Index	305,431	Apax Digital	708,353
Todd Asset Management	544,409	Apax Digital II	797,712
UBS Global Asset Management	1,320,000	Audax Mezzanine III	—
Total international equity	9,397,000	Audax Mezzanine IV	137,346
Real estate		Audax Mezzanine V	268,735
Angelo Gordon Net Lease Realty III	1,159,152	Audax Private Equity IV	—
Angelo Gordon Net Lease Realty IV	1,072,857	Audax Private Equity V	—
Angelo Gordon Realty Value XI	616,832	Audax Private Equity VI	—
Blackstone Partners VII	—	Baillie Gifford Private Companies II	254,138
Blackstone Partners VIII	379,752	CapitalSouth Partners III	—
Blackstone Partners IX	625,615	Carlyle Asia Partners V	701,464
Blackstone Partners X	975,000	Carlyle Europe Partners IV	134,103
Carlyle Realty Partners VI	14,714	Carlyle Europe Partners V	709,861
Carlyle Realty Partners VII	162,414	Carlyle Renewable and Sustainable Energy	433,400
Carlyle Realty Partners VIII	380,232	Carlyle Renewable and Sustainable Energy II	347,152
Carlyle Realty Partners IX	843,143	Carlyle Partners VIII	738,927
Carlyle Property Investors	1,663,198	Fort Washington II	33,181
Landmark Real Estate Partners VII	64,336	Fort Washington II-K	105,074
Landmark Real Estate Partners VIII	373,342	Fort Washington VIII	94,265
Landmark Real Estate Partners IX	1,639,131	Fort Washington IX	126,000
Prudential PRISA	3,278,703	Fort Washington IX-K	126,000
Rockwood Capital Real Estate IX	127,862	Fort Washington X	126,000
Rockwood Capital Real Estate X	655,000	Fort Washington X-S	126,000
Rockwood Capital Real Estate XI	852,263	Fort Washington XI	51,591
Rockwood Capital Real Estate XII	798,765	Fort Washington XI-K	95,814

INVESTMENT SECTION

Fort Washington Opportunities IV	273,700	Silver Lake Alpine VII	800,000
Fort Washington Opportunities IV-K	321,300	Stepstone Pioneer Capital III	24,900
Gavea Investments V	40,808	Total alternative investments	<u>26,413,248</u>
Hellman & Friedman Capital Partners VII	—	Additional categories	
Hellman & Friedman Capital Partners VIII	262,878	Avenue Special Situations VI	—
IFM Global Infrastructure	2,486,985	Barings European Loan	406,818
J.P. Morgan Global Maritime	(4,798)	Columbia High Yield Bond	606,770
J.P. Morgan Global Transport Income	641,731	Deerpath Capital Direct Lending	1,893,007
KKR 2006	—	Fort Washington High Yield Bond	583,355
KKR European III	(707)	Highbridge Specialty Loan III	—
KKR European IV	174,158	Lord Abbett High Yield Core	351,999
KKR European V	453,563	Marathon European Credit Opportunities II	—
KKR Americas XII	242,920	Marathon European Credit Opportunities III	354,700
KKR Health II	420,243	Marathon TRS Credit	848,174
Landmark Equity Partners XIV	16,338	Molpus Lake Superior Timberlands	1,278,459
Landmark Equity Partners XV	137,330	Molpus Seven States	1,341,030
Landmark Equity Partners XVI	500,000	Oaktree European Capital Solutions	294,017
Landmark Equity Partners XVII	450,000	Oaktree European Dislocation	—
Lexington Capital Partners VII	—	Oaktree Opportunities IX	290,043
Lexington Capital Partners VIII	207,961	Oaktree Opportunities X	191,692
Lexington Capital Partners IX	495,852	Oaktree Opportunities Xb	592,068
Lexington Capital Partners X	475,000	Shenkman Capital Management	1,455,321
Manulife Cropland Plus	292,118	Total additional categories	10,487,453
Macquarie MIP VI	389,160	Total investment counselor fees	75,508,382
NGP ETP IV	527,162		
NGP Natural Resources X	56,548	Administrative expenses	
NGP Natural Resources XI	411,637	Custodian	
NGP Natural Resources XII	588,556	Bank of New York Mellon	684,924
NGP Natural Resources XIII	412,193	Legal and research	
Oaktree European Principal III	—	Seyfarth	224,303
Oaktree European Principal IV	771,658	Other	
Oaktree European Principal V	675,172	Other administrative and operational	4,944,759
Oaktree Mezzanine III	—	Consultant	
Oaktree Mezzanine IV	77,695	Aon Hewitt	464,736
Oaktree Mezzanine V	426,337	Bevis Longstreth	50,000
Public Pension Capital	3,143,312	George Philip	30,000
Riverstone/Carlyle Energy and Power IV	—	Total consultant	<u>544,736</u>
Riverstone Energy and Power V	68,421	Total administrative expenses	<u>6,398,722</u>
Riverstone Energy and Power VI	262,273		
Silver Lake Alpine II	296,712	Grand total	<u><u>81,907,104</u></u>

Life Insurance Trust
Schedule of Investment Counselor Fees and Administrative Expenses
For the Year Ended June 30, 2024

Investment counselor fees		Investment counselor fees	
Domestic equity		Fort Washington PE Opportunities IV	4,251
Baillie Gifford US Equity Growth	\$ 5,842	Fort Washington PE Opportunities IV-K	4,251
Fort Washington Focused Equity	<u>7,269</u>	Fort Washington X	1,800
Total domestic equity	13,111	Fort Washington X-S	1,800
International equity		Fort Washington XI	1,474
Baillie Gifford EAFE Alpha	9,340	Fort Washington Small Markets II	1,384
BlackRock All Country World ex US IMI	<u>8,668</u>	Landmark Equity Partners XVII	4,500
Total international equity	18,008	Lexington Capital Partners IX	4,939
Real estate		Lexington Capital Partners X	4,751
Angelo Gordon Net Lease Realty IV	11,320	Oaktree European Principal V	6,753
Angelo Gordon Realty Value XI	4,745	Oaktree Mezzanine V	4,264
Blackstone X	7,500	Silver Lake Alpine II	2,722
Carlyle Property Investors	20,717	Silver Lake Partners VII	<u>8,000</u>
Carlyle Realty Partners IX	21,078	Total alternative investments	72,173
Landmark Real Estate Partners IX	12,609	Additional categories	
Rockwood Capital Real Estate Partners XI	5,013	Marathon TRS Credit	1,927
Rockwood Capital Real Estate Partners XII	6,145	Total investment counselor fees	\$ 231,223
TA Realty Core Property	17,533	Administrative expenses	
The Realty Associates XII	10,136	Custodian	
The Realty Associates XIII	<u>9,208</u>	Bank of New York Mellon	\$ 62,457
Total real estate	126,004	Other	
Alternative investments		Other administrative and operational	13,837
AlpInvest Co-Investment VIII	4,106	Total administrative expenses	\$ 76,294
AlpInvest Secondaries VII	3,032	Grand total	
Apax X	5,785	\$ 307,517	
Audax Mezzanine V	2,688		
Baillie Gifford Private Equity Companies II	1,340		
Carlyle Renewable and Sustainable Energy	4,333		

**Retirement Annuity Trust
Ten Largest Stock Holdings Ranked by Fair Value*
June 30, 2024**

		Fair Value	Percent of Total Fair Value
1	Microsoft Corp.	\$ 513,141,507	3.30
2	Nvidia Corp.	417,545,434	2.69
3	Apple	385,649,011	2.48
4	Amazon.com	329,910,409	2.12
5	Alphabet Class C	213,774,154	1.38
6	Meta Platforms	205,005,263	1.32
7	Broadcom	175,545,439	1.13
8	Alphabet Class A	140,227,525	0.90
9	United Health Group	130,307,921	0.84
10	JP Morgan Chase	89,591,472	0.58

* Includes only actively managed separate accounts. A complete list of investments is available from TRS.

**Retirement Annuity Trust
Ten Largest Fixed Income Holdings Ranked by Fair Value*
June 30, 2024**

				Par Value	Fair Value	Percent of Total Fair Value
		Maturity	Coupon			
1	U.S. Treasury Note	Apr. 30, 2029	4.625	\$ 67,390,000	\$ 68,206,093	1.98
2	U.S. Treasury Note	Feb. 15, 2034	4.000	56,859,000	55,313,004	1.61
3	U.S. Treasury Note	May 15, 2034	4.375	53,785,000	53,919,463	1.57
4	U.S. Treasury Note	Feb. 15, 2031	1.125	65,000,000	53,216,150	1.54
5	U.S. Treasury Note	May 31, 2026	4.875	46,545,000	46,637,625	1.35
6	U.S. Treasury Note	Aug. 31, 2024	3.250	45,000,000	44,828,550	1.30
7	U.S. Treasury Bond	Nov. 15, 2043	4.750	38,390,000	39,067,967	1.13
8	U.S. Treasury Bond	Feb. 15, 2051	1.875	60,000,000	35,287,800	1.02
9	U.S. Treasury Bond	May 15, 2054	4.625	30,000,000	30,600,000	0.89
10	U.S. Treasury Bond	Aug. 15, 2050	1.375	55,000,000	28,361,300	0.82

*A complete list of investments is available from TRS.

Life Insurance Trust
Ten Largest Stock Holdings Ranked by Fair Value*
June 30, 2024

		Fair Value	Percent of Total Fair Value
1	Microsoft Corp.	\$ 2,195,927	5.17
2	Nvidia Corp.	2,008,665	4.73
3	Apple	2,006,687	4.72
4	Amazon.com	1,169,786	2.75
5	Meta Platforms	730,375	1.72
6	Alphabet Inc. Class C	707,223	1.66
7	Alphabet Inc. Class A	592,470	1.39
8	Berkshire Hathaway	486,791	1.15
9	Eli Lilly & Co.	477,262	1.12
10	Broadcom	462,273	1.09

* Includes only actively managed separate accounts. A complete list of investments is available from TRS.

Life Insurance Trust
Ten Largest Fixed Income Holdings Ranked by Fair Value*
June 30, 2024

		Maturity	Coupon	Par Value	Fair Value	Percent of Total Fair Value
1	Met Govt. Nashville & Davidson	Jul. 1, 2030	6.393	\$ 2,000,000	\$ 2,090,020	10.14
2	U.S. Treasury Note	Aug. 31, 2024	3.250	1,000,000	996,190	7.83
3	U.S. Treasury Note	Sep. 30, 2024	2.125	1,000,000	991,890	4.81
4	U.S. Treasury Note	Sep. 15, 2025	3.500	1,000,000	981,990	4.76
5	U.S. Treasury Bond	Nov. 15, 2050	1.625	1,500,000	827,460	4.01
6	U.S. Treasury Note	Apr. 15, 2025	2.625	700,000	686,182	3.33
7	Gatx Corp.	Nov. 7, 2028	4.550	500,000	489,085	2.37
8	U.S. Treasury Note	Aug. 31, 2025	0.250	500,000	473,065	2.29
9	U.S. Treasury Bond	Feb. 15, 2025	2.250	700,000	448,987	2.18
10	U.S. Treasury Note	Aug. 31, 2027	0.500	500,000	441,545	2.14

*A complete list of investments is available from TRS.

INVESTMENT SECTION

Transaction Commissions for the Year Ended June 30, 2024

Broker Name	Shares Traded	Commissions	Commission Per Share	Percent of Total
ConvergEx ADR Conversions	11,526,965	\$ 221,610	\$ 0.019	20.72
Investment Tech Group Transition	20,701,044	156,049	0.008	14.59
Virtu Americas	11,862,838	116,934	0.010	10.94
RBC Transitions	10,293,662	51,470	0.005	4.81
ConvergEx—Algos	10,021,565	50,108	0.005	4.69
Raymond James & Associates	1,212,123	36,413	0.030	3.40
Liquidnet	3,136,803	31,141	0.010	2.91
ConvergEx—Transitions	5,929,320	29,647	0.005	2.77
ISI Group	949,898	28,497	0.030	2.67
Piper Jaffray	889,500	26,685	0.030	2.50
Tradebook	4,869,962	24,350	0.005	2.28
RBC Capital Markets	3,809,742	24,030	0.006	2.25
Morgan Stanley	1,694,592	20,608	0.012	1.93
Merrill Lynch	594,843	17,845	0.030	1.67
Abel Noser—Transitions	2,324,213	17,432	0.008	1.63
ConvergEx—FS	3,192,852	15,964	0.005	1.49
Goldman Sachs	1,309,293	15,176	0.012	1.42
Jones & Associates	355,514	14,306	0.040	1.34
Stifel, Nicolaus & Co.	470,967	14,129	0.030	1.32
Abel Noser	1,211,470	11,862	0.010	1.11
ISI Algos	1,181,737	11,817	0.010	1.11
Bank of America	983,989	11,753	0.012	1.10
UBS Financial Services	1,366,074	11,587	0.008	1.08
Barclays	1,614,364	11,328	0.007	1.06
Liquidnet—Transitions	2,231,584	11,158	0.005	1.04
Keybank Capital	356,021	10,681	0.030	1.00
Other <1%	5,421,621	76,673	0.014	7.17
Totals*	109,512,556	\$ 1,069,253	\$ 0.010	100

* The acquisition of initial public offerings (IPOs) represented a portion of small-capitalization stock purchases. IPOs usually have a high commission rate; however, the security issuers and not the investors pay the commissions. In fiscal year 2024, the Retirement Annuity Trust bought small capitalization IPOs that generated \$221,630 in commissions. Although these commissions were not paid by TRS, they resulted from the annuity trust's investment activities and are included in the total commissions. Typical stock transactions occur at lower commission rates than IPO transactions, frequently at \$0.03 per share or less. Investment companies usually provide investment research for brokerage clients. Total commissions per share are calculated using total shares traded and total commissions.

Proxy Voting and Corporate Behavior

TRS votes proxy statements in accordance with KRS 161.430 and the board's Proxy Voting Guidelines. TRS shares are voted solely in the best interest of the membership using only pecuniary factors and not to further any nonpecuniary interest. Stock ownership is an implicit endorsement of company management, and, consequently, TRS shares in most cases are voted in support of company management. TRS expects the companies in which it acquires stock to abide by federal, state and local laws.

TRS's fiduciary duty is to obtain the highest investment return within acceptable levels of risk. In fulfilling this duty and regarding corporate behavior, TRS may correspond with the company, meet with company officials, sponsor shareholder resolutions or liquidate TRS's holdings in the company.

Securities Lending

TRS operates its securities lending program through its custodian, Bank of New York Mellon (BNYM), under contract. Securities lending occurs when TRS transfers a security to the borrower, such as a broker-dealer or bank, for cash collateral pursuant to an agreement to return the identical security in the future. Securities are borrowed for a variety of reasons including: settlement of short sales and to cover hedges, options, arbitrage positions and settlement fails. Consequently, the borrower receives custody of the transferred security. The borrower, however, is obligated to return the exact same security at the end of the loan period and to make the retirement system whole for dividends, interest and other distributions as if the security remained in the retirement system's portfolio.

The restrictions applying to loanable securities are as follows:

- There is no limit on the amount of government securities that can be loaned.
- There will be a limit of 30% of the equity portfolio. Securities may be loaned from any equity portfolio.
- A maximum of 50 corporate bonds may be on loan at any time.

TRS maintains with BNYM an approved borrowers list to which TRS will lend securities. The approved borrowers list is comprised of large, high-quality brokers and TRS has discretion to add or remove names from the list.

BNYM acts as lending agent in exchanging securities for collateral. The collateral provided in exchange for securities may include cash or non-cash collateral. For a loan of U.S. securities, collateralization of 102% or greater of the fair value of the securities lent is required. For a loan of foreign securities, collateralization of 105% or greater of the fair value of the securities lent is required. BNYM bears the risk of loss of any cash or non-cash collateral.

Cash collateral may be invested in any of the following:

- Government securities
- Repurchase and reverse repurchase transactions with approved counterparties

Staff closely monitors the lending program to make sure that BNYM is in compliance with lending restrictions. BNYM provides a detailed listing of all securities that are on loan on a daily basis. They also provide a summary report that lists the fair value of securities on loan with a particular borrower and the collateral value that the borrower has provided to cover the loan. The collateralization percentage for each broker also is listed.

Kentucky Investments

The retirement system always is cognizant of its significant role in the commonwealth's economy. Over \$2 billion in benefits are distributed annually to members and annuitants living in Kentucky. The Retirement Annuity Trust has invested about \$328 million directly in Kentucky. These investments include: commercial real estate; bonds issued by public agencies of the commonwealth and those of local municipalities; pools of single-family mortgages in Kentucky; financing for multi-family housing; and investments in global companies that contribute to the commonwealth's economy. Fiduciary duty requires that investments, including any in the commonwealth, be made solely for the benefit of TRS's members and annuitants.

Professional Service Providers**Investment consultant**

Aon Investments USA

Investment custodian

Bank of New York Mellon

Fixed income managers

Fort Washington Investment Advisors

Galliard Capital Management

Domestic equity managers

Baillie Gifford

Fort Washington Investment Advisors

State Street Global Advisors Trust Co.

Todd Asset Management

UBS Global Asset Management

Wellington Management Co.

International equity managers

Baillie Gifford Overseas Ltd.

Barings Asset Management

BlackRock Institutional Trust Co.

Todd Asset Management

UBS Global Asset Management

Real Estate managers

Angelo Gordon & Co.

Blackstone Real Estate Advisors

The Carlyle Group

Landmark Partners

Prudential Real Estate Investors

Rockwood Capital

TA Realty

Alternatives managers

Actis

Alinda Capital Partners

AlpInvest Partners

Apax Partners

Audax Group

Baillie Gifford

CapitalSouth Partners

The Carlyle Group

Fort Washington Private Equity Investors

Gavea Investimentos

Hellman & Friedman Capital Partners

IFM Investors

J.P. Morgan Asset Management

Kohlberg Kravis Roberts & Co.

Landmark Partners

Lexington Capital Partners

Molpus Woodlands Group

Natural Gas Partners

Oaktree Capital Management

Public Pension Capital

Riverstone Holdings

Silver Lake Partners

Stepstone Group

Additional categories managers

Avenue Capital Group

Barings Asset Management

Columbia Threadneedle Investments

Deerpath Capital Management

Fort Washington Investment Advisors

Highbridge Principal Strategies

Lord, Abbett & Co.

Marathon Asset Management

Oaktree Capital Management

Shenkman Capital Management

Attorneys

Reinhart, Boerner, Van Deuren

Seyfarth

Health Insurance Trust

Investment Policy Summary

KRS 161.677 created the Health Insurance Trust on July 1, 2010, and obliges the board to “manage the assets of the fund in the same general manner in which it administers the retirement funds, except that the asset allocation may differ and separate accounting and financial reporting shall be maintained for the trust fund.” KRS 161.430, which governs the investment of funds for the retirement trust, requires that members’ assets be managed in a manner consistent with fiduciary standards set forth in the prudent person rule. Further, 102 KAR 1:178 establishes investment policies for the Health Insurance Trust. This regulation requires the board and Investment Committee to diversify assets prudently and to consider the fund’s “liquidity and its capability of meeting both short and long-term obligations” in setting asset allocation policy.

Due to an imbalance of required distributions over contributions early in the fund’s existence, liquidity needs historically dominated investment policy. This has evolved as contribution rate increases provided in statute have improved cash flow, and the focus now is on establishing an investment policy that achieves the required rate of return and matches the health insurance liability.

Investment Objectives

The definitive objective of the health insurance fund is to provide for beneficiaries’ health insurance benefit obligations, both short and long term. In support of this, investment policy is designed, on an ongoing basis, to meet all liquidity needs, achieve the actuarially assumed 7.1% rate of return over the long term and do so within appropriate risk levels.

Risk Controls

Any investment program faces various risks; as with the retirement funds, the primary risk is that the assets will not support liabilities long term. Risk control measures for the Health Insurance Trust mirror those of the Retirement Annuity Trust, but are customized to reflect the fund’s unique liability. Primary risk control measures include:

- Actuarial valuations are performed each year to evaluate the funding objectives of the Health Insurance Trust. Every 10 years an external audit of the actuary is conducted to ensure that the assumptions made, and calculation methods used, are resulting in properly computed liabilities of the fund.
- Asset-liability studies are conducted about every five years. These studies ensure that the portfolio is designed to meet the fund’s liabilities.
- In accordance 102 KAR 1:178, which governs investment policies for the fund, the Investment Committee adopts and regularly reviews an asset allocation policy designed to meet the fund’s needs.

Asset Allocation

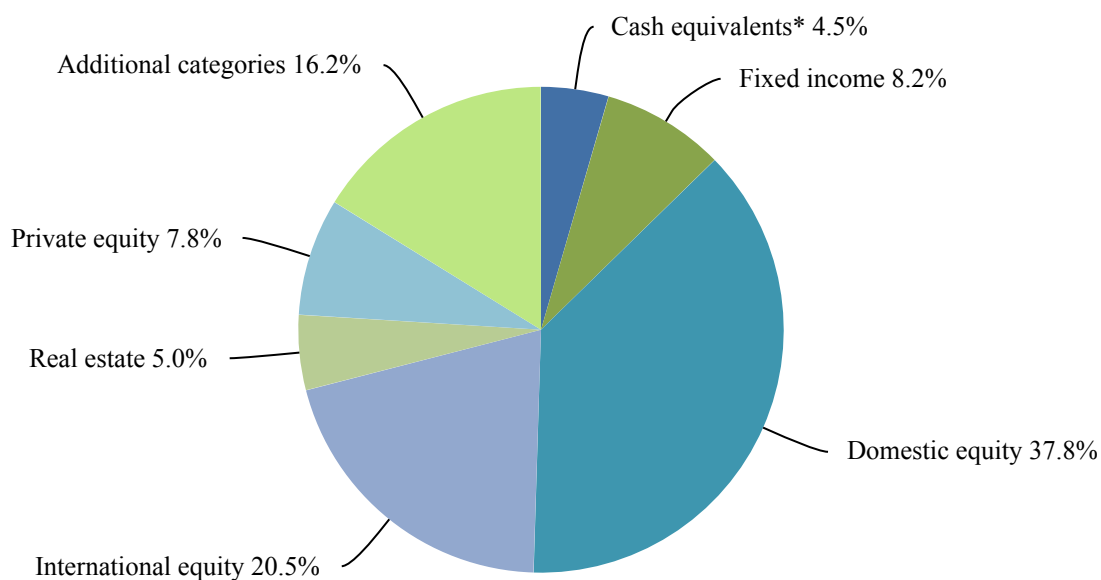
As of June 30, 2024, the Health Insurance Trust had \$3.15 billion in assets. This included \$258.7 million in investment-grade bonds. This trust also had \$221.2 million in high-yield bonds, \$1.84 billion in public equity investments, \$246.1 million in private equity, \$123.1 million in bank loans, \$166.8 million in alternative credit funds and \$156.5 million in real estate.

Asset allocation is adjusted annually by the Investment Committee to reflect changing liquidity needs and actuarial funding status. Due to the trust being cash flow positive, liquidity needs are declining as funding status has improved. The information below shows the health insurance fund’s asset allocation by fair value as of June 30, 2024 and 2023.

	<u>June 30, 2024</u>	<u>Percent</u>	<u>June 30, 2023</u>	<u>Percent</u>
Cash equivalents*	\$ 140,845,575	4.5	\$ 14,919,707	0.6
Fixed income	258,749,093	8.2	176,694,577	7.3
Equity	1,839,242,457	58.3	1,426,960,263	59.1
Real estate	156,478,824	5.0	159,444,210	6.6
Private equity	246,078,333	7.8	220,197,307	9.2
Additional categories	511,052,833	16.2	415,388,542	17.2
Totals	<u>\$ 3,152,447,114</u>	<u>100.0</u>	<u>\$ 2,413,604,606</u>	<u>100.0</u>

* Reflects only cash balances not allocated to other asset classes. Uninvested cash balances allocated to various asset classes are represented in those classes.

**Distribution of Investments — Fair Value
As of June 30, 2024**



* Reflects only cash balances not allocated to other asset classes. Any uninvested manager cash balances are represented in the asset class of the respective managers.

**Health Insurance Trust
Asset Class Strategic Weighting by Fair Value**

	Strategic Range	Target	June 30, 2024
Cash equivalents	0-5%	1 %	4.5 %
Fixed income	6-14	9	8.2
Equity	51-64	58	58.3
Domestic large cap	28-38	33	33.5
Domestic mid cap	1-5	3	3.0
Domestic small cap	1-3	2	1.3
International	15-25	20	20.5
Real estate	4-12	6.5	5.0
Alternative investments*	5-12	8.5	7.8
Additional categories	14-25	17	16.2
Total		<u>100 %</u>	<u>100 %</u>

* Includes private equity, venture capital, and infrastructure investments.

Portfolio Results

The Health Insurance Trust returns were generated by the Segal Marco Advisors performance reporting system using a time-weighted rate of return calculation based upon fair value. For fiscal year 2024, the Health Insurance Trust's portfolio returned 12.73% versus a policy index return of 14.13%. The fund's public equity returned 18.21% versus 12.12% for the MSCI All Country World IMI Index. A high-quality bond fund returned 4.59% versus 2.74% for the Barclays Government/Credit Index. Private real estate rose 7.63% versus a decline of 9.26% for the NCREIF ODCE and a decline of 5.53% for the NCREIF Property Index. Private equity returned 7.43%. Additional categories returned 10.03% versus an 10.46% return for the benchmark, Bank of America Merrill Lynch High Yield Master II.

General partner profit sharing, known as carried interest, for the Health Insurance Trust for fiscal year 2024 was a \$404,045, consisting by asset class of \$1.3 million in private equity, a decline of \$1 million in private real estate and \$102,445 in private credit.

Schedule of Investment Results — Gross

	1-year	3-year*	5-year*	10-year*
Total plan	12.73	4.56	9.07	7.45
Policy benchmark**	14.13	4.61	8.83	
Equity	18.21	4.34	11.11	
Domestic equity	22.13	-5.53	10.61	
S&P 500 Index	24.56	10.01	15.05	
Russell 3000	23.12	8.05	14.14	
International equity	11.07			
MSCI AC World ex-USA IMI	12.12			
Fixed income	4.59	-1.19	1.21	1.92
Barclays Government Credit	2.74	-3.11	-0.07	1.51
Total real estate	-7.63	8.82	8.86	
Core real estate	-7.89	8.00	7.52	
NCREIF ODCE (VW)	-9.26	1.90	3.16	
Non-core real estate	-7.36	9.59	10.06	
NCREIF Property Index	-5.53	2.33	3.39	
Private equity	7.43	12.65	15.07	15.09
Mature private equity	5.07	14.60	14.69	14.95
S&P 500 plus 3%	28.29	13.31	18.50	16.24
Private equity < 5 years	10.40	9.29	13.84	
Additional categories	10.03	3.38	4.60	4.37
B of A Merrill Lynch High Yield Master II	10.46	1.65	3.71	4.21
Cash (unallocated)	5.44	3.39	2.30	1.62
90-day Treasury Bill	5.40	3.03	2.16	1.5

* Rates of return are time-weighted based upon fair value. Returns are annualized for periods longer than one year.

** Overall fund performance is compared to a board-approved benchmark, first established in July 2015, that represents the returns of appropriate benchmarks for the various asset classes weighted by the midpoint of the strategic range for the current fiscal year.

Schedule of Investment Results — Net of Investment Fees and Expenses

2024	12.37 %
2023	11.52
2022	(9.70)
2021	31.10
2020	2.30
2019	6.11
2018	8.44
2017	14.37
2016	(2.20)
2015	1.38

Portfolio Fair Value as of June 30, 2024			
Internally managed		APAX IX	\$ 7,879,744
Cash collections (unallocated)	\$ 140,845,575	APAX X	11,121,102
Fixed income		APAX XI	268,040
Internal Bond	258,749,093	APAX Credit Opportunities	985,199
In-house High Yield	8,190,630	Apax Digital	12,596,060
Equity		Apax Digital II	2,431,523
S&P 400 stock index	92,837,227	Audax Mezzanine V	1,487,854
S&P 500 stock index	912,736,237	Audax Private Equity V	5,765,310
S&P 600 stock index	42,187,918	BG Private Companies II	4,490,415
Subtotal	<u>\$ 1,455,546,680</u>	Carlyle Asia V	8,886,556
		Carlyle Europe Partners IV	2,838,773
Externally managed		Carlyle Europe V	7,995,892
Domestic equity		Carlyle Partners VIII	5,159,985
Baillie Gifford US Equity Growth	66,776,628	Carlyle Renewable & Sustainable Energy	8,588,145
Fort Washington Focused Equity	76,976,466	Carlyle Renewable & Sustainable Energy II	1,174,606
International equity		Fort Washington PE Opportunities III	1,330,215
BlackRock MSCI ACWI IMI	647,727,981	Fort Washington VII	1,209,710
Real estate		Fort Washington VIII	6,688,862
Angelo Gordon Net Lease Realty IV	9,362,871	Fort Washington IX	11,094,001
Angelo Gordon Realty Value IX	2,710,558	Fort Washington IX-K	10,430,518
Blackstone Partners VIII	6,989,664	Fort Washington X	4,626,877
Blackstone Partners IX	5,571,093	Fort Washington X-S	3,946,982
Blackstone Partners X	2,455,735	Fort Washington XI	1,415,154
Carlyle Realty Partners VII	2,157,025	Fort Washington IV	2,764,990
Carlyle Realty Partners VIII	4,778,766	Fort Washington IV-K	3,104,504
Carlyle Realty Partners IX	5,232,555	Fort Washington PE Small Market II	2,073,265
Carlyle Property Advisors	27,282,210	KKR European IV	6,815,371
Landmark Real Estate Partners VII	1,308,256	KKR European V	5,187,100
Landmark Real Estate Partners VIII	5,558,090	KKR Americas XII	11,675,201
Landmark Real Estate Partners IX	120,250	KKR Health II	1,894,737
Prudential PRISA	14,973,566	Landmark Equity Partners XV	964,154
Rockwood Capital Real Estate X	3,877,346	Landmark Equity XVI	6,497,920
Rockwood Capital Real Estate XI	10,952,785	Landmark Equity XVII	3,008,322
Rockwood Capital Real Estate XII	970,109	Lexington Capital Partners IX	5,093,199
The Realty Associates XI	72,796	Lexington Capital Partners X	2,359,408
The Realty Associates XII	12,597,594	Macquarie MIP VI	3,705,985
The Realty Associates XIII	4,848,167	NGP ETP IV	1,405,833
TA Realty Core Property	34,659,388	NGP Natural Resources XI	5,096,957
Alternative investments		NGP Natural Resources XII	5,580,805
Actis Global IV	2,583,000	NGP Natural Resources XIII	886,169
Alpine Investor Co-Invest VIII	10,678,923	Oaktree European Principal IV	10,225,119
Alpine Investor Secondaries VII	7,755,024	Oaktree European Principal V	6,271,744

INVESTMENT SECTION

Oaktree Mezzanine V	\$ 3,274,581
Riverstone E & P VI	4,654,484
Silver Lake Alpine II	7,876,136
Silver Lake Partners VII	2,233,879
Additional categories	
Columbia High Yield	70,119,418
Fort Washington High Yield Bond	73,785,621
Highbridge Principal Strategies III	70,320
Lord Abbett High Yield Core	69,093,698
Marathon European Credit Opportunities III	4,748,509
Marathon TRS Credit	110,905,449
Monroe Capital Private Credit	18,120,020
Oaktree European Capital Solutions	3,079,222
Oaktree Opportunities Xb	10,689,616
Shenkman Capital Management	123,083,198
Deerpath Direct Lending	19,167,131
Subtotal	<u>\$ 1,696,900,434</u>
Total	<u><u>\$ 3,152,447,114</u></u>

Investment Summary — Fair Value as of June 30, 2024

	Fair Value June 30, 2023	Acquisitions	Appreciation (Depreciation)	Sales Redemptions, Maturities & Paydowns	Fair Value June 30, 2024	Percent
Cash equivalents	\$ 77,221,128	\$ 765,067,544	\$	\$ 651,741,879	\$ 190,546,793	6.1
Fixed income	153,143,085	117,659,172	1,844,022	25,517,649	247,128,630	7.8
Real estate	159,444,210	28,614,448	(15,514,249)	16,065,585	156,478,824	5.0
Equity	1,406,514,939	196,884,211	260,584,868	40,768,643	1,823,215,375	57.8
Alternative investments	220,197,307	61,989,618	18,020,378	54,128,970	246,078,333	7.8
Additional categories	397,083,937	225,391,516	23,250,926	156,727,220	488,999,159	15.5
Total	\$ 2,413,604,606	\$ 1,395,606,509	\$ 288,185,945	\$ 944,949,946	\$ 3,152,447,114	100.0

Schedule of Investment Counselor Fees and Administrative Expenses
For the Year Ended June 30, 2024

(Dollars in thousands)

Investment counselor fees	Assets Under Management	Expense
Equity manager(s)	\$ 791,481	\$ 636
Fixed income manager(s)		
Real estate	156,479	2,687
Additional categories	502,862	1,792
Alternative investments	246,078	3,324
Subtotal	\$ 1,696,900	\$ 8,439
Administrative expenses**		611
Total		\$ 9,050
	Basis Points*	28.7

* One basis point is one hundredth of one percent or the equivalent of 0.0001. Total basis points is weighted.

