



CITY OF PHOENIX EMPLOYEES'
RETIREMENT SYSTEM



Annual
Comprehensive
Financial Report

A Component Unit of the
City of Phoenix, Arizona



FISCAL YEARS ENDING
JUNE 30, 2024 AND 2023

*Building the Phoenix
of Tomorrow*





CITY OF PHOENIX
EMPLOYEES' RETIREMENT PLAN
(A Component Unit of the City of Phoenix, Arizona)

SEVENTY-EIGHTH
ANNUAL COMPREHENSIVE FINANCIAL REPORT
FOR THE FISCAL YEARS ENDED
JUNE 30, 2024 and 2023

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Prepared by:
City of Phoenix
Employees' Retirement System
and
City of Phoenix
Finance Department



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Introductory section

*The **Introductory Section** contains the Certificate of Achievement for Excellence in Financial Reporting, the letter of transmittal, the Retirement Board structure, the administrative organization and the Chairperson's Report.*



**City of Phoenix**
RETIREMENT SYSTEM

December 17, 2024

Chairperson and Members of the Retirement Board

City of Phoenix Employees' Retirement System:

I am pleased to submit this Annual Comprehensive Financial Report (ACFR) of the City of Phoenix Employees' Retirement System (COPERS or the Plan) as of and for the years ended June 30, 2024 and 2023. This report consists of the Introductory, Financial, Investment, Actuarial and Statistical sections.

The Plan is governed by the City of Phoenix Employees' Retirement Law of 1953 (Chapter XXIV of the City of Phoenix Charter). This law has been revised over the years, with the latest amendment approved by the City voters on August 25, 2015.

Financial Information

Responsibility for accuracy of the data, completeness, and fairness of the presentation of the ACFR, including all disclosures, rests with the Retirement Board. The Plan's record-keeping, financial statement and investment control responsibilities have been performed by the City's Finance Department. To the best of our knowledge and belief, this report is accurate in all material respects and is reported in a manner designed to present fairly the Fiduciary Net Position and Changes in Fiduciary Net Position. All disclosures necessary to enable the reader to gain an understanding of the Plan's financial activities have been included.

Readers of this ACFR are encouraged to review the Management's Discussion and Analysis starting on page 28, which provides a narrative analysis and highlights of our financial condition and activities for the fiscal years ended June 30, 2024 and 2023.

Internal Controls

Internal controls are procedures designed to accomplish the following: to protect assets from loss, theft or misuse; to check the accuracy and reliability of accounting data; to promote operational efficiency; and, to encourage compliance with managerial policies. The Board and the City of Phoenix (the City) management are responsible for establishing a system of internal controls designed to provide reasonable assurance that these objectives are met. Because the cost of internal controls should not outweigh their benefits, the City's comprehensive framework of internal controls has been designed to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements. Representatives from the City Auditor's Department meet periodically with the Board to review their audit plans and present the results of the audits. Moreover, representatives from the independent auditors meet annually with the Board to review their audit plans and receive input from the Board. The City also maintains budgetary controls designed to ensure compliance with legal provisions of the annual budget adopted by the City Council.

This report has been prepared in conformance with the principles of governmental accounting and reporting as set forth by the Governmental Accounting Standards Board. Transactions of COPERS are reported on the accrual basis of accounting. Revenues are recorded when earned, without regard to the date of collection, and expenses are recorded when incurred. The City's internal accounting and audit controls are designed to provide for the accuracy, reliability and integrity of all financial records.

COPERS History

COPERS was created to provide retirement, survivor and disability benefits to the City of Phoenix general employees. COPERS is a qualified retirement plan under the Internal Revenue Code. The City of Phoenix Employees' Retirement Board (the Board) is the trustee of the Plan.

The Mayor and City Council are covered by the Elected Officials Retirement Plan of Arizona (EORPA). Sworn police and fire employees are covered by the Arizona Public Safety Personnel Retirement System (APSPRS). The EORPA and the APSPRS were created by Arizona State Statute. EORPA and APSPRS benefit payments, investments and overall administration of the Plans are handled by centralized State Boards, and each of the retirement plans publish separate financial reports. However, the administration of the system and responsibility for making the APSPRS provisions effective for each employer are vested in Local Boards. For the City of Phoenix, this responsibility rests with the City of Phoenix Fire Pension Board and the City of Phoenix Police Pension Board. The COPERS Retirement Program Administrator oversees the Local Board Secretary for both Boards, and retirement office staff perform the administrative functions on behalf of those Boards.

Administrative Budget

The City provides an annual budgetary allocation to pay for the general administration of COPERS. The cost paid by the City for COPERS' administration was \$2.081 million. Most investment-related expenses, such as investment custody costs, investment manager fees, and consultant fees, are paid directly from the Plan's assets. Certain administrative fees for legal, actuarial and computer services are also paid directly from Plan assets. The investment costs amounted to \$16.548 million for the fiscal year ended June 30, 2024. These costs represented 0.44% of total Plan assets.

Professional Services

The Retirement Board retains professional consultants to prudently discharge its fiduciary responsibility for the proper administration of the Plan. Gabriel Roeder Smith & Company (GRS) provides actuarial services and the corresponding certification. BNY Mellon serves as the master custodian. Brokerage trade execution monitoring is compiled by Elkins/McSherry, LLC. Meketa Investment Group provides investment performance analysis, asset allocation review and investment consulting to the Retirement Board. Aksia provides consultative services to COPERS regarding its real estate investments. COPERS' financial statements are audited by Forvis Mazars, LLP and reviews of operations are performed by the City Auditor's Department.

The City Attorney's office provides legal representation. COPERS also uses Ice Miller for outside legal services in the event the City Attorney's office has a conflict or for specialized legal work.

The guidance provided by the Retirement Board is greatly appreciated. The preparation of this report is a collaborative effort of many individuals. I would like to acknowledge the hard work of the COPERS staff, the Finance Department and the Retirement Board. This report is intended to provide important information crucial to the understanding of the pension plan.

Funding Status and Progress

COPERS contracts with an independent actuarial firm to conduct an actuarial valuation each year. The purpose of the valuation is to measure COPERS' liability for pension payments and its funding progress, to determine the actuarially determined contribution and to analyze changes in experience. The City of Phoenix has adopted a Pension Funding Policy that serves as a roadmap to a fully funded pension plan. Through the policy the City commits to contributing at least 100% of the actuarially determined contribution, as well as exploring other strategies that would have a positive impact on the security of the Plan.

The actuarial valuation as of June 30, 2024 reflects a funded ratio of 72.62% using a smoothed fair value of plan assets. This is a 0.6% improvement from the prior fiscal year. The unfunded actuarial accrued liability will be amortized as a level percent of payroll over future years.

Investment Activities

As of June 30, 2024, COPERS' net position is 3.616 billion. The fiscal year net return for the Plan is 7.3%, which is 0.3% above the assumed rate of return of 7.00%. The funded ratio on a fair value of assets basis increased from 69.29% to 70.25%. For more information on COPERS' investment policies and performance, please refer to the Investment section in this report, beginning on page 61.

Major Initiatives Involving Plan Administration

In early 2020, COPERS kicked off a multi-year project to replace our aging pension administration system. COPERS continues to make excellent progress on implementing this new system. This project includes staff in the Retirement Office, Levi, Ray & Shoup, Inc. (LRS) our software vendor and The Segal Group, our project consulting team. We have completed two months of parallel processing every transaction in both our current system and the new system. We went live with our new system on March 1, 2024.

The next step in our implementation is MemberDirect, which we will be testing over the next two months and intend on going live by the end of June 2025. MemberDirect will provide online access to active employees and retirees with the goal of making more account information accessible to our members and retirees. We are confident with the progress we have made so far and look forward to all the enhancements the new system provides.

Awards And Acknowledgements

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to COPERS for its annual comprehensive financial report for the fiscal year ended June 30, 2023. In order to be awarded a Certificate of Achievement, an organization must conform to the highest standards of fiduciary reporting and full disclosure. This is the 38th year COPERS has received this award.

The Plan also received the Public Pension Standards Award for Funding and Administration. This award was presented by the Public Pension Coordinating Council, a confederation of the National Association of State Retirement Administrators, the National Conference on Public Employee Retirement Systems and the National Council on Teacher Retirement. This is the twelfth year the Plan has applied for and received this award.

Sincerely,

Scott Steventon

Scott Steventon
Retirement Program Administrator





Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**City of Phoenix Employees' Retirement Plan
Arizona**

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

June 30, 2023

Christopher P. Morill

Executive Director/CEO





Public Pension Coordinating Council

***Public Pension Standards Award
For Funding and Administration
2024***

Presented to

City of Phoenix Employees' Retirement System

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

Presented by the Public Pension Coordinating Council, a confederation of

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

A handwritten signature in black ink, reading 'Alan H. Winkle'.