** Basis points for administrative expenses are calculated against the \$3.15 billion in assets under management for the trust.

INVESTMENT SECTION

Schedule of Investment Counselor Fees and Administrative Expenses For the Year Ended June 30, 2024

Investment counselor fees			
Domestic equity			
Baillie Gifford US Equity Growth	\$ 118,231	Fort Washington PE Small Market II	13,827
Fort Washington Focused Equity	248,720	Fort Washington PE Opportunities III	5,784
Total domestic equity	<u>366,951</u>	Fort Washington PE Opportunities IV	42,500
International equity		Fort Washington PE Opportunities IV-K	42,500
BlackRock MSCI ACWI IMI	268,778	Fort Washington VII	16,146
Total international equity	<u>268,778</u>	Fort Washington VIII	26,932
Real estate		Fort Washington IX	36,000
Angelo Gordon Net Lease Realty IV	214,571	Fort Washington IX-K	36,000
Angelo Gordon Realty Value XI	94,898	Fort Washington X	18,000
Blackstone Partners VIII	75,950	Fort Washington X-S	18,000
Blackstone IX	62,562	Fort Washington XI	14,741
Blackstone X	150,000	KKR Americas XII	48,584
Carlyle Realty Partners IX	189,707	KKR IV	34,832
Carlyle Realty Partners VII	32,484	KKR European V	45,354
Carlyle Realty Partners VIII	76,046	KKR Health II	60,036
Carlyle Property Advisors	276,519	Landmark Equity Partners XV	22,889
Landmark Real Estate Partners VII	13,105	Landmark Equity Partners XVI	100,000
Landmark Real Estate Partners VIII	74,954	Landmark Equity Partners XVII	90,000
Landmark IX	252,174	Lexington Capital Partners IX	49,605
Prudential PRISA	116,859	Lexington Capital Partners X	47,500
Rockwood Capital Real Estate X	135,000	Macquarie MIP VI	77,833
Rockwood Capital Real Estate XI	150,399	NGP ETP IV	87,860
Rockwood Capital Real Estate XII	122,887	NGP Natural Resources XI	82,329
The Realty Associates XI	7,535	NGP Natural Resources XII	141,135
The Realty Associates XII	202,714	NGP Natural Resources XIII	28,100
The Realty Associates XIII	184,153	Oaktree European Principal IV	154,330
TA Realty Core Property	253,842	Oaktree European Principal V	67,515
Total real estate	<u>2,686,359</u>	Oaktree Mezzanine V	42,635
Alternative investments		Riverstone E & P VI	52,453
Actis Global IV	41,798	Silver Lake Alpine II	54,444
AlpInvest Co-Investment VIII	82,104	Silver Lake Partners VII	160,000
AlpInvest Secondaries VII	60,640	Total alternative investments	<u>3,324,191</u>
APAX Credit Opportunities	17,707	Additional categories	
APAX IX	70,920	Columbia High Yield Bond	251,467
APAX X	115,714	Deerpath Capital Direct Lending	485,054
APAX XI	253,963	Fort Washington High Yield Bond	143,687
Apax Digital	141,672	Highbridge Specialty Loan III	—
Apax Digital II	159,543	Lord Abbett High Yield Core	212,753
Audax Mezzanine V	26,875	Marathon European Credit Opportunities II	—
Audax Private Equity V	0	Marathon European Credit Opportunities III	47,293
Baillie Gifford Private Companies II	26,814	Marathon TRS Credit	116,717
Carlyle Asia V	140,292	Oaktree European Capital Solutions	58,803
Carlyle Europe Partners IV	26,821	Oaktree Opportunities Xb	118,414
Carlyle Europe V	137,570	Shenkman Capital Management	358,252
Carlyle Renewable and Sustainable Energy	86,679	Total additional categories	<u>1,792,440</u>
Carlyle Renewable and Sustainable Energy II	69,430	Total investment counselor fees	8,438,719
Carlyle Partners VIII	147,785	Administrative expenses	
		Custodian	

Bank of New York Mellon 179,276

Other

Other administrative and operational 431,998

Total administrative expenses \$ 611,274

Grand total \$ 9,049,993

**Health Insurance Trust
Ten Largest Stock Holdings Ranked by Fair Value*
June 30, 2024**

		Fair Value	Percent of Total Fair Value
1	Microsoft Corp.	\$ 72,343,774	6.07
2	Nvidia	69,024,145	5.79
3	Apple	66,384,054	5.57
4	Amazon.com	44,511,659	3.73
5	Meta Platforms	29,968,316	2.51
6	Alphabet	22,813,046	1.91
7	Alphabet	21,365,649	1.79
8	Berkshire Hathaway	17,915,065	1.50
9	Eli Lilly & Co	14,278,748	1.20
10	Broadcom	13,913,523	1.17

* Includes only actively managed separate accounts. A complete list of investments is available from TRS.

**Health Insurance Trust
Ten Largest Fixed Income Holdings Ranked by Fair Value*
June 30, 2024**

						Percent of Total Fair Value
	Maturity	Coupon	Par Value	Fair Value		
1	U.S. Treasury Note	Feb. 15, 2031	1.125	15,000,000	\$ 12,280,650	4.69
2	U.S. Treasury Note	Aug. 31, 2024	3.250	7,000,000	6,973,330	2.66
3	U.S. Treasury Note	Feb. 15, 2034	4.000	6,000,000	5,836,860	2.23
4	U.S. Treasury Note	Feb. 15, 2027	2.250	5,000,000	4,714,450	1.8
5	U.S. Treasury Note	April 30, 2026	4.875	4,000,000	4,005,920	1.53
6	U.S. Treasury Note	Mar. 31, 2026	4.500	4,000,000	3,979,240	1.52
7	U.S. Treasury Note	April 30, 2029	4.625	3,000,000	3,036,330	1.16
8	Federal Home Loan Bank	May 9, 2044	6.500	3,000,000	2,999,160	1.14
9	U.S. Treasury Note	Feb. 15, 2027	4.125	3,000,000	2,966,010	1.13
10	U.S. Treasury Bond	May 15, 2047	3.000	3,750,000	2,884,725	1.1

* A complete list of investments is available from TRS.

**Health Insurance Trust
Transaction Commissions for the Year Ended June 30, 2024**

Broker Name	Shares Traded	Commissions	Commission Per Share	Percent of Total
Virtu Americas	1,334,182	\$ 13,320	0.010	100.00
Totals	1,334,182	\$ 13,320	0.010	100

Professional Service Providers

Investment consultant

Aon Investments USA

Investment custodian

Bank of New York Mellon

Equity managers

Baillie Gifford

BlackRock Institutional Trust Co.

Fort Washington Investment Advisors

Additional categories managers

Columbia Threadneedle Investments

Deerpath Capital Management

Fort Washington Investment Advisors

Highbridge Principal Strategies

Marathon Asset Management

Oaktree Capital Management

Shenkman Capital Management

Real estate managers

Angelo Gordon & Co.

Blackstone Real Estate Advisors

The Carlyle Group

Landmark Partners

Prudential Real Estate Investors

Rockwood Capital

TA Realty

Alternatives managers

Actis

AlpInvest Partners

Apax Partners

Audax Group

Baillie Gifford

The Carlyle Group

Fort Washington Private Equity Investors

Kohlberg Kravis Roberts & Co.

Landmark Partners

Lexington Capital Partners

Natural Gas Partners

Oaktree Capital Management

Riverstone Holdings

Silver Lake Partners

Attorneys

Reinhart, Boerner, Van Deuren

Seyfarth

Actuarial Section



Annual Valuation of the Retirement Annuity Trust





November 15, 2024

Board of Trustees
 Teachers' Retirement System of the
 State of Kentucky
 479 Versailles Road
 Frankfort, KY 40601-3800

Members of the Board:

Kentucky Revised Statutes (KRS) 161.400 of the law governing the operation of the Teachers' Retirement System of the State of Kentucky (TRS) provides that the actuary shall make an actuarial valuation of the Retirement Annuity Trust. We are pleased to submit the results of the annual actuarial valuation prepared as of June 30, 2024. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

During the 2021 valuation, a new set of economic and demographic assumptions was adopted by the TRS Board of Trustees (Board) that resulted in an increase in liabilities and contribution requirements. To help alleviate the pressure on increased contributions, a direct-rate smoothing technique was implemented to phase-in the required contribution increase, estimated at 8.59% of payroll, over a five-year period beginning with the 2021 valuation. For this 2024 valuation, and the next valuation, we will recognize an increase in contributions of at least 1.72% of payroll as a result of the cost of the change in assumptions.

The total combined member and employer contribution rates broken down for members hired before July 1, 2002 (TRS 1), members hired between July 1, 2002 and June 30, 2008 (TRS 2) and members hired between July 1, 2008 and December 31, 2021 (TRS 3), as a percentage of payroll for the fiscal years ending June 30, 2027 and June 30, 2026, required to support the total benefits are shown on pages 136 and 138 of this report. The rates represent an increase since the previous valuation in the total pension actuarially determined employer contribution rates (ADEC) of 2.98% of payroll for the fiscal year ending June 30, 2027.

A breakdown of the changes in the components of the ADEC are as follows:

- an expected increase of 1.72% of payroll for the direct rate smoothing technique of phasing-in contribution requirements due to the 2021 assumption changes,
- no change in the percent of payroll due to the amount required for life insurance benefits, and
- an increase of 1.26% of payroll due to the overall experience of the System for the fiscal year ending June 30, 2024.

The total combined member and employer statutorily required contributions for TRS 4 members are shown on pages 137 and 139 of this report.

The financing objective of the system is that contribution rates will remain relatively level over time as a percentage of payroll, except as otherwise noted. The promised benefits of the system are included in the actuarially calculated contribution rates which are developed using the entry age normal cost method.

Five-year market related value of plan assets is used for actuarial valuation purposes. Gains and losses are reflected in the total unfunded actuarial accrued liability that is being amortized by regular annual contributions as a level percentage of payroll in accordance with the funding policy adopted by the board, on the assumption that payroll will increase by 2.75% annually. The assumptions recommended by the actuary and adopted by the board are reasonably related to the experience under the system and to reasonable expectations of anticipated experience under the system.

ACTUARIAL SECTION

Board of Trustees
November 15, 2024
Page 2

We have prepared the trend information shown in the Schedule of Funding Progress in the Financial Section of the Annual Comprehensive Financial Report (ACFR) and Schedule A, Schedule B, Schedule C, Solvency Test and Analysis of Financial Experience shown in the Actuarial Section of the ACFR. We have also included a sensitivity analysis that is required under Actuarial Standards of Practice Statement No. 51 (ASOP 51) and the Low Default Risk Obligation Measure that is required under ASOP 4.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the system.

In order to prepare the results in the report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

Future actuarial results may differ significantly from the current results presented in this report 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; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This actuarial valuation was performed to determine the recommended funding amount for the system. The asset values used to determine unfunded actuarial accrued liabilities and funded ratios are not fair values but less volatile market related values. A smoothing technique is applied to fair values to determine the market-related values. The unfunded actuarial accrued liability amounts and funded ratios using the fair value of assets would be different. The interest rate used for determining liabilities is based on the expected return of assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

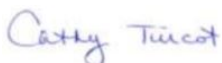
For fiscal years ending 2007 through 2018, the system was not funded on an actuarially sound basis as the full actuarially determined employer contributions were not made by the State. However, since that time, the State has appropriated enough to satisfy the actuarially determined employer contributions. Also, it is our understanding that the state budget includes an additional appropriation to the pension plan equal to the ADEC for the 2025 fiscal year.

If contributions by the employer to the system in subsequent fiscal years are less than those required, the assets are expected to become insufficient to pay promised benefits. However, assuming that contributions to the system are made by the employer and state from year to year in the future at rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the assets to provide the benefits called for under the system may be safely anticipated.

Respectfully submitted,



Edward J. Koebel, EA, FCA, MAAA
Chief Executive Officer



Cathy Turcot
Principal and Managing Director



Alisa Bennett, FSA, EA, FCA, MAAA
President



Micki R. Taylor, ASA, EA, FCA, MAAA
Consulting Actuary

Section I — Summary of Principal Results

1. For convenience of reference, the principal results of the aggregate valuation (TRS 1, TRS 2, TRS 3 and TRS 4) and a comparison with the results of the previous valuation are summarized below.

(Dollars in thousands)

Valuation Date	June 30, 2024		June 30, 2023	
Number of active members	76,014		75,644	
Annual salaries	\$	4,308,468	\$	4,138,909
Number of annuitants and beneficiaries	60,358		59,559	
Annual allowances	\$	2,497,828	\$	2,423,859
Assets				
Fair value	\$	26,108,136	\$	24,244,554
Actuarial value	25,728,190		24,725,018	
Actuarial accrued liability	\$	43,545,752	\$	42,179,888
Unfunded actuarial accrued liability (UAAL)	\$	17,817,562	\$	17,454,870
Funded ratio	59.1 %		58.6 %	
Amortization period (years)	19.9		\$	20.9

2. KRS 161.633 requires that the actuary assess the funding levels, unfunded liabilities, and the actuarially required employer contributions rates payable solely on behalf of individuals who first become members on or after Jan. 1, 2022. The following table shows the results of the valuation as of June 30, 2024, for TRS 4 members:

Group	University		Non-University	
	<u>Foundational</u>	<u>Supplemental</u>	<u>Foundational</u>	<u>Supplemental</u>
Number of active members	395		11,902	
Annual salaries	\$17,893		\$296,773	
Actuarial value of assets	\$ 2,978	\$ 1,118	\$ 76,414	\$ 18,085
Actuarial accrued liability	\$ 2,002	\$ 610	\$ 56,670	\$ 9,777
Unfunded actuarial accrued liability	\$ (976)	\$ (508)	\$ (19,744)	\$ (8,308)
Funded ratio	148.7 %	183.4 %	134.8 %	185.0 %

3. Contribution rates are shown separately for university and non-university members, as well as by member group (TRS 1 through TRS 4) on the following pages.

Contribution Rates for University Members — Other Than TRS 4

Valuation Date For year ending	June 30, 2024 June 30, 2027		June 30, 2023 June 30, 2026	
	TRS 1 & TRS 2	TRS 3	TRS 1 & TRS 2	TRS 3
Retirement Annuity Trust:				
Normal*	11.980 %	11.980 %	12.130 %	12.130 %
Actuarial accrued liability	31.980	31.980	28.850	28.850
Total**	43.960 %	43.960 %	40.980 %	40.980 %
Member	7.625 %	7.625 %	7.625 %	7.625 %
State (ARC)	36.335	36.335	33.355	33.355
Total**	43.960 %	43.960 %	40.980 %	40.980 %
Life Insurance Trust:				
State	0.080 %	0.080 %	0.080 %	0.080 %
Health Insurance Trust:				
Member	2.775 %	2.775 %	2.775 %	2.775 %
State match	2.775	2.775	2.775	2.775
Total	5.550 %	5.550 %	5.550 %	5.550 %
Total contributions	49.590 %	49.590 %	46.610 %	46.610 %
Member fixed	10.400 %	10.400 %	10.400 %	10.400 %
State fixed	13.650	13.650	13.650	13.650
Required increase	25.540	25.540	22.560	22.560
Total	49.590 %	49.590 %	46.610 %	46.610 %

* Includes a load for administrative expenses.

** Total contribution rates for year ending June 30, 2026, and June 30, 2027, shown above apply a five-year contribution direct rate smoothing methodology and are anticipated to increase each year until the full funding rates are achieved in not more than five years from the 2021 valuation. See Schedule H for anticipated contribution rate increases.

Contribution Rates for University Members — TRS 4

Valuation Date For year ending	June 30, 2024 June 30, 2027		June 30, 2023 June 30, 2026	
	Foundational	Supplemental	Foundational	Supplemental
Retirement Annuity Trust:				
Normal*	7.170 %	2.190 %	7.170 %	2.200 %
Actuarial accrued liability	3.525	1.810	3.525	1.800
Total	10.695 %	4.000 %	10.695 %	4.000 %
Member	5.000 %	2.000 %	5.000 %	2.000 %
Employer	5.695	2.000	5.695	2.000
Total	10.695 %	4.000 %	10.695 %	4.000 %
Life Insurance Trust:				
Employer	0.080 %	— %	0.080 %	— %
Health Insurance Trust:				
Member	2.775 %	— %	2.775 %	— %
Employer	2.000	—	2.000	—
Total	4.775 %	— %	4.775 %	— %
Total contributions	15.550 %	4.000 %	15.550 %	4.000 %
Member fixed	7.775 %	2.000 %	7.775 %	2.000 %
Employer Fixed	7.775	2.000	7.775	2.000
Total	15.550 %	4.000 %	15.550 %	4.000 %

* Includes a load for administrative expenses.

Contribution Rates for Non-University Members — Other Than TRS 4

Valuation Date For year ending	June 30, 2024 June 30, 2027		June 30, 2023 June 30, 2026	
	TRS 1 & TRS 2	TRS 3	TRS 1 & TRS 2	TRS 3
Retirement Annuity Trust:				
Normal*	16.080 %	16.080 %	16.150 %	16.150 %
Actuarial accrued liability	30.840	31.840	27.790	28.790
Total**	46.920 %	47.920 %	43.940 %	44.940 %
Member	9.105 %	9.105 %	9.105 %	9.105 %
State (ARC)	37.815	38.815	34.835	35.835
Total**	46.920 %	47.920 %	43.940 %	44.940 %
Life Insurance Trust:				
State	0.080 %	0.080 %	0.080 %	0.080 %
Health Insurance Trust:				
Member	3.750 %	3.750 %	3.750 %	3.750 %
State match	3.750	3.750	3.750	3.750
Total	7.500 %	7.500 %	7.500 %	7.500 %
Total Contributions	54.500 %	55.500 %	51.520 %	52.520 %
Member fixed	12.855 %	12.855 %	12.855 %	12.855 %
State fixed	16.105	17.105	16.105	17.105
Required increase	25.540	25.540	22.560	22.560
Total	54.500 %	55.500 %	51.520 %	52.520 %

* Includes a load for administrative expenses.

** Total contribution rates for year ending June 30, 2026, and June 30, 2027, shown above apply a five-year contribution direct rate smoothing methodology and are anticipated to increase each year until the full funding rates are achieved in not more than five years from the 2021 valuation. See Schedule H for anticipated contribution rate increases.

Contribution Rates for Non-University TRS 4 Members

Valuation Date For year ending	June 30, 2024 June 30, 2027		June 30, 2023 June 30, 2026	
	Foundational	Supplemental	Foundational	Supplemental
Retirement Annuity Trust:				
Normal*	11.760 %	2.120 %	11.380 %	2.130 %
Actuarial accrued liability	5.160	1.880	5.540	1.870
Total	16.920 %	4.000 %	16.920 %	4.000 %
Member	9.000 %	2.000 %	9.000 %	2.000 %
Employer	7.920	2.000	7.920	2.000
Total	16.920 %	4.000 %	16.920 %	4.000 %
Life Insurance Trust:				
Employer	0.080 %	— %	0.080 %	— %
Health Insurance Trust:				
Member	3.750 %	— %	3.750 %	— %
Employer	3.750	—	3.750	—
Total	7.500 %	— %	7.500 %	— %
Total Contributions	24.500 %	4.000 %	24.500 %	4.000 %
Member fixed	12.750 %	2.000 %	12.750 %	2.000 %
Employer fixed	11.750	2.000	11.750	2.000
Total	24.500 %	4.000 %	24.500 %	4.000 %

* Includes a load for administrative expenses.

4. The valuation includes only the assets and liabilities associated with the Retirement Annuity Trust. The valuation of the Health Insurance Trust and the active and retired life insurance benefits has been prepared separately.
5. Comments on the valuation results as of June 30, 2024, are given in Section IV and further discussion of the contribution levels is set out in Sections V and VI.
6. Schedule B shows the development of the actuarial value of assets. The assumed investment rate of return is 7.1%
7. Schedule D of this report outlines the full set of actuarial assumptions and methods employed in the current valuation. There have been no changes since the previous valuation. Direct rate smoothing is being used to phase in the impact of the June 30, 2021 assumption changes to the required contributions over a five-year period. The cost of the assumption changes was estimated at 8.59% of payroll beginning with the June 30, 2021 valuation, which represents an expected increase of at least 1.72% of payroll each year over a five-year period to cover the cost of the change in assumptions.
8. Provisions of the system, as summarized in Schedule F, were taken into account in the current valuation. There have been no changes since the previous valuation.
9. The aggregate funded ratio for TRS 1 through TRS 4, shown in the Summary of Principal Results, is the ratio of actuarial value of assets to the actuarial accrued liability. The funded status would be different based on the fair value of assets. The funded ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100% for TRS 1 through TRS 3, there is a need for additional contributions toward the payment of the unfunded actuarial accrued liability. For TRS 4, the ratio is above 100%, so there is no need for additional contributions. In addition, this funded ratio does not have any relationship to measuring the sufficiency if the plan had to settle its liabilities.

ACTUARIAL SECTION

Section II — Membership Data

1. Data regarding the membership of the system for use as a basis of the valuation were furnished by the retirement system office. The following table shows the number of active members and their annual salaries as of June 30, 2024, on the basis of which the valuation was prepared.

Group	Number	Annual Salaries (In thousands)
University active members		
TRS 1 and TRS 2	1,239	\$ 94,584
TRS 3	1,303	82,773
TRS 4	395	17,893
Total university active members	<u>2,937</u>	<u>195,250</u>
Non-university active members		
Full-time TRS 1 and TRS 2	25,775	2,014,121
Full-time TRS 3	28,966	1,735,679
Full-time TRS 4	5,799	260,122
Part-time TRS 1 & 2	990	9,681
Part-time TRS 3	5,444	56,963
Part-time TRS 4	6,103	36,652
Total non-university active members	<u>73,077</u>	<u>4,113,218</u>
Grand total	<u>76,014</u>	<u>\$ 4,308,468</u>

2. The following table shows the number and annual retirement allowances payable to annuitants and beneficiaries on the roll of the retirement system as of the valuation date.

Number and Annual Retirement Allowances of Annuitants and Beneficiaries on the Roll as of June 30, 2024

Group	Number	Annual Retirement Allowances* (In thousands)
Service retirements	52,741	\$ 2,274,920
Disability retirements	2,742	90,043
Beneficiaries of deceased members	4,875	132,865
Total	<u>60,358</u>	<u>\$ 2,497,828</u>

*Includes cost-of-living adjustments effective through July 1, 2024.

3. In addition, there are 11,957 terminated vested employees entitled to benefits in the future and 53,459 inactive non-vested members.
4. Table 1 of Schedule G shows a distribution by age and years of service of the number and annual salaries of active members included in the valuation, while Table 3 shows the number and annual retirement allowances of annuitants and beneficiaries included in the valuation, distributed by age.

Section III — Assets

1. As of June 30, 2024, the fair value of Retirement Annuity Trust assets for valuation purposes held by the system amounted to \$26.1 billion. This value excludes assets in the Health Insurance Trust, the 403(b) Tax Sheltered Trust and the Life Insurance Trust, which are not included in the assets used for Retirement Annuity Trust valuation purposes. The investment return for the plan year ending June 30, 2024, on a fair value basis was 11.9%. Schedule C shows the receipts and disbursements for the year preceding the valuation date and a reconciliation of the asset balances for the Retirement Annuity Trust.
2. The five-year fair value of Retirement Annuity Trust assets used for valuation purposes as of June 30, 2024, was \$25.73 billion. The estimated investment return for the plan year ending June 30, 2024, on an actuarial value of assets basis was 8.1%, compared to the assumed investment rate of return for the period of 7.1%. Schedule B shows the development of the actuarial value of assets as of June 30, 2024.
3. Below is a history of actual investment rates of return for the Retirement Annuity Trust over the past five years:

Fiscal Year	Fair Value Rate of Return	Actuarial Value Rate of Return
2024	11.9%	8.1%
2023	10.2%	6.6%
2022	(10.9)%	7.9%
2021	29.6%	12.9%
2020	5.5%	7.0%

Section IV — Comments on Valuation

1. Schedule A of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the system for TRS 1 through TRS 4 as of June 30, 2024. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
2. The valuation balance sheet shows that the system has total prospective liabilities of \$21.8 billion for benefits expected to be paid on account of the present active members. The liability on account of benefits payable to annuitants and beneficiaries amounts to \$26.79 billion of which there are no remaining special appropriations to be made toward funding ad hoc increases and sick leave allowances granted after 1981. The liability for benefits expected to be paid to inactive members and to members entitled to deferred vested benefits is \$637.7 million. The total prospective liabilities of the system amounts to \$49.2 billion. Against these liabilities, the system has present assets for valuation purposes of \$25.73 billion. When this amount is deducted from the total liabilities of \$49.18 billion, there remains \$23.45 billion as the present value contributions to be made in the future.
3. The contributions to the system consist of normal contributions and actuarial accrued liability contributions. The valuation indicates that total employer normal contributions are required at the rate of 11.98% of payroll for university other than TRS 4 and 9.36% of payroll for university TRS 4 members for both foundational and supplemental plans. The valuation indicates that employer normal contributions at the rate of 16.08% of payroll for non-university members other than TRS 4 and 13.88% of payroll for non-university TRS members for both foundational and supplemental plans are required. This includes a load for administrative expenses of 0.32% of payroll.
4. Prospective normal employer and employee contributions have a present value of \$5.63 billion. When this amount is subtracted from \$23.45 billion, which is the present value of the total future contributions to be made by the employer, there remains \$17.82 billion as the amount of future unfunded actuarial accrued liability contributions.
5. Although the unfunded actuarial accrued liability increased by approximately \$362.7 million for the plan year ending June 30, 2024, and the funded ratio increased from 58.6% to 59.1%. The increase in the UAAL was primarily due to salary increases that were more than expected and the contribution deficiency as a result of the phase-in of contributions offset somewhat by the investment return experience which was better than expected. See Section VII for a complete breakdown of the experience of the system.

Section V — Contributions Payable Under the System

Employee Contributions

1. KRS 161.540 provides that each university member hired before Jan. 1, 2022, will contribute 10.4% of annual salary to the system and each non-university member contribute 12.855% of annual salary. Of this amount, for each university member, 2.775% is paid to the Health Insurance Trust for medical benefits and for each non-university member, 3.75% is paid to the Health Insurance Trust for medical benefits. The remainder, 7.625% for university members and 9.105% for non-university members, is applicable for the retirement benefits taken into account in the valuation.

ACTUARIAL SECTION

2. KRS 161.540 also provides for each university member hired on and after Jan. 1, 2022, will contribute 9.775% of annual compensation to the system for both foundation and supplemental plans and each non-university member will contribute 14.75% of annual compensation for both foundational and supplemental. Of this amount, for each university member, 2.775% is paid to the Health Insurance Trust for medical benefits and for each non-university member, 3.75% is paid to the Health Insurance Trust for medical benefits. Of the remainder, 5% for university members and 9% for non-university members, is applicable to the foundational benefit component of the retirement benefits. Finally, an additional 2% is applicable to the supplemental benefit component of the retirement benefits for all TRS 4 members.

Employer Contributions

3. KRS 161.550 provides that for members hired before Jan. 1, 2022, each employer will contribute an amount to fund pension and life insurance benefits equal to 10.875% of the total annual compensation of university members, 12.355% of the total compensation of non-university members hired prior to July 1, 2008 and 13.355% of the total annual compensation of non-university members hired on and after July 1, 2008. Additional contributions are made to the Health Insurance Trust as required under 161.550(3).
4. KRS 161.550 also provides that for members hired on and after Jan. 1, 2022 each employer will contribute an amount to fund pension and life insurance benefits equal to 5.775% for university members and 8% for non-university members.
5. Based on the results of the current valuation, of the amounts shown above, 0.08% of payroll will be allocated to the Life Insurance Trust.
6. Based on the results of the current valuation, an additional 27.26% of payroll for both university and non-university members other than TRS 4, will be required in order to maintain the amortization of the unfunded actuarial accrued liability of the Retirement Annuity Trust based on the funding policy adopted by the board. However, due to the results of the experience study adopted by the board, direct-rate smoothing of contribution rates will be used to phase in the impact over a five-year period. The resulting required increase based on direct-rate smoothing is 25.54% of payroll for the year ending June 30, 2027.
7. The total actuarially determined employer contribution (ADEC) rate to the Retirement Annuity Trust is 36.335% for university members other than TRS 4. The total ADEC rate to the pension plan is 37.815% for non-university TRS 1 and TRS 2 members and 38.815% for non-university TRS 3 members. The total member and employer contribution rates to the Retirement Annuity Trust for members other than TRS 4, are shown in the following tables.

Contribution Rates by Source University — Other Than TRS 4

<u>Member</u>	TRS 1, TRS 2 and TRS 3 Members
Fixed total	10.400 %
Fixed Health Insurance Trust	(2.775 %)
Contribution to Retirement Annuity Trust	7.625 %
 <u>Employer</u>	
Fixed total	13.650 %
Fixed Health Insurance Trust	(2.775 %)
Subtotal	10.875 %
Life Insurance Trust	(0.080 %)
Additional to comply with board funding policy using Direct-Rate Smoothing of the Impact of the Assumption Changes over five years	25.540 %
Special appropriation	— %
Contribution to Retirement Annuity Trust	36.335 %
Total contribution to Retirement Annuity Trust	43.960 %

**Contribution Rates by Source
Non-University — Other Than TRS 4**

	TRS 1 and TRS 2 Members	TRS 3 Members
<u>Member</u>		
Fixed total	12.855 %	12.855 %
Fixed Health Insurance Trust	(3.750 %)	(3.750 %)
Contribution to Retirement Annuity Trust	9.105 %	9.105 %
<u>Employer</u>		
Fixed total	16.105 %	17.105 %
Fixed Health Insurance Trust	(3.750 %)	(3.750 %)
Subtotal	12.355 %	13.355 %
Life Insurance Trust	(0.080 %)	(0.080 %)
Additional to comply with board funding policy using Direct-Rate Smoothing of the Impact of the Assumption Changes over five years	25.540 %	25.540 %
Special appropriation		
ADEC contribution to Retirement Annuity Trust	37.815 %	38.815 %
Total contribution to Retirement Annuity Trust	46.920 %	47.920 %

8. The valuation indicates that normal contributions at the rate of 11.98% of active university members’ salaries and 16.08% of active non-university members’ salaries are required for members other than TRS 4. In addition, the valuation indicates that normal contributions at the rate of 9.36% of active university members’ salaries and 13.88% of active non-university members’ salaries are required for TRS 4 members. The difference between the total contribution rate and the normal rate remains to be applied toward the liquidation of the unfunded actuarial accrued liability. This actuarial accrued liability rate, based on the assumptions set forth in the board’s funding policy and including the impact of direct-rate smoothing of contributions, is 31.98% for university members other than TRS 4, 30.84% for non-university TRS 1 and TRS 2 members, and 31.84% for non-university TRS 3 members. The actuarial accrued liability rate for TRS 4 members is 5.335% for university members and 7.04% for non-university members. These rates are shown in the following table.

Combined Member and Employer Contribution Rates — Members Other Than TRS 4

Rate	Percentage of Active Members’ Salaries		
	University	Non-University	
	TRS 1, TRS 2 and TRS 3 Members	TRS 1 and TRS 2 Members	TRS 3 Members
Total normal cost*	11.98 %	16.08 %	16.08 %
Actuarial accrued liability	31.98	30.84	31.84
Total**	43.96 %	46.92 %	47.92 %

* Includes a load for administrative expenses.

** Total contribution rates shown above apply a five-year contribution direct rate smoothing methodology and are anticipated to increase each year until the full funding rates are achieved in not more than five years from the 2021 valuation. Please see the projections in Schedule H of the report for anticipated increases to the total contribution rates.

Fixed Contribution Rates — TRS 4 Members

Rate	Percentage of Active Members' Salaries			
	University		Non-University	
	Foundational	Supplemental	Foundational	Supplemental
Total normal cost*	7.170 %	2.19 %	11.76 %	2.12 %
Actuarial accrued liability	3.525	1.81	5.16	1.88
Total	10.695 %	4.00 %	16.92 %	4.00 %

* Includes a load for administrative expenses.

9. The following table shows the components of the total Unfunded Actuarial Accrued Liability (UAAL) and the derivation of the UAAL contribution rate in accordance with the funding policy.

Total UAAL and UAAL Contribution Payment
(Dollars in thousands)

	UAAL		Amortization	
	Original	Current	Years Remaining	Payment
Legacy	\$ 14,010,205	\$ 15,284,988	20	\$ 1,148,081
New incremental June 30, 2015	(351,610)	(303,052)	11	(35,030)
New incremental June 30, 2016*	340,766	303,257	12	32,752
New incremental June 30, 2017	(428,468)	(392,174)	13	(39,845)
New incremental June 30, 2018	(192,240)	(179,922)	14	(17,297)
New incremental June 30, 2019	53,306	50,761	15	4,640
New incremental June 30, 2020	112,464	108,490	16	9,472
New incremental June 30, 2021*	2,042,379	1,988,348	17	166,414
New incremental June 30, 2022	(79,030)	(77,851)	18	(6,267)
New incremental June 30, 2023	605,417	601,677	19	46,724
New incremental June 30, 2024	433,041	433,041	20	32,526
Total UAAL		\$ 17,817,563		\$ 1,342,170 **
Blended amortization period (years)				19.9

* Includes assumption changes

** The UAAL payment provided above is the total payment before any consideration of the direct rate smoothing technique per the board's funding policy.

Section VI — Comments on Level of Funding

1. Our calculations indicate that the contribution rates shown in the previous section will be sufficient to cover the benefits of the system and the annual 1.5% increases in the allowances of retired members and beneficiaries.
2. The valuation indicates that the present fixed contribution rates if continued at the current level percentage, along with an additional required contribution for members other than TRS 4 members, are sufficient to meet the cost of benefits currently accruing and provide for the amortization of the unfunded actuarial accrued liability in accordance with the board funding policy and the direct rate smoothing methodology of phasing in the additional required contribution.
3. The ADEC is determined based on the board's funding policy, and the amortization and direct rate smoothing methodologies. Each year, we determine the required increase percentage needed, in addition to the present fixed contribution rates to fund the ADEC over the closed amortization period. The table below provides a historical view of the special appropriations and required increase as a percentage of payroll.

Valuation Date	Year	Special Appropriations Rate	Cumulative Required Increase Rate	Cumulative Total State Additional Contribution Rate	Cumulative Total State Required Contribution Amounts
June 30, 2005	June 30, 2008	4.17 %	1.32 %	5.49 % \$	162,062,900
June 30, 2006	June 30, 2009	4.25	1.88	6.13	197,267,800
June 30, 2007	June 30, 2010	4.28	2.46	6.74	225,574,200
June 30, 2008	June 30, 2011	4.15	3.59	7.74	261,860,000
June 30, 2009	June 30, 2012	3.88	5.81	9.69	347,988,000
June 30, 2010	June 30, 2013	3.69	7.27	10.96	393,444,000
June 30, 2011	June 30, 2014	3.50	8.02	11.52	430,090,000
June 30, 2012	June 30, 2015	3.00	10.42	13.42	497,648,000
June 30, 2013	June 30, 2016	2.90	12.97	15.87	596,397,000
June 30, 2014	June 30, 2017	2.70	13.80	16.50	622,184,000
June 30, 2015	June 30, 2018	2.94	13.49	16.43	624,660,000
June 30, 2016	June 30, 2019	2.83	14.61	17.44	660,830,000
June 30, 2017	June 30, 2020	3.00	14.10	17.10	652,775,000
June 30, 2018	June 30, 2021	2.89	14.27	17.16	662,701,000
June 30, 2019	June 30, 2022	3.05	14.82	17.87	698,411,000
June 30, 2020	June 30, 2023	2.61	15.78	17.39	733,520,000
June 30, 2021	June 30, 2024	2.38	16.18	18.56	741,547,000
June 30, 2022	June 30, 2025	—	18.92	18.92	805,690,000
June 30, 2023	June 30, 2026	—	22.56	22.56	948,616,000
June 30, 2024	June 30, 2027	—	25.54	25.54	1,076,889,000

4. The amounts above are calculated by the actuary as the minimum additional dollar amount to be contributed by the state in order to comply with the board’s funding policy and include the impact of direct-smoothing of the cost of assumption changes over five years beginning with the 2021 valuation. For the years shaded in light and dark gray, the state required contribution amounts were made or are expected to be made in full.
5. As can be seen from the table, the total state additional contribution rate increase is 2.98% of payroll from FY26 to FY27. This increase is based on:
 - an expected increase of 1.72% of payroll for the direct rate smoothing technique of phasing in contribution requirements due to the 2021 assumption changes,
 - an increase of 1.26% of payroll due to the overall experience of the system for the year ending June 30, 2024.
6. Effective Sept. 21, 2020, the amount to be provided by the state shall not be less than the prior year’s dollar amount until the plan (TRS 1 through TRS 3) reaches a funded ratio of 100%. Any further benefit improvements or return to work changes must be accompanied by the entire additional contributions necessary to support the benefits.

Section VII — Analysis of Financial Experience

The following table shows the estimated gain or loss from various factors that resulted in an increase of \$362.7 million in the unfunded actuarial accrued liability from \$17.45 billion to \$17.82 billion during the year ending June 30, 2024. The increase in the unfunded actuarial accrued liability was primarily due to salary increases that were more than expected and the contribution deficiency as a result of the phase-in of contributions for the fiscal year ending June 20, 2024. These losses were partially offset by a gain due to investment return on an actuarial value basis that was greater than expected (8.1% vs. 7.1%), gains due to mortality (more deaths than expected) and gains due to turnover and retirements.

Analysis of Financial Experience
(In thousands)

Item	Amount of Increase/ (Decrease)
Interest (7.1%) added to previous unfunded accrued liability	\$ 1,239,296
Expected actuarially accrued liability contribution	(954,748)
Experience:	
Valuation asset growth	(231,536)
Pensioners' mortality	(25,496)
Turnover and retirements	(41,582)
New entrants	50,624
Salary increases	326,135
Total	\$ 362,693

Section VIII — Accounting Information

The information required under Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 is issued in separate reports. The following information is provided for informational purposes only.

- The following is a distribution of the number of employees by type of membership.

**Number of Active and Retired Members
as of June 30, 2024**

Group	Number
Retirees and beneficiaries currently receiving benefits	60,358
Terminated vested employees entitled to benefits but not yet receiving benefits	11,957
Inactive non-vested members	53,459
Active plan members	76,014
Total	201,788

- The schedule of funding progress is shown below.

Schedule of Funding Progress
(Dollars in thousands)

Actuarial Valuation Date June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) / c)
2015	\$ 17,219,520	\$ 31,149,962	\$ 13,930,442	55.3 %	\$ 3,515,113	396.3 %
2016*	17,496,894	32,028,227	14,531,333	54.6	3,537,226	410.8
2017	18,514,638	32,819,887	14,305,249	56.4	3,563,584	401.4
2018*	19,496,056	33,795,671	14,299,615	57.7	3,605,116	396.6
2019	20,154,161	34,676,713	14,522,552	58.1	3,648,428	398.0
2020	20,796,494	35,582,250	14,785,756	58.4	3,723,482	397.1
2021*	22,624,398	39,581,704	16,957,306	57.2	3,784,400	448.1
2022	24,090,355	40,970,441	16,880,086	58.8	4,033,509	418.5
2023	24,725,018	42,179,888	17,454,870	58.6	4,138,909	421.7
2024	25,728,190	43,545,752	17,817,562	59.1	4,308,468	413.5

* Reflects change in assumptions and methods.

3. The information presented above was determined as part of the actuarial valuation at June 30, 2024. Additional information as of the latest actuarial valuation follows.

Valuation date	June 30, 2024
Actuarial cost method	Entry age
Amortization method	Level percent of pay, closed
Remaining amortization period	19.9 years
Asset valuation method	Five-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.1%
Projected salary increases**	3% - 7.5%
Cost-of-living adjustments	1.5% annually

* Includes price inflation at 2.5%

** Includes wage inflation at 2.75%

Schedule of Employer Contributions*

Fiscal Year Ended June 30	Actuarially Determined Employer Contributions	Actual Employer Contributions	Percentage Contributed
2015	\$ 913,653,854	\$ 559,579,290	61
2016	999,270,174	565,454,590	57
2017	1,076,617,093	1,060,719,993	99
2018	1,080,892,201	1,048,671,201	97
2019	1,123,034,823	1,123,034,823	100
2020	1,134,281,095	1,134,281,095	100
2021	1,146,977,669	1,146,977,669	100
2022	1,200,342,369	1,679,584,669	140
2023	1,144,448,806	1,144,448,806	100
2024	1,178,681,973	1,178,681,973	100

*The contribution for the fiscal year ending June 30, 2024, is the first year of the phase-in of contributions. If the Plan were not phasing in the contributions, the ADEC for the fiscal year ending June 30, 2024, would have been \$1,453,167,000.

Section IX — Risk Assessment

Actuarial Standards of Practice (ASOP) No. 51, issued by the Actuarial Standards Board, provides guidance on assessing and disclosing risks related to pension plan funding. This guidance is binding on all credentialed actuaries practicing in the United States. This standard was issued as final in September 2017 with application to measurement dates on or after Nov. 1, 2018.

The term “risk” frequently has a negative connotation, but from an actuarial perspective, it may be thought of as simply the fact that what actually happens in the real world will not always match what was expected, based on actuarial assumptions. Of course, when actual experience is better than expected, the favorable risk is easily absorbed. The risk of unfavorable experience will likely be unpleasant, and so there is an understandable focus on aspects of risk that are negative.

Risk usually can be reduced or eliminated at some cost. Consumers, for example, buy auto and home insurance to reduce the risk associated with accidents or catastrophes. Another way to express this concept, however, is that there is generally some reward for assuming risk. Thus, retirement plans invest not just in U.S. Treasury bonds which have almost no risk, but also in equity, which is considerably riskier — because those investments have an expected reward of a higher return that justifies the risk.

ACTUARIAL SECTION

Under ASOP 51, the actuary is called on to identify the significant risks to the pension plan and provide information to help those sponsoring and administering the plan understand the implications of these risks. In this section, we identify some of the key risks for the Plan and provide information to help interested parties better understand these risks.

Sensitivity Analysis

The valuation results are a projection of expected benefit payments based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing liabilities and valuation results. The charts on the following pages provide a simple analysis on how the costs are sensitive to changes in the assumed discount rate, the assumed price inflation rate and the rate of wage inflation. The charts show the actuarial accrued liability, the unfunded actuarial accrued liability, the funded ratio and the employer contribution rate under each of the following scenarios:

- **Table 1** — The discount rate assumption sensitivity analysis shows the valuation results with the baseline discount rate assumption, 7.1%, together with an increase and a decrease of 1% in the discount rate. Under this scenario, the underlying price inflation rate assumption is held constant at 2.5% and the wage inflation assumption is held constant at 2.75%.
- **Table 2** — The price inflation assumption sensitivity analysis shows the valuation results with the baseline underlying price inflation rate assumption, 2.5%, together with decreases in the price inflation rate to 2.25% and 2%. Under this scenario, the decrease in the underlying price inflation rate assumption leads to corresponding decreases in the discount rate (6.85% and 6.6%, respectively), the wage inflation assumption (2.5% and 2.25%, respectively), and the assumed rates of salary increase for active members.
- **Table 3** — The wage inflation assumption sensitivity analysis shows the valuation results with the baseline underlying wage inflation assumption, 2.75%, together with decreases in the wage inflation assumption to 1.25% and 0%. Under this scenario, all other assumptions, including the individual member salary scale, are held constant so that the only impact is in the amortization of the unfunded actuarial accrued liability, leading to higher employer contribution rates.

Table 1
Assumed Discount Rate Sensitivity Analysis
as of June 30, 2024
(Dollars in thousands)

	Decrease Discount Rate	Valuation Results	Increase Discount Rate
Actuarial accrued liability	\$ 48,832,670	\$ 43,545,752	\$ 39,154,330
Actuarial value of assets	25,728,190	25,728,190	25,728,190
Unfunded actuarial accrued liability	\$ 23,104,480	\$ 17,817,562	\$ 13,426,140
Funded ratio	52.7 %	59.1 %	65.7 %
Employer ADEC — university	49.015 %	38.055 %	28.515 %
Employer ADEC — non-university*	51.495 %	40.535 %	30.995 %
Discount rate	6.1 %	7.1 %	8.1 %
Wage inflation rate	2.75 %	2.75 %	2.75 %
Price inflation rate	2.5 %	2.5 %	2.5 %

* Less 1% for TRS 1 and TRS 2 members. The ADEC rates do not include the impact of direct-rate smoothing.

Table 2
Price Inflation Assumption Sensitivity Analysis
As of June 30, 2024
(Dollars in thousands)

	Valuation Results	Decrease Inflation Rate 0.25%	Decrease Inflation Rate 0.50%
Actuarial accrued liability	\$ 43,545,752	\$ 44,624,084	\$ 45,750,683
Actuarial value of assets	25,728,190	25,728,190	25,728,190
Unfunded actuarial accrued liability	\$ 17,817,562	\$ 18,895,894	\$ 20,022,493
Funded ratio	59.1 %	57.7 %	56.2 %
Employer ADEC — university	38.055 %	40.655 %	43.405 %
Employer ADEC — non-university*	40.535 %	43.135 %	45.885 %
Discount rate	7.10 %	6.85 %	6.60 %
Wage inflation rate	2.75 %	2.50 %	2.25 %
Price inflation rate	2.5 %	2.25 %	2.0 %

* Less 1% for TRS 1 and TRS 2 members. The ADEC rates do not include the impact of direct-rate smoothing.

Table 3
Wage Inflation Assumption Sensitivity Analysis
As of June 30, 2024
(Dollars in thousands)

	Valuation Results	Decrease Wage Inflation to 1.25%	No Wage Inflation
Actuarial accrued liability	\$ 43,545,752	\$ 43,545,752	\$ 43,545,752
Actuarial value of assets	25,728,190	25,728,190	25,728,190
Unfunded actuarial accrued liability	\$ 17,817,562	\$ 17,817,562	\$ 17,817,562
Funded ratio	59.1 %	59.1 %	59.1 %
Employer ADEC — university	38.055 %	42.735 %	46.965 %
Employer ADEC — non-university*	40.535 %	45.215 %	49.445 %
Discount rate	7.1 %	7.1 %	7.1 %
Wage inflation rate	2.75 %	1.25 %	0.0 %
Price inflation rate	2.5 %	2.5 %	2.5 %

* Less 1% for TRS 1 and TRS 2 members. The ADEC rates do not include the impact of direct-rate smoothing.

Low-Default-Risk Obligation Measure

Under the revised Actuarial Standards of Practice (ASOP) No.4 effective for valuations after Feb. 15, 2023, we are required to include a low-default-risk obligation measure of the system’s liability in our funding valuation report. This is an informational disclosure as described below and would not be appropriate for assessing the funding progress or health of the plan. This measure uses the unit credit cost method and reflects all the assumptions and provisions of the funding valuation (including the assumed COLA paid), except that the discount rate is derived from considering low-default risk fixed income securities. We considered the FTSE Pension Discount Curve based on market bond rates published by the Society of Actuaries as of June 30, 2024 and with the 30-year spot rate used for all the durations beyond 30 because this provides an appropriate set of discount rates for this intended purpose.

Using these assumptions, we calculate a liability of approximately \$47.7 billion. This amount approximates the termination liability if the plan (or all covered employment) ended on the valuation date and all of the accrued benefits had to be paid with cash-flow matched bonds. If the plan were funded with the intent of being able to be terminated at any valuation date, contribution

ACTUARIAL SECTION

requirements may need to increase and would also be more volatile. This assurance of funded status and benefit security is typically more relevant for corporate plans than for governmental plans since governments rarely have the need or option to completely terminate the plan. However, this informational disclosure is required for all plans whether corporate or governmental and care should be taken to ensure the one size fits all metric is not misconstrued.

Schedule A
Valuation Balance Sheet
Showing the Present and Prospective Assets and Liabilities
As of June 30, 2024
(In thousands)

Actuarial Liabilities

(1)	Present value of prospective benefits payable on account of present active members		
	- Service retirement benefits	\$	20,628,837
	- Disability retirement benefits		746,482
	- Death and survivor benefits		122,191
	- Refunds of member contributions		255,002
	<hr/>		
	Total	\$	21,752,512
(2)	Present value of prospective benefits payable on account of present retired and disabled members, and beneficiaries of deceased members		
	- Service retirement benefits	\$	24,705,334
	- Disability retirement benefits		997,251
	- Death and survivor benefits		1,087,850
	<hr/>		
	Total	\$	26,790,435
(3)	Present value of prospective benefits payable on account of inactive members and members entitled to deferred vested benefits		
	<hr/>	\$	637,712
(4)	Total Actuarial Liabilities	\$	49,180,659
	Present and Prospective Assets		
(5)	Actuarial value of assets	\$	25,728,190
(6)	Present value of total future contributions = (4)-(5)	\$	23,452,469
(7)	Present value of future member contributions and employer normal contributions	\$	5,634,907
(8)	Prospective unfunded accrued liability contributions = (6)-(7)	\$	17,817,562
	<hr/>		
(9)	Total Present and Prospective Assets	\$	<u>49,180,659</u>

Solvency Test for TRS 1 through TRS 4
(Dollars in millions)

Valuation Date June 30	Aggregate Actuarial Accrued Liability for			Valuation Assets	Portion of Accrued Liabilities Covered by Assets		
	(1) Active Member Contributions	(2) Retirants and Beneficiaries	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)
	2015	\$3,700.6	\$19,522.5		\$7,926.8	\$17,219.5	100 %
2016	3,756.0	20,416.4	7,855.8	17,496.9	100	67	0
2017	3,849.9	21,108.0	7,862.1	18,514.6	100	69	0
2018	3,927.8	21,922.5	7,945.4	19,496.1	100	71	0
2019	4,022.4	22,601.6	8,052.7	20,154.2	100	71	0
2020	4,158.7	23,158.6	8,265.0	20,796.5	100	72	0
2021	4,282.8	25,367.6	9,931.3	22,624.4	100	72	0
2022	4,420.7	26,002.2	10,547.5	24,090.4	100	76	0
2023	4,511.0	26,788.6	10,880.3	24,725.0	100	75	0
2024	4,636.5	27,428.1	11,481.2	25,728.2	100	77	0

Schedule B

Development of Actuarial Value of Assets
For TRS 1 through TRS 4

(1)	Actuarial value of assets beginning of year	\$24,725,018,062
(2)	Net position at fair value at end of year	26,108,136,077
(3)	Net position at fair value at beginning of year	24,244,554,125
(4)	Cash flow	
	a. Contributions	1,564,588,485
	b. Benefit payments	2,499,893,273
	c. Administrative expense	14,807,287
	d. Net: (4)a - (4)b - (4)c	(950,112,075)
(5)	Investment income	
	a. Fair value total: (2) - (3) - (4)d	2,813,694,027
	b. Assumed rate	7.1 %
	c. Amount for immediate recognition: [(3) x (5)b] + [(4)d x (5)b x 0.5]	1,687,634,364
	d. Amount for phased-in recognition: (5)a - (5)c	1,126,059,663
(6)	Phased-in recognition of investment income	
	a. Current year: 0.20 x (5)d	225,211,933
	b. First prior year	134,580,241
	c. Second prior year	(911,655,908)
	d. Third prior year	898,669,898
	e. Fourth prior year	(81,156,976)
	f. Total recognized investment gain	265,649,188
(7)	Actuarial value of assets end of year: (1) + (4)d + (5)c + (6)f	\$25,728,189,539
(8)	Difference between fair & actuarial values: (2) - (7)	\$ 379,946,538
(9)	Net investment rate of return on actuarial value	8.1 %

Schedule C

Summary of Receipts & Disbursements*
For TRS 1 through TRS 4 (Fair Value)

Receipts for the year	For the Year Ending	
	June 30, 2024	June 30, 2023
Contributions		
Members	\$ 385,906,512	\$ 366,774,504
Employers	1,178,681,973	1,144,448,806
Total	1,564,588,485	1,511,223,310
Net investment income	2,813,694,027	2,266,085,160
Total	4,378,282,512	3,777,308,470
Disbursements for the year		
Benefit payments	2,466,971,497	2,391,326,201
Refunds to members	32,921,776	26,909,781
Miscellaneous, including expenses	14,807,287	14,470,733
Total	2,514,700,560	2,432,706,715
Excess of receipts over disbursements	1,863,581,952	1,344,601,755
Reconciliation of net position		
Net position as of the beginning of the year	24,244,554,125	22,899,952,370
Excess of receipts over disbursements	1,863,581,952	1,344,601,755
Net position as of the end of the year	<u>\$ 26,108,136,077</u>	<u>\$ 24,244,554,125</u>
Net investment rate of return on fair value	11.9 %	10.2 %

* Excludes assets of the Health Insurance Trust, the 403(b) Tax-Sheltered Trust and the Life Insurance Trust.

Schedule D

Outline of Actuarial Assumptions and Methods

The assumptions and methods used in the valuation were selected based on the actuarial experience study prepared as of June 30, 2020, submitted to and adopted by the board on September 20, 2021.

Investment Rate of Return: 7.1% per annum, compounded annually, including price inflation at 2.5% per annum.

Salary increases: Representative values of the assumed annual rates of future salary increases are as follows and include wage inflation at 2.75% per annum:

Service	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	≥17
Annual Rate %	7.5	5.5	5	5	5	4.75	4.5	4.25	4	4	4	3.75	3.5	3.5	3.25	3.25	3

Separations From Service: Representative values of the assumed annual rates of death, disability, withdrawal, service retirement and early retirement are as follows:

Males: Annual Rate of

Age	Death*	Disability	Withdrawal			Retirement	
			Service			Before 27 Years of Service	After 27 Years of Service**
			0 - 4	5 - 9	10+		
20	0.030 %	0.01 %	20.00 %				
25	0.017	0.01	11.00	3.25 %			
30	0.024	0.01	10.00	3.60	2.80 %		
35	0.032	0.02	11.00	3.60	1.55		
40	0.046	0.07	12.50	4.00	1.25		
45	0.074	0.18	11.50	4.00	1.10		17.0 %
50	0.122	0.28	14.25	4.50	1.10		25.0
55	0.187	0.40	15.00	6.00	1.25	5.25 %	40.0
60	0.291	0.50	15.00	0.00	0.00	13.50	33.0
62	0.354	0.50	15.00	0.00	0.00	15.00	30.0
65	0.481	0.50	20.00	0.00	0.00	20.00	30.0
70	0.774	0.50	20.00	0.00	0.00	25.00	30.0
75	1.234	0.50	20.00	0.00	0.00	100.00	100.0

* Base rates.

** Plus 8.5% in year when first eligible for unreduced retirement with 27 years of service.

Females: Annual Rate of

Age	Death*	Disability	Withdrawal			Retirement	
			Service			Before 27 Years of Service	After 27 Years of Service**
			0 - 4	5 - 9	10+		
20	0.013 %	0.01 %	13.00 %				
25	0.009	0.01	9.00	4.50 %			
30	0.011	0.02	11.00	4.25	1.00 %		
35	0.017	0.06	11.00	3.50	1.60		
40	0.026	0.10	12.50	4.00	1.20		
45	0.040	0.24	13.50	4.00	1.00		17.0 %
50	0.062	0.38	15.00	4.50	1.25		20.0
55	0.090	0.50	15.00	5.00	1.60	5.0 %	50.0
60	0.132	0.60	17.50	0.00	0.00	15.0	40.0
62	0.158	0.62	17.50	0.00	0.00	15.0	40.0
65	0.213	0.65	25.00	0.00	0.00	25.0	40.0
70	0.372	0.65	25.00	0.00	0.00	30.0	35.0
75	0.696	0.65	25.00	0.00	0.00	100.0	100.0

* Base rates.

** Plus 10% in year when first eligible for unreduced retirement with 27 years of service.

TRS 4 Members

Age	Annual Rate for Males			Annual Rates for Females		
	Before 20 Years of Service	20-29 Years of Service	30 or More Years of Service*	Before 20 Years of Service	20-29 Years of Service	30 or More Years of Service*
57	3.0 %	5.0 %	25.0 %	3.0 %	5.0 %	30.0 %
60	8.5	13.5	25.0	10.0	15.0	30.0
62	12.0	15.0	25.0	12.0	15.0	30.0
65	20.0	20.0	25.0	25.0	25.0	30.0
70	25.0	25.0	25.0	30.0	30.0	30.0
75	100.0	100.0	100.0	100.0	100.0	100.0

* Plus 20% in the first year attaining 30 years of service; plus 25% at age 65 in the first year attaining 30 years of service

Deaths after retirement: Mortality rates were based on the Pub-2010 (Teachers Benefit-Weighted) Mortality table, projected generationally based on Projection Scale MP-2020, with various set forwards, set backs, and adjustments for each of the groups. Below is a summary of the specific mortality tables and adjustments for each of the groups.

Group	Set Forward (+) / Set Back (-)	Adjustment to Rates	Projection Scale
Service retirees	Male: +2	Male: 102%	75% of MP-2020
	Female: +2	Female: 98%	
Contingent annuitants	Male: +2	Male: 101%	75% of MP-2020
	Female: None	Female: 100%	
Disability retirees	Male: +1	Male: 96%	75% of MP-2020
	Female: -2	Female: 94%	
Actives	Male: +1	Male: 100%	75% of MP-2020
	Female: -2	Female: 98%	

Representative values of the assumed annual rates of death after service retirement and after disability retirement are shown in this table.

Annual Base Rates of Death For

Age	Service Retirees		Disability Retirees		Contingent Annuitants	
	Male	Female	Male	Female	Male	Female
45	0.0836 %	0.0568 %	1.0646 %	0.7755 %	0.6020 %	0.2620 %
50	0.1357	0.0843	1.6435	1.1910	0.7545	0.3200
55	0.2744	0.2215	2.1130	1.5416	0.8959	0.4460
60	0.4427	0.3322	2.4806	1.7616	1.1413	0.6220
65	0.7579	0.5351	3.0653	1.9834	1.6443	0.8990
70	1.4066	0.9682	3.9485	2.4149	2.5876	1.3530
75	2.6816	1.8649	5.3155	3.2562	4.1006	2.1510
80	5.0500	3.5819	7.6118	4.7705	6.5630	3.5730
85	9.4585	6.8071	11.2109	7.3423	10.7717	6.3160
90	16.9116	12.6077	16.9738	11.1653	17.7306	11.3290
95	26.9423	21.5110	24.2170	15.7356	26.8670	18.5900

Assets — Five-year market related actuarial value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the fair value of assets and the expected actuarial value of assets, based on the ultimate assumed valuation rate of return of 7.1%. The amount recognized each year is 20% of the difference between fair value and expected actuarial value.