Alan H. Winkle
Program Administrator

Retirement Board



AARON AVILA
Chairperson, Retirement Board
Elected Board Member



TAMMY RYAN
Vice Chairperson, Retirement Board
Retiree Board Member



INGER ERICKSON
Deputy City Manager
City of Phoenix
Ex-Officio Board Member



JOE JATZKEWITZ
Assistant Finance Director/City Treasurer
City of Phoenix
Ex-Officio Board Member



DAVE MATHEWS
Human Resources Director
City of Phoenix
Ex-Officio Board Member



KATHLEEN GITKIN
Chief Financial Officer
City of Phoenix
Ex-Officio Board Member



BRETT HUTCHISON
Elected Board Member



STEPHEN VITAL
Elected Board Member



ALAN MAGUIRE
Citizen Board Member

Retirement Board Committees

Investment Committee

Alan Maguire, Chairperson
Joe Jatzkewitz
Tammy Ryan, Vice Chairperson
Aaron Avila
Brett Hutchison
Stephen Vital

Legal Review Committee

Inger Erickson, Chairperson
Aaron Avila
David Mathews
Stephen Vital

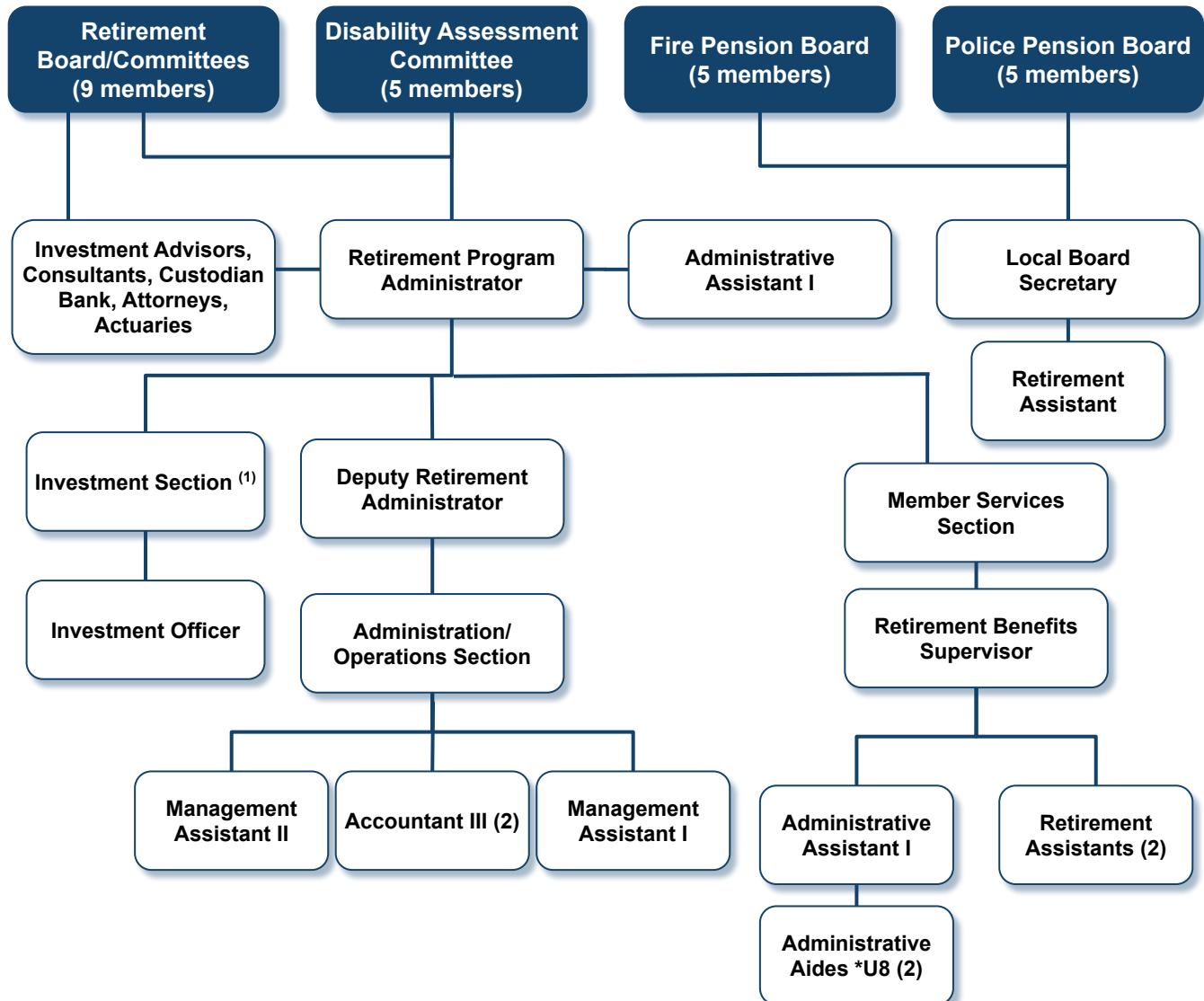
Charter Amendments/ Policies & Procedures Committee

Aaron Avila, Chairperson
Kathleen Gitkin
Tammy Ryan
David Mathews

Disability Assessment Committee

Scott Steventon, Chairperson
Robert Jones, M.D.
Debra Payan
Maria Enriquez
Nicole Harris

Retirement Department Administrative Organization



(1) Please refer to the Investment Section for a list of Investment Managers on page 72 - 73, the Schedule of Investment Fees on pages 80 - 81 and the Schedule of Commissions of page 83.

Administrative Staff

Scott Steventon	Retirement Program Administrator
Stacy Osborne-Fry	Assistant Retirement Administrator
Tina Esparza	Local Board Secretary
Marissa Hernandez	Retirement Benefits Supervisor
Greg Fitchet	Investment Officer
Jamie Yagodnik	Deferred Compensation Coordinator
Claudya Quintero	Defined Contribution Specialist
Bevey McCloud	Management Assistant II
Trista Eaden	Management Assistant I
Valerie Livingston	Accountant III
La Toya Guevara	Accountant III
Alejandra Montoya	Administrative Assistant I
Corrina Apolinar	Retirement Assistant
Rita Azcona	Retirement Assistant
Kyle Patton	Retirement Assistant
Rosa Rogers	Administrative Aide
Sophie Gonzalez	Administrative Aide

Accounting

Kathleen Gitkin	Chief Financial Officer, Finance Department
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Treasurer

Joe Jatzkewitz	City Treasurer, Finance Department
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Legal

Michelle Wood	Assistant City Attorney IV, Law Department
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Actuary

Gabriel, Roeder Smith & Company	Denver, CO
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Auditor

Forvis Mazars, LLP	Dallas, TX Certified Public Accountants
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Brokerage

Elkins McSherry LLC	New York, NY
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Investment Services

Refer to Investment Section for:	Investment Managers on page 72 - 73 Schedule of Investment Fees on page 80 - 81 and Schedule of Commissions on page 83
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Legal Services

ICE Miller	Indianapolis, IN
Kelley Law Group	Phoenix, AZ

Master Custodian

BNY Mellon	Pittsburgh, Pennsylvania
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Medical Advisors

Integrated Medical Evaluations, Inc	Tempe, AZ
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**City of Phoenix**
RETIREMENT SYSTEM

December 17, 2024

To COPERS Members and Retirees:

On behalf of the Retirement Board, it is my pleasure to present the City of Phoenix Employees' Retirement System (COPERS) Annual Comprehensive Financial Report (ACFR) for the fiscal years ended June 30, 2024 and June 30, 2023. This annual report contains information regarding the COPERS' administration, financial statements, investments, actuarial and statistical data.

COPERS' net position increased from \$3.384 billion to \$3.616 billion during the year ended June 30, 2024 and net performance for the year was 7.3%. The annualized net return for the past three and five years was 2.5% and 6.1%, respectively. Meketa, provided the Board with analysis of investment issues and portfolio performance measurement.

COPERS follows a strategic asset allocation ensuring investments are diversified. The goal of the asset allocation is to provide the highest level of return at an acceptable level of risk. For fiscal year 2024, the investment portfolio generated a 7.3% net of fee return slightly above our 7.0% assigned rate. For the trailing 5-year period, the annual compounded return is 6.1% which lags the fund policy index of 7.1%

The COPERS funded ratio on an actuarial value of assets (AVA) as of June 30, 2024 was 72.62%, which was an increase from the June 30, 2023 funded ratio of 72.02%. The Board's independent, actuarial consultant, Gabriel Roeder Smith & Company (GRS), conducted the annual actuarial valuation. The plan's sponsor, the City of Phoenix, remains committed to fully funding their actuarially-computed contribution amount.

COPERS is annually audited by the the City of Phoenix Auditor Department and the Plan's independent external auditors, Forvis Mazars, LLP. The Board reviews their audit plans and reviews their findings and results.

COPERS was again recognized by the Government Finance Officers Association for the quality and completeness of its ACFR and the Popular Annual Financial Report (PAFR) for the fiscal year ended June 30, 2023. These reports are accessible through the COPERS' internet site.

The COPERS Board continues to focus on fulfilling its fiduciary obligation to the COPERS' active members, retirees and beneficiaries. Please contact the Retirement Office with any questions or comments. Finally, I would like to thank my fellow Board members and the COPERS staff for their diligent and committed service on behalf of all our members.

Sincerely,

Aaron Avila

Aaron Avila
Chairperson, Retirement Board

200 West Washington Street, 10th Floor Phoenix, Arizona 85003 602-534-4400 Fax: 602-495-2008 7-1-1 Relay Friendly





Financial section

*The **Financial Section** contains the opinion of the independent auditors, management's discussion and analysis, the audited financial statements, notes to the financial statements, and relevant supplemental information.*



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Independent Auditor's Report

Honorable Mayor and Members of the City Council
City of Phoenix Employees' Retirement System Retirement Board
Phoenix, Arizona

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the City of Phoenix Employees' Retirement System (Plan), a fiduciary fund of the City of Phoenix, Arizona, as of and for the years ended June 30, 2024 and 2023, and the related notes to the financial statements, which collectively comprise the Plan's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Plan as of June 30, 2024 and 2023, and the changes in fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). 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 the Plan, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

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

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Plan's ability to continue as a going concern for 12 months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Forvis Mazars, LLP is an independent member of Forvis Mazars Global Limited

Honorable Mayor and Members of the City Council
City of Phoenix Employees' Retirement System Retirement Board

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 the Plan'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 the Plan's ability to continue as a going concern for a reasonable period of time.

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

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and pension information 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.