Administrative Expense Load — 0.32% of payroll added to the normal cost rate.

Percent Married — 100%, with females three years younger than males.

Part-Timers — Assume 0.25 years of accrual service per year.

Loads — Unused sick leave: 3% of active liability at the time of retirement for members other than TRS 4.

Level Percentage of Payroll Growth Assumption — 2.75%

Schedule E

Actuarial Cost Method

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future, of each active member's expected benefit at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability or survivor's benefit. Future salary increases and post-retirement cost-of-living adjustments are also anticipated. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries and inactive members to obtain the present value of all expected benefits payable from the system on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the system are determined following a level funding approach, and consist of a normal contribution and an actuarial accrued liability contribution.
3. Under the entry age normal cost method, the actuarial present value of each member's projected benefits is allocated on a level basis over the member's compensation between the entry age of the member the assumed exit ages. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial liability. The unfunded actuarial liability represents the difference between the actuarial liability and the actuarial value of assets as of the valuation date. The unfunded actuarial liability is calculated each year and reflects experience gains/losses. The accrued liability contribution amortizes the balance of the unfunded actuarial accrued liability over a period of years from the valuation date.

Schedule F

Summary of Main System Provisions

The Teachers' Retirement System of the State of Kentucky began operations on July 1, 1940. The valuation took into account amendments to the system effective through June 30, 2024. The following summary describes the main benefit and contribution provisions of the system as interpreted for the valuation.

Definitions

Final average salary means the average of the five highest annual salaries which the member has received for service in a covered position and on which the member has made contributions or on which the public board, institution or agency has picked up the member contributions. For a member who retires after attaining age 55 with 27 years of service, final average salary means the average of the three highest annual salaries.

Benefits

Service Retirement Allowance for TRS 1 and TRS 2 Members

Condition for Allowance — Completion of 27 years of service or attainment of age 55 and five years of service.

ACTUARIAL SECTION

Amount of Allowance — The annual retirement allowance for non-university members is equal to:

- 2% of final average salary multiplied by service before July 1, 1983, plus
- 2.5% of final average salary multiplied by service after July 1, 1983.
- For individuals who become members of the retirement system on or after July 1, 2002 and have less than 10 years of service at retirement, the retirement allowance is 2% of final average salary multiplied by service. If, however, they have 10 or more years, they receive a benefit percentage of 2.5% for all years of service up to 30 years.
- For members retiring on or after July 1, 2004, the retirement allowance formula is 3% of final average salary for each year of service credit earned in excess of 30 years.

The annual retirement allowance for university members is equal to 2% of final average salary multiplied by all years of service.

For all members, the annual allowance is reduced by 5% per year from the earlier of age 60 or the date the member would have completed 27 years of service.

The minimum annual service allowance for all members is \$440 multiplied by credited service.

Service Retirement Allowance for TRS 3 Members

Condition for Allowance — Completion of 27 years of service; attainment of age 60 and five years of service; or attainment of age 55 and 10 years of service.

Amount of Allowance — The annual retirement allowance for non-university members is equal to:

- 1.7% of final average salary if service is 10 years or less.
- 2% of final average salary if service is greater than 10 years and no more than 20 years.
- 2.3% of final average salary if service is greater than 20 years but no more than 26 years.
- 2.5% of final average salary if service is greater than 26 years but no more than 30 years.
- 3% of final average salary for years of service greater than 30 years.

The annual retirement allowance for university members is equal to:

- 1.5% of final average salary if service is 10 years or less.
- 1.7% of final average salary if service is greater than 10 years and no more than 20 years.
- 1.85% of final average salary if service is greater than 20 years but less than 27 years.
- 2% of final average salary if service is greater than or equal to 27 years.

For all members, the annual allowance is reduced by 6% per year from the earlier of age 60 or the date the member would have completed 27 years of service.

Service Retirement Allowance for TRS 4 Members

Condition for Allowance — Attainment of age 57 and 10 years of service; or attainment of age 65 and 5 years of service.

Amount of Allowance — Foundational Benefit

The annual foundational benefit for members is equal to service times a multiplier times final average salary. The multiplier for non-university members is shown in the following table:

Age	Years of Service			
	5-9.99	10-19.99	20-29.99	30 or more
57-60		1.70 %	1.95 %	2.20 %
61		1.74 %	1.99 %	2.24 %
62		1.78 %	2.03 %	2.28 %
63		1.82 %	2.07 %	2.32 %
64		1.86 %	2.11 %	2.36 %
65 & over	1.90 %	1.90 %	2.15 %	2.40 %

The multiplier for university members is shown in the following table:

Age	Years of Service			
	5-9.99	10-19.99	20-29.99	30 or more
57-60		0.70 %	0.95 %	1.20 %
61		0.74 %	0.99 %	1.24 %
62		0.78 %	1.03 %	1.28 %
63		0.82 %	1.07 %	1.32 %
64		0.86 %	1.11 %	1.36 %
65 & over	0.90 %	0.90 %	1.15 %	1.40 %

The annual foundational benefit is reduced by 6% per year from the earlier of age 60 or the date the member would have completed 30 years of service.

Amount of Allowance — Supplemental Benefit

The annual supplemental benefit is equal to the account balance which includes member and employer contributions and interest credited annually on June 30. Options include annuitizing the balance or receiving the balance as a lump sum either at the time of retirement or at a later date.

Disability Retirement Allowance

Condition for Allowance — For members hired before Jan. 1, 2022, totally and permanently incapable of being employed as a teacher and under 27 years of service but after completing five years of service.

Amount of Allowance — The disability allowance is equal to 60% of the member’s final average salary. The disability allowance is payable over an entitlement period equal to 25% of the service credited to the member at the date of disability or five years, whichever is longer. After the disability entitlement period has expired and if the member remains disabled, the member will be retired under service retirement. The service retirement allowance will be computed with service credit given for the period of disability retirement. The allowance will not be less than \$6,000 per year. The service retirement allowance will not be reduced for commencement of the allowance before age 60 or the completion of 27 years of service.

Benefits Payable on Separation from Service — Any member who ceases to be in service is entitled to receive contributions with allowable interest. A member who has completed five years of creditable service and leaves the contributions with the system may be continued in the membership of the system after separation from service, and file application for service retirement after the attainment of age 60.

Life Insurance

A separate life insurance fund has been created as of June 30, 2000, to pay benefits on behalf of deceased TRS active and retired members.

Death Benefits

A surviving spouse of an active member with less than 10 years of service may elect to receive an annual allowance of \$2,880 except that if income from other sources exceeds \$6,600 per year the annual allowance will be \$2,160.

A surviving spouse of an active member with 10 or more years of service may elect to receive an allowance which is the actuarial equivalent of the allowance the deceased member would have received upon retirement. The allowance will commence on the date the deceased member would have been eligible for service retirement and will be payable during the life of the spouse. If the deceased member is survived by unmarried children under age 18 the following schedule of annual allowances applies.

Number of Children	Annual Allowance
1	\$2,400
2	4,080
3	4,800
4 or more	5,280

The allowances are payable until a child attains age 18 or age 23 if a full-time student. If the member has no eligible survivor, a refund of his accumulated contributions is payable to his estate.

Options

In lieu of the regular Option 1, a retirement allowance payable in the form of a life annuity with refundable balance, any member before retirement may elect to receive a reduced allowance which is actuarially equivalent to the full allowance, in one of the following forms:

Option 2. A single life annuity payable during the member's lifetime with payments for 10 years certain.

Option 3. At the death of the member the allowance is continued throughout the life of the beneficiary.

Option 3(a). At the death of the beneficiary designated by the member under Option 3, the member's benefit will revert to what would have been paid had an option not been selected.

Option 4. At the death of the member one half of the allowance is continued throughout the life of the beneficiary.

Option 4(a). At the death of the beneficiary designated by the member under Option 4, the member's benefit will revert to what would have been paid had an option not been selected.

Postretirement Adjustments

The retirement allowance of each retired member and of each beneficiary shall be increased by 1.5% each July 1.

Contributions

Member Contributions — University members other than TRS 4 contribute 7.625% of salary to the retirement trust. Non-university members other than TRS 4 contribute 9.105% of salary to the retirement trust. University TRS 4 members contribute 7% of salary to the retirement trust. Non-university TRS 4 members contribute 11% of salary to the retirement trust. 2% of each is for the supplemental plan.

Schedule G

Table 1
Age — Service Table
Distribution of Active Members as of June 30, 2024
by Age and Service Groups

Attained Age	Completed Years of Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 26	27 to 29	30 to 34	35 & Over	Number	Number
Under 25	2,437	2,147	7								4,591	109,240,905
25 to 29	927	4,801	2,108	1							7,837	348,749,181
30 to 34	622	2,024	4,049	1,407	1						8,103	423,693,514
35 to 39	616	1,546	1,984	3,903	1,446						9,495	562,239,697
40 to 44	623	1,449	1,583	1,981	4,233	1,491	6	1			11,367	738,849,100
45 to 49	445	982	1,104	1,248	1,951	3,976	1,018	134	3		10,861	772,334,410
50 to 54	625	970	782	960	1,403	1,929	1,336	1,576	393	1	9,975	701,722,041
55 to 59	855	1,064	470	493	831	1,029	515	431	352	45	6,085	365,083,982
60 to 64	715	1,034	368	322	390	469	185	173	119	56	3,831	182,154,030
65 to 69	524	783	240	115	99	132	56	63	68	35	2,115	66,413,089
70 & Over	464	709	267	79	59	55	16	34	28	43	1,754	37,988,096
Total Count	8,853	17,509	12,962	10,509	10,413	9,081	3,132	2,412	963	180	76,014	4,308,468,045

Average Age: 43.8

Average Service: 11.1

Retirement Eligible: 9,864

Table 2
Schedule of Active Member Valuation Data

Valuation Date June 30	Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
2015	72,246	\$ 3,515,113,127	\$ 48,655	2.45
2016	71,848	3,537,226,348	49,232	1.19
2017	72,130	3,563,584,342	49,405	0.35
2018	72,205	3,605,115,787	49,929	1.06
2019	72,647	3,648,427,710	50,221	0.58
2020	73,151	3,723,481,576	50,901	1.35
2021	69,256	3,784,400,223	54,644	7.35
2022	74,785	4,033,509,178	53,935	(1.30)
2023	75,644	4,138,908,992	54,716	1.45
2024	76,014	4,308,468,045	56,680	3.59

Table 3
Number of Retired Members, Beneficiaries
and their Benefits by Age

Attained Age	Number of Members	Total Annual Payments	Average Annual Benefits
49 & Under	805	\$ 9,280,723	\$ 11,529
50 - 54	1,662	71,285,568	42,891
55 - 59	4,726	225,566,681	47,729
60 - 64	6,891	305,240,089	44,295
65 - 69	9,241	392,203,668	42,442
70 - 74	12,780	540,735,603	42,311
75 - 79	12,232	500,120,508	40,886
80 - 84	6,825	270,015,197	39,563
85 - 89	3,348	123,655,878	36,934
90 - 94	1,416	46,568,335	32,887
95 & Over	432	13,155,897	30,453
Total	60,358	\$ 2,497,828,147	\$ 41,384

Average Current Age: 71.5

Average Age at Retirement for All Retirees and Beneficiaries: 56.3

Table 4
Schedule of Retirees, Beneficiaries and Survivors
Added to and Removed from Rolls

Year Ended June 30	Add to Rolls		Removed from Rolls		Rolls at End of Year		Increase In Annual Allowances	Average Annual Allowances
	Number	Annual Allowances (In millions)	Number	Annual Allowances (In millions)	Number	Annual Allowances (In millions)		
2015	2,917	\$ 119.1	1,671	\$ 36.3	49,822	\$ 1,767.6	4.9%	\$ 35,479
2016	2,753	128.2	1,012	26.9	51,563	1,868.9	5.7	36,244
2017	2,638	119.8	1,235	35.2	52,966	1,953.5	4.5	36,881
2018	2,499	120.0	1,088	30.0	54,377	2,043.5	4.6	37,581
2019	2,355	113.8	1,119	32.8	55,613	2,124.5	4.0	38,201
2020	2,145	107.6	1,129	34.0	56,629	2,198.1	3.5	38,816
2021	2,137	108.3	1,301	41.1	57,465	2,265.3	3.1	39,421
2022	2,308	117.2	1,335	42.0	58,438	2,340.5	3.3	40,051
2023	2,421	125.9	1,300	42.5	59,559	2,423.9	3.6	40,697
2024	2,262	122.2	1,463	48.3	60,358	2,497.8	3.1	41,384

30-Year Baseline Projections

The results of actuarial valuations are a snapshot of the financial position on the valuation date, based on the assumed number of active employees and current beneficiaries. Projections simulate future actuarial valuation results over a forecast period (30 years in this case) by creating future new hires and performing valuations using the projected membership. The following items are assumed for the projected results.

Active Employee Growth Rate — 0%

Valuation Discount Rate — 7.1%

Investment Rate of Return — 7.1% each year

Actuarial Value of Assets — five year smoothing, no corridor

Amortization Method — Level percent of payroll, closed

Amortization Bases —

 Legacy amortization from 2014 valuation amortized over closed 30-year period

 Subsequent bases amortized over closed 20-year period from date of valuation

Amortization Period — Weighted 19.9-year period as of valuation date

Future Contributions — Based on expected actuarially determined contributions including the impact of direct-rate smoothing of the impact of the assumption changes over a five-year period beginning with the 2021 valuation

All other demographic and economic changes are assumed to occur in accordance with the actuarial assumptions used for the actuarial valuation.

Schedule H

30-Year Baseline Projection

(Dollars in millions)

Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Actuarially Determined Contribution using Direct Rate Smoothing	Salary Percentage Contribution in Dollars	Additional for Unfunded Accrued Liability
2027	4,229	193	4,422	17,818	59.1	1,625	548	1,077
2028	4,291	195	4,486	17,671	60.3	1,705	557	1,148
2029	4,357	198	4,555	18,273	59.9	1,805	567	1,238
2030	4,425	202	4,627	17,785	61.7	1,827	578	1,249
2031	4,493	205	4,698	17,353	63.4	1,856	589	1,267
2032	4,565	209	4,774	16,998	64.9	1,898	600	1,298
2033	4,640	214	4,854	16,596	66.3	1,944	612	1,332
2034	4,716	219	4,935	16,135	67.9	1,991	624	1,367
2035	4,797	223	5,020	15,598	69.5	2,040	637	1,403
2036	4,882	228	5,110	14,976	71.2	2,091	650	1,441
2037	4,972	234	5,206	14,261	73.0	2,144	663	1,481
2038	5,069	240	5,309	13,445	74.9	2,249	677	1,572
2039	5,171	247	5,418	12,518	77.0	2,264	692	1,572
2040	5,279	254	5,533	11,472	79.2	2,384	708	1,676
2041	5,394	263	5,657	10,245	81.7	2,474	724	1,750
2042	5,515	271	5,786	8,916	84.2	2,540	741	1,799
2043	5,641	281	5,922	7,371	87.1	2,593	759	1,834
2044	5,775	290	6,065	5,625	90.3	2,385	777	1,608
2045	5,915	301	6,216	3,691	93.7	2,436	796	1,640
2046	6,062	312	6,374	1,567	97.4	2,395	817	1,578
2047	6,214	324	6,538		100.0		838	
2048	6,374	336	6,710		100.0		860	
2049	6,541	349	6,890		100.0		882	
2050	6,715	362	7,077		100.0		906	
2051	6,903	375	7,278		100.0		931	
2052	7,103	388	7,491		100.0		957	
2053	7,311	400	7,711		100.0		985	
2054	7,524	413	7,937		100.0		1,014	
2055	7,744	424	8,168		100.0		1,044	
2056	7,973	437	8,410		100.0		1,074	

Annual Valuation of the Health and Life Insurance Trusts





November 14, 2024

Board of Trustees
Teachers' Retirement System of the State of Kentucky
479 Versailles Road
Frankfort, KY 40601-3800

Members of the Board:

This report covers the retiree medical plan funded by the Health Insurance Trust and OPEB liabilities related to the life insurance plan funded by the Life Insurance Trust. CavMac (CMC) has submitted the results of the annual actuarial valuation prepared as of June 30, 2024. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

The valuation covers benefits for members hired before July 1, 2002 (TRS 1), members hired between July 1, 2002 and June 30, 2008 (TRS 2), members hired between July 1, 2008 and Dec. 31, 2021 (TRS 3), and members hired on or after Jan. 1, 2022 (TRS 4).

The valuation indicates a total actuarially determined contribution of 3.54% as of percentage of active member payroll for the health trust payable for the fiscal year ending June 30, 2025 is required to support the benefits of the Kentucky Employees' Health Plan (KEHP) and the Medicare Eligible Health Plan (MEHP). This actuarially determined contribution reflects the actuarial value of assets of the Health Insurance Trust and a 7.1% discount rate for valuing liabilities.

The initial per capita costs of health care and the rates of health care inflation used to project the per capita health care costs have been revised since the previous valuation. The health care trend assumption has been increased for the next few years starting at 7% while continuing to step down to an ultimate health care trend assumption of 4.5%, which is 2% higher than our price inflation assumption. The increase in trend is due to continuing high expectations for prescription drug costs and utilization, particularly for specialty drugs. In addition, we note that expected 2025 per member per month (PMPM) costs for the stand alone Medicare Part D prescription drug plan are less than expected in spite of the plan changes due to the Inflation Reduction Act, including the \$2,000 out of pocket maximum, because of increased Federal reimbursements and the additional \$15 PMPM premium stabilization contribution. We have made no additional specific changes to the valuation results due to the Inflation Reduction Act, but we have included scenarios in our sensitivity analysis section in Schedule G to illustrate the potential impact of changes to the Medicare Part D plan design, such as the elimination of the \$15 PMPM premium stabilization contribution or decreased Federal reimbursements.

The impact of the COVID-19 pandemic was considered in this valuation; however, no changes were incorporated at this time due to the level of uncertainty regarding the impact on both plan costs and contribution levels going forward. Given the uncertainty regarding COVID-19, (e.g., the impact of routine care being deferred, direct COVID-19 treatment and prevention costs, changes in contribution and budget projections), continued monitoring of the impact on the Plans' liability will be required.

We recommend that the life insurance plan maintain a total actuarially determined contribution of 0.08% of active member payroll payable for the fiscal year ending June 30, 2027 to support the benefits of the Life Insurance Trust. This actuarially determined contribution reflects the actuarial value of assets of the Life Insurance Trust and a 7.1% discount rate for valuing liabilities.

Board of Trustees
November 14, 2024
Page 2

The promised benefits of the retiree medical and life insurance plans are included in the actuarially calculated contribution rates that are developed using the entry age normal actuarial cost method. Five-year market related value of plan assets is used for actuarial valuation purposes. Gains and losses are reflected in the unfunded actuarial accrued liability that is being amortized by regular annual contributions as a level percentage of payroll within a 16-year period for the retiree medical plan and a 20-year period for the life insurance plan, on the assumption that payroll will increase by 2.75% annually. The assumptions recommended by the actuary and adopted by the board are in aggregate reasonably related to the experience under the retiree medical and life insurance plans and to reasonable expectations of anticipated experience under the retiree medical and life insurance plans.

CMC has prepared the trend information shown in the Schedule of Funding Progress in the Financial Section of the Annual Comprehensive Financial Report (ACFR) and Section VII shown in the Actuarial Section of the ACFR.

This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retiree health and life insurance trusts and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the plans.

Future actuarial results may differ significantly from the current results presented in this report 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; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This actuarial valuation was performed to determine the recommended funding amount for the system. The asset values used to determine unfunded liabilities and funded ratios are not fair values, but less volatile market-related values. A smoothing technique is applied to fair values to determine the market-related values. The unfunded liability amounts and funded ratios using the fair value of assets would be different. The interest rate used for determining liabilities is based on the expected return of assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

In our opinion, if the contributions to the Health Insurance Trust continue at the current statutorily required levels, the funded ratio of the retiree medical plan will continue to increase, and the ability of the Health Insurance Trust to fund the benefits called for under the retiree medical plan will improve.

Respectfully submitted,



Alisa Bennett, FSA, EA, FCA, MAAA
President



Edward J. Koebel, EA, FCA, MAAA
CEO



Jessica Fain, EA, MAAA
Associate Actuary

Section I — Summary of Principal Results

1. For convenience of reference, the principal results of the valuation and a comparison with the results of the previous valuation are summarized below.

Health Insurance Trust

(Dollars in thousands)

Valuation Date	June 30, 2024	June 30, 2023
Number of active members	71,213	71,005
Annual salaries	\$ 4,308,468	\$ 4,138,909
Number of deferred vested members	8,409	7,917
Number of annuitants in medical plans	41,000	41,055
Number of spouses and beneficiaries in medical plans*	6,322	6,555
Total	47,322	47,610
Assets:		
Fair value	\$ 3,317,711	\$ 2,743,413
Actuarial value	\$ 3,246,186	\$ 2,788,970
Actuarial accrued liability	\$ 4,035,741	\$ 3,909,612
Unfunded actuarial accrued liability	\$ 789,555	\$ 1,120,642
Funded ratio based on actuarial value of assets	80.4 %	71.3 %
Amortization period (years)	16	17
Discount rate	7.1 %	7.1 %

* Spouses of post-65 retirees, and surviving spouses of deceased retirees on or after July 1, 2002, pay 100% of the full contribution. The full contribution for non-Medicare-eligible dependents is paid through a combination of payments from beneficiaries and the state. There are 1,067 surviving spouses reflected in these headcounts.

Health Insurance Trust Contribution Rates for University Members

Valuation Date Contribution For Year Ending	June 30, 2024			June 30, 2023		
	June 30, 2025			June 30, 2024		
	TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4
Normal	2.01 %	2.01 %	2.01 %	2.04 %	2.04 %	2.04 %
Accrued liability	1.53	1.53	1.53	2.17	2.17	2.17
Total	3.54 %	3.54 %	3.54 %	4.21 %	4.21 %	4.21 %
Member	2.775 %	2.775 %	2.775 %	2.775 %	2.775 %	2.775 %
Employer (ARC)	2.775	2.775	2.00	2.775	2.775	2.00
State (ARC)*	1.74	1.74	1.74	1.87	1.87	1.87
Statutorily Required Prefunding**	(3.750)	(3.750)	(2.975)	(3.210)	(3.210)	(2.435)
Total	3.54 %	3.54 %	3.54 %	4.21 %	4.21 %	4.21 %

* This represents funding by the state to pay the cost of health insurance for retirees who are not eligible for Medicare and who retired on or after July 1, 2010, less the amounts that are otherwise required to be paid by the retirees under KRS 161.675. See KRS 161.550(2).

** This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5)

Health Insurance Trust Contribution Rates for School District Employees (Non-Federal)

Valuation Date Contribution For Year Ending	June 30, 2024			June 30, 2023		
	June 30, 2025			June 30, 2024		
	TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4
Normal	2.01 %	2.01 %	2.01 %	2.04 %	2.04 %	2.04 %
Accrued liability	1.53	1.53	1.53	2.17	2.17	2.17
Total	3.54 %	3.54 %	3.54 %	4.21 %	4.21 %	4.21 %
Member	3.75 %	3.75 %	3.75 %	3.75 %	3.75 %	3.75 %
Employer (ARC)	3.00 %	3.00 %	3.00 %	3.00 %	3.00 %	3.00 %
State (ARC)*	2.49 %	2.49 %	2.49 %	2.62 %	2.62 %	2.62 %
Statutorily Required Prefunding**	(5.70)	(5.70)	(5.70)	(5.16)	(5.16)	(5.16)
Total	3.54 %	3.54 %	3.54 %	4.21 %	4.21 %	4.21 %

* This represents funding by the state to pay the cost of health insurance for retirees who are not eligible for Medicare and who retired on or after July 1, 2010, less the amounts that are otherwise required to be paid by the retirees under KRS 161.675. See KRS 161.550(2).

** This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5).

Health Insurance Trust Contribution Rates for Other Employees

Valuation Date Contribution for Year Ending	June 30, 2024			June 30, 2023		
	June 30, 2025			June 30, 2024		
	TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4
Normal	2.01 %	2.01 %	2.01 %	2.04 %	2.04 %	2.04 %
Accrued liability	1.53	1.53	1.53	2.17	2.17	2.17
Total	3.54 %	3.54 %	3.54 %	4.21 %	4.21 %	4.21 %
Member	3.75 %	3.75 %	3.75 %	3.75 %	3.75 %	3.75 %
Employer (ARC)	3.75	3.75	3.75	3.75	3.75	3.75
State (ARC)*	1.74	1.74	1.74	1.87	1.87	1.87
Statutorily Required Prefunding**	(5.70)	(5.70)	(5.70)	(5.16)	(5.16)	(5.16)
Total	3.54 %	3.54 %	3.54 %	4.21 %	4.21 %	4.21 %

* This represents funding by the state to pay the cost of health insurance for retirees who are not eligible for Medicare and who retired on or after July 1, 2010, less the amounts that are otherwise required to be paid by the retirees under KRS 161.675. See KRS 161.550(2).

** This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5).

We recommend maintaining the Total Employer Contribution rate at 0.08% by rounding the normal contribution up to 0.03% for fiscal year 2027 (from actual amount of 0.024%) and holding the accrued liability contribution at 0.05%. The resulting contribution is equivalent to using an effective amortization period of 14 years.

Life Insurance Trust

(Dollars in thousands)

Valuation Date	June 30, 2024	June 30, 2023
Number of active members	70,712	70,528
Annual salaries	\$ 4,308,468	\$ 4,138,909
Number of vested former members	11,845	11,216
Number of retirees in life insurance plan	54,048	53,379
 Assets:		
Fair value	\$ 101,559	\$ 94,030
Actuarial value	\$ 102,760	\$ 99,027
Actuarial accrued liability	\$ 125,526	\$ 122,611
Unfunded actuarial accrued liability*	\$ 22,766	\$ 23,584
Funded ratio based on actuarial value of assets	81.9%	80.8%
Amortization period (years)	20	21
Effective amortization period (years)	14	15
Discount rate	7.1%	7.1%

Life Insurance Contribution Rates

Contribution for year ending	June 30, 2027	June 30, 2026
Normal	0.03%	0.03%
Accrued liability	0.05	0.05
Total	0.08%	0.08%

** Includes liability for death in active service. This amount could be segregated from the OPEB liability and assets could be split for active and post-employment purposes. However, since this could be administratively burdensome and since death in active service liabilities can be considered de minimis, we will consider the entire liability an OPEB liability under GASB 74 and 75.*

2. The valuation indicates combined member, employer and state contributions of 3.54% of active member payroll would be sufficient to support the current benefits of the retiree medical plan and state contributions of 0.08% of active member payroll would be sufficient to support the current benefits of the life insurance plan. Comments on the valuation results as of June 30, 2024, are given in Section IV and further discussion of the contribution levels is set out in Sections VI and VII.
3. Schedule B shows the development of the actuarial value of assets. The assumed investment rate of return is 7.1% for Health Insurance Trust and 7.1% for Life Insurance Trust.
4. Schedule D of this report outlines the full set of actuarial assumptions and methods employed in the current valuation. Since the previous valuation, the initial per capita costs of health care and the rates of health care inflation used to project the per capita health care costs have been increased for the next few years starting at 7%, while continuing to step down to an ultimate health care trend assumption of 4.5%, which is 2% higher than our price inflation assumption. The increase in trend is due to continuing high expectations for prescription drug costs and utilization, particularly for specialty drugs.
5. The impacts of the COVID-19 pandemic, the ACA and the Inflation Reduction Act were considered in this valuation. We note expected 2025 per member per month (PMPM) costs for the stand alone Medicare Part D prescription drug plan is less than expected in spite of the plan changes due to the Inflation Reduction Act, including \$2,000 out of pocket maximum, because of increased Federal reimbursements and the additional \$15 PMPM premium stabilization contribution. We have made no additional specific changes to the valuation results due to the Inflation Reduction Act, COVID-19 or the ACA, but we have included scenarios in our sensitivity analysis section in Schedule G to illustrate the potential impact of changes to the Medicare Part D plan design, such as the elimination of the \$15 PMPM premium stabilization contribution or decreased Federal reimbursements. We also considered scenarios regarding economic factors and healthcare trend in our sensitivity

ACTUARIAL SECTION

analysis in Schedule G. Continued monitoring of the impact of these and any future such events on the plan's liability will be required.

6. Provisions of the system, as summarized in Schedule E, were taken into account in the current valuation.
7. The funded ratio shown in the Summary of Principal Results, is the ratio of actuarial value of assets to the actuarial accrued liability. The funded status would be different based on the fair value of assets. The funded ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions toward the payment of the unfunded actuarial accrued liability. In addition, this funded ratio does not have any relationship to measuring the sufficiency if the plan had to settle its liabilities.

Section II — Membership Data

1. Data regarding the membership of the retiree medical and life insurance plans for use as a basis of the valuation were furnished by the system's office. The following tables summarize the membership of the system as of June 30, 2024, upon which the valuation was based. Detailed tabulations of the data are given in Schedule F.

Active Members as of June 30, 2024

(Dollars in thousands)

Group	Number	Annual Salaries
University TRS 1 and TRS 2	1,239	\$ 94,584
University TRS 3	1,303	82,773
University TRS 4	395	17,893
Total University Active Members	2,937	195,250
Non-University Full Time TRS 1 and TRS 2	25,775	2,014,122
Non-University Full Time TRS 3	28,966	1,735,679
Non-University Full Time TRS 4	5,799	260,122
Non-University Part Time TRS 1 and TRS 2	990	9,681
Non-University Part Time TRS 3	5,444	56,963
Non-University Part Time TRS 4	6,103	36,651
Total Non-University Active Members	73,077	4,113,218
Total	76,014	\$ 4,308,468

2. The following tables show the number of retired members and their beneficiaries receiving health care as of the valuation date as well as average ages.