Honorable Mayor and Members of the City Council
City of Phoenix Employees' Retirement System Retirement Board

Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Plan's basic financial statements. The schedule of investment expenses, schedule of administrative expenditures and encumbrances, schedule of administrative expenses and schedule of payments to consultants are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of investment expenses, schedule of administrative expenditures and encumbrances, schedule of administrative expenses and schedule of payments to consultants are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

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

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

Forvis Mazars, LLP

Dallas, Texas
December 17, 2024

Management's Discussion and Analysis (unaudited)

Dear Members and Retirees:

The City of Phoenix Employees' Retirement System ("COPERS" or the "Plan") is pleased to provide the following analysis of the financial activities for the fiscal years ended June 30, 2024 and 2023. This discussion is presented as a narrative overview only. Readers are encouraged to consider the information presented in this analysis in conjunction with the Transmittal Letter in the Introductory Section, the financial statements and the other information provided in this report.

Financial Highlights:

(in thousands)

- The Plan's Net Position Restricted for Pensions increased by \$231,719 or approximately 6.8% to \$3,615,815 as of June 30, 2024 as reflected in the Statement of Fiduciary Net Position on page 34. The Net Position Restricted for Pensions as of June 30, 2023, was \$3,384,096. The increase during fiscal year 2024 was primarily attributable to favorable investment performance.
- Total additions to the Net Position Restricted for Pensions, as reported in the Statement of Changes in Fiduciary Net Position on page 35, for the fiscal year ended June 30, 2024 was \$519,022 compared to \$418,486 for fiscal year ended June 30, 2023. The increase for the current year was primarily attributable to favorable investment performance. Total additions include employer and employee contributions of \$267,768 and total net investment gain of \$249,173 for the fiscal year ending June 30, 2024 compared to \$240,885 and an investment gain of \$175,400 in the prior year.
- The recent actuarial valuation prepared as of June 30, 2024 reported the funded ratio to be 72.62%, up from 72.02% the prior fiscal year. This is based on a total pension liability of \$5,147,294 and the smoothed actuarial value of assets.
- On a fair value basis, the investment rate of return for this fiscal year was 7.3% compared with 5.40% in fiscal year 2023.
- Retirement benefits paid to retirees and beneficiaries increased 2.7% to \$276,224 for fiscal year 2024, compared to \$268,868 in fiscal year 2023.

Using This Annual Report:

This report is prepared to provide information as a means for making management decisions, complying with statutory provisions, and demonstrating the responsible stewardship of the assets of the Plan. The financial statements starting on page 34 in the Financial Section identify the Net Position Restricted for Pensions and provide a comparison of the current fiscal year to the prior year.

Overview of Financial Statements:

The Financial Section includes the following:

- Statement of Fiduciary Net Position (Page 34)
- Statement of Changes in Fiduciary Net Position (Page 35)
- Notes to the Financial Statements (Page 36)
- Required Supplementary Information (Page 53)
- Supplementary Information (Page 56)

Statement of Fiduciary Net Position:

This statement presents information on all of the assets and liabilities of the Plan with the difference reported as Net Position Restricted for Pensions available to retirees and survivors. The current year information is provided in comparison to the previous year to assist the reader in evaluating the progress of the Plan.

Statement of Changes in Fiduciary Net Position:

The Statement of Changes in Fiduciary Net Position presents information showing how the Plan's net position changed during the stated fiscal year.

Notes to the Financial Statements:

The Notes to the Financial Statements are an integral part of the financial statements. The information provides the reader additional information that is essential to a full understanding of the data presented in the financial statements to further evaluate the financial condition and operation of the Plan.

Required Supplementary Information:

The Schedule of Changes in Net Pension Liability and Related Ratios provides the Plan's funding progress for the last ten years and the funding ratio that indicates the Plan's ability to meet its current and future benefit obligations. The Schedule of Employer Contributions reflects the City's Actuarial Determined Contribution and Actual Contributions for the last ten years. The Notes to the Required Supplementary Information provide additional information regarding actuarial assumptions and factors affecting trends.

Supplementary Information:

The Supplementary Information includes investment expenses and administrative expenditures for the current and previous fiscal years. The Schedule of Investment Expenses provides the reader with the cost to the Plan for managing and monitoring the Plan's assets.

Financial Analysis

(in thousands)

The evaluation of the Plan's net position provides a measurement tool in assessing the progress and performance of the Plan. COPERS' Net Position Restricted for Pensions as of June 30, 2024 was \$3,615,815. This amount represents an increase of 6.8% from Net Position Restricted for Pensions of \$3,384,096 as of June 30, 2023.

Uninvested cash is reflected as Cash & Cash Equivalents on the Statement of Fiduciary Net Position and may fluctuate due to the timing of investments, pension payroll and other transactions. Cash & Cash Equivalents increased from \$104,316 as of June 30, 2023 to \$164,995 as of June 30, 2024, an increase of \$60,679.

The Plan had liabilities of \$139,323 on June 30, 2024 compared to \$62,876 on June 30, 2023. This change was primarily attributable to increases in payables related to securities lending collateral, unsettled investment broker transactions and amounts owed to the City of Phoenix.

The overall return on investments for fiscal years 2024, 2023 and 2022 was 7.3%, 5.40% and -4.70%, respectively. The chart below illustrates the performance of major asset classes over the last three fiscal years.

2024-2022 Investment Performance

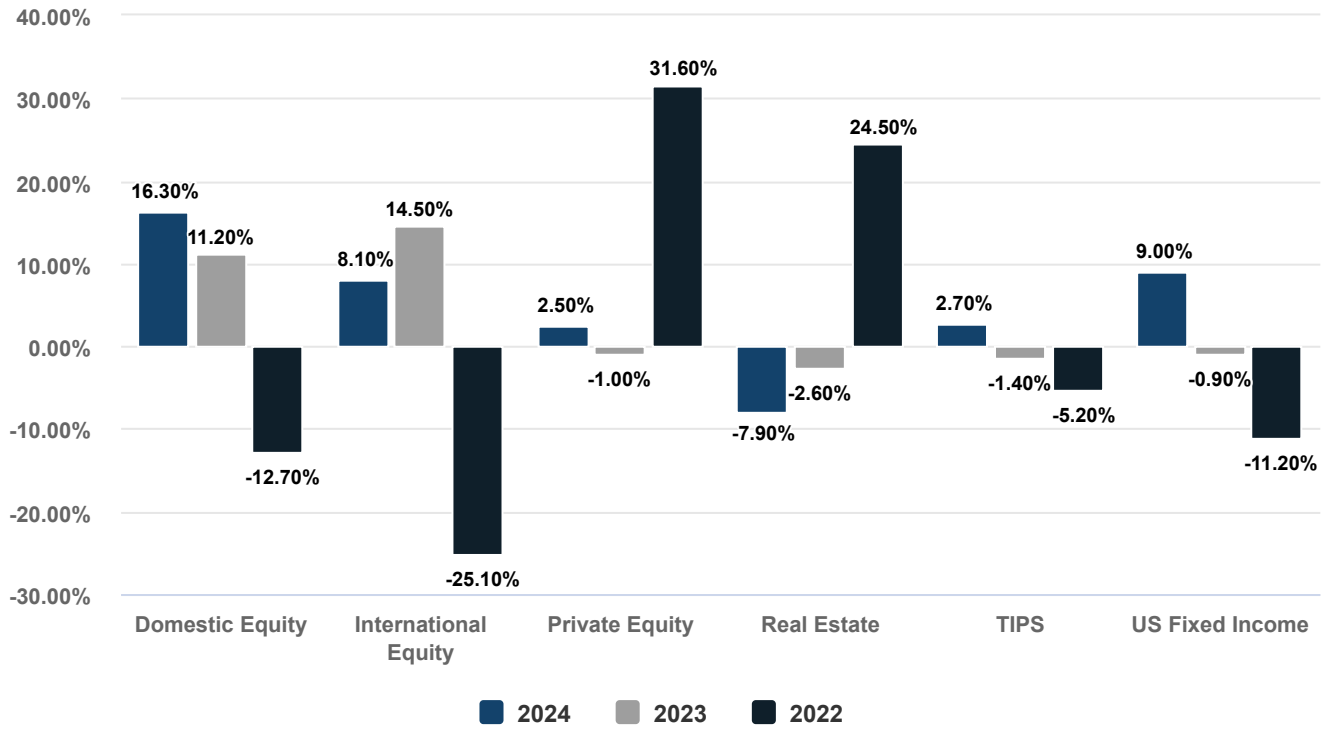


Table 1: COPERS Fiduciary Net Position for Benefits for June 30, 2024 and 2023 (in thousands)

	2024	2023	Change	% Change
Cash & Cash Equivalents	\$ 164,995	\$ 104,316	\$ 60,679	58.2%
Total Receivables	96,077	27,320	68,757	251.7
Total Investments	3,494,066	3,315,336	178,730	5.4
Total Assets	3,755,138	3,446,972	308,166	8.9
Total Liabilities	139,323	62,876	76,447	121.6
COPERS Net Position	\$ 3,615,815	\$ 3,384,096	\$ 231,719	6.8%

Table 2: COPERS Fiduciary Net Position for Benefits for June 30, 2023 and 2022 (in thousands)

	2023	2022	Change	% Change
Cash & Cash Equivalents	\$ 104,316	\$ 183,915	\$ (79,599)	(43.3)%
Total Receivables	27,320	33,588	(6,268)	(18.7)
Total Investments	3,315,336	3,116,717	198,619	6.4
Total Assets	3,446,972	3,334,220	112,752	3.4
Total Liabilities	62,876	91,533	(28,657)	(31.3)
COPERS Net Position	\$ 3,384,096	\$ 3,242,687	\$ 141,409	4.4%

Reserves:

COPERS maintains five reserve funds to separately account for various transactions of the Plan. Additions to the reserves come from employer and member contributions, and investment income. Deductions from the reserves include monthly pension benefits and payments to investment managers. A schedule of reserve account balances is included in Note 3 to the Financial Statements.