Retirees Receiving Health Benefits as of June 30, 2024

	Under Age 65	Age 65 and Over	Total
Number	8,418	32,582	41,000
Average Age	59.66	75.82	72.51

Spouses Receiving Health Benefits as of June 30, 2024

Number	1,154	5,168	6,322
Average Age	60.09	75.40	72.60

3. The retiree health plan valuation includes 71,213 active members eligible for health care and the life insurance plan valuation includes 70,712 active members eligible for life insurance. There were initially 76,014 active members eligible for health care and life insurance. However, 4,801 were ultimately excluded from the retiree health plan active

- headcounts and 5,302 from the life insurance plan active headcounts as they are either retirees returning to work or members working an additional active position. They are already reflected in the active or retiree headcounts.
4. The retiree health plan valuation includes 8,409 deferred vested members eligible for health care at age 60 and the life insurance plan valuation includes 11,845 deferred vested members eligible for retiree life insurance at age 60. There were initially 8,467 deferred vested members eligible for health care at age 60, and 11,957 deferred vested members eligible for retiree life insurance at age 60. However, 58 were ultimately excluded from the retiree health plan deferred vested headcounts and 112 from the life insurance plan deferred vested headcounts as they are either retirees returning to work or members working an additional active position. They are already reflected in the active or retiree headcounts
 5. The life insurance plan valuation includes 54,048 retired members eligible for life insurance. There were initially 55,483 retired members eligible for life insurance. However, 1,435 were ultimately excluded from the life insurance plan retiree headcounts as they were listed multiple times, reflecting different pension benefits earned under multiple roles as an employee. They are already reflected in the retiree headcounts.

Section III — Assets

1. As of June 30, 2024, the fair value of Health Insurance Trust assets held by the retiree medical plan amounted to \$3.32 billion and the fair value of Life Insurance Trust assets held by the life insurance plan amounted to \$101.6 million. The estimated market investment return for the plan year was 12.37% for the Health Insurance Trust and 11.18% for the Life Insurance Trust.
2. The five-year market related value of health trust assets used for valuation purposes as of June 30, 2024, was \$3.25 billion and the five-year market related value of Life Insurance Trust assets used for valuation purposes as of June 30, 2024 was \$102.8 million. Schedule B shows the development of the actuarial value of assets as of June 30, 2024.
3. Schedule C shows the receipts and disbursements for the year preceding the valuation date and a reconciliation of the asset balances for the Health Insurance Trust and the Life Insurance Trust.

Section IV — Comments on Valuation

1. Schedule A of this report outlines the results of the actuarial valuation. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D.
2. The valuation shows the retiree medical plan has an actuarial accrued liability of \$2.17 billion for benefits expected to be paid on account of the present active membership, based on service to the valuation date. The liability on account of deferred vested members amounts to \$85 million. The liability on account of benefits payable to retirees and covered spouses amounts to \$1.78 billion. The total actuarial accrued liability of the retiree medical plan amounts to \$4.04 billion. Against these liabilities, the retiree medical plan has present assets for valuation purposes of \$3.2 billion. When this amount is deducted from the actuarial accrued liability of \$4.04 billion, there remains \$789.6 million as the unfunded actuarial accrued liability for the retiree medical plan.
3. The normal contribution is equal to the actuarial present value of benefits accruing during the current year. The normal contribution for the retiree medical plan is determined to be \$86.6 million, or 2.01% of payroll.
4. The valuation shows that the life insurance plan has an actuarial accrued liability of \$16.8 million for benefits expected to be paid on account of the present active membership, based on service to the valuation date. The liability on account of deferred vested members amounts to \$4.9 million. The liability on account of benefits payable to retirees amounts to \$103.8 million. The total actuarial accrued liability of the life insurance plan amounts to \$125.5 million. This amount includes liability for death in active service. The liability for death in active service could be segregated from the OPEB liability and assets could be split for active and post-employment purposes. As this could be administratively burdensome and, as death in active service liabilities can be considered de minimis, we will consider the entire liability an OPEB liability under GASB 74 and 75. Against these liabilities, the life insurance plan has present assets for valuation purposes of \$102.8 million. When this amount is deducted from the actuarial accrued liability of \$125.5 million, there remains \$22.8 million as the unfunded actuarial accrued liability for the life insurance plan.
5. The normal contribution is equal to the actuarial present value of benefits accruing during the current year. The normal contribution for the life insurance plan is determined to be \$1.05 million, which is rounded up to 0.03% of payroll.

Section V — Derivation of Experience Gains and Losses

1. Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) for the year ended June 30, 2024, is shown below (dollars in thousands).

Experience Gain/(Loss) of the:	Health Insurance Trust	Life Insurance Trust
(1) UAAL as of June 30, 2023	\$ 1,120,642	\$ 23,584
(2) Normal cost from last valuation	84,496	1,007
(3) Expected employer contributions	174,478	2,279
(4) Interest accrual: [(1) + (2)] x .071 - (3) x (.071)/2 for MIF [(1) + (2)] x .071 - (3) x (.071)/2 for LIF	79,371	1,665
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	\$ 1,110,031	\$ 23,977
(6) Change due to updated health care trend rates	243,591	—
(7) Change due to claims experience	(286,194)	—
(8) Expected UAAL after changes: (5) + (6) + (7)	\$ 1,067,428	\$ 23,977
(9) Actual UAAL as of June 30, 2024	789,555	22,766
(10) Total gain/(loss): (9) - (8)	(277,873)	(1,211)
(a) Contribution and investment gain/(loss)	(227,144)	(665)
(b) Experience gain/(loss) (10) - (10a)	(50,729)	(546)
(11) Accrued liabilities as of June 30, 2023	\$ 3,909,612	\$ 122,611
(12) Experience gain/(loss) as percent of actuarial accrued liabilities at start of year (10b) / (11)	(1.3 %)	(0.45 %)

Section VI — Contributions Payable Under the Plans

1. KRS 161.420 and 161.550 provide the amounts employers and the state are required to contribute to the Health Insurance Trust. These contribution amounts vary by date of membership and employee type.

Employer Percentage of Payroll Contributions Made to Medical Insurance Trust

University Employees			School District Employees (Non-Federal)*			Other Employees		
TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4
2.775 %	2.775 %	2.000 %	3.000 %	3.000 %	3.000 %	3.750 %	3.750 %	3.750 %

* In addition to the amounts contributed by school districts on behalf of non-federal employees, the state contributes 0.75%

2. For the year ending June 30, 2024, member contributions will be 2.775% for university employees and 3.75% for all other members. Based upon the amortization of the unfunded actuarial accrued liability over a 16-year period as a level percentage of payroll, the valuation indicates employer and state contributions of 0.765% of payroll for university employees and (0.21)% of payroll for all other members.
3. The state is scheduled to contribute 0.08% of salary to the Life Insurance Trust for the year ending June 30, 2026. CMC recommends maintaining this rate for the year ending June 30, 2027, to support sufficiently the benefits of the life insurance plan.

**Required Contribution Rates
For Year Ending June 30, 2025
Health Insurance Trust**

Normal	2.01 %
Accrued liability	1.53 %
Total	3.54 %

	University Employees			School District Employees (Non-Federal)			Other Employees		
	TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4
Members	2.775 %	2.775 %	2.775 %	3.750 %	3.750 %	3.750 %	3.750 %	3.750 %	3.750 %
Employer	2.775	2.775	2.000	3.000	3.000	3.000	3.750	3.750	3.750
State*	1.740	1.740	1.740	2.490	2.490	2.490	1.740	1.740	1.740
Statutorily Required Prefunding**	(3.750)	(3.750)	(2.975)	(5.700)	(5.700)	(5.700)	(5.700)	(5.700)	(5.700)
Total	3.540 %	3.540 %	3.540 %	3.540 %	3.540 %	3.540 %	3.540 %	3.540 %	3.540 %

* This represents funding by the state to pay the cost of health insurance for retirees who are not eligible for Medicare and who retired on or after July 1, 2010, less the amounts that are otherwise required to be paid by the retirees under KRS 161.675. See KRS 161.550(2). Includes the state contribution of 0.75% on behalf of non-federal school district employees.

** This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) and 161.550(5).

**Required Contribution Rates
Life Insurance Trust
For Year Ending June 30, 2027**

Normal	0.03 %
Accrued liability	0.05
Total	0.08 %
Member	0.00 %
State	0.08
Total	0.08 %

4. The valuation indicates that a total normal contribution of 2.01% of payroll is required to meet the cost of benefits currently accruing under the retiree medical plan and 0.03% of payroll is required to meet the cost of benefits currently accruing under the life insurance plan. The difference between the total contribution and the normal contribution remains to be applied toward the liquidation of the unfunded actuarial accrued liability. This accrued liability payment is 1.53% of payroll for the retiree medical plan and 0.05% of payroll for the life insurance plan.
5. The unfunded actuarial accrued liability amounts to \$789.6 million for the retiree medical plan and \$22.8 million for the life insurance plan as of the valuation date. An accrued liability contribution rate of 1.53% of payroll for the retiree medical plan and 0.05% of payroll for the life insurance plan is sufficient to amortize the unfunded actuarial accrued liabilities over an 16-year period for the retiree medical plan and a 20-year period for the life insurance plan, based on the assumption that the payroll will increase by 2.75% annually.

Section VII — Comments on the Level of Funding

1. Beneficiary contributions and the system’s monthly contribution for retirees who opt into the retiree medical plan is based upon date of hire, date of attaining age 65, years of service at retirement, plan election, Medicare eligibility and tobacco use. Beneficiary contributions for dependents are targeted to be 100% of the cost of expected claims and/or insured premiums for spouses age 65 and older. Historically, this target has been achieved. The full cost for non-Medicare eligible dependents is paid through a combination of payments from beneficiaries and the state on a current disbursement basis. Current employer and state contributions have been determined to be sufficient to fund the cost of the benefits to be provided. Benefits for university, school district (non-federal), and other members are identical, although active employee contributions collected from university, school district (non-federal) and other members differ. A listing of active member retiree medical plan contributions by fiscal year, date of membership and employer type is provided in Schedule E.
2. This valuation provides the contributions required to fund sufficiently the retiree medical plan and to ensure the future solvency of the Health Insurance Trust. For all membership, a combined member contribution together with the employer and state contributions totaling 3.54% of payroll is required to meet the cost of benefits currently accruing and provide for the amortization of the unfunded actuarial accrued liability over a period of 16 years.

Section VIII — Accounting Information

1. The information required under Governmental Accounting Standards Board (GASB) Statements No. 74 and 75 will be issued in separate reports. The following information is provided for informational purposes only.

**Number of Active and Retired Members in
Retiree Medical Plan as of June 30, 2024**

Group	Number
Retirees currently receiving health benefits	41,000
Spouses of retirees currently receiving health benefits	6,322
Terminated employees entitled to benefits but not yet receiving benefits	8,409
Active plan members	71,213
Total	<u>126,944</u>

**Number of Active and Retired Members in
Life Insurance Plan as of June 30, 2024**

Group	Number
Retirees	54,048
Terminated employees	11,845
Active plan members	70,712
Total	<u>136,605</u>

**Schedule of Funding Progress
Health Insurance Trust
(Dollars in thousands)**

Actuarial Valuation Date June 30	Actuarial Value of Assets	Actuarial Accrued Liabilities (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
	A	B	(B-A)	(A/B)	C	[(B-A)/C]
2015	\$ 637,839	\$ 3,525,584	\$ 2,887,745	18.1 %	\$ 3,515,113	82.2 %
2016*	795,055	3,634,073	2,839,018	21.9	3,537,226	80.3
2017	985,694	3,691,719	2,706,025	26.7	3,563,584	75.9
2018	1,213,918	3,340,709	2,126,791	36.3	3,605,116	58.9
2019	1,442,522	3,133,202	1,690,680	46.0	3,648,428	46.3
2020	1,700,968	2,757,653	1,056,685	61.7	3,723,482	28.4
2021	2,072,648	3,456,677	1,384,029	60.0	3,784,400	36.6
2022	2,401,147	3,768,713	1,367,566	63.7	4,033,509	33.9
2023	2,788,970	3,909,612	1,120,642	71.3	4,138,909	27.1
2024	3,246,186	4,035,741	789,555	80.4	4,308,468	18.3

* Reflects change in decrement and participation assumptions.

**Schedule of Funding Progress
Life Insurance Trust**
(Dollars in thousands)

Actuarial Valuation Date June 30	Actuarial Value of Assets	Actuarial Accrued Liabilities (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
	A	B	(B-A)	(A/B)	C	[(B-A)/C]
2015	\$ 97,186	\$ 98,739	\$1,553	98.4 %	\$ 3,515,113	0.04 %
2016*	97,269	106,059	8,790	91.7	3,537,226	0.25
2017	95,730	109,069	13,339	87.8	3,563,584	0.37
2018	93,808	112,471	18,663	83.4	3,605,116	0.52
2019	92,506	117,485	24,979	78.7	3,648,428	0.68
2020	92,229	122,194	29,965	75.5	3,723,482	0.80
2021	95,483	116,656	21,173	81.9	3,784,400	0.56
2022	96,926	119,197	22,271	81.3	4,033,509	0.55
2023	99,027	122,611	23,584	80.8	4,138,909	0.57
2024	102,760	125,526	22,766	81.9	4,308,468	0.53

* Reflects change in decrement and participation assumptions.

2. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2024. Additional information as of the latest actuarial valuation follows.

Valuation date	June 30, 2024
Actuarial cost method	Entry age
Amortization method	Level percent of pay, closed
Remaining amortization period	16 years Health Insurance Trust 20 years Life Insurance Trust
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.1% Health Insurance Trust 7.1% Life Insurance Trust
Medical trend assumption**	7.0%
Ultimate trend rate	4.5%
Year of ultimate trend rate	2035

* Includes price inflation at 2.5%.

** Alternate trend rates were used for Medicare Part B premiums and are disclosed in Schedule D.

Schedule of Employer Contributions
Health Insurance Trust

Year Ended June 30	Statutorily Required Contribution	Actual Employer Contribution	Percentage of Statutory Contributed
	(A)	(B)	(B) / (A)
2015	\$ 145,263,926	\$ 145,263,926	100.0 %
2016	\$ 178,638,370	\$ 178,638,370	100.0
2017	180,375,986	180,375,986	100.0
2018	187,102,413	187,102,413	100.0
2019	183,146,155	183,146,155	100.0
2020	184,625,474	184,625,474	100.0
2021	184,887,065	184,887,065	100.0
2022	200,235,203	151,765,145	75.8
2023	208,815,818	208,815,818	100.0
2024	224,320,176	224,320,176	100.0

Schedule of Employer Contributions
Life Insurance Trust

Year Ended June 30	Actuarially Determined Contribution (ADC)	Actual Employer Contribution	Percentage of ADC Contributed
	(A)	(B)	(B) / (A)
2015	\$ 1,050,216	\$ 1,019,519	97.1 %
2016	1,057,851	1,037,769	98.1
2017	1,065,122	1,049,683	98.6
2018	1,075,305	1,058,329	98.4
2019	1,081,535	1,421,227	131.4
2020	1,842,977	1,796,389	97.5
2021	2,252,365	2,138,375	94.9
2022	2,736,268	2,754,863	100.7
2023	3,268,967	3,223,560	98.6
2024	3,311,127	3,356,772	101.4

Schedule A
Results of the Valuation
June 30, 2024
(Dollars in thousands)

	Health Insurance Trust	Life Insurance Trust
Payroll	\$ 4,308,468	\$ 4,308,468
Actuarial Accrued Liability		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 2,169,814	\$ 16,825
(b) Present terminated vested members	85,149	4,867
(c) Present retired members and covered spouses	1,780,778	103,834
(d) Total actuarial accrued liability	\$ 4,035,741	\$ 125,526
 Present Assets for Valuation Purposes	 \$ 3,246,186	 \$ 102,760
 Unfunded Actuarial Accrued Liability	 \$ 789,555	 \$ 22,766
 Contributions	Year Ended June 30, 2025	Year Ended June 30, 2027
Normal	2.01 %	0.03 %
Accrued liability	1.53	0.05
Total	3.54 %	0.08 %

Health Insurance Trust
Solvency Test
(Dollars in millions)

Valuation Date June 30	Accrued Liability for			Valuation Assets	Portion of Accrued Liabilities Covered by Assets		
	(1) Active Member Contributions	(2) Deferred Vested, Retirants and Beneficiaries	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)
	2015	n/a	\$ 1,982.2		\$ 1,543.4	\$ 637.8	n/a
2016	n/a	1,950.9	1,683.2	795.1	n/a	41	0
2017	n/a	1,985.1	1,706.6	985.7	n/a	50	0
2018	n/a	1,692.3	1,648.4	1,213.9	n/a	72	0
2019	n/a	1,604.3	1,528.9	1,442.5	n/a	90	0
2020	n/a	1,354.0	1,403.7	1,701.0	n/a	100	25
2021	n/a	1,690.3	1,766.3	2,072.6	n/a	100	22
2022	n/a	1,832.1	1,936.6	2,401.1	n/a	100	29
2023	n/a	1,836.8	2,072.8	2,789.0	n/a	100	46
2024	n/a	1,865.9	2,169.8	3,246.2	n/a	100	64

**Life Insurance Trust
Solvency Test**
(Dollars in millions)

Valuation Date June 30	Accrued Liability for				Portion of Accrued Liabilities Covered by Assets		
	(1) Active Member Contributions	(2) Deferred Vested, Retirants and Beneficiaries	(3) Active Members (Employer Financed Portion)	Valuation Assets	(1)	(2)	(3)
2015	n/a	\$ 82.7	\$ 16.0	\$ 97.2	n/a	100 %	91 %
2016	n/a	89.0	17.1	97.3	n/a	100	49
2017	n/a	92.1	17.0	95.7	n/a	100	21
2018	n/a	94.2	18.3	93.8	n/a	99	0
2019	n/a	99.1	18.4	92.5	n/a	93	0
2020	n/a	103.5	18.7	92.2	n/a	89	0
2021	n/a	100.7	16.0	95.5	n/a	95	0
2022	n/a	102.8	16.4	96.9	n/a	94	0
2023	n/a	106.1	16.5	99.0	n/a	93	0
2024	n/a	108.7	16.8	102.8	n/a	95	0

Schedule B
Development of the Actuarial Value of Assets
Health Insurance Trust
June 30, 2024

(1)	Actuarial value of assets beginning of year	\$2,788,969,835
(2)	Fair value of assets end of year	3,317,710,858
(3)	Fair value of assets beginning of year	2,743,413,081
(4)	Cash flow	
	a. Contributions	536,423,857
	b. Benefit payments	300,298,462
	c. Administrative expense	2,120,996
	d. Net: (4)a - (4)b - (4)c	234,004,399
(5)	Investment Income	
	a. Fair value total: (2) - (3) - (4)d	340,293,378
	b. Assumed rate	7.1 %
	c. Amount for immediate recognition: [(3) x (5)b] + [(4)d x (5)b x 0.5]	203,089,485
	d. Amount for phased-in recognition: (5)a - (5)c	137,203,893
(6)	Phased-in recognition of investment income	
	a. Current year: 0.20 x (5)d	27,440,779
	b. First prior year	14,746,739
	c. Second prior year	(77,903,191)
	d. Third prior year	73,328,318
	e. Fourth prior year	(17,490,774)
	f. Total recognized investment gain	20,121,871
(7)	Actuarial value of assets end of year: (1) + (4)d + (5)c + (6)f	3,246,185,590
(8)	Difference between fair & actuarial values: (2) - (7)	\$ 71,525,268
(9)	Rate of return on actuarial value	7.68 %

**Development of the Actuarial Value of Assets
Life Insurance Trust
June 30, 2024**

(1)	Actuarial value of assets beginning of year	\$ 99,026,964
(2)	Fair value of assets end of year	101,559,122
(3)	Fair value of assets beginning of year	94,029,915
(4)	Cash flow	
	a. Contributions	3,356,772
	b. Benefit payments	6,106,000
	c. Administrative expense	36,650
	d. Net: (4)a - (4)b - (4)c	(2,785,878)
(5)	Investment Income	
	a. Fair value total: (2) - (3) - (4)d	10,315,085
	b. Assumed rate	7.1 %
	c. Amount for immediate recognition: [(3) x (5)b] + [(4)d x (5)b x 0.5]	6,577,225
	d. Amount for phased-in recognition: (5)a - (5)c	3,737,860
(6)	Phased-in recognition of investment income	
	a. Current year: 0.20 x (5)d	747,572
	b. First prior year	503,029
	c. Second prior year	(4,617,322)
	d. Third prior year	3,534,632
	e. Fourth prior year	(226,460)
	f. Total recognized investment gain	(58,549)
(7)	Actuarial value of assets end of year: (1) + (4)d + (5)c + (6)f	102,759,762
(8)	Difference between fair & actuarial values: (2) - (7)	\$ (1,200,640)
(9)	Rate of return on actuarial value	6.68 %

Schedule C

**Health Insurance Trust
Summary of Receipts & Disbursements
(Fair Value)**

	For the Year Ended	
	June 30, 2024	June 30, 2023
Receipts for the Year		
Contributions		
Members statutory	\$ 155,327,151	\$ 149,209,656
Payment by retired members	62,939,581	63,329,256
Total members	<u>218,266,732</u>	<u>212,538,912</u>
State statutory contributions	26,039,273	24,370,180
Employer contributions	127,901,507	123,487,533
State shared responsibility	70,379,396	60,958,105
Total employer	<u>224,320,176</u>	<u>208,815,818</u>
Total receipts	442,586,908	421,354,730
Recovery income	156,776,530	145,358,918
Net investment income	340,293,378	243,052,241
Total	<u>939,656,816</u>	<u>809,765,889</u>
Disbursements for the Year		
Administrative expense	2,120,996	1,974,318
Medical insurance expense	363,238,043	333,554,179
Total disbursements	<u>365,359,039</u>	<u>335,528,497</u>
Excess of Receipts Over Disbursements	574,297,777	474,237,392
Reconciliation of Asset Balances		
Asset balance as of the beginning of the year	2,743,413,081	2,269,175,689
Excess of receipts over disbursements	<u>574,297,777</u>	<u>474,237,392</u>
Asset balance as of the end of the year	<u><u>\$3,317,710,858</u></u>	<u><u>\$ 2,743,413,081</u></u>
Investment rate of return on fair value	12.37%	11.52%

**Life Insurance Trust
Summary of Receipts & Disbursements
(Fair Value)**

	For the Year Ended	
	June 30, 2024	June 30, 2023
Receipts for the Year		
Contributions		
Members	\$	\$
State	2,777,522	2,599,486
Employer	<u>579,250</u>	<u>624,074</u>
Total	3,356,772	3,223,560
Net investment income	<u>10,315,085</u>	<u>8,682,485</u>
Total	13,671,857	11,906,045
Disbursements for the Year		
Benefit payments	6,106,000	6,219,000
Miscellaneous, including expenses	<u>36,650</u>	<u>37,633</u>
Total	6,142,650	6,256,633
Excess of Receipts Over Disbursements	7,529,207	5,649,412
Reconciliation of Asset Balances		
Asset balance as of the beginning of the year	94,029,915	88,380,503
Excess of receipts over disbursements	<u>7,529,207</u>	<u>5,649,412</u>
Asset balance as of the end of the year	<u><u>\$101,559,122</u></u>	<u><u>\$ 94,029,915</u></u>
Investment rate of return on fair value	11.18 %	9.63 %

Schedule D

Statement of Actuarial Assumptions and Methods

The rates of retirement, disability, mortality, termination, salary increases, and rates of future benefit participation used in the valuation were selected based on the actuarial experience study prepared as of June 30, 2020, submitted to and adopted by the board on Sept. 20, 2021. The health care cost trend rates, and expected plan costs were determined by the actuary based on recent experience.

Valuation Date — June 30, 2024

Discount Rate — 7.1% per annum, compounded annually for Health Insurance Trust.
7.1% per annum, compounded annually for Life Insurance Trust.

ACTUARIAL SECTION

Health Care Cost Trend Rates — Following is a chart detailing trend assumptions.

Fiscal Year Ended	Annual Trend Rate	
	Medicare Part B	Medical
2025	3.39 %	7.00 %
2026	6.02	6.75
2027	7.71	6.50
2028	5.98	6.25
2029	6.47	6.00
2030	6.05	5.75
2031	6.63	5.50
2032	7.01	5.25
2033	5.98	5.00
2034	4.87	4.75
2035	4.62	4.50
2036 and beyond	4.50	4.50

Expected Annual Claims — For retirees ages 65 and older, per capita health care costs are adjusted to reflect expected health care cost changes related to age. The relative value factors used were developed from the Society of Actuaries' June 2013 research report Health Care Costs-From Birth to Death by Dale Yamamoto and from the ASOP 6 practice note developed by the American Academy of Actuaries. Representative values of the expected annual claims based on a blended 2025 MEHP rate of \$210 per month, or \$2,520 per year, are as follows:

Participant Age	Male	Female
65	\$1,713	\$1,632
70	2,082	2,007
75	2,472	2,343
80	2,870	2,699
85	3,233	3,046
90	3,550	3,308

For the retiree health care liabilities of those under age 65, the current premium charged by the Kentucky Employees' Health Plan (KEHP) is used as the base cost and is projected forward using the health care trend assumption. No implicit rate subsidy is calculated or recognized as the implicit rate subsidy is deemed the responsibility of the KEHP. Under Actuarial Standard of Practice No. 6 (ASOP No. 6), aging subsidies (or implicit rate subsidies) should be recognized, as the differences in health care utilization and cost due to age have been demonstrated and well quantified.

The impact of aging on a valuation's results can be as significant as the use of mortality, trend, and discounting. It has been the long-standing position that the responsibility for costs that relate to KEHP implicit subsidies, rests with KEHP, not the system, as the system has no operational authority over KEHP. As such, KEHP implicit subsidies are excluded from the OPEB valuation process of the retiree medical plan. As GASB 74 and 75 prohibit such a deviation from ASOP No. 6 and therefore the KEHP implicit subsidies will be valued and will increase the actuarial accrued liability for GASB 74 and 75 purposes. The information required under GASB Statements No. 74 and 75 will be issued in separate reports.

Retiree Medical Plan Costs — Assumed per capita health care costs were based on past experience and trended based on the assumptions. Following are charts detailing retiree per capita assumptions. These amounts include medical, drug, and administrative costs and represent the amount that the system pays as the full contribution amount. An additional \$8 per month is paid to the Department of Employee Insurance (DEI) and is not included in the under-age-65 costs listed below. For retirees ages 65 and older, the average costs shown are normalized to age 65, and then age adjusted in calculating liabilities.

Monthly Under Age 65 (KEHP) Full Costs as of Jan. 1, 2025

Tier Elected	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell HD
Single	\$ 930.76	\$ 949.04	\$ 901.04	\$ 835.42
Parent Plus	1,269.28	1,320.40	1,234.80	1,144.86
Couple	1,866.24	1,981.62	1,863.04	1,727.36
Family	2,078.08	2,185.78	2,069.88	1,919.14
Family Cross-Reference*	1,068.66	1,126.28	1,057.40	980.38

* Family Cross-Reference is not an available payment option if hired on Jan. 1, 2025, or after.

Retiree Medical Plan Contribution — The portion of the medical plan premiums paid by participants is composed of a Plan Option Cost, a Time-Specific Adjustment Cost and a Shared Responsibility Cost. Retirees under the age of 65 who do not complete their LivingWell Promise will be charged an additional \$40 per month above the Plan Option Cost detailed below. An additional contribution is required to be paid by retirees under the age of 65 who use tobacco (\$40 for Single or Family Cross-Reference, and \$80 for Parent Plus, Couple or Family).

Monthly Under Age 65 (KEHP) Plan Option Costs as of Jan. 1, 2025

Tier Elected	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell HD
Single	\$ 53.46	\$ 89.14	\$ 28.34	\$ 20.88
Parent Plus	137.06	254.10	67.52	56.10
Couple	339.34	571.76	281.42	250.46
Family	398.92	716.64	337.68	301.30
Family Cross-Reference*	86.90	170.48	31.50	29.20
Spouse - Single	938.76	957.04	909.04	843.42
Spouse - Parent Plus	1,277.28	1,328.40	1,242.80	1,152.86

* Per employee/retiree. Family Cross-Reference is not an available payment option if hired on Jan. 1, 2025, or after.

Time-specific adjustment plus Shared Responsibility Cost — The following charts are the Time-Specific Adjustment Costs paid by retirees in addition to the Plan Option Costs shown prior.

Time-Specific Adjustments for Retirees Employed Before July 1, 2002, as of Jan. 1, 2025

Plan	Years of Service	Single	Parent Plus	Couple	Family	Family Cross-Reference*
Living Well CDHP	5-9.99	\$ 704.22	\$ 959.14	\$ 1,353.82	\$ 1,506.08	\$ 808.68
	10-14.99	531.15	786.07	1,180.75	1,333.01	635.66
	15-19.99	358.07	612.99	1,007.67	1,159.93	462.53
	20 or More	185.00	439.92	834.60	986.86	289.46
Living Well PPO	5-9.99	691.17	893.22	1,236.78	1,296.06	782.72
	10-14.99	522.45	720.15	1,063.71	1,122.99	609.65
	15-19.99	353.72	547.07	890.63	949.91	436.57
	20 or More	185.00	374.00	717.56	776.84	263.50
Living Well Basic	5-9.99	700.77	994.20	1,408.54	1,559.12	852.82
	10-14.99	528.85	821.13	1,235.47	1,386.05	679.75
	15-19.99	356.92	648.05	1,062.39	1,212.97	506.67
	20 or More	185.00	474.98	889.32	1,039.90	333.60
Living Well HD	5-9.99	657.15	915.68	1,303.82	1,444.76	778.10
	10-14.99	499.77	742.61	1,130.75	1,271.69	605.03
	15-19.99	342.38	569.53	957.67	1,098.61	431.95
	20 or More	185.00	396.46	784.60	925.54	258.88

**Family Cross-Reference is not an available payment option if hired on Jan. 1, 2025, or after.*

Time-Specific Adjustments for Retirees Employed On/After July 1, 2002, as of Jan. 1, 2025

Plan	Years of Service	Single	Parent Plus	Couple	Family	Family Cross-Reference*
Living Well CDHP	5-9.99	\$ 808.07	\$ 1,062.99	\$ 1,457.67	\$ 1,609.93	\$ 912.53
	10-14.99	704.22	959.14	1,353.82	1,506.08	808.68
	15-19.99	565.76	820.68	1,215.36	1,367.62	670.22
	20-24.99	427.30	682.22	1,076.90	1,229.16	531.76
	25-25.99	254.23	509.15	903.83	1,056.09	358.69
	26-26.99	219.61	474.53	869.21	1,021.47	324.07
	27 or More	185.00	439.92	834.60	986.86	289.46
Living Well PPO	5-9.99	792.41	997.07	1,340.63	1,399.91	886.57
	10-14.99	691.17	893.22	1,236.78	1,296.06	782.72
	15-19.99	556.19	754.76	1,098.32	1,157.60	644.26
	20-24.99	421.21	616.30	959.86	1,019.14	505.80
	25-25.99	252.49	443.23	786.79	846.07	332.73
	26-26.99	218.74	408.61	752.17	811.45	298.11
	27 or More	185.00	374.00	717.56	776.84	263.50
Living Well Basic	5-9.99	803.93	1,098.05	1,512.39	1,662.97	956.67
	10-14.99	700.77	994.20	1,408.54	1,559.12	852.82
	15-19.99	563.23	855.74	1,270.08	1,420.66	714.36
	20-24.99	425.69	717.28	1,131.62	1,282.20	575.90
	25-25.99	253.77	544.21	958.55	1,109.13	402.83
	26-26.99	219.38	509.59	923.93	1,074.51	368.21
	27 or More	185.00	474.98	889.32	1,039.90	333.60
Living Well HD	5-9.99	751.59	1,019.53	1,407.67	1,548.61	881.95
	10-14.99	657.15	915.68	1,303.82	1,444.76	778.10
	15-19.99	531.25	777.22	1,165.36	1,306.30	639.64
	20-24.99	405.34	638.76	1,026.90	1,167.84	501.18
	25-25.99	247.95	465.69	853.83	994.77	328.11
	26-26.99	216.48	431.07	819.21	960.15	293.49
	27 or More	185.00	396.46	784.60	925.54	258.88

*Family Cross-Reference is not an available payment option if hired on Jan. 1, 2025, or after.