COPERS' Activities:

(in thousands)

COPERS provides retirement pensions, survivor benefits and disability benefits to qualified members and their beneficiaries. These benefits are financed by income on COPERS investments and employer and member contributions.

Total net investment income, which includes net appreciation or depreciation in fair value of investments, bond interest, dividend income, net securities lending income and investment expenses for the fiscal year ended June 30, 2024 was positive \$249,173 due to a strong financial market environment. This compares to net investment gain for June 30, 2023 of \$175,400 and net investment loss of -\$161,784 for June 30, 2022 respectively.

Historical long-term performance rates of returns demonstrate that COPERS has struggled to meet or exceed its actuarial assumed rate of return of 7.0% over long periods. As of June 30, 2024, COPERS' annualized rate of return for the five-year period was 6.1% (one-percent below the policy benchmark), the ten-year period was 5.7% (one-percent below the policy benchmark), and the since inception return was 7.3% (slightly above the policy benchmark).

Despite volatility in the stock market, management and COPERS' actuary concur that COPERS remains in a very strong financial position to meet its obligations to the plan participants and beneficiaries.

Total employer contributions were \$210,701 in fiscal year 2024, compared to \$193,136 in fiscal year 2023 and \$178,319 in fiscal year 2022. The City contributed \$18,163 in excess of the Actuarially Determined Contribution in fiscal year 2024, \$13,520 in excess in fiscal year 2023, and \$10,476 in excess in fiscal year 2022. Benefit payments for the fiscal years 2024, 2023 and 2022 were \$276,224, \$268,868 and \$257,782, respectively. Total deductions increased by 3.7% over the prior fiscal year, primarily as a result of an increase in the number of retirees.

The summary of COPERS revenues (additions) and expenses (deductions) for the fiscal years ended June 30, 2024, 2023 and 2022 are provided in Table 3 and Table 4:

Table 3: Summary Statement of Changes in Net Position (in thousands)

	2024	2023	Change	% Change
Additions				
Employer Contributions	\$ 210,701	\$ 193,136	\$ 17,565	9.1%
Members' Contributions	57,067	47,749	9,318	19.5
Retirement Office Administration	2,081	2,201	(120)	(5.5)
Net Investment Income	248,972	175,211	73,761	42.1
Net Securities Lending Income	201	189	12	6.3
Total Additions	\$ 519,022	\$ 418,486	\$ 100,536	24.0%
Deductions				
Benefit Payments	\$ 276,224	\$ 268,868	\$ 7,356	2.7%
Refunds	4,000	4,120	(120)	(2.9)
Inter-System Transfers	128	514	(386)	(75.1)
Retirement Office Administration	2,081	2,201	(120)	(5.5)
Administrative Expense	4,870	1,373	3,497	254.7
Total Deductions	\$ 287,303	\$ 277,077	\$ 10,227	3.7%
Increase in Net Position	231,719	141,409	\$ 90,309	63.9%
Net Position Restricted for Pensions				
Beginning of Year	3,384,096	3,242,687		
End of Year	\$ 3,615,815	\$ 3,384,096		

Table 4: Summary Statement of Changes in Net Position (in thousands)

	2023	2022	Change	% Change
Additions				
Employer Contributions	\$ 193,136	\$ 178,319	\$ 14,817	8.3%
Members' Contributions	47,749	53,350	(5,601)	(10.5)
Retirement Office Administration	2,201	2,122	79	3.7
Net Investment Income	175,211	(161,872)	337,083	(208.2)
Net Securities Lending Income	189	88	101	114.8
Total Additions	\$ 418,486	\$ 72,007	\$ 346,479	481.2%
Deductions				
Benefit Payments	\$ 268,868	\$ 257,782	\$ 11,086	4.3%
Refunds	4,120	4,436	(316)	(7.1)
Inter-System Transfers	514	442	72	16.3
Retirement Office Administration	2,201	2,122	79	3.7
Administrative Expense	1,373	2,564	(1,191)	(46.5)
Total Deductions	\$ 277,077	\$ 267,346	\$ 9,730	3.6%
Increase in Net Position	141,409	(195,340)	\$ 336,749	(172.4)%
Net Position Restricted for Pensions				
Beginning of Year	3,242,687	3,438,027		
End of Year	\$ 3,384,096	\$ 3,242,687		

Requests for Information:

This report is prepared to provide the Retirement Board, members, retirees and citizens with an overview of the plan, to assess COPERS' financial position and to show accountability for funds received. Questions regarding the information provided in this financial report or requests for additional information may be addressed to:

COPERS

200 W. Washington, 10th Floor

Phoenix, AZ 85003

(602) 534-4400

www.phoenix.gov/copers

Statement of Fiduciary Net Position as of June 30, 2024 and 2023 (in thousands)

	2024	2023
Assets		
Cash and Cash Equivalents	\$ 164,995	\$ 104,316
Receivables		
City of Phoenix Contributions	18,163	15,536
Member Contributions	-	557
Interest and Dividends	4,941	4,303
Unsettled Broker Transactions - Sales	70,983	6,924
Other	1,990	-
Total Receivables	96,077	27,320
Investments		
Temporary Investments from Securities Lending Collateral	110,225	44,117
Fixed Income	531,305	511,900
Domestic Equities	998,612	823,012
Private Equity	463,615	401,370
Global Commingled	236,478	296,651
International Equities	572,622	605,731
Hedge Funds	98,983	142,648
Real Estate	482,226	489,907
Total Investments	3,494,066	3,315,336
Total Assets	3,755,138	3,446,972
Liabilities		
Payable for Securities Lending Collateral	110,225	44,117
Unsettled Broker Transactions - Purchases	4,882	428
Due to the City of Phoenix	23,252	735
Investment Management Fees Payable	824	3,008
Other Payables	140	14,588
Total Liabilities	139,323	62,876
Net Position Restricted for Pensions	\$ 3,615,815	\$ 3,384,096

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

Statement of Changes in Fiduciary Net Position for fiscal years ended June 30, 2024 and 2023 (in thousands)

	2024	2023
Additions		
Contributions		
City of Phoenix	\$ 210,701	\$ 193,136
Member	57,067	47,749
Retirement Office Administration	2,081	2,201
Total Contributions	269,849	243,086
Net Investment Income		
Net Appreciation in Fair Value of Investments	214,255	136,469
Interest	36,673	27,924
Dividends	9,656	15,612
Other	4,936	13,283
Total Income from Investing Activities	265,520	193,287
Less Investing Activities Expense	(16,548)	(18,076)
Net Income from Investing Activities	248,972	175,211
Securities Lending Gross Income	3,964	2,131
Less Agent Fees	(86)	(81)
Less Broker Rebates/Collateral Management Fees	(3,677)	(1,861)
Net Securities Lending Expenses	(3,763)	(1,942)
Net Income from Securities Lending Activities	201	189
Total Net Investment Income	249,173	175,400
Total Additions	519,022	418,486
Deductions		
Benefit Payments	276,224	268,868
Refunds of Contributions	4,000	4,120
Retirement Office Administration	2,081	2,201
Inter-System Transfers	128	515
Administrative Expenses	4,870	1,373
Total Deductions	287,303	277,077
Increase In Net Position	231,719	141,409
Net Position Restricted for Pensions		
Beginning of Year	3,384,096	3,242,687
End of Year	\$ 3,615,815	\$ 3,384,096

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

Note 1 - Summary of Significant Accounting Policies

The City of Phoenix Employees' Retirement Plan ("COPERS" or the "Plan") is a defined benefit single-employer public employees' retirement system for the City of Phoenix ("City") general municipal employees. The accounting policies of COPERS conform to accounting principles generally accepted in the United States of America ("GAAP") as applicable to governmental retirement plans.

A. Reporting Entity

COPERS prepares and distributes separate financial statements as required by the Charter of the City of Phoenix (Chapter XXIV, Article II, Employees' Retirement Law of 1953) ("Charter"). Its financial statements are also included as a component unit of the City due to the significance of COPERS' operational and financial relationships with the City. The cost of administering the Retirement Office is reflected as offsetting contributions and deductions on the Statement of Changes in Fiduciary Net Position although the costs are borne solely by the City. The City is the only non-employee contributor to the pension plan. Not all employees of the City are covered under COPERS. Police officers and firefighters are covered under the Arizona Public Safety Personnel Retirement System ("APSPRS") and elected officials are covered under the Elected Officials Retirement Plan of Arizona ("EORPA"). APSPRS and EORPA were established by Arizona State Statute and are administered by an independent Board of Trustees. The City's involvement with these plans is limited to the administration of benefits for APSPRS through the City of Phoenix Fire and Police Local Boards and making the required annual contributions.

B. Basis of Accounting

The accompanying financial statements have been prepared using the accrual basis of accounting in conformity with United States generally accepted accounting principles as prescribed by the Governmental Accounting Standards Board. COPERS' transactions are accounted for using the flow of economic resources measurement focus. Employee contributions are recognized as revenue in the period in which employee services are rendered and the contributions are therefore earned. Employer contributions are recognized at the same time, as the City is formally committed to contributing the actuarially determined amount each year. Pension payments and refunds are recognized when due and payable and expenses are recorded when the corresponding liabilities are incurred, regardless of when payments are made.

C. Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make a number of estimates and assumptions that affect the reported amounts of net position restricted for pensions and changes therein. Actual results could differ from those estimates.