Current Retiree Medical Plan Participation — Actual census data and current plan elections (including waivers) provided by the system were used for those retirees currently participating in the retiree medical plan. Current participants are assumed to maintain their current retiree medical plan coverage until they are no longer eligible.

ACTUARIAL SECTION

Anticipated Retiree Medical Plan Participation — The assumed annual rates of health care plan participation for future retirees are as follows.

Member Participation

Years of Service	TRS 1	TRS 2	TRS 3 & TRS 4
5-9.99	20 %	20%	Not Eligible
10-14.99	40	20	Not Eligible
15-19.99	70	40	40%
20-24.99	90	50	50
25-25.99	90	80	80
26-26.99	90	85	85
27 or more	90	90	90

Anticipated Retiree Medical Plan Elections — The assumed rates of plan election for future retirees participating in the KEHP plans are provided in the following table. As the assumed plan election rates are estimates and actual results may be materially different, this assumption will need to be revised as experience evolves.

LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell HD
58%	39%	3%	0%

Spouse Coverage in Medical Plan — Actual census data and current plan elections were used for MEHP- and KEHP-covered spouses (including beneficiaries) of current retirees. For spouses of future retirees, 30% of future male retirees are assumed to cover their spouse and 25% of future female retirees are assumed to cover their spouse. Male retirees are assumed to be three years older than their spouse and female retirees are assumed to be one year younger than their spouse.

Disabled Dependent Children in Retiree Medical Plan — The liability associated with disabled dependent children was determined to be de minimis and was therefore excluded from this valuation.

Withdrawal Assumption — Future vested members who terminate employment prior to retirement are assumed to elect to withdraw their contributions based upon their age and service at termination of employment as follows.

Rates of Withdrawal Upon Termination of Employment

Age at Termination of Employment	Years of Service		
	5 - 10	10 - 15	15+
Under Age 55	20%	15%	10%
Ages 55+	10%	10%	10%

All vested members who terminate employment prior to retirement are assumed to elect to withdraw their contributions prior to receiving a pension benefit based upon their service as follows.

Rates of Withdrawal Prior to Receiving a Pension Benefit

Years of Service			
5 - 9	10 - 14	15 - 26	27+
25%	15%	10%	25%

All vested members who terminate employment prior to retirement and who are assumed to elect to receive a pension benefit are assumed to begin receiving their benefit at age 60.

Salary Increases — Representative values of the assumed annual rates of future salary increases are as follows and include wage inflation at 2.75% per annum.

Service	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	≥17
Annual Rate %	7.5	5.5	5	5	5	4.75	4.5	4.25	4	4	4	3.75	3.5	3.5	3.25	3.25	3

Payroll Growth — 2.75% per annum, compounded annually.

Price Inflation — 2.5% per annum, compounded annually.

Federal Legislation — The impacts of the Affordable Care Act (ACA) and the Inflation Reduction Act (IRA) were addressed in this valuation. Review of the information currently available did not identify any specific provisions of the legislation that are anticipated to directly impact results other than plan design features and fees currently mandated by the ACA and incorporated in the plan designs, which are included in the current baseline claims costs, and the anticipation of potential changes to Medicare due to the IRA, which are included in our trend assumption and considered in our sensitivity analysis section in Schedule G. Continued monitoring of the impact on the plan’s liability due to this and other legislation, if applicable, will be required.

COVID-19 — The impact of COVID-19 pandemic was considered in this valuation, however, no changes were incorporated at this time due to the level of uncertainty regarding the impact on both plan costs and contribution levels going forward. Given the uncertainty regarding COVID-19 (e.g., the impact of routine care being deferred, direct COVID-19 treatment and prevention costs, changes in contribution and budget projections), continued monitoring of the impact on the plan’s liability will be required.

Asset Valuation Method — Five-year market related actuarial value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the fair value of assets and the expected actuarial value of assets, based on the ultimate assumed valuation rate of return. The amount recognized each year is 20% of the difference between fair value and expected actuarial value. The ultimate assumed valuation rate of return is assumed to be 7.1% for the Health Insurance Trust and 7.1% for the Life Insurance Trust.

Actuarial Cost Method — The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future, of each active member’s expected benefit at retirement or death is determined, based on his/her age, service, and gender. The calculations take into account the probability of a member’s death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability or survivor’s benefit. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries and deferred vested members to obtain the present value of all expected benefits payable from the system on account of the present group of members and beneficiaries.

The employer contributions required to support the benefits of the system are determined following a level funding approach and consist of a normal contribution and an accrued liability contribution.

The normal contribution is determined using the entry age normal method. Under this method, a calculation is made to determine the uniform and constant percentage rate of employer contribution, which, if applied to the compensation of the average new member during the entire period of his/her anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his or her behalf.

The unfunded actuarial accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the system.

Separations From Service — Representative values of the assumed annual rates of salary increases, death, disability, withdrawal, service retirement and early retirement are as follows.

TRS 1, TRS 2 & TRS 3 Members

Males: Annual Rate of							
Age	Death*	Disability	Withdrawal			Retirement	
			Years of Service			Before 27 Years of Service	After 27 Years of Service **
			0 - 4	5 - 9	10+		
20	0.030 %	0.01 %	20.00 %				
25	0.017	0.01	11.00	3.25 %			
30	0.024	0.01	10.00	3.60	2.80 %		
35	0.032	0.02	11.00	3.60	1.55		
40	0.046	0.07	12.50	4.00	1.25		
45	0.074	0.18	11.50	4.00	1.10		17.0 %
50	0.122	0.28	14.25	4.50	1.10		25.0
55	0.187	0.40	15.00	6.00	1.25	5.25 %	40.0
60	0.291	0.50	15.00	0.00	0.00	13.5	33.0
62	0.354	0.50	15.00	0.00	0.00	15.0	30.0
65	0.481	0.50	20.00	0.00	0.00	20.0	30.0
70	0.774	0.50	20.00	0.00	0.00	25.0	30.0
75	1.234	0.50	20.00	0.00	0.00	100.0	100.0

* Base Rates

** Plus 8.5% in year when first eligible for unreduced retirement with 27 years of service

TRS 1, TRS 2 & TRS 3 Members

Females: Annual Rate of							
Age	Death*	Disability	Withdrawal			Retirement	
			Years of Service			Before 27 Years of Service	After 27 Years of Service **
			0 - 4	5 - 9	10+		
20	0.013 %	0.01 %	13.00 %				
25	0.009	0.01	9.00	4.50 %			
30	0.011	0.02	11.00	4.25	1.00 %		
35	0.017	0.06	11.00	3.50	1.60		
40	0.026	0.10	12.50	4.00	1.20		
45	0.040	0.24	13.50	4.00	1.00		17.0 %
50	0.062	0.38	15.00	4.50	1.25		20.0
55	0.090	0.50	15.00	5.00	1.60	5.0 %	50.0
60	0.132	0.60	17.50	0.00	0.00	15.0	40.0
62	0.158	0.62	17.50	0.00	0.00	15.0	40.0
65	0.213	0.65	25.00	0.00	0.00	25.0	40.0
70	0.372	0.65	25.00	0.00	0.00	30.0	35.0
75	0.696	0.65	25.00	0.00	0.00	100.0	100.0

* Base rates

** Plus 10% in year when first eligible for unreduced retirement with 27 years of service

TRS 4 Members

Age	Annual Rate for Males			Annual Rates for Females		
	Before 20 Years of Service	20-29 Years of Service	30 or More Years of Service*	Before 20 Years of Service	20-29 Years of Service	30 or More Years of Service*
57	3.0 %	5.0 %	25.0 %	3.0 %	5.0 %	30.0 %
60	8.5	13.5	25.0	10.0	15.0	30.0
62	12.0	15.0	25.0	12.0	15.0	25.0
65	20.0	20.0	25.0	25.0	25.0	30.0
70	25.0	25.0	25.0	30.0	30.0	30.0
75	100.0	100.0	100.0	100.0	100.0	100.0

* Plus 20% in the first year attaining 30 years of service; plus 25% at age 65 in the first year attaining 30 years of service

Deaths after retirement: Mortality rates were based on the Pub-2010 (Teachers Benefit-Weighted) Mortality table, projected generationally based on Projection Scale MP-2020, with various set forwards, set backs, and adjustments for each of the groups. Below is a summary of the specific mortality tables and adjustments for each of the groups. Mortality Assumption — All mortality rates use Pub-2010 benefit-weighted tables.

Group	Set Forward (+) / Set Back (-)	Adjustment to Rates	Projection Scale
Service retirees	Male: +2	Male: 102%	75% of MP-2020
	Female: +2	Female: 98%	
Contingent annuitants	Male: +2	Male: 101%	75% of MP-2020
	Female: None	Female: 100%	
Disability retirees	Male: +1	Male: 96%	75% of MP-2020
	Female: -2	Female: 94%	
Actives	Male: +1	Male: 100%	75% of MP-2020
	Female: -2	Female: 98%	

Representative values of the assumed annual rates of death after service retirement and after disability retirement are shown here.

Age	Annual Rate of Death After Service Retirement		Disability Retirement		Survivors of Deceased Members	
	Male	Female	Male	Female	Male	Female
45	0.0836 %	0.0568 %	1.0646 %	0.7755 %	0.6020 %	0.2620 %
50	0.1357	0.0843	1.6435	1.1910	0.7545	0.3200
55	0.2744	0.2215	2.1130	1.5416	0.8959	0.4460
60	0.4427	0.3322	2.4806	1.7616	1.1413	0.6220
65	0.7579	0.5351	3.0653	1.9834	1.6443	0.8990
70	1.4066	0.9682	3.9485	2.4149	2.5876	1.3530
75	2.6816	1.8649	5.3155	3.2562	4.1006	2.1510
80	5.0500	3.5819	7.6118	4.7705	6.5630	3.5730
85	9.4585	6.8071	11.2109	7.3423	10.7717	6.3160
90	16.9116	12.6077	16.9738	11.1653	17.7306	11.3290
95	26.9423	21.5110	24.2170	15.7356	26.8670	18.5900

employees identified as currently receiving retiree health care through the system are valued as retirees. Retirees making active contributions into a second account do not qualify for insurance on that second account.

Covered Member Retiree Medical Plan Contributions

Under Age 65 Retiree Shared Responsibility Contribution — Effective July 1, 2010, retirees under the age of 65 began a three-year phase-in of the Shared Responsibility contribution. This contribution reduces the applicable amount of the full contribution provided by the system to retirees, by adjusting the Shared Responsibility Contribution amount by 100% less the appropriate percentage from the Retiree Percentage Contribution table below. Effective July 1, 2012, the full Shared Responsibility Contribution equals the Standard Medicare Part B premium paid by retirees ages 65 and older.

Monthly Under Age 65 Shared Responsibility Contribution Timeline

Effective Date	Medicare Part B Monthly Cost	Formula	Shared Responsibility Contribution
July 1, 2010	\$ 110.50	(1/3 x \$110.50)	\$ 37.00
Jan. 1, 2011	115.40	(1/3 x 115.40)	39.00
July 1, 2011	115.40	(2/3 x 115.40)	77.00
Jan. 1, 2012	99.90	(2/3 x 99.90)	66.00
July 1, 2012	99.90	99.90	99.90
Jan. 1, 2013	104.90	104.90	104.90
Jan. 1, 2014	104.90	104.90	104.90
Jan. 1, 2015	104.90	104.90	104.90
Jan. 1, 2016	121.80	121.80	121.80
Jan. 1, 2017	134.00	134.00	134.00
Jan. 1, 2018	134.00	134.00	134.00
Jan. 1, 2019	135.50	135.50	135.50
Jan. 1, 2020	144.60	144.60	144.60
Jan. 1, 2021	148.50	148.50	148.50
Jan. 1, 2022	170.10	170.10	170.10
Jan. 1, 2023	164.90	164.90	164.90
Jan. 1, 2024	174.70	174.70	174.70
Jan. 1, 2025	185.00	185.00	185.00

Retiree Years of Service Percentage Contribution — Retirees contribute percentages based on years of service at retirement, which are then applied to the Retiree Contribution Rate Basis as shown on the table below.

Retiree Percentage Contribution*

Years of Service	TRS 1		TRS 2	TRS 3 & TRS 4
	Age 65 or Older and Covered Before Jan.1, 2005	Age 65 After or Covered After Dec.31, 2004		
5 - 9.99	30	75	90	Not Eligible
10 - 14.99	20	50	75	Not Eligible
15 - 19.99	10	25	55	55
20 - 24.99	0	0	35	35
25 - 25.99	0	0	10	10
26 - 26.99	0	0	5	5
27 or more	0	0	0	0

* 0% for disabled retirees that retired prior to Jan 1, 2002.

ACTUARIAL SECTION

Covered Member Retiree Retiree Medical Plan — For 2025, the TRS Board of Trustees approved a single contributions amount of up to \$877.30, as well as an additional \$8.00 per month paid to the Department of Employee Insurance (DEI) for participants on the Kentucky Employees' Health Plan (KEHP). TRS will contribute this amount towards insurance costs, less the Shared Responsibility cost of \$185.00. Under-65 retirees who are not Medicare eligible and continue on the KEHP are responsible for the remaining costs left from the total premium costs. The total premium costs are shown below.

Monthly Under Age 65 Plan Full Costs* Effective Jan. 1, 2025

Tier Elected	Under Age 65 (KEHP)				Ages 65 and Older (MEHP)
	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell HD	
Single	\$ 930.76	\$ 949.04	\$ 901.04	\$ 835.42	\$ 210.00
Parent Plus	1,269.28	1,320.40	1,234.80	1,144.86	
Couple	1,866.24	1,981.62	1,863.04	1,727.36	
Family	2,078.08	2,185.78	2,069.88	1,919.14	
Family Cross-Reference**	1,068.66	1,126.28	1,057.40	980.38	

* Does not include the additional contribution required to be paid by retirees under the age of 65 who use tobacco (\$40 for Single or Family Cross-Reference, and \$80 for Parent Plus, Couple or Family). Also, this does not include the additional contribution required to be paid by retirees under the age of 65 who do not complete their LivingWell Promise, which is an additional \$40 per month for all levels of coverage—single, parent +, couple, and family. For valuation purposes, it is conservatively assumed that, over time, 100% of KEHP retirees will complete their LivingWell Promise. This assumption will be monitored in future experience studies.

** Family Cross-Reference is not an available payment option if hired on January 1, 2025 or after.

Spouse Contributions — 100% of the full cost for non-Medicare eligible dependents is paid through a combination of payments from beneficiaries and the state. Neither the state nor TRS will pay any subsidy for family style coverage.

Survivors — Spouses of employees who die in service while eligible to retire, as well as survivors of service and disabled retirees, are eligible for retiree medical plan coverage if elected within 30 days of the employee's/retiree's death with no future remarriage. Otherwise, survivor is not eligible for retiree medical plan coverage.

Spousal Shared Risk Waiver for MEHP — Beginning in 2013, eligible spouses who waive the MEHP coverage, will no longer have the opportunity to enroll during any annual MEHP open enrollment so most spousal waivers on the MEHP are now permanent waivers unless a TRS-specific qualifying event is met. This does not apply to the KEHP. This MEHP eligibility rule became necessary to mitigate spousal adverse selection with zero premium Medicare Advantage plans on the individual and open market.

Monthly Surviving Spouse Contribution Effective Jan. 1, 2025

Tier Elected by Surviving Spouse	Under Age 65 (KEHP)				Age 65 and Older (MEHP)
	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell HD	
Single	\$ 938.76	\$ 957.04	\$ 909.04	\$ 843.42	\$ 210.00
Parent Plus	1,277.28	1,328.40	1,242.80	1,152.86	n/a

System Retiree Medical Plan Contributions — The system Contribution Rate Basis is determined annually by the system; and the full cost is projected based on historical claims data. For retirees, the following percentages are based on years of service at retirement and are then applied to the system Contribution Rate Basis.

Percentage of System Contribution Rate Provided to Retirees*

Years of Service	TRS 1		TRS 2	TRS 3 & TRS 4
	Age 65 or Older & Covered Before Jan. 1, 2005	Age 65 After or Covered After Dec. 31, 2004		
5 - 9.99	70	25	10	Not Eligible
10 - 14.99	80	50	25	Not Eligible
15 - 19.99	90	75	45	45
20 - 24.99	100	100	65	65
25 - 25.99	100	100	90	90
26 - 26.99	100	100	95	95
27 or more	100	100	100	100

* 100% for disabled retirees that retired prior to Jan. 1, 2002.

Active Member Retiree Medical Plan Contributions — Actively employed members make payroll contributions to the Health Insurance Trust based upon the following schedule.

Active Member Percentage of Payroll Contribution Made to Health Insurance Trust

University Employees			School District Employees (Non-Federal)			Other Employees		
TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4	TRS 1 & TRS 2	TRS 3	TRS 4
2.775 %	2.775 %	2.775 %	3.750 %	3.750%	3.750%	3.750 %	3.750 %	3.750 %

Life Insurance Plan Benefits — Effective July 1, 2000, the Teachers’ Retirement System shall:

- (a) Provide a life insurance benefit in a minimum amount of \$5,000 for its members who are retired for service or disability if hired prior to Jan. 1, 2022. Provide a life insurance benefit in a minimum amount of \$10,000 for its members who are retired for service or disability if hired on or after Jan. 1, 2022. This life insurance benefit shall be payable upon the death of a member retired for service or disability to the member’s estate or to a party designated by the member on a form prescribed by the retirement system; and
- (b) Provide a life insurance benefit in a minimum amount of \$2,000 for its active contributing members if hired prior to Jan. 1, 2022. Provide a life insurance benefit in a minimum amount of \$5,000 for its active contributing members if hired on or after Jan. 1, 2022. This life insurance benefit shall be payable upon the death of an active contributing member to the member’s estate or to a party designated by the member on a form prescribed by the retirement system.

Note — Members employed on a substitute or part-time basis and working at least 69% of a full contract year in a single fiscal year will be eligible for a life insurance benefit for the balance of the fiscal year or the immediately succeeding fiscal year under certain conditions. For non-vested members employed on a substitute or part-time basis, the life insurance benefit is provided if death occurs as the result of a physical injury on the job. For vested members employed on a substitute or part-time basis, death does not have to be the result of a physical injury on the job for life insurance benefits to be provided.

Schedule F

Table 1
Age - Service Table
Distribution of Active Members as of June 30, 2024
by Age and Service Groups

Attained Age	Completed Years of Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 26	27 to 29	30 to 34	35 & Over	Number	Payroll
Under 25	2,437	2,147	7								4,591	\$ 109,240,905
25 to 29	927	4,801	2,108	1							7,837	348,749,181
30 to 34	622	2,024	4,049	1,407	1						8,103	423,693,514
35 to 39	616	1,546	1,984	3,903	1,446						9,495	562,239,697
40 to 44	623	1,449	1,583	1,981	4,233	1,491	6	1			11,367	738,849,100
45 to 49	445	982	1,104	1,248	1,951	3,976	1,018	134	3		10,861	772,334,410
50 to 54	625	970	782	960	1,403	1,929	1,336	1,576	393	1	9,975	701,722,041
55 to 59	855	1,064	470	493	831	1,029	515	431	352	45	6,085	365,083,982
60 to 64	715	1,034	368	322	390	469	185	173	119	56	3,831	182,154,030
65 to 69	524	783	240	115	99	132	56	63	68	35	2,115	66,413,089
70 & Over	464	709	267	79	59	55	16	34	28	43	1,754	37,988,096
Total Count	8,853	17,509	12,962	10,509	10,413	9,081	3,132	2,412	963	180	76,014	\$4,308,468,045

Average Age: 43.8

Average Service: 11.1

Retirement Eligible: 9,864

Table 2
Schedule of Total Active Member Valuation Data

Valuation Date June 30	Number	Annual Payroll	Annual Average Pay	Percentage Increase in Average Pay
2015	72,246	\$ 3,515,113,126	\$ 48,655	2.45 %
2016	71,848	3,537,226,348	49,232	1.19
2017	72,130	3,563,584,342	49,405	0.35
2018	72,205	3,605,115,787	49,929	1.06
2019	72,647	3,648,427,710	50,221	0.58
2020	73,151	3,723,481,576	50,901	1.35
2021	69,256	3,784,400,223	54,644	7.35
2022	74,785	4,033,509,178	53,935	(1.30)
2023	75,644	4,138,908,992	54,716	1.45
2024	76,014	4,308,468,045	56,680	3.59

Table 3
Eligible Deferred Vested Members
Male and Female Demographic Breakdown
as of June 30, 2024
Health Insurance Trust

Attained Age	Number of Males	Number of Females	Total Number
Under 30	0	0	0
30-34	14	40	54
35-39	188	544	732
40-44	399	1,253	1,652
45-49	387	1,198	1,585
50-54	387	1,419	1,806
55-59	253	1,042	1,295
60 & Over	276	1,009	1,285
Total	<u>1,904</u>	<u>6,505</u>	<u>8,409</u>

Life Insurance Trust			
Attained Age	Number of Males	Number of Females	Total Number
Under 30	26	89	115
30-34	196	726	922
35-39	378	1,181	1,559
40-44	505	1,605	2,110
45-49	480	1,514	1,994
50-54	484	1,675	2,159
55-59	304	1,217	1,521
60 & Over	335	1,130	1,465
Total	<u>2,708</u>	<u>9,137</u>	<u>11,845</u>

Table 4
All Retirees and Spouses Receiving Health Care Benefits
as of June 30, 2024
Male and Female Demographic Breakdown

Attained Age	Number of Males	Number of Females	Total Number
Under 40	0	2	2
40-44	3	20	23
45-49	22	68	90
50-54	320	831	1,151
55-59	945	2,303	3,248
60-64	1,581	3,660	5,241
65-69	2,155	5,555	7,710
70-74	3,334	7,660	10,994
75-79	3,197	6,518	9,715
80-84	1,856	3,479	5,335
85-89	830	1,679	2,509
90-94	279	730	1,009
95-99	44	206	250
100 and over	7	38	45
Total	14,573	32,749	47,322

Table 5
Schedule of Retirees, Beneficiaries and Survivors Added To and Removed From Rolls *
Health Insurance Trust

Year Ended June 30	Members Added	Spouses** Added	Total Added	Members Removed	Spouses** Removed	Total Removed	Members at Year End	Spouses** at Year End	Total at Year End
2015	1,990	731	2,721	1,190	633	1,823	38,075	7,129	45,204
2016	2,045	726	2,771	1,305	674	1,979	38,815	7,181	45,996
2017	1,835	699	2,534	1,153	691	1,844	39,497	7,189	46,686
2018	1,903	828	2,731	1,170	422	1,592	40,230	7,595	47,825
2019	1,701	666	2,367	1,220	692	1,912	40,711	7,569	48,280
2020	1,500	487	1,987	1,057	1,173	2,230	41,154	6,883	48,037
2021	1,548	448	1,996	1,527	603	2,130	41,175	6,728	47,903
2022	1,600	466	2,066	1,598	533	2,131	41,177	6,661	47,838
2023	1,619	369	1,988	1,741	475	2,216	41,055	6,555	47,610
2024	1,500	267	1,767	1,555	500	2,055	41,000	6,322	47,322

* Reflects members, spouses and beneficiaries participating in a health care plan.

** Includes spouses, beneficiaries and surviving spouses.

Table 6
Schedule of Retirees, Beneficiaries and Survivors Added To and Removed From Rolls *
Life Insurance Trust

(Dollars in thousands except Average Life Insurance Benefit)

Year Ended June 30	Number Added	Life Insurance Benefit	Number Removed	Life Insurance Benefit	Number at Year End	Life Insurance Benefit	Increase in Life Insurance Benefit	Average Life Insurance Benefit
2015	2,270	\$ 11,350	1,641	\$ 8,205	45,484	\$ 227,420	1.40 %	\$ 5,000
2016	2,394	11,970	807	4,035	47,071	235,355	3.49	5,000
2017	2,175	10,875	1,021	5,105	48,225	241,125	2.45	5,000
2018	2,605	13,025	1,408	7,040	49,422	247,110	2.48	5,000
2019	2,226	11,130	210	1,050	51,438	257,190	4.08	5,000
2020	2,003	10,015	1,179	5,895	52,262	261,310	1.60	5,000
2021	1,886	9,430	2,417	12,085	51,731	258,655	(1.02)	5,000
2022	2,213	11,065	1,731	8,655	52,213	261,065	0.93	5,000
2023	2,600	13,000	1,434	7,170	53,379	266,895	2.23	5,000
2024	2,036	10,180	1,367	6,835	54,048	270,240	1.25	5,000

* Beginning with the June 30, 2021 valuation date, the counts in the exhibit above reflect all adjustments, which resulted in a larger number removed from rolls. Prior to June 30, 2021, the exhibit reflected the initial member counts.

Sensitivity Analysis — Health Insurance Trust

The June 30, 2024, valuation results of the Health Insurance Trust are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing cost. The charts on the following pages provide a simple analysis on how the costs are sensitive to changes to the assumed discount rate, the assumed inflation rate, the assumed rate of payroll growth, and the assumed rates of health care inflation (trend). The charts show the actuarial accrued liability, the unfunded liability, the funded ratio and the employer contribution rate under the following scenarios:

- The discount rate assumption sensitivity analysis shows the valuation results with the baseline discount rate assumption, 7.1%, together with a decrease in the discount rate to 6.1% and an increase in the discount rate to 8.1%. Under this scenario, the underlying inflation rate assumption is held constant at 2.5% and the payroll growth assumption is held constant at 2.75%.
- The inflation assumption sensitivity analysis shows the valuation results with the baseline underlying inflation rate assumption, 2.5%, together with decreases in the inflation rate to 2.25% and 2%. Under this scenario, the decrease in the underlying inflation rate assumption leads to corresponding decreases in the discount rate, the payroll growth assumption, and the assumed rates of salary increase for active members, and the ultimate health care trend.
- The wage inflation assumption sensitivity analysis shows the valuation results with the baseline underlying payroll growth assumption, 2.75%, together with decreases in the wage inflation assumption to 1.25% and 0%. Under this scenario, all other assumptions, including the individual member salary scale, are held constant so that the only impact is in the amortization of the unfunded liability, leading to higher employer contribution rates.
- The health care inflation (trend) assumption sensitivity analysis shows the valuation results with the baseline trend assumption along with a 1% increase in all assumed trend rates and a 1% decrease in all assumed trend rates.
- The MEHP cost sensitivity analysis shows the valuation results with the baseline costs along with the cost scenarios reflecting the risk of trust income disruption if income sources beyond the control of the state and TRS- such as prescription medication rebates and subsidies- are eliminated. We illustrate the impact of potential changes due to the Inflation Reduction Act on Medicare Part D costs and/or changes to Medicare Advantage plans under Medicare Part C.

Schedule G

Assumed Discount Rate Sensitivity Analysis
(Dollars in thousands)

	Decrease Discount Rate	Valuation Results	Increase Discount Rate
Actuarial accrued liability	\$ 4,626,112	\$ 4,035,741	\$ 3,555,188
Actuarial value of assets	3,246,186	3,246,186	3,246,186
Unfunded liability	\$ 1,379,926	\$ 789,555	\$ 309,002
Funded ratio	70.17 %	80.44 %	91.31 %
Contributions			
Normal cost	2.67 %	2.01 %	1.52 %
Accrued liability	2.52 %	1.53 %	0.64 %
Total	5.19 %	3.54 %	2.16 %
Member	(3.71)%	(3.71)%	(3.71)%
Employer	(2.99)%	(2.99)%	(2.99)%
State	(2.46)%	(2.46)%	(2.46)%
Statutorily required prefunding*	(3.97)%	(5.62)%	(7.00)%
Discount rate	6.10 %	7.10 %	8.10 %
Payroll growth	2.75 %	2.75 %	2.75 %
Inflation rate	2.50 %	2.50 %	2.50 %
Ultimate health care trend	4.50 %	4.50 %	4.50 %

* This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5).

Inflation Assumption Sensitivity Analysis
(Dollars in thousands)

	Valuation Results	Decrease Inflation Rate 0.25%	Decrease Inflation Rate 0.50%
Actuarial accrued liability	\$ 4,035,741	\$ 4,119,343	\$ 4,210,744
Actuarial value of assets	3,246,186	3,246,186	3,246,186
Unfunded liability	\$ 789,555	\$ 873,157	\$ 964,558
Funded ratio	80.44 %	78.8 %	77.09 %
Contributions			
Normal cost	2.01 %	2.06 %	2.11 %
Accrued liability	1.53 %	1.70 %	1.88 %
Total	3.54 %	3.76 %	3.99 %
Member	(3.71)%	(3.71)%	(3.71)%
Employer	(2.99)%	(2.99)%	(2.99)%
State	(2.46)%	(2.46)%	(2.46)%
Statutorily required prefunding*	(5.62)%	(5.40)%	(5.17)%
Discount rate	7.10 %	6.85 %	6.60 %
Payroll growth	2.75 %	2.50 %	2.25 %
Inflation rate	2.50 %	2.25 %	2.00 %
Ultimate health care trend	4.50 %	4.25 %	4.00 %

* This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5).

Wage Inflation Assumption Sensitivity Analysis

(Dollars in thousands)

	Valuation Results	Decrease Payroll Growth 1.25%	No Payroll Growth
Actuarial accrued liability	\$ 4,035,741	\$ 4,035,741	\$ 4,035,741
Actuarial value of assets	3,246,186	3,246,186	3,246,186
Unfunded liability	\$ 789,555	\$ 789,555	\$ 789,555
Funded ratio	80.44 %	80.44 %	80.44 %
Contributions			
Normal cost	2.01 %	2.01 %	2.01 %
Accrued liability	1.53 %	1.69 %	1.82 %
Total	3.54 %	3.70 %	3.83 %
Member	(3.71)%	(3.71)%	(3.71)%
Employer	(2.99)%	(2.99)%	(2.99)%
State	(2.46)%	(2.46)%	(2.46)%
Statutorily required prefunding*	(5.62)%	(5.46)%	(5.33)%
Discount rate	7.10 %	7.10 %	7.10 %
Payroll growth	2.75 %	1.25 %	0.00 %
Inflation rate	2.50 %	2.50 %	2.50 %
Ultimate health care trend	4.50 %	4.50 %	4.50 %

** This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5).*

Health Care Trend Assumption Sensitivity Analysis

(Dollars in thousands)

	Decrease Trend Rates 1%	Valuation Results	Increase Trend Rates 1%
Actuarial accrued liability	\$ 3,509,330	\$ 4,035,741	\$ 4,696,716
Actuarial value of assets	3,246,186	3,246,186	3,246,186
Unfunded liability	\$ 263,144	\$ 789,555	\$ 1,450,530
Funded ratio	92.50 %	80.44 %	69.12 %
Contributions			
Normal cost	1.58 %	2.01 %	2.59 %
Accrued liability	0.51 %	1.53 %	2.82 %
Total	2.09 %	3.54 %	5.41 %
Member	(3.71)%	(3.71)%	(3.71)%
Employer	(2.99)%	(2.99)%	(2.99)%
State	(2.46)%	(2.46)%	(2.46)%
Statutorily required prefunding*	(7.07)%	(5.62)%	(3.75)%
Discount rate	7.10 %	7.10 %	7.10 %
Payroll growth	2.75 %	2.75 %	2.75 %
Inflation rate	2.50 %	2.50 %	2.50 %
Ultimate health care trend	3.50 %	4.50 %	5.50 %

** This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5).*

The 2025 monthly TRS MEHP rate of \$210 includes \$200 in EGWP prescription drug costs. The EGWP prescription drug costs are based on projected total drug costs minus projected reimbursements from CMS and drug manufacturers for Medicare Part D rebates, subsidies, and reinsurance. If these reimbursements were not to continue at the current rate, and if Medicare eligible medical costs were to increase significantly, it is estimated that TRS MEHP costs could increase to as much as \$809. In this case, the statutory contribution rates will be less than the actuarially determined contribution rates, the unfunded actuarial accrued liability will not be paid off in the scheduled 16 year timeframe and the health insurance fund will not reach 100% funded. To illustrate the potential impact of this risk, the chart below shows the valuation results under the baseline scenario of the monthly TRS MEHP rate of \$210, and incremental impacts of rate increases up to the projected worse case scenario of \$809 per month.

Health Insurance Trust
MEHP Cost Sensitivity Analysis — Incremental Step Scenario
(Dollars in thousands)

MEHP Rate:	Baseline				No rebates or reimbursements
	\$210.00	\$359.75	\$509.50	\$659.25	\$809.00
Actuarial accrued liability	\$ 4,035,741	\$ 5,658,010	\$ 7,280,279	\$ 8,902,548	\$ 10,524,817
Actuarial value of assets	3,246,186	3,246,186	3,246,186	3,246,186	3,246,186
Unfunded liability	\$ 789,555	\$ 2,411,824	\$ 4,034,093	\$ 5,656,362	\$ 7,278,631
Funded ratio	80.44 %	57.37 %	44.59 %	36.46 %	30.84 %
Contributions					
Normal cost	2.01 %	2.54 %	3.07 %	3.59 %	4.12 %
Accrued liability	1.53 %	4.69 %	7.84 %	11.00 %	14.15 %
Total	3.54 %	7.23 %	10.91 %	14.59 %	18.27 %
Member	(3.71)%	(3.71)%	(3.71)%	(3.71)%	(3.71)%
Employer	(2.99)%	(2.99)%	(2.99)%	(2.99)%	(2.99)%
State	(2.46)%	(2.46)%	(2.46)%	(2.46)%	(2.46)%
Statutorily required prefunding*	(5.62)%	(1.93)%	1.75 %	5.43 %	9.11 %
Discount rate	7.10 %	7.10 %	7.10 %	7.10 %	7.10 %
Payroll growth	2.75 %	2.75 %	2.75 %	2.75 %	2.75 %
Inflation rate	2.50 %	2.50 %	2.50 %	2.50 %	2.50 %
Ultimate health care trend	4.50 %	4.50 %	4.50 %	4.50 %	4.50 %

* This represents funding by active members, local school districts, universities and other employers toward the unfunded liability of the health trust. See KRS 161.540(1)(c)(3) & 161.550(5).

Sensitivity Analysis — Life Insurance Trust

The June 30, 2024, valuation results of the Life Insurance Trust are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing cost. The charts on the following pages provide a simple analysis on how the costs are sensitive to changes to the assumed discount rate, the assumed inflation rate, and the assumed rate of payroll growth. The charts show the actuarial accrued liability, the unfunded liability, the funded ratio and the employer contribution rate under the following scenarios. Please note we maintain a minimum total employer contribution rate of 0.08% for all scenarios except the 1% increase in the discount rate scenario:

- The discount rate assumption sensitivity analysis shows the valuation results with the baseline discount rate assumption, and 7.1% together with a decrease in the discount rate to 6.1% and an increase in the discount rate to 8.1%. Under this scenario, the underlying inflation rate assumption is held constant at 2.5% and the payroll growth assumption is held constant at 2.75%.
- The inflation assumption sensitivity analysis shows the valuation results with the baseline underlying inflation rate assumption, 2.5%, together with decreases in the inflation rate to 2.25% and 2%. Under this scenario, the decrease in the underlying inflation rate assumption leads to corresponding decreases in the discount rate, the payroll growth assumption, and the assumed rates of salary increase for active members.
- The wage inflation assumption sensitivity analysis shows the valuation results with the baseline underlying wage inflation assumption, 2.75%, together with decreases in the wage inflation assumption to 1.25% and 0%. Under this scenario, all other assumptions, including the individual member salary scale, are held constant so that the only impact is in the amortization of the unfunded liability, leading to higher employer contribution rates.

Schedule H

Assumed Discount Rate Sensitivity Analysis
(Dollars in thousands)

	Decrease Discount Rate	Valuation Results	Increase Discount Rate
Actuarial accrued liability	\$ 143,083	\$ 125,526	\$ 111,321
Actuarial value of assets	102,760	102,760	102,760
Unfunded liability	\$ 40,323	\$ 22,766	\$ 8,561
Funded ratio	71.82 %	81.86 %	92.31 %
Contributions			
Normal cost	0.03 %	0.03 %	0.02 %
Accrued liability	0.06 %	0.05 %	0.02 %
Total	0.09 %	0.08 %	0.04 %
Member	0%	0%	0%
Employer/state	0.09 %	0.08 %	0.04 %
Discount rate	6.10 %	7.10 %	8.10 %
Payroll growth	2.75 %	2.75 %	2.75 %
Inflation rate	2.50 %	2.50 %	2.50 %

Inflation Assumption Sensitivity Analysis
(Dollars in thousands)

	Valuation Results	Decrease Inflation Rate 0.25%	Decrease Inflation Rate 0.50%
Actuarial accrued liability	\$ 125,526	\$ 129,721	\$ 134,165
Actuarial value of assets	102,760	102,760	102,760
Unfunded liability	\$ 22,766	\$ 26,961	\$ 31,405
Funded ratio	81.86 %	79.22 %	76.59 %
Contributions*			
Normal cost	0.03 %	0.03 %	0.03 %
Accrued liability	0.05 %	0.05 %	0.05 %
Total	0.08 %	0.08 %	0.08 %
Member	0%	0%	0%
Employer/state	0.08 %	0.08 %	0.08 %
Discount rate	7.10 %	6.85 %	6.60 %
Payroll growth	2.75 %	2.50 %	2.25 %
Inflation rate	2.50 %	2.25 %	2.00 %

* Recommended contributions actuarially determined, but not less than 0.08%.

Wage Inflation Assumption Sensitivity Analysis
(Dollars in thousands)

	Valuation Results	Decrease Payroll Growth 1.25%	No Payroll Growth
Actuarial accrued liability	\$ 125,526	\$ 125,526	\$ 125,526
Actuarial value of assets	102,760	102,760	102,760
Unfunded liability	\$ 22,766	\$ 22,766	\$ 22,766
Funded ratio	81.86 %	81.86 %	81.86 %
Contributions			
Normal cost	0.03 %	0.03 %	0.03 %
Accrued liability	0.05 %	0.05 %	0.05 %
Total	0.08 %	0.08 %	0.08 %
Member	0 %	0 %	0 %
Employer/state	0.08 %	0.08 %	0.08 %
Discount rate	7.10 %	7.10 %	7.10 %
Payroll growth	2.75 %	1.25 %	0.00 %
Inflation rate	2.50 %	2.50 %	2.50 %

** Recommended contributions actuarially determined, but not less than 0.08%.*

**30-Year Baseline Projection
Health Insurance Trust**

The results of actuarial valuations are a snapshot of the financial position on the valuation date, based on the assumed number of active employees and current beneficiaries. Projections simulate future actuarial valuation results over a forecast period (30 years in this case) by “creating” future new hires and performing valuations using the projected membership. The following items are assumed for the projected results.

- Active Employee Growth Rate — 0%
- Valuation Discount Rate — 7.1%
- Investment Rate of Return — 7.1% each year
- Actuarial Value of Assets — Five year smoothing, no corridor
- Amortization Method — Level percent of payroll, closed
- Amortization Period — 16-year period as of valuation date
- Future Contributions — Based on the contribution rates defined in statute

All other demographic and economic changes are assumed to occur in accordance with the actuarial assumptions used for the actuarial valuation. Projections assume all actuarial assumptions are met and do not include any adjustment for adverse experience due to COVID-19 (either impacting claims or demographics), changes in the ACA, larger than expected increases to Medicare Advantage premiums, or lower than expected investment return or payroll growth.

Schedule I

Health Insurance Trust

Baseline - MEHP rate = \$210 PMPM

(Dollars in thousands)

Fiscal Year	Contribution Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Total Contributions
2024	2025	\$ 4,113,218	\$ 195,250	\$ 4,308,468	\$ 789,555	80.4 %	\$ 394,272
2025	2026	4,169,805	192,928	4,362,733	489,747	88.5	406,601
2026	2027	4,228,577	193,456	4,422,033	233,779	94.8	420,860
2027	2028	4,290,665	195,267	4,485,932		100.0	91,970
2028	2029	4,357,028	198,193	4,555,221		100.0	94,084
2029	2030	4,425,169	201,593	4,626,762		100.0	96,351
2030	2031	4,493,153	205,384	4,698,537		100.0	98,769
2031	2032	4,564,905	209,424	4,774,329		100.0	101,360
2032	2033	4,640,218	213,737	4,853,955		100.0	104,135
2033	2034	4,716,337	218,587	4,934,924		100.0	107,046
2034	2035	4,797,477	223,365	5,020,842		100.0	110,133
2035	2036	4,882,036	228,306	5,110,342		100.0	113,381
2036	2037	4,972,405	234,130	5,206,535		100.0	116,815
2037	2038	5,068,750	240,257	5,309,007		100.0	120,462
2038	2039	5,171,141	247,030	5,418,171		100.0	124,335
2039	2040	5,279,233	254,478	5,533,711		100.0	128,420
2040	2041	5,393,852	262,659	5,656,511		100.0	132,748
2041	2042	5,514,532	271,416	5,785,948		100.0	137,302
2042	2043	5,640,821	280,527	5,921,348		100.0	142,053
2043	2044	5,775,151	290,456	6,065,607		100.0	147,073

Fiscal Year	Contribution Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Total Contributions
2044	2045	5,915,394	301,159	6,216,553		100.0	152,349
2045	2046	6,062,497	312,480	6,374,977		100.0	157,892
2046	2047	6,214,259	324,232	6,538,491		100.0	163,661
2047	2048	6,373,710	336,294	6,710,004		100.0	169,697
2048	2049	6,541,205	348,973	6,890,178		100.0	176,048
2049	2050	6,715,433	361,582	7,077,015		100.0	182,679
2050	2051	6,903,335	374,642	7,277,977		100.0	189,907
2051	2052	7,102,508	387,553	7,490,061		100.0	197,785
2052	2053	7,311,143	400,312	7,711,455		100.0	206,315
2053	2054	7,524,056	412,557	7,936,613		100.0	215,387

**30-Year Sensitivity Projection
Health Insurance Trust**

The results of actuarial valuations are a snapshot of the financial position on the valuation date, based on the assumed number of active employees and current beneficiaries. Projections simulate future actuarial valuation results over a forecast period (30 years in this case) by “creating” future new hires and performing valuations using the projected membership. The following items are assumed for the projected results.

- Active Employee Growth Rate — 0%
- Valuation Discount Rate — 7.1%
- Investment Rate of Return — 7.1% each year
- Actuarial Value of Assets — Five year smoothing, no corridor
- Amortization Method — Level percent of payroll, closed
- Amortization Period — 16-year period as of valuation date
- Future Contributions — Based on the contribution rates defined in statute
- MEHP Rate — shown in table

All other demographic and economic changes are assumed to occur in accordance with the actuarial assumptions used for the actuarial valuation.

Projections assume all actuarial assumptions are met and do not include any adjustment for adverse experience due to COVID-19 (either impacting claims or demographics), changes in the ACA, larger than expected increases to Medicare Advantage premiums, or lower than expected investment return or payroll growth. The 2025 monthly TRS MEHP rate of \$210 includes \$200 EGWP prescription drug costs. The EGWP prescription drug costs are based on projected total drug costs minus projected reimbursements from CMS and drug manufacturers for Medicare Part D rebates, subsidies and reinsurance. If 25% of these reimbursements were to discontinue, TRS MEHP costs could increase to as much as \$359.75. In this case, the statutory contribution rates will be more than the actuarially determined contribution rates, the unfunded actuarial accrued liability would be paid off in the scheduled 16 year timeframe, and the health insurance fund would reach 100% funded, but it would take an additional 7 years to achieve.

Schedule J

Health Insurance Trust

25% risk scenario - MEHP rate = \$359.75 PMPM

(Dollars in thousands)

Fiscal Year	Contribution Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Total Contribution Including Member
2024	2025	\$ 4,113,218	\$ 195,250	\$ 4,308,468	\$ 2,411,824	57.4 %	\$ 394,272
2025	2026	4,169,805	192,928	4,362,733	2,251,609	62.2	406,601
2026	2027	4,228,577	193,456	4,422,033	2,145,969	65.8	420,860
2027	2028	4,290,665	195,267	4,485,932	1,940,502	70.5	435,345
2028	2029	4,357,028	198,193	4,555,221	1,726,331	74.9	451,637
2029	2030	4,425,169	201,593	4,626,762	1,512,870	79.0	468,370
2030	2031	4,493,153	205,384	4,698,537	1,270,564	83.1	486,540
2031	2032	4,564,905	209,424	4,774,329	996,118	87.3	504,947
2032	2033	4,640,218	213,737	4,853,955	687,282	91.6	522,854
2033	2034	4,716,337	218,587	4,934,924	342,421	96.0	541,319
2034	2035	4,797,477	223,365	5,020,842		100.0	143,567
2035	2036	4,882,036	228,306	5,110,342		100.0	148,310
2036	2037	4,972,405	234,130	5,206,535		100.0	153,328
2037	2038	5,068,750	240,257	5,309,007		100.0	158,650
2038	2039	5,171,141	247,030	5,418,171		100.0	164,292
2039	2040	5,279,233	254,478	5,533,711		100.0	170,243
2040	2041	5,393,852	262,659	5,656,511		100.0	176,541
2041	2042	5,514,532	271,416	5,785,948		100.0	183,165
2042	2043	5,640,821	280,527	5,921,348		100.0	190,092
2043	2044	5,775,151	290,456	6,065,607		100.0	197,399
2044	2045	5,915,394	301,159	6,216,553		100.0	205,077
2045	2046	6,062,497	312,480	6,374,977		100.0	213,142
2046	2047	6,214,259	324,232	6,538,491		100.0	221,553
2047	2048	6,373,710	336,294	6,710,004		100.0	230,360
2048	2049	6,541,205	348,973	6,890,178		100.0	239,615
2049	2050	6,715,433	361,582	7,077,015		100.0	249,287
2050	2051	6,903,335	374,642	7,277,977		100.0	259,713
2051	2052	7,102,508	387,553	7,490,061		100.0	270,937
2052	2053	7,311,143	400,312	7,711,455		100.0	282,954
2053	2054	7,524,056	412,557	7,936,613		100.0	295,645

If 50% of these reimbursements were to discontinue, TRS MEHP costs could increase to as much as \$509.50. In this case, the statutory contribution rates will be less than the actuarially determined contribution rates, the unfunded actuarial accrued liability will not be paid off in the scheduled 16 year timeframe, and the health insurance fund will not reach 100% funded until almost 2050.

Health Insurance Trust

50% risk scenario - MEHP rate = \$509.50 PMPM

(Dollars in thousands)

Fiscal Year	Contribution Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Total Contribution Including Member Contributions
2024	2025	\$ 4,113,218	\$ 195,250	\$ 4,308,468	\$ 4,034,093	44.6 %	\$ 394,272
2025	2026	4,169,805	192,928	4,362,733	4,013,471	47.6	406,601
2026	2027	4,228,577	193,456	4,422,033	4,058,158	49.6	420,860
2027	2028	4,290,665	195,267	4,485,932	4,014,562	52.5	435,345
2028	2029	4,357,028	198,193	4,555,221	3,974,699	55.1	451,637
2029	2030	4,425,169	201,593	4,626,762	3,948,942	57.3	468,370
2030	2031	4,493,153	205,384	4,698,537	3,908,758	59.5	486,540
2031	2032	4,564,905	209,424	4,774,329	3,851,951	61.7	504,947
2032	2033	4,640,218	213,737	4,853,955	3,777,459	63.9	522,854
2033	2034	4,716,337	218,587	4,934,924	3,684,923	66.2	541,319
2034	2035	4,797,477	223,365	5,020,842	3,572,809	68.4	556,331
2035	2036	4,882,036	228,306	5,110,342	3,443,675	70.7	566,057
2036	2037	4,972,405	234,130	5,206,535	3,302,132	72.9	576,505
2037	2038	5,068,750	240,257	5,309,007	3,146,946	75.1	587,645
2038	2039	5,171,141	247,030	5,418,171	2,976,863	77.3	599,515
2039	2040	5,279,233	254,478	5,533,711	2,790,520	79.5	612,077
2040	2041	5,393,852	262,659	5,656,511	2,586,481	81.7	625,429
2041	2042	5,514,532	271,416	5,785,948	2,363,162	83.9	639,507
2042	2043	5,640,821	280,527	5,921,348	2,118,908	86.1	654,239
2043	2044	5,775,151	290,456	6,065,607	1,852,001	88.3	669,940
2044	2045	5,915,394	301,159	6,216,553	1,560,359	90.5	686,367
2045	2046	6,062,497	312,480	6,374,977	1,242,006	92.7	703,614
2046	2047	6,214,259	324,232	6,538,491	894,744	94.9	721,415
2047	2048	6,373,710	336,294	6,710,004	516,459	97.2	740,103
2048	2049	6,541,205	348,973	6,890,178	104,598	99.5	759,747
2049	2050	6,715,433	361,582	7,077,015		100.0	315,896
2050	2051	6,903,335	374,642	7,277,977		100.0	329,519
2051	2052	7,102,508	387,553	7,490,061		100.0	344,089
2052	2053	7,311,143	400,312	7,711,455		100.0	359,594
2053	2054	7,524,056	412,557	7,936,613		100.0	375,903

If 75% of these reimbursements were to discontinue, TRS MEHP costs could increase to as much as \$659.25. In this case, the statutory contribution rates will be less than the actuarially determined contribution rates, the unfunded actuarial accrued liability will not be paid off in the scheduled 16 year timeframe, and the health insurance fund will not reach 100% funded in the 30 year period.

Health Insurance Trust

75% risk scenario - MEHP rate = \$659.25 PMPM

(Dollars in thousands)

Fiscal Year	Contribution Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Total Contribution Including Member Contributions
2024	2025	\$ 4,113,218	\$ 195,250	\$ 4,308,468	\$ 5,656,362	36.5 %	\$ 394,272
	2025	4,169,805	192,928	4,362,733	5,775,332	38.4	406,601
	2026	4,228,577	193,456	4,422,033	5,970,348	39.3	420,860
	2027	4,290,665	195,267	4,485,932	6,088,621	41.0	435,345
	2028	4,357,028	198,193	4,555,221	6,223,067	42.4	451,637
	2029	4,425,169	201,593	4,626,762	6,385,014	43.5	468,370
	2030	4,493,153	205,384	4,698,537	6,546,952	44.5	486,540
	2031	4,564,905	209,424	4,774,329	6,707,784	45.5	504,947
	2032	4,640,218	213,737	4,853,955	6,867,637	46.4	522,854
	2033	4,716,337	218,587	4,934,924	7,027,426	47.3	541,319
	2034	4,797,477	223,365	5,020,842	7,186,981	48.1	556,331
	2035	4,882,036	228,306	5,110,342	7,350,323	49.0	566,057
	2036	4,972,405	234,130	5,206,535	7,523,627	49.7	576,505
	2037	5,068,750	240,257	5,309,007	7,707,341	50.4	587,645
	2038	5,171,141	247,030	5,418,171	7,902,017	51.0	599,515
	2039	5,279,233	254,478	5,533,711	8,108,230	51.6	612,077
	2040	5,393,852	262,659	5,656,511	8,326,618	52.2	625,429
	2041	5,514,532	271,416	5,785,948	8,557,831	52.7	639,507
	2042	5,640,821	280,527	5,921,348	8,802,603	53.1	654,239
	2043	5,775,151	290,456	6,065,607	9,061,774	53.5	669,940
	2044	5,915,394	301,159	6,216,553	9,336,015	53.9	686,367
	2045	6,062,497	312,480	6,374,977	9,626,299	54.3	703,614
	2046	6,214,259	324,232	6,538,491	9,933,593	54.6	721,415
	2047	6,373,710	336,294	6,710,004	10,259,170	54.9	740,103
	2048	6,541,205	348,973	6,890,178	10,604,118	55.2	759,747
	2049	6,715,433	361,582	7,077,015	10,969,600	55.4	780,138
	2050	6,903,335	374,642	7,277,977	11,357,049	55.6	802,118
	2051	7,102,508	387,553	7,490,061	11,767,529	55.8	825,367
	2052	7,311,143	400,312	7,711,455	12,202,543	56.0	848,172
	2053	7,524,056	412,557	7,936,613	12,665,456	56.1	858,771

If 100% of these reimbursements were to discontinue, TRS MEHP costs could increase to as much as \$809.00. In this case, the statutory contribution rates will be less than the actuarially determined contribution rates, the unfunded actuarial accrued liability will not be paid off in the scheduled 16 year timeframe, and the health insurance fund will not reach 100% funded in the 30 year period.

Health Insurance Trust

100% risk scenario - MEHP rate = \$809 PMPM

(Dollars in thousands)

Fiscal Year	Contribution Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Total Contribution Including Member Contributions
2024	2025	\$ 4,113,218	\$ 195,250	\$ 4,308,468	\$ 7,278,631	30.8 %	\$ 394,272
2025	2026	4,169,805	192,928	4,362,733	7,537,194	31.9	406,601
2026	2027	4,228,577	193,456	4,422,033	7,882,537	32.2	420,860
2027	2028	4,290,665	195,267	4,485,932	8,162,681	33.1	435,345
2028	2029	4,357,028	198,193	4,555,221	8,471,435	33.6	451,637
2029	2030	4,425,169	201,593	4,626,762	8,821,086	33.9	468,370
2030	2031	4,493,153	205,384	4,698,537	9,185,146	34.1	486,540
2031	2032	4,564,905	209,424	4,774,329	9,563,617	34.2	504,947
2032	2033	4,640,218	213,737	4,853,955	9,957,814	34.2	522,854
2033	2034	4,716,337	218,587	4,934,924	10,369,928	34.2	541,319
2034	2035	4,797,477	223,365	5,020,842	10,801,152	34.1	556,331
2035	2036	4,882,036	228,306	5,110,342	11,256,972	34.0	566,057
2036	2037	4,972,405	234,130	5,206,535	11,745,122	33.7	576,505
2037	2038	5,068,750	240,257	5,309,007	12,267,735	33.4	587,645
2038	2039	5,171,141	247,030	5,418,171	12,827,171	33.0	599,515
2039	2040	5,279,233	254,478	5,533,711	13,425,940	32.5	612,077
2040	2041	5,393,852	262,659	5,656,511	14,066,755	31.9	625,429
2041	2042	5,514,532	271,416	5,785,948	14,752,500	31.3	639,507
2042	2043	5,640,821	280,527	5,921,348	15,486,297	30.7	654,239
2043	2044	5,775,151	290,456	6,065,607	16,271,548	29.9	669,940
2044	2045	5,915,394	301,159	6,216,553	17,111,672	29.1	686,367
2045	2046	6,062,497	312,480	6,374,977	18,010,593	28.3	703,614
2046	2047	6,214,259	324,232	6,538,491	18,972,442	27.4	721,415
2047	2048	6,373,710	336,294	6,710,004	20,001,881	26.4	740,103
2048	2049	6,541,205	348,973	6,890,178	21,103,638	25.4	759,747
2049	2050	6,715,433	361,582	7,077,015	22,282,778	24.3	780,138
2050	2051	6,903,335	374,642	7,277,977	23,544,917	23.2	802,118
2051	2052	7,102,508	387,553	7,490,061	24,895,619	22.0	825,367
2052	2053	7,311,143	400,312	7,711,455	26,341,201	20.7	848,172
2053	2054	7,524,056	412,557	7,936,613	27,890,174	19.4	858,771

**30-Year Baseline Projection
Life Insurance Trust**

The results of actuarial valuations are a snapshot of the financial position on the valuation date, based on the assumed number of active employees and current beneficiaries. Projections simulate future actuarial valuation results over a forecast period (30 years in this case) by creating future new hires and performing valuations using the projected membership. The following items are assumed for the projected results.

- Active Employee Growth Rate — 0%
- Valuation Discount Rate — 7.1%
- Investment Rate of Return — 7.1% each year
- Actuarial Value of Assets — Five-year smoothing, no corridor
- Amortization Method — Level percent of payroll, closed
- Amortization Period — 20-year period as of valuation date
- Future Contributions — Based on expected actuarially determined contributions (not less than 0.08%)

All other demographic and economic changes are assumed to occur in accordance with the actuarial assumptions used for the actuarial valuation.

**Schedule K
Life Insurance Trust**

(Dollars in thousands)

Fiscal Year	Contribution Fiscal Year	Non-University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Actuarially Determined Contribution
2024	2027	\$ 4,113,218	\$ 195,250	\$ 4,308,468	\$ 22,766	81.9 %	\$ 3,538
2025	2028	4,169,805	192,928	4,362,733	21,898	83.0	3,589
2026	2029	4,228,577	193,456	4,422,033	24,550	81.3	3,644
2027	2030	4,290,665	195,267	4,485,932	22,562	83.2	3,701
2028	2031	4,357,028	198,193	4,555,221	21,045	84.6	3,759
2029	2032	4,425,169	201,593	4,626,762	20,229	85.5	3,819
2030	2033	4,493,153	205,384	4,698,537	19,357	86.4	3,883
2031	2034	4,564,905	209,424	4,774,329	18,424	87.3	3,948
2032	2035	4,640,218	213,737	4,853,955	17,417	88.2	4,017
2033	2036	4,716,337	218,587	4,934,924	16,325	89.1	4,088
2034	2037	4,797,477	223,365	5,020,842	15,138	90.0	4,165
2035	2038	4,882,036	228,306	5,110,342	13,844	91.0	4,247
2036	2039	4,972,405	234,130	5,206,535	12,429	92.0	4,335
2037	2040	5,068,750	240,257	5,309,007	10,877	93.1	4,427
2038	2041	5,171,141	247,030	5,418,171	9,171	94.3	4,525

ACTUARIAL SECTION

Fiscal Year	Contribution Fiscal Year	Non- University Payroll	University Payroll	Total Payroll	Unfunded Accrued Liability	Funded Ratio	Actuarially Determined Contribution
2039	2042	5,279,233	254,478	5,533,711	7,293	95.5	4,629
2040	2043	5,393,852	262,659	5,656,511	5,218	96.8	4,737
2041	2044	5,514,532	271,416	5,785,948	2,928	98.2	4,852
2042	2045	5,640,821	280,527	5,921,348	398	99.8	4,973
2043	2046	5,775,151	290,456	6,065,607		100.0	1,984
2044	2047	5,915,394	301,159	6,216,553		100.0	2,007
2045	2048	6,062,497	312,480	6,374,977		100.0	2,027
2046	2049	6,214,259	324,232	6,538,491		100.0	2,047
2047	2050	6,373,710	336,294	6,710,004		100.0	2,063
2048	2051	6,541,205	348,973	6,890,178		100.0	2,080
2049	2052	6,715,433	361,582	7,077,015		100.0	2,096
2050	2053	6,903,335	374,642	7,277,977		100.0	2,107
2051	2054	7,102,508	387,553	7,490,061		100.0	2,112
2052	2055	7,311,143	400,312	7,711,455		100.0	2,112
2053	2056	7,524,056	412,557	7,936,613		100.0	2,110

Statistical Section



This section of the Teachers' Retirement System of the State of Kentucky's Annual Comprehensive Financial Report presents detailed information as a context for understanding the information in the financial statements, note disclosures and required supplementary information regarding TRS's overall financial health. Schedules and information are derived from TRS's internal sources.

Contents

Financial Trends..... 217

These schedules contain trend information to help the reader understand how TRS's financial performance and well-being have changed over time.

Demographic & Economic Information..... 220

These schedules offer demographic and economic indicators to help the reader understand the environment within which TRS's financial activities take place.

Operating Information 225

These schedules contain benefits, service and employer contribution data to help the reader understand how TRS's financial report relates to TRS's services and activities.