D. Investments

Equity securities and fixed-income securities are reported at fair value (Note 14). Interest and dividends are recognized on the accrual basis as earned. Purchases and sales of investments are recorded on a trade-date basis. Cash equivalents are determined by using a maturity of no more than 90 days at time of purchase. The fair value of an investment is the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date. The fair values of investments are generally based on published market prices and quotations obtained from major investment firms. Certain investments are reported at the net asset values calculated by the investment manager as a practical expedient.

In March of 2017, the Board significantly revised the Investment Policy Statement that was more than 10 years old. The Board considered it necessary to:

- Update the objectives and guidelines that govern the investment of COPERS' assets;
- Establish a long-term target asset allocation with a high likelihood of meeting COPERS' objectives; and
- Protect the financial health of COPERS through the implementation of a stable, long-term investment policy.

Significant areas of revision include modifying the asset allocation, reflecting the changes in the Phoenix City Charter that previously limited the types of investments COPERS could make, and adding prudent investor language. In consultation with their investment manager and consulting actuary, the Board believes the revised asset allocation will have a greater probability of realizing the assumed rate of return. The revised asset allocation was adopted during fiscal year 2017, was implemented in phases and completed in 2020. An update to the asset allocation plan became effective March 2023.

Note 1 - Summary of Significant Accounting Policies (Continued)

The table below reflects the target and actual allocation of the portfolio and the expected return on those asset classes:

Asset Class	FY 2024 Target Allocation	FY 2024 Actual Allocation	10-Year Expected Real Return
U.S. Equity	16.00%	23.00%	8.10%
Developed Market Equity (non-U.S.)	9.0	9.0	9.0
Emerging Market Equity	8.0	8.0	9.5
Private Equity	9.0	8.0	12.3
TIPS	6.0	4.0	4.5
Private Debt	10.0	-	10.1
High Yield Bonds	5.0	5.0	7.0
Bank Loans	3.0	3.0	6.9
Emerging Market Bonds	3.0	2.0	7.3
Infrastructure	4.0	3.0	7.3
Natural Resources	4.0	2.0	9.6
Hedge Funds	-	2.0	-
Real Estate	12.0	13.0	7.4
Risk Mitigating Strategies	5.0	4.0	3.0
Short Duration Bonds	6.0	10.0	3.8
Cash	-	4.0	2.4

Note 2 - Description of Plan

A. Purpose

COPERS is a single-employer, defined benefit pension plan established by the City Charter. Its purpose is to provide retirement, disability retirement and survivor benefits for its members. Members are full-time employees on a work schedule which consists of the number of full-time hours per week designated for the class of employment for the employee's classification with a work schedule intended to be continuous over a period of twelve months. All full-time classified civil service employees and full-time appointive officials of the City are required, as a condition of employment, to contribute to COPERS.

B. Administration

The general administration, management and operation of COPERS are vested in a nine-member Retirement Board consisting of three elected employee members, four statutory members, a citizen member and a retiree member. The Retirement Board appoints the Retirement Program Administrator, a civil service position, and contracts other services necessary to properly administer the Plan.

C. Plan Amendment and Termination

COPERS is administered in accordance with the Charter and can be amended or repealed only by a vote of the people. There are no provisions for termination of COPERS. Voters approved changes to the City of Phoenix retirement system in an election held on August 25, 2015. New employees hired on or after January 1, 2016 were placed in Tier 3. The employee contribution rate for Tier 3 is based on 50% of the actuarially determined rate or 11% whichever is lower.

D. Membership Data

	June 30	
	2024	2023
Retirees, beneficiaries and survivors	7,870	7,793
Alternate payees	195	193
Terminated vested members	1,144	1,149
Refunds eligible count ⁽¹⁾	3,013 ⁽¹⁾	-
Active members:		
Tier 1	3,545	3,769
Tier 2	509	521
Tier 3	4,712	4,117
Total Members	20,988	17,542

⁽¹⁾ First year data has been provided by actuary.

Note 2 - Description of Plan (Continued)

E. Pension Benefits

Benefits are calculated on the basis of a given rate, final average salary and service credit. Members are eligible for retirement benefits at age 60 plus ten or more years of service credit, age 62 with five or more years of service credit, or where age and service credits equal 80 for Tier 1 employees and 87 for Tier 2 and 3 employees. The below table outlines the benefits for each tier.

Tier 1	Tier 2	Tier 3
<ul style="list-style-type: none"> Up to 32.5 yrs service @ 2.0% 32.5 to 35.5 yrs service @ 1.0% 35.5 yrs service & over @ 0.5% 	<ul style="list-style-type: none"> Less than 20 yrs service @ 2.10% 20 yrs but less than 25 yrs service @ 2.15% 25 yrs but less than 30 yrs service @ 2.20% 30 yrs or more @ 2.30% 	<ul style="list-style-type: none"> Less than 10 yrs service @ 1.85% 10 yrs but less than 20 yrs service @ 1.9% 20 yrs but less than 30 yrs service @ 2.0% 30 yrs or more @ 2.1%

A deferred pension is available at age 62 to members who end their City employment with five or more years of service credit and leave their accumulated contributions in COPERS.

A supplemental post-retirement payment and a permanent benefit increase (under the Pension Equalization Program) may be provided to Tier 1 and Tier 2 retirees if sufficient reserves are available at the end of the fiscal year. The reserve is funded if the five-year average investment return exceeds 8%.

F. Disability Benefits

A member who becomes permanently disabled for the performance of duty is eligible for a disability benefit if the disability is 1) due to a personal injury or disease and the member has ten or more years of service credit or 2) due to injuries sustained on the job, regardless of service credit.

G. Survivor Benefits

Dependents of deceased members may qualify for survivor benefits if the deceased member had ten or more years of service credit or if the member's death was in the line of duty with the City and compensable under the Workmen's Compensation Act of the State of Arizona. Chapter XXIV, Section 25 of the Charter of the City of Phoenix specifies conditions for eligibility of survivor benefits.

H. Refunds

Upon separation from employment, a member or beneficiary not entitled to a pension may withdraw the member's contribution plus applicable interest. Acceptance of a refund revokes the individual's rights and benefits in COPERS. Employer contributions to COPERS are not refundable. An interest rate of 3.75%, the rate cap imposed by the City Charter, was granted by the Retirement Board to be applied effective June 30, 2024 to the members' mean account balances during the fiscal year. The interest rate granted in fiscal year 2023 was also 3.75%.

I. Tax Exempt Status of Member Contributions

COPERS has received a favorable letter of determination of qualification from the Internal Revenue Service under Section 401(a) of the Internal Revenue Code. Continued tax-exempt status of COPERS is contingent on future operations remaining in compliance with Section 401(a).

Under Internal Revenue Code Section 414(h)(2) and Revenue Ruling 81-36, effective January 1, 1985 the City of Phoenix authorized that a portion of its contributions be earmarked as being made by the members of COPERS, and "picked up" that portion of the designated active member contributions. The member contribution that is picked up by the City of Phoenix is treated as an employer contribution for federal and state income tax purposes and excluded from the member's gross income until distributed by COPERS.

Note 3 – Net Position Restricted for Pensions

Five reserve funds have been established to separately account for transactions of the Plan:

- The Income Account is used to account for COPERS' investment income and loss, including net appreciation or depreciation in fair value and miscellaneous income. At year-end, the Income Account is closed to the Employees' Savings Account, the Pension Accumulation Account, the Pension Reserve Account and the Pension Equalization Reserve Account, which results in no fund balance in the Income Account.
- The Employees' Savings Account is used to account for member contributions, member refunds, and the member portion of investment income. As a condition of employment, a member hired before July 1, 2013 is required to contribute 5% of his/her covered compensation; a member hired after this date is required to contribute 50% of the actuarially determined rate, while the City contributes the other 50%. Effective with the election on August 25, 2015, the employee contribution for Tiers 2 and 3 cannot exceed 11%. Accumulated contributions receive regular interest that is computed at the end of each fiscal year on the mean balance in the members' accounts during the year. The rate of interest is established each year by the Board and is capped at 3.75% by the City Charter. Transfers are made from the Employees' Savings Account to the Pension Reserve Account when a member retires or becomes eligible for disability benefits.
- The Pension Accumulation Account is used to account for employer contributions and for a portion of investment income. The Charter requires the City to contribute an amount that is determined annually by COPERS' retained actuaries. Contributions are based upon a level percentage of payroll. The Pension Accumulation Account may carry a negative balance as the City contribution rate includes a component for the unfunded actuarial liability (UAL). Transfers are made from the Pension Accumulation Account to the Pension Reserve Account when a member retires or becomes eligible for disability benefits.
- The Pension Reserve Account is used to account for distributions to retirees and the balance receives regular interest that is computed at the end of each fiscal year on the mean balance during the year. The rate of interest is the actuarial assumed rate.
- The Pension Equalization Reserve Account is used for funding increases to eligible pensions under the Pension Equalization Program and the "13th Check." The Pension Equalization Program was established on October 1, 1991, when voters of the City of Phoenix approved an amendment to the City Charter, allowing pension adjustments to be paid to retired members of COPERS. These adjustments are to be made exclusively from COPERS' investment earnings in excess of 8% (per Charter) over the preceding 5-year period and may not exceed the Phoenix Area Consumer Price Index (CPI). This amendment was effective January 1, 1992, and will benefit only retirees who, as of January 1 of each year, have received at least 36 pension payments.