Retirement Annuity Trust
Past 10 Fiscal Years

Additions by Source

Year	Employer Contributions	Member Contributions	Net Investment Income (Loss)	Total Additions to Plan Net Position
2024	\$ 1,178,681,973	\$ 385,906,512	\$ 2,813,694,027	\$ 4,378,282,512
2023	1,144,448,806	366,774,504	2,266,085,160	3,777,308,470
2022	1,679,584,669	356,966,620	(2,727,775,055)	(691,223,766)
2021	1,146,977,669	327,833,177	6,017,184,311	7,491,995,157
2020	1,134,281,095	324,664,055	1,094,023,378	2,552,968,528
2019	1,123,034,823	321,172,166	1,085,189,349	2,529,396,338
2018	1,048,671,201	319,127,087	1,953,214,031	3,321,012,319
2017	1,060,719,993	313,625,434	2,475,752,798	3,850,098,225
2016	565,454,590	313,044,226	(245,214,860)	633,283,956
2015	559,579,290	308,159,763	862,178,759	1,729,917,812

Deductions by Type

Year	Service Retirees	Disability Retirees	Survivors	Total Benefits	Refunds — Separation*	Refunds — Death*	Administrative Expense	Total Deductions to Plan Net Position
2024	\$2,355,814,939	\$ 90,003,684	\$ 21,152,874	\$2,466,971,497	\$ 30,323,591	\$ 2,598,185	\$ 14,807,287	\$ 2,514,700,560
2023	2,281,150,748	89,272,686	20,902,766	2,391,326,201	24,861,526	2,048,255	14,470,733	2,432,706,715
2022	2,196,122,634	88,683,021	21,047,117	2,305,852,772	23,810,213	2,934,990	12,005,095	2,344,603,070
2021	2,126,870,064	88,451,354	19,919,198	2,235,240,616	22,244,967	3,128,851	12,601,841	2,273,216,275
2020	2,059,900,271	87,666,903	19,672,067	2,167,239,241	26,822,159	1,650,058	12,166,651	2,207,878,109
2019	1,989,082,744	86,215,602	19,065,726	2,094,364,072	29,855,075	2,548,074	12,352,308	2,139,119,529
2018	1,901,237,575	84,500,330	18,879,429	2,004,617,334	29,618,564	1,453,857	11,388,493	2,047,078,248
2017	1,817,594,617	82,466,114	18,551,397	1,918,612,128	24,586,074	1,719,166	10,313,715	1,955,231,083
2016	1,735,374,416	79,808,432	18,015,782	1,833,198,630	25,320,322	2,427,420	8,636,438	1,869,582,810
2015	1,647,205,474	76,912,574	17,338,047	1,741,456,095	23,032,624		8,868,971	1,773,357,690

* Prior to 2016, both refund types are shown under separation.

Changes in Plan Net Position

Year	Total Additions to Plan Net Position	Total Deductions to Plan Net Position	Changes in Plan Net Position
2024	\$ 4,378,282,512	\$ 2,514,700,560	\$ 1,863,581,952
2023	3,777,308,470	2,432,706,715	1,344,601,755
2022	(691,223,766)	2,344,603,070	(3,035,826,836)
2021	7,491,995,157	2,273,216,275	5,218,778,882
2020	2,552,968,528	2,207,878,109	345,090,419
2019	2,529,396,338	2,139,119,529	390,276,809
2018	3,321,012,319	2,047,078,248	1,273,934,071
2017	3,850,098,225	1,955,231,083	1,894,867,142
2016	633,283,956	1,869,582,810	(1,236,298,854)
2015	1,729,917,812	1,773,357,690	(43,439,878)

Health Insurance Trust

Past 10 Fiscal Years

Additions by Source

Year	Employer Contributions	Member Contributions*	Recovery Income*	Net Investment Income (Loss)	Total Additions to Plan Net Position
2024	\$ 224,320,176	\$ 155,327,151	\$	\$ 340,293,378	\$ 719,940,705
2023	208,815,818	149,209,656		243,052,241	601,077,715
2022	151,765,145	145,681,855		(219,500,061)	77,946,939
2021	184,887,065	128,117,484		503,200,749	816,205,298
2020	184,625,474	133,588,771		32,474,949	350,689,194
2019	183,146,155	131,676,820		74,385,482	389,208,457
2018	187,102,413	130,777,471		76,840,512	394,720,396
2017	180,375,986	128,819,243		95,452,597	404,647,826
2016	178,638,370	128,068,781		(9,332,490)	297,374,661
2015	145,263,926	157,467,680	22,820,427	7,354,704	332,906,737

* Amounts paid by retirees and recovery income is netted against insurance expenses beginning fiscal year 2016.

Deductions by Type

Year	Insurance Benefit Expense		Total Insurance Benefits Expense	Administrative Expense	Total Deductions to Plan Net Position
	Under Age 65	Age 65 & Over			
2024	\$ 119,207,504	\$ 24,314,428	\$ 143,521,932	\$ 2,120,996	\$ 145,642,928
2023	110,701,357	14,164,648	124,866,005	1,974,318	126,840,323
2022	106,170,919	1,030,520	107,201,439	2,074,227	109,275,666
2021	106,822,555	23,825,579	130,648,134	1,728,008	132,376,142
2020	109,708,027	36,278,725	145,986,752	2,047,238	148,033,990
2019	114,509,069	49,156,947.85	163,666,016.85	1,803,192	165,469,208.85
2018	120,519,991	40,561,709	161,081,700	1,747,561	162,829,261
2017	124,079,802	54,420,744	178,500,546	1,538,574	180,039,120
2016	127,673,325	61,196,669	188,869,994	1,686,070	190,556,064
2015	131,396,480	108,998,102	240,394,582	1,545,235	241,939,817

Changes in Plan Net Position

Year	Total Additions to Plan Net Position	Total Deductions to Plan Net Position	Changes in Plan Net Position
2024	\$ 719,940,705	\$ 145,642,928	\$ 574,297,777
2023	601,077,715	126,840,323	474,237,392
2022	77,946,939	109,275,666	(31,328,727)
2021	816,205,298	132,376,142	683,829,156
2020	350,689,194	148,033,990	202,655,204
2019	389,208,457	165,469,209	223,739,248
2018	394,720,396	162,829,261	231,891,135
2017	404,647,826	180,039,120	224,608,706
2016	297,374,661	190,556,064	106,818,597
2015	332,906,737	241,939,817	90,966,920

Life Insurance Trust

Past 10 Fiscal Years

While TRS began separate reporting of its Life Insurance Trust effective Feb. 1, 2018, for investment purposes, life insurance funds always have been accounted for separately, which is the basis of the following schedules.

Additions by Source

Year	Employer Contributions	Net Investment Income (Loss)	Total Additions to Plan Net Position
2024	\$ 3,356,772	\$ 10,315,085	\$ 13,671,857
2023	3,223,560	8,682,485	11,906,045
2022	2,754,863	(15,582,277)	(12,827,414)
2021	2,138,375	24,075,148	26,213,523
2020	1,796,389	5,166,203	6,962,592
2019	1,421,227	5,058,188	6,479,415
2018	1,058,329	1,110,421	2,168,750
2017	1,049,683	915,497	1,965,180
2016	1,037,769	4,829,336	5,867,105
2015	1,019,519	1,990,324	3,009,843

Deductions by Type

Changes in Plan Net Position

Year	Life Insurance	Administrative Expense	Total Deductions to Plan Net Position	Year	Total Additions to Plan Net Position	Total Deductions to Plan Net Position	Changes in Plan Net Position
2024	\$ 6,106,000	\$ 36,650	\$ 6,142,650	2024	\$ 13,671,857	\$ 6,142,650	\$ 7,529,207
2023	6,219,000	37,633	6,256,633	2023	11,906,045	6,256,633	5,649,412
2022	6,178,000	40,999	6,218,999	2022	(12,827,414)	6,218,999	(19,046,413)
2021	6,120,000	34,498	6,154,498	2021	26,213,523	6,154,498	20,059,025
2020	5,317,000	35,980	5,352,980	2020	6,962,592	5,352,980	1,609,612
2019	5,153,000	30,392	5,183,392	2019	6,479,415	5,183,392	1,296,023
2018	5,452,920	30,979	5,483,899	2018	2,168,750	5,483,899	(3,315,149)
2017	5,151,013	27,690	5,178,703	2017	1,965,180	5,178,703	(3,213,523)
2016	4,595,489	27,195	4,622,684	2016	5,867,105	4,622,684	1,244,421
2015	4,061,000	25,306	4,086,306	2015	3,009,843	4,086,306	(1,076,463)

**Distribution of Active Contributing Members
as of June 30, 2024**

Age	By Age		Years of	By Service	
	Male	Female		Male	Female
20-24	885	3,773	Less than 1	2,554	8,410
25-29	1,841	6,060	1-4	4,551	14,637
30-34	1,926	6,224	5-9	3,092	9,676
35-39	2,233	7,318	10-14	2,447	7,537
40-44	2,747	8,682	15-19	2,366	7,499
45-49	2,733	8,185	20-24	1,960	6,526
50-54	2,600	7,659	25-29	1,398	3,868
55-59	1,540	4,964	30-34	262	638
60-64	1,044	3,011	35 or more	46	68
65 & over	1,127	2,983	Total	18,676	58,859
Total	18,676	58,859			

**Principal Participating Employers
Current Year and Nine Years Ago**

Employer	2024			2015		
	Covered Employees	Rank	Percentage of System	Covered Employees	Rank	Percentage of System
Jefferson County Schools	11,020	1	14.21 %	10,300	1	13.91 %
Fayette County Schools	5,346	2	6.89	4,433	2	5.99
Boone County Schools	2,130	3	2.75	1,871	3	2.53
Warren County Schools	1,770	4	2.28	1,258	6	1.70
Hardin County Schools	1,550	5	2.00	1,318	4	1.78
Kenton County Schools	1,317	6	1.70	1,261	5	1.70
Oldham County Schools	1,246	7	1.61	1,192	8	1.61
Bullitt County Schools	1,233	8	1.59	1,222	7	1.65
Madison County Schools	1,145	9	1.48	1,109	9	1.50
Daviess County Schools	1,144	10	1.48	1,082	10	1.46
Other employers (see below)	49,634		64.01	48,993		66.17
Total (200 employers)	<u>77,535</u>		<u>100 %</u>	<u>74,039</u>		<u>100 %</u>

Other Employers

(detailed from above chart)

Type	Number of Employers	Employees
Local school districts	161	44,735
Higher education	6	3,012
State agencies	10	1,261
Educational cooperatives	8	499
Other	5	127
Total	<u>190</u>	<u>49,634</u>

TRS Schedule of Participating Local School District Employers

Adair County	Campbellsville	Floyd County	Jessamine County	Mercer County	Rowan County
Allen County	Carlisle County	Fort Thomas	Johnson County	Metcalfe County	Russell
Anchorage	Carroll County	Frankfort	Kenton County	Middlesboro	Russell County
Anderson County	Carter County	Franklin County	Knott County	Monroe County	Russellville
Ashland	Casey County	Fulton	Knox County	Montgomery County	Science Hill
Augusta	Caverna	Fulton County	LaRue County	Morgan County	Scott County
Ballard County	Christian County	Gallatin County	Laurel County	Muhlenberg County	Shelby County
Barbourville	Clark County	Garrard County	Lawrence County	Murray	Simpson County
Bardstown	Clay County	Glasgow	Lee County	Nelson County	Somerset
Barren County	Clinton County	Grant County	Leslie County	Newport	Southgate
Bath County	Cloverport	Graves County	Letcher County	Nicholas County	Spencer County
Beechwood	Corbin	Grayson County	Lewis County	Ohio County	Taylor County
Bell County	Covington	Green County	Lincoln County	Oldham County	Todd County
Bellevue	Crittenden County	Greenup County	Livingston County	Owen County	Trigg County
Berea	Cumberland County	Hancock County	Logan County	Owensboro	Trimble County
Boone County	Danville	Hardin County	Ludlow	Owsley County	Union County
Bourbon County	Daviess County	Harlan	Lyon County	Paducah	Walton-Verona
Bowling Green	Dawson Springs	Harlan County	Madison County	Paintsville	Warren County
Boyd County	Dayton	Harrison County	Magoffin County	Paris	Washington County
Boyle County	East Bernstadt	Hart County	Marion County	Pendleton County	Wayne County
Bracken County	Edmonson County	Hazard	Marshall County	Perry County	Webster County
Breathitt County	Elliott County	Henderson County	Martin County	Pike County	Whitley County
Breckinridge County	Elizabethtown	Henry County	Mason County	Pikeville	Williamsburg
Bullitt County	Eminence	Hickman County	Mayfield	Pineville	Williamstown
Burgin	Erlanger-Elsmere	Hopkins County	McCracken County	Powell County	Wolfe County
Butler County	Estill County	Jackson	McCreary County	Pulaski County	Woodford County
Caldwell County	Fairview	Jackson County	McLean County	Raceland	
Calloway County	Fayette County	Jefferson County	Meade County	Robertson County	
Campbell County	Fleming County	Jenkins	Menifee County	Rockcastle County	

TRS Schedule of Participating Higher Education and Agency Employers

Central Kentucky Education Cooperative	Kentucky State University
Eastern Kentucky University	Kentucky Valley Educational Cooperative
Education and Workforce Development Cabinet	Morehead State University
Green River Regional Education Cooperative	Murray State University
Kentucky Academic Association	Northern Kentucky Cooperative for Educational Services
Kentucky Community & Technical College System	Ohio Valley Educational Cooperative
Kentucky Department of Education	Southeast South-Central Educational Cooperative
Kentucky Education Association	Teachers' Retirement System of the State of Kentucky
Kentucky Educational Development Cooperative	West Kentucky Education Cooperative
Kentucky High School Athletic Association	Western Kentucky University
Kentucky School Boards Association	

**Distribution of Retirement and Health Insurance Payments Statewide
For the Year Ended June 30, 2024**

County	Payments	Recipients	County	Payments	Recipients
Adair	\$ 11,468,344	265	Laurel	\$ 33,971,198	816
Allen	9,631,398	216	Lawrence	7,487,166	186
Anderson	10,337,240	280	Lee	3,980,916	97
Ballard	5,579,899	142	Leslie	7,456,577	166
Barren	24,882,526	568	Letcher	14,521,636	369
Bath	6,789,164	179	Lewis	8,142,952	198
Bell	15,580,773	372	Lincoln	14,922,322	350
Boone	57,082,300	1,227	Livingston	4,445,525	103
Bourbon	9,801,846	226	Logan	14,129,339	340
Boyd	25,139,203	586	Lyon	4,785,963	113
Boyle	23,737,004	543	Madison	72,044,655	1,693
Bracken	4,979,089	118	Magoffin	9,732,835	225
Breathitt	10,394,055	260	Marion	9,773,759	231
Breckinridge	9,854,137	239	Marshall	18,777,178	436
Bullitt	26,989,120	570	Martin	5,901,050	148
Butler	5,415,225	125	Mason	10,463,733	255
Caldwell	8,635,474	210	McCracken	31,252,045	756
Calloway	32,694,112	788	McCreary	9,405,556	227
Campbell	38,474,252	849	McLean	5,401,354	126
Carlisle	2,265,245	62	Meade	10,735,743	227
Carroll	4,968,643	108	Menifee	3,053,721	86
Carter	17,313,197	437	Mercer	12,766,775	323
Casey	8,084,142	192	Metcalfe	4,592,151	115
Christian	24,059,651	587	Monroe	7,676,623	174
Clark	18,368,108	435	Montgomery	16,854,457	404
Clay	14,911,450	343	Morgan	8,001,190	197
Clinton	7,234,072	176	Muhlenberg	17,940,851	402
Crittenden	2,585,955	67	Nelson	24,025,400	552
Cumberland	4,063,420	91	Nicholas	2,972,155	77
Daviess	58,343,495	1,373	Ohio	10,399,474	255
Edmonson	5,101,118	128	Oldham	29,656,401	621
Elliott	2,902,042	74	Owen	4,818,021	118
Estill	8,230,033	193	Owsley	5,117,189	126
Fayette	157,434,789	3,619	Pendleton	7,055,547	156
Fleming	8,869,063	216	Perry	20,096,175	450
Floyd	24,380,514	593	Pike	34,818,240	834
Franklin	33,468,408	949	Powell	6,940,261	159
Fulton	3,382,120	83	Pulaski	37,916,834	926
Gallatin	2,230,316	55	Robertson	1,167,764	29
Garrard	11,027,111	256	Rockcastle	9,946,990	225
Grant	9,853,235	222	Rowan	25,677,680	616
Graves	19,450,991	441	Russell	11,761,087	275
Grayson	14,339,323	337	Scott	27,947,251	644
Green	6,655,070	160	Shelby	27,104,019	589
Greenup	18,949,872	439	Simpson	7,578,701	179
Hancock	3,329,122	75	Spencer	8,981,318	190
Hardin	52,066,499	1,172	Taylor	16,440,149	388
Harlan	18,123,177	441	Todd	4,625,187	113
Harrison	9,856,547	237	Trigg	8,976,945	218
Hart	8,578,979	189	Trimble	3,295,632	74
Henderson	22,168,660	533	Union	5,148,903	133
Henry	9,308,602	223	Warren	89,586,382	2,111
Hickman	1,659,424	39	Washington	6,639,879	151
Hopkins	22,241,075	525	Wayne	11,902,910	284
Jackson	7,962,805	205	Webster	6,204,972	157
Jefferson	382,122,773	7,769	Whitley	33,906,145	808
Jessamine	24,006,241	574	Wolfe	5,531,910	143
Johnson	17,638,704	384	Woodford	18,358,602	426
Kenton	51,987,102	1,199			
Knott	10,973,095	257	Total in	\$ 2,374,454,180	54,562
Knox	14,476,685	355	Kentucky		
LaRue	9,202,752	196			

**Distribution of Retirement and Health Insurance Payments Worldwide
as of June 30, 2024**

**Number of Recipients in United States
Outside Kentucky**

223 Alabama	7 Montana
5 Alaska	9 Nebraska
95 Arizona	26 Nevada
40 Arkansas	7 New Hampshire
99 California	20 New Jersey
87 Colorado	18 New Mexico
13 Connecticut	51 New York
14 Delaware	355 North Carolina
8 District of Columbia	1 North Dakota
1,550 Florida	768 Ohio
328 Georgia	32 Oklahoma
11 Hawaii	34 Oregon
11 Idaho	83 Pennsylvania
132 Illinois	3 Rhode Island
966 Indiana	308 South Carolina
24 Iowa	13 South Dakota
34 Kansas	1,193 Tennessee
48 Louisiana	273 Texas
21 Maine	28 Utah
54 Maryland	4 Vermont
35 Massachusetts	198 Virginia
78 Michigan	43 Washington
28 Minnesota	107 West Virginia
69 Mississippi	45 Wisconsin
101 Missouri	11 Wyoming



**Number of Recipients
Outside United States**

1 Military APO
3 Australia
1 Barbados
5 Canada
1 Czech Republic
1 Japan
1 Poland
3 Puerto Rico
3 Spain
1 Sweden

	<u>Number of Recipients</u>	<u>Amount of Payments</u>
Inside Kentucky	54,562	\$ 2,374,454,180
Outside Kentucky	7,731	256,190,189
Total	<u>62,293</u>	<u>\$ 2,630,644,369</u>

Growth in Annuitants as of June 30, 2024

Fiscal Year	Service Retirees	Disability Retirees	Beneficiaries of Retired Members	Beneficiaries of Deceased Members Eligible to Retire	Survivors	Disabled Adult Child
2024	52,838	2,753	3,518	619	416	362
2023	52,086	2,788	3,452	622	390	364
2022	51,085	2,801	3,311	627	395	349
2021	50,267	2,840	3,175	634	359	352
2020	49,526	2,859	3,019	648	353	349
2019	48,727	2,842	2,886	644	344	343
2018	47,606	2,831	2,757	648	353	339
2017	46,356	2,806	2,675	655	349	333
2016	45,096	2,762	2,544	652	370	327
2015	43,634	2,691	2,442	653	349	328

Schedule of Annuitants by Type of Benefit as of June 30, 2024

Monthly Benefit (\$)	Number of Annuitants	Type of Benefit*					
		1	2	3	4	5	6
1 - 500	4,677	3,665	9	208	18	415	362
501 - 1,000	3,085	2,637	118	272	58	0	0
1,001 - 1,500	2,808	2,047	246	429	85	1	0
1,501 - 2,000	3,163	2,238	337	517	71	0	0
2,001 - 2,500	3,704	2,834	395	395	80	0	0
2,501 - 3,000	5,562	4,440	609	419	94	0	0
3,001 - 3,500	8,492	7,508	518	389	77	0	0
3,501 - 4,000	8,478	7,901	268	267	42	0	0
4,001 - 4,500	6,337	5,945	138	227	27	0	0
4,501 - 5,000	4,456	4,217	61	151	27	0	0
5,001 & over	9,744	9,406	54	244	40	0	0
Total	60,506	52,838	2,753	3,518	619	416	362

* **Type of Benefit**
 1 — Normal Retirement for Age & Service
 2 — Disability Retirement
 3 — Beneficiaries of Retired Members
 4 — Beneficiaries of Deceased Member Eligible to Retire
 5 — Survivor Payments
 6 — Disabled Adult Child

Schedule of Annuitants by Option Selected as of June 30, 2024

Monthly Benefit (\$)	Option Selected*							
	1	2	3	4	5	6	7	8
1 - 500	2,438	606	303	43	5	431	73	778
501 - 1,000	1,738	482	273	70	11	377	130	4
1,001 - 1,500	1,384	364	275	139	9	363	265	9
1,501 - 2,000	1,520	378	289	127	11	457	369	12
2,001 - 2,500	1,862	450	332	138	1	555	326	40
2,501 - 3,000	2,727	576	514	182	2	942	486	133
3,001 - 3,500	4,311	994	670	199	6	1,503	745	64
3,501 - 4,000	4,561	1,110	594	205	7	1,223	749	29
4,001 - 4,500	3,282	803	460	168	4	996	600	24
4,501 - 5,000	2,286	518	385	115	6	666	473	7
5,001 & OVER	5,039	1,103	884	339	21	1,375	978	5
Total	31,148	7,384	4,979	1,725	83	8,888	5,194	1,105

* **Option selected:**
 1 — Straight-life annuity with refundable balance
 2 — Period certain benefit and life thereafter
 3 — Joint-survivor annuity
 4 — Joint-survivor annuity, one-half benefit to beneficiary
 5 — Other payment - special option
 6 — Joint-survivor annuity with pop-up option
 7 — Joint-survivor annuity, one-half benefit to beneficiary with pop-up option
 8 — Disability, survivors and disabled adult children - set by statute

STATISTICAL SECTION

Retirement Annuity Trust Average Initial Benefit Payments for the Past 10 Years Service Retirements by Years of Service Credit

Retirement Effective Dates	0-4.99	5-9.99	10-14.99	15-19.99	20-24.99	25-29.99	≥ 30	Total
Year ending June 30, 2015								
Average monthly benefit	\$ 157	\$ 472	\$ 1,282	\$ 2,038	\$ 2,890	\$ 3,898	\$ 5,124	\$ 3,173
Final average salary	\$ 3,331	\$ 3,577	\$ 4,892	\$ 5,266	\$ 5,709	\$ 5,948	\$ 6,552	\$ 5,577
Number of retired members	60	231	183	206	314	806	456	2,256
Year ending June 30, 2016								
Average monthly benefit	\$ 177	\$ 519	\$ 1,316	\$ 1,998	\$ 2,934	\$ 3,935	\$ 5,389	\$ 3,195
Final average salary	\$ 3,642	\$ 3,791	\$ 4,847	\$ 5,188	\$ 5,777	\$ 6,019	\$ 6,858	\$ 5,664
Number of retired members	61	254	194	217	356	807	448	2,337
Year ending June 30, 2017								
Average monthly benefit	\$ 176	\$ 473	\$ 1,235	\$ 2,039	\$ 2,902	\$ 3,935	\$ 5,179	\$ 3,040
Final average salary	\$ 3,691	\$ 3,506	\$ 4,588	\$ 5,208	\$ 5,722	\$ 6,024	\$ 6,666	\$ 5,514
Number of retired members	53	259	162	212	346	766	320	2,118
Year ending June 30, 2018								
Average monthly benefit	\$ 152	\$ 486	\$ 1,254	\$ 2,098	\$ 2,990	\$ 4,002	\$ 5,412	\$ 3,175
Final average salary	\$ 3,760	\$ 3,668	\$ 4,702	\$ 5,397	\$ 5,883	\$ 6,068	\$ 6,980	\$ 5,677
Number of retired members	64	255	147	193	356	844	330	2,189
Year ending June 30, 2019								
Average monthly benefit	\$ 130	\$ 460	\$ 1,190	\$ 2,073	\$ 2,847	\$ 4,027	\$ 5,393	\$ 3,078
Average final average salary	\$ 3,041	\$ 3,595	\$ 4,523	\$ 5,260	\$ 5,738	\$ 6,185	\$ 7,049	\$ 5,607
Number of retired members	79	239	153	197	330	779	295	2,072
Year ending June 30, 2020								
Average monthly benefit	\$ 134	\$ 433	\$ 1,187	\$ 2,060	\$ 3,002	\$ 4,157	\$ 5,343	\$ 3,115
Final average salary	\$ 3,260	\$ 3,276	\$ 4,447	\$ 5,369	\$ 5,972	\$ 6,379	\$ 7,042	\$ 5,672
Number of retired members	84	214	129	179	283	718	245	1,852
Year ending June 30, 2021								
Average monthly benefit	\$ 105	\$ 465	\$ 1,313	\$ 2,081	\$ 2,943	\$ 4,133	\$ 5,445	\$ 3,143
Final average salary	\$ 2,900	\$ 3,414	\$ 4,821	\$ 5,208	\$ 5,836	\$ 6,288	\$ 7,120	\$ 5,649
Number of retired members	83	219	131	179	284	760	249	1,905
Year ending June 30, 2022								
Average monthly benefit	\$ 104	\$ 462	\$ 1,124	\$ 2,102	\$ 2,911	\$ 4,147	\$ 5,355	\$ 3,205
Final average salary	\$ 2,903	\$ 3,407	\$ 4,337	\$ 5,407	\$ 5,696	\$ 6,314	\$ 7,082	\$ 5,688
Number of retired members	95	190	122	206	336	816	292	2,057
Year ending June 30, 2023								
Average monthly benefit	\$ 129	\$ 472	\$ 1,204	\$ 2,133	\$ 3,035	\$ 4,246	\$ 5,445	\$ 3,350
Final average salary	\$ 3,057	\$ 3,697	\$ 4,723	\$ 5,412	\$ 5,892	\$ 6,406	\$ 7,005	\$ 5,840
Number of retired members	76	216	133	191	323	916	318	2,173
Year ending June 30, 2024								
Average monthly benefit	\$ 136	\$ 487	\$ 1,230	\$ 2,161	\$ 3,047	\$ 4,377	\$ 5,662	\$ 3,408
Final average salary	\$ 3,684	\$ 3,684	\$ 4,823	\$ 5,631	\$ 5,957	\$ 6,616	\$ 7,342	\$ 5,994
Number of retired members	95	222	119	149	281	836	309	2,011
Ten Years Ended June 30, 2024								
Average monthly benefit	\$ 136	\$ 474	\$ 1,239	\$ 2,075	\$ 2,948	\$ 4,088	\$ 5,363	\$ 3,189
Final average salary	\$ 3,295	\$ 3,569	\$ 4,683	\$ 5,325	\$ 5,813	\$ 6,227	\$ 6,940	\$ 5,687
Number of retired members	750	2,299	1,473	1,929	3,209	8,048	3,262	20,970

The annuity for most TRS retirees is in lieu of Social Security. Final average salary is a monthly equivalent of the average final average salary for the respective group.

Health Insurance Trust
Average Insurance Premium Supplements for the Last 10 Years
 Service Retirements by Years of Service Credit

Retirement Effective Dates	0-9.99	10-14.99	15-19.99	≥ 20	Total
Year ending June 30, 2015					
Average monthly supplement	\$ 78	\$ 204	\$ 369	\$ 492	
Number of retired members	24	101	176	1,411	1,712
Year ending June 30, 2016					
Average monthly supplement	\$ 87	\$ 182	\$ 323	\$ 484	
Number of retired members	68	98	178	1,407	1,751
Year ending June 30, 2017					
Average monthly supplement	\$ 75	\$ 192	\$ 333	\$ 477	
Number of retired members	62	71	194	1,291	1,618
Year ending June 30, 2018					
Average monthly supplement	\$ 85	\$ 122	\$ 299	\$ 464	
Number of retired members	59	71	169	1,375	1,674
Year ending June 30, 2019					
Average monthly supplement	\$ 75	\$ 181	\$ 305	\$ 483	
Number of retired members	48	72	158	1,239	1,517
Year ending June 30, 2020					
Average monthly supplement	\$ 64	\$ 201	\$ 295	\$ 473	
Number of retired members	57	56	141	1,096	1,350
Year ending June 30, 2021					
Average monthly supplement	\$ 80	\$ 199	\$ 300	\$ 484	
Number of retired members	66	54	137	1,104	1,361
Year ending June 30, 2022					
Average monthly supplement	\$ 74	\$ 203	\$ 284	\$ 487	
Number of retired members	68	42	128	1,207	1,445
Year ending June 30, 2023					
Average monthly supplement	\$ 78	\$ 238	\$ 297	\$ 544	
Number of retired members	48	44	108	1,286	1,486
Year ending June 30, 2024					
Average monthly supplement	\$ 98	\$ 269	\$ 362	\$ 639	
Number of retired members	57	32	98	1,143	1,330

**Sick Leave Payments Summary
for Members Completing Service By June 30, 2024**

Total members retiring (including July 1, 2024, retirees.)	2,117
Total members receiving sick leave payments	1,456
Total amount of sick leave payments included in final average salary	\$ 20,765,682
Average sick leave payment per retiree	\$ 14,262
Total increase in final three or five year average salary base	\$ 5,555,742
Average increase in final average salary	\$ 3,816
Total service credit of 1,456 retirees	38,386
Average service credit of 1,456 retirees	26.36

Anticipated Payout of Additional Annuity

Actuarial cost of sick leave as salary credit	\$ 46,613,789
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Funding of Sick Leave Payment Used in Annuity

Member contributions (\$20,765,682 x 9.105%)	\$ 1,890,715
Employer contributions (\$20,765,682 x 12.305%)	2,555,217
Total Contributions	<u>\$ 4,445,932</u>
Anticipated additional payout	\$ 46,613,789
Less: total member and state contributions	<u>4,445,932</u>
Total	<u>\$ 42,167,857</u>