Following are the fiscal year-end reserve balances as of June 30, 2024 and 2023 respectively, based on amortized cost for fixed income investments and cost for equity investments (in thousands):

	2024	2023
Employees' Savings	\$ 601,916	\$ 563,855
Pension Accumulation	(2,796,719)	(2,620,503)
Pension Reserve	5,047,748	4,841,456
Pension Equalization Reserve	550	-
Convert to Fair Value	762,320	599,288
Total Based on Fair Value	\$ 3,615,815	\$ 3,384,096

Note 4 - Investment Fees (in thousands)

The investment costs paid from Plan assets were \$16,548 and \$18,076 for the fiscal years 2024 and 2023, respectively. This information is provided in greater detail in the Supplementary Information section of this document.

Employer contributions are actuarially determined amounts, which together with member contributions are sufficient to cover both (i) normal costs of the plan and (ii) financing of unfunded actuarial costs over a selected period of future years (See Note 6).

Note 5 - Funding Requirement Determinations and Actual Contributions (in thousands)

City of Phoenix contributions for fiscal year 2024 were \$210,701, which is equivalent to 28.09% of the estimated annual active member payroll, compared to \$193,136 or 29.56% for the fiscal year 2023. Member contributions for the fiscal years 2024 and 2023 were \$57,067 and \$47,749, respectively. The Tier 1 employee contribution rate is 5%. The Tier 2 and Tier 3 employee contribution rate is 11%.

Note 6 – Funded Status and Funding Progress (as of most recent valuation)

Unfunded actuarial liabilities are determined annually by the consulting actuary, applying actuarial assumptions to reflect the time value of money (through discounts for interest) and the probability of payment (by means of decrements, such as for death, disability, withdrawal or retirement) between the valuation date and the expected date of payment.

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the date indicated. Additional information as of the latest actuarial valuation follows:

Description Valuation Date	Methods/Assumptions	
	June 30, 2024	June 30, 2023
Actuarial Cost Method	Individual Entry Age Normal	Individual Entry Age Normal
Amortization Method	Level Percentage of Payroll	Level Percentage of Payroll
Amortization Method	<ul style="list-style-type: none">• The UAL of June 30, 2013 is amortized over a closed 25-year period.• The impact of September 2013 assumption changed is amortized over a closed 25-year period.• The impact of August 2015 assumption changed is amortized over a closed 25-year period with a four-year phase-in.• Future gains and losses are amortized over closed 20 year period.	
Actuarial Assumptions		
Investment Rate of Return	7.00%	7.00%
Projected Salary Increases	2.8%-7.0%	2.8%-7.0%
Cost-of-Living Adjustments	0.5% to 1.25%	0.5% to 1.25%
Wage Inflation	2.80%	2.80%
Payroll Growth Rate	2.50%	2.50%

The actuarial assumptions used for the June 30, 2024 valuation, include the following:

1. Salary Scale – Salary increases are composed of a price inflation component, a real wage growth component and a merit or longevity component that varies by age. Growth in total payroll is assumed to be 2.50%.
2. Multiple Decrement Tables:
 - a. Death - For determination of member, retiree and beneficiary mortality, the Pub-2010.
 - b. Disability – Based on 20% of the Arizona State Retirement System disability table.
 - c. Withdrawal - Based upon COPERS' experience, measures the probability of members terminating employment for reasons other than retirement, death or disability.

The foregoing actuarial assumptions are based on the presumption that COPERS will continue as presently chartered. If COPERS is amended, different actuarial assumptions and other factors might be applicable in determining actuarial present values.

Discount Rate

A single discount rate of 7.00% was used to measure the total pension liability as of June 30, 2024 and June 30, 2023. This single discount rate was based on the expected rate of return on pension plan investments. The projection of cash flows used to determine the discount rate assumed that Tier 1 member contributions remain at 5% of payroll, Tier 2 and 3 member contributions are set equal to half of the total actuarially determined contribution rate, not to exceed 11%, and City contributions will be made at rates equal to the difference between the actuarially

Note 6 – Funded Status and Funding Progress (as of most recent valuation) (Continued)

determined contribution rates and the member rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be sufficient 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.

Sensitivity of the Net Position Liability to Changes in the Discount Rate

The table below presents the net pension liability of the Plan calculated using the discount rate of 7.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1.0% lower (6.00%) or 1.0% higher (8.00%) than the rates at June 30, 2024 and June 30, 2023. Changes in the discount rate affect the measurement of the TPL (Total Pension Liability). Lower discount rates produce a higher TPL and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the NPL (Net Pension Liability) can be significant for a relatively small change in the discount rate. A 1.0% decrease in the discount rate increases the TPL by approximately 12.0% and increases the NPL by approximately 40.5%. A 1.0% increase in the discount rate decreases the TPL by approximately 10.0%, and decreases the NPL by approximately 33.8%. The table below shows the sensitivity of the NPL to the discount rate.

Sensitivity of Net Pension Liability to Changes in Discount Rate (in thousands):

Sensitivity as of June 30, 2024	1% Decrease 6.00%	Discount Rate 7.00%	1% Increase 8.00%
Total Pension Liability	\$ 5,767,243	\$ 5,147,294	\$ 4,630,162
Plan Fiduciary Net Position	3,615,814	3,615,814	3,615,814
Net Pension Liability	2,151,429	1,531,480	1,014,348
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	62.7%	70.2%	78.1%

Sensitivity as of June 30, 2023	1% Decrease 6.00%	Discount Rate 7.00%	1% Increase 8.00%
Total Pension Liability	\$ 5,471,455	\$ 4,884,162	\$ 4,394,356
Plan Fiduciary Net Position	3,384,095	3,384,095	3,384,095
Net Pension Liability	2,087,360	1,500,067	1,010,261
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	61.9%	69.3%	77.0%

Note 7 - Funding Policy

The City has formally adopted a pension funding policy that requires payment of at least 100 percent of the actuarially determined contribution every year. Under current actuarial calculations and amortization periods COPERS will be fully funded by June 30, 2044.

As a condition of employment, COPERS members are also required to contribute a percentage of their salary as provided in Chapter XXIV, Section 27, of the City Charter. The table below outlines the contribution rates for Tiers 1, 2, and 3.

Tier	Contribution Rate
Tier 1	5%
Tier 2	Capped at 11%
Tier 3	Capped at 11%

Present members' accumulated contributions at June 30, 2024 were \$601,916, including interest compounded annually, compared to \$563,855 at June 30, 2023, and are included in the Employee Savings Account as discussed on page 39.

Note 8 – Investments

The Board has a fiduciary duty to invest and manage the assets of the Plan solely in the interests of members and beneficiaries. The Board invests and manages trust assets as a prudent investor would, considering the purposes, terms, distribution requirements, and other circumstances of the Plan. In satisfying this standard, the Board exercises reasonable care, skill, and caution.

In fulfilling its responsibilities, the Board has contracted with various investment management firms and a master global custodian. The Board's investment policy addresses permissible investment categories and appropriate allocation.

A summary of investments at June 30, 2024 and 2023 is as follows (in thousands):

	2024		2023	
	Fair Value	Amortized Cost	Fair Value	Amortized Cost
Temporary Investments from Securities Lending Collateral (Note 9)	\$ 110,225	\$ 110,225	\$ 44,117	\$ 44,117
Fixed Income	531,305	539,417	511,900	554,810
Domestic Equity	998,612	773,720	823,012	651,400
Private Equity	463,615	326,363	401,370	271,870
International Equities	572,622	422,432	605,731	513,876
Global Commingled	236,478	83,626	296,651	195,740
Hedge Funds	98,983	69,886	142,648	107,666
Real Estate	482,226	406,079	489,907	376,571
Total Investments	\$ 3,494,066	\$ 2,731,748	\$ 3,315,336	\$ 2,716,050
Cash and Cash Equivalents	164,995	164,995	104,316	104,316
Total	\$ 3,659,061	\$ 2,896,743	\$ 3,419,652	\$ 2,820,366

COPERS investments are managed by professional fund managers and are held by a global master custodian who acts as COPERS' agent.

Note 8 - Investments (Continued)

The following schedule provides the fair value of each investment category at June 30, 2024 and 2023 (in thousands):

Investment Categories	2024 Fair Value	2023 Fair Value
Cash	\$ 7,203	\$ 1,429
Short-Term Investment Fund	157,792	102,887
Cash and Cash Equivalents	\$ 164,995	\$ 104,316
Temporary Investments from Securities Lending Collateral	\$ 110,225	\$ 44,117
Fixed Income:		
Derivatives	\$ 9	\$ 463
U S Government Guaranteed Securities	57,378	46,977
Government Agencies Securities	770	308
Mortgage Backed Securities-Residential	18,144	72,165
Asset Backed Securities	37,657	16,672
Municipal Bonds	1,519	3,802
Corporate Bonds	328,855	288,508
Foreign Commingled	86,973	83,005
	\$ 531,305	\$ 511,900
Domestic Equities	\$ 998,612	\$ 823,012
Global Commingled	\$ 236,478	\$ 296,651
International Equities	\$ 572,622	\$ 605,731
Private Equity	\$ 463,615	\$ 401,370
Hedge Funds	\$ 98,983	\$ 142,648
Real Estate Funds	\$ 482,226	\$ 489,907
Total with Securities Lending Collateral	\$ 3,659,061	\$ 3,419,652

Note 8 - Investments (Continued)

Custodial Credit Risk – Deposits

Custodial credit risk for deposits is the risk that in the event of a depository institution failure, a government will not be able to recover deposits or collateral held by an outside party. As of June 30, 2024, COPERS did not realize any losses related to custodial credit risk for deposits.

Annual Money-Weighted Rate of Return

The rate of return for the year ended June 30, 2024, which is the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 7.3%, compared to 5.40% for the prior year. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Custodial Credit Risk – Investments

Custodial credit risk for investments is the risk that in the event of a failure of a counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in the possession of an outside party. As of June 30, 2024, COPERS did not realize any losses due to custodial credit risk for investments or securities lending arrangements. Note 9 on page 48 provides detailed information regarding securities lending. COPERS' policy requires all investments to be collateralized and registered in COPERS' or its nominee's name.

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. COPERS' investment policy does not allow for an investment in any one issuer in excess of 5% of COPERS' total investments which includes futures, options and swaps, except investments issued or explicitly guaranteed by the U.S. government. As of June 30, 2024, COPERS did not have any investments with any one issuer in excess of 5%.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates may adversely affect the fair value of an investment or a deposit. COPERS' investment in foreign fixed income is managed by Longfellow and Western Asset. The managers' report dollar and non-dollar denominated holdings and provide for direct ownership of the underlying security. The following table presents the foreign currency exposure for the Plan's fixed income investments.

Foreign Currency Exposure June 30, 2024 and 2023 (in thousands):

Currency	2024	2023
British Pound	4	-
Canadian Dollar	-	28
Australian Dollar	19	-
Euro	0	18
Totals	\$ 23	\$ 46

Commitments (in thousands)

In connection with the purchase of various private equity, natural resources, infrastructure and real estate investments, COPERS had unfunded commitments totaling \$634,685 as of June 30, 2024 and \$737,200 as of June 30, 2023. Remaining unfunded commitments for real estate were \$149,065 as of June 30, 2024. COPERS is not in any redemption queues. All non-core real estate is self-liquidating. COPERS also had \$485,620 in other unfunded alternative investment commitments as of June 30, 2024.

Note 8 - Investments (Continued)**Credit Risk**

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. COPERS' investment policy permits purchasing securities included in the Barclays Capital US Aggregate Index and relies on the methodology used by Barclays Capital to determine if a security is investment grade. For fixed income securities and their futures or options derivatives, emphasis is on high-quality securities.

COPERS currently has two managers responsible for fixed income investments. Longfellow Investment Management and Western Asset Management Company ("Western") are active bond managers. As part of their portfolios, Longfellow and Western may enter into futures, options, and swap contracts for hedging purposes and/or as a part of the overall portfolio strategy and will be incidental to its securities trading activities for the account. COPERS also invests in index funds SSgA U.S. Aggregate Bond Index and SSgA U.S. TIPS.

The table on page 46 provides fixed income investments as of June 30, 2024 subject to credit risk along with current credit ratings.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Typically, the longer the maturity of an investment, the greater the sensitivity of its fair value to interest rate changes. COPERS' contract with Western directs them to maintain an average weighted duration of portfolio security holdings including futures and options positions within +/- 20% of the Barclays Capital US Aggregate Index. COPERS' contract with Longfellow specifies a weighted average duration of +/- 20% of the Barclays Capital US Aggregate Index. The contracts with Brigade and DDJ Capital Management require a weighted average duration of +/- two years of the Barclays Capital US Aggregate Index.

Information about the interest rate risk exposure of COPERS is provided in the table on page 46. COPERS assets include several collateralized mortgage obligations and mortgage-backed securities, which could be considered as highly sensitive to interest rate changes, depending upon the exercise of prepayment options.

COPERS' investment policy permits the following investments, which include investments that are considered to be highly sensitive to interest rate changes due to long maturities, prepayment options, coupon multipliers, reset dates and similar terms:

- Obligations issued or guaranteed by the U.S. Federal Government, U.S. Federal Agencies or U.S. government-sponsored corporations and agencies.
- Obligations of U.S. and non-U.S. corporations such as mortgage bonds, convertible and non-convertible notes and debentures.
- Mortgage-backed and asset-backed securities, swaps, forwards, options on swaps, and options on forwards.
- Obligations denominated in U.S. dollars of international agencies, supranational entities and foreign governments (or their subdivisions or agencies).
- Securities defined under Rule 144A and Commercial paper defined under Section 4(2) of the Securities Act of 1933.
- Bank Loans, TBA Securities and Mortgage Dollar Rolls.
- General obligation bonds, revenue bonds, improvement district bonds, or other evidences of indebtedness of any state of the United States, or any of the counties or incorporated cities, towns and duly organized school districts in the State of Arizona which are not in default as to principal and interest.

Note 8 – Investments (Continued)

Credit Rating and Maturity for COPERS' Fixed Income Investments (in thousands)

	2024			2023		
	Credit Quality Ratings	Fair Value	Weighted Average Maturity (Years)	Credit Quality Ratings	Fair Value	Weighted Average Maturity (Years)
Derivatives	Not Rated	\$ 9	1.675	Not Rated	\$ 463	24.332
Total Derivatives		9			463	
U.S. Government Guaranteed	AAA	\$ 39,763	1.748	AAA	41,244	17
U.S. Government Guaranteed	B	40	4.173	B	1,140	11
U.S. Government Guaranteed	Not Rated	17,575	2.055	Not Rated	4,593	13.910
Total U. S. Government Guaranteed		57,378			46,977	
Government Agency	AAA	237	1.403	AAA	- \$	0.00
Government Agency	BBB	290	2	BBB	-	-
Government Agency	Not Rated	243	2.663	Not Rated	308	4.666
Total Government Agency		770			308	
Mortgage Backed	AAA	\$ 2,428	20.252	AAA	\$ 3,461	19.952
Mortgage Backed	AA	180	14.066	AA	938	18.664
Mortgage Backed	A	-	-	A	1,049	22.192
Mortgage Backed	BBB	-	-	BBB	36	14.984
Mortgage Backed	BB	-	-	BB	49	12.162
Mortgage Backed	B	202	14.301	B	30	13.669
Mortgage Backed	CCC	-	-	CCC	165	19.858
Mortgage Backed	CC	-	-	CC	9	13.666
Mortgage Backed	Not Rated	15,334	24.002	Not Rated	66,428	26.754
Total Mortgage Backed		18,144			72,165	
Asset Backed	AAA	\$ 6,138	6.533	AAA	\$ 1,954	13.262
Asset Backed	AA	1,995	9.976	AA	2,021	13.512
Asset Backed	A	2,525	0	A	0.00	-
Asset Backed	BBB	1,723	5.255	BBB	-	-
Asset Backed	BB	284	6.562	BB	-	-
Asset Backed	B	1,749	5.595	B	679	10.371
Asset Backed	CC	189	1.874	CC	269	14.912
Asset Backed	Not Rated	23,054	7.038	Not Rated	11,749	15.864
Total Asset Backed		37,657			16,672	
Municipal Bonds	AA	1,057	3.390	AA	2,511	16.089
Municipal Bonds	A	462	2.340	A	668	23.377
Municipal Bonds	B	-	-	B	623	12.096
Total Municipal Bonds		1,519			3,802	

Note 8 – Investments (Continued)

Credit Rating and Maturity for COPERS' Fixed Income Investments (in thousands)

	Credit Quality Ratings	2024		Credit Quality Ratings	2023	
		Fair Value	Weighted Average Maturity (Years)		Fair Value	Weighted Average Maturity (Years)
Corporate Bonds	AAA	\$ 16,487	5.050	AAA	\$ 12,318	10.240
Corporate Bonds	AA	8,313	4.044	AA	8,940	9.596
Corporate Bonds	A	29,468	3.963	A	20,382	9.552
Corporate Bonds	BBB	25,799	3.083	BBB	26,526	9.257
Corporate Bonds	BB	13,981	4.643	BB	14,034	6.718
Corporate Bonds	B	27,815	4.473	B	28,860	5.903
Corporate Bonds	CCC	20,080	4.212	CCC	24,915	4.836
Corporate Bonds	CC	1,860	8.582	CC	868	4.255
Corporate Bonds	C	116	1.874	C	312	3.877
Corporate Bonds	Not Rated	184,936	4.305	Not Rated	151,353	5.902
Total Corporate Bonds		328,855			288,508	
Foreign	AAA	-	-	AAA	447	13.880
Foreign	AA	713	2.734	AA	-	-
Foreign	A	587	3.667	A	1,126	21.223
Foreign	BBB	893	2.801	BBB	1,300	21.584
Foreign	BB	-	-	BB	-	-
Foreign	B	412	3.685	B	408	5.692
Foreign	Not Rated	84,368	10.263	Not Rated	79,724	10.469
Total Foreign		86,973			83,005	
Total Fixed Income Investments		\$ 531,305			\$ 511,900	

Note 9 – Securities Lending Program

State statutes and City Charter do not prohibit COPERS from participating in securities lending transactions, and COPERS has, via a Securities Lending Authorization Agreement effective May 6, 2015, authorized Bank of New York Mellon (“BNY”) to lend its securities to broker-dealers and banks pursuant to a form of loan agreement.

During 2024 and 2023, BNY lent, on behalf of COPERS, certain securities held by BNY as custodian and received cash (United States and foreign currency), securities issued or guaranteed by the United States government and irrevocable letters of credit as collateral. BNY did not have the ability to pledge or sell collateral securities delivered absent a borrower default. Borrowers were required to deliver collateral for each loan equal to: (i) in the case of loaned securities denominated in United States dollars or whose primary trading market was located in the United States or sovereign debt issued by foreign governments, 102% of the fair value of the loaned securities; and (ii) in the case of loaned securities not denominated in United States dollars or whose primary trading market was not located in the United States, 105% of the fair value of the loaned securities.

At June 30, 2024 and 2023, COPERS had the following securities out-on-loan (in thousands).

	Fair Value of Securities Lent	Cash Collateral Value	Non-Cash Collateral Value
June 30, 2024			
U.S. Equities	\$ 31,645	\$ 31,139	\$ 506
U.S. Corporate Securities	36,624	36,616	8
U.S. Government Securities	41,956	34,086	7,870
Total	\$ 110,225	\$ 101,841	\$ 8,384
	Fair Value of Securities Lent	Cash Collateral Value	Non-Cash Collateral Value
June 30, 2023			
U.S. Equities	\$ 21,337	\$ 21,325	\$ 12
U.S. Corporate Securities	19,191	17,634	1,557
U.S. Government Securities	3,589	2,924	665
Total	\$ 44,117	\$ 41,883	\$ 2,234

During 2024 and 2023, COPERS and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral received on each loan was invested, together with the cash collateral of other qualified tax-exempt plan lenders, in a liquidity pool and a duration pool. As of June 30, 2024, the collateral pool had a weighted average maturity (WAM) of 3 days and a weighted average life (WAL) of 68 days. Because the loans were terminable at will, their duration did not generally match the duration of the investments made with cash collateral.

Note 10 – Risk and Uncertainties

COPERS invest in various investment securities. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and such changes could materially affect the amounts reported in the statement of fiduciary net position. Because the values of individual investments fluctuate with market conditions, the amount of investment gains or losses that COPERS will recognize in its future financial statements cannot be determined.

Note 11 – Funds To/From Other Systems

Under the provisions of Arizona Revised Statutes, Sections 38-730 and 38-922 as amended, transfers between COPERS and the Arizona State Retirement System (“ASRS”) are allowed when the City hires an employee who

Note 11 – Funds To/From Other Systems (Continued)

was formerly covered by ASRS, or a COPERS member who separates from City of Phoenix employment goes to work for an entity whose employees are covered under ASRS. Effective July 2011, an amendment in statute changed the calculation method of retirement service credit transfers between COPERS and ASRS. Previously, retirement service credits (time) were transferred between systems without possible service reduction or member cost. Beginning July 2011, retirement service credit transfers are based on an actuarial present value (APV) methodology to the extent the prior retirement system is funded on a fair value basis. With this calculation method a member may have to pay for a portion of the transferred service or accept a reduced transfer of service credits.

Also, City employees previously employed by other government entities may purchase prior service credits.

Note 12 – Interfund Balances

Because COPERS does not have a local bank account, the City of Phoenix Payroll Section acts as a paying and collecting agent for COPERS. Payroll issues pension payments and employee retirement contribution refunds from the City's bank account and handles payment reclamations through the City's bank account. This type of activity, if any, is reflected in the Statement of Fiduciary Net Position as a liability or receivable, as applicable.

Note 13 – Contingent Liabilities

Management is not aware of any pending or threatened claims against COPERS.

Note 14 – Fair Value Measurements (in thousands)**Investment valuation**

COPERS categorizes the fair value measurements of its investments based on the hierarchy established by generally accepted accounting principles. The fair value hierarchy, which has three levels, is based on the valuation inputs used to measure an asset's fair value: Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

Investments

Investments, including derivative instruments that are not hedging derivatives, are measured at fair value on a recurring basis. Recurring fair value measurements are those that Governmental Accounting Standards Board (GASB) Statements require or permit in the statement of fiduciary net position at the end of each reporting period. Fair value investments measurements are as follows at June 30, 2024 and 2023 (in thousands).

Note 14 – Fair Value Measurements (in thousands) (Continued)

	Fair Value June 30, 2024	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Domestic Equities	\$ 998,612	\$ 359,282	\$ -	\$ 639,330
International Equities	572,622	151,667	-	420,955
Fixed Income				
Derivatives	9	14	(5)	-
US Government and Agency	58,148	57,378	770	-
Mortgage Backed - Residential	18,144	-	18,144	-
Asset Backed	37,657	-	37,657	-
Municipal Bonds	1,519	-	1,519	-
Corporate Bonds	328,855	-	192,481	136,374
Foreign	86,973	-	4,820	82,153
Temporary Investments from Securities Lending	8,384	8,384	-	-
Total Investments by Fair Value Level	\$ 2,110,923	\$ 576,725	\$ 255,386	\$ 1,278,812
Investments measured at net asset value (NAV)				
Private Equity	463,615			
Hedge Funds	98,983			
Global Commingled	236,478			
Real Estate Funds	482,226			
Total Investments Measured at NAV	\$ 1,281,302			
Cash Equivalents in Securities Lending	101,841			
Total Investments	\$ 3,494,066			

Note 14 – Fair Value Measurements (in thousands) (Continued)

	Fair Value June 30, 2023	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Domestic Equities	\$ 823,012	\$ 299,379	\$ -	\$ 523,633
International Equities	605,731	255,081	-	350,650
Fixed Income				
Derivatives	463	(136)	599	-
US Government and Agency	47,285	46,977	308	-
Mortgage Backed - Residential	72,165	-	72,165	-
Asset Backed	16,672	-	16,672	-
Municipal Bonds	3,802	-	3,802	-
Corporate Bonds	288,508	93,568	150,629	44,311
Foreign	83,005	76,649	6,356	-
Global Commingled	100,104	100,104	-	-
Temporary Investments from Securities Lending	2,234	2,234	-	-
Total Investments by Fair Value Level	\$ 2,042,981	\$ 873,856	\$ 250,531	\$ 918,594
Investments measured at net asset value (NAV)				
Private Equity	401,370			
Hedge Funds	142,648			
Global Commingled	196,547			
Real Estate Funds	489,907			
Total Investments Measured at NAV	\$ 1,230,472			
Cash Equivalents in Securities Lending	41,883			
Total Investments	\$ 3,315,336			

Note 14 – Fair Value Measurements (in thousands) (Continued)

Alternative investments measured at NAV include private equity funds, hedge funds, real estate, opportunistic and global fixed income. Below is a description of the various investment strategies:

- COPERS has one private equity fund manager that focuses on limited partnership arrangements.
- COPERS invests in four direct hedge funds which all have a global macro strategy.
- COPERS' portfolio consists of one commingled fixed income fund and five fixed income separate accounts. These accounts have a core-plus strategy.
- COPERS has two global commingled funds, one with a global large cap growth mandate and the second fund with a large cap value mandate.
- COPERS' real estate investments consist of three core real estate funds and 18 non-core real estate partnerships. The core funds permit redemptions with a 90-day notice, the non-core fund investments have a limited liquidity and redemptions are restricted.

Certain investments are reported at the net asset values calculated by the investment manager as a practical expedient and are not classified by level in the fair value hierarchy. The fair value amounts included above are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the statement of fiduciary net position. These investments (in thousands), at June 30, 2024, detailed in the following table, are subject to capital calls and specific redemption terms:

	6/30/2024	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Hedge Funds	98,983	-	Quarterly	90 Days
Global Commingled	236,478	-	Monthly	30 Days
Private Equity	463,615	485,620	Quarterly	0-90 Days
Real Estate Funds	482,226	149,065	Quarterly	0 - 90 Days

Debt and equity securities categorized as Level 1 are valued based on prices quoted in active markets for those debts and securities. Debt and equity securities categorized as Level 2 are valued using matrix pricing techniques maintained by the various pricing vendors for these securities. Matrix pricing is used to value securities based on the relationship to benchmark quoted prices. Investment derivative instruments categorized as Level 2 are valued using market approaches that consider, as applicable, benchmark interest rates or foreign exchange rates. Mortgage-backed securities categorized as Level 2 are valued using discounted cash flow techniques. Debt and equity securities categorized as Level 3 are debt and securities whose stated market price is unobservable by the marketplace, many of these securities are priced by the issuers or industry groups for these securities. Collateralized debt obligations categorized as Level 3 are valued using consensus pricing. The fair value of international equity funds and related short-term investments classified as Level 3 represent the value of unit positions in funds that are not publicly traded on an exchange. Fair value of these securities can be impacted by redemption restrictions imposed by the fund managers.

Required Supplementary Information

The schedule below shows the changes in Net Pension Liability and related ratios required by GASB. As more information becomes available, additional years will be presented.

Schedule of Changes in Net Pension Liability and Related Ratios (in thousands) *

Total Pension Liability	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Service cost	\$ 89,016	\$ 81,561	\$ 79,869	\$ 78,643	\$ 81,119	\$ 73,255	\$ 73,072	\$ 72,876	\$ 80,757	\$ 75,310
Interest on total pension liability	335,308	324,026	311,636	303,102	313,397	300,543	293,883	293,258	293,206	266,355
Changes of benefit terms	-	-	-	-	-	-	-	-	(3,229)	-
Difference between expected and actual experience	119,160	28,788	52,647	(4,347)	(77,698)	39,370	(42,785)	429	(76,891)	(31,009)
Changes of assumptions	-	-	-	-	(62,386)	-	-	2,420	(69,420)	254,870
Benefit payments, including refunds of member contributions	(280,352)	(273,504)	(262,660)	(249,713)	(242,143)	(237,389)	(227,576)	(223,667)	(216,193)	(204,403)
Net change in pension liability	\$ 263,132	\$ 160,871	\$ 181,492	\$ 127,685	\$ 12,289	\$ 175,779	\$ 96,594	\$ 145,315	\$ 8,230	\$ 361,123
Total Pension liability - beginning	\$ 4,884,162	\$ 4,723,291	\$ 4,541,799	\$ 4,414,114	\$ 4,401,825	\$ 4,226,046	\$ 4,129,452	\$ 3,984,137	\$ 3,975,907	\$ 3,614,784
Total Pension liability - ending	\$ 5,147,294	\$ 4,884,162	\$ 4,723,291	\$ 4,541,799	\$ 4,414,114	\$ 4,401,825	\$ 4,226,046	\$ 4,129,452	\$ 3,984,137	\$ 3,975,907
Plan Fiduciary Net Position										
Contributions - employer	210,701	193,136	178,319	357,382	175,947	165,796	229,006	152,153	119,844	117,092
Contributions - member	57,067	47,749	53,350	40,561	39,356	35,042	33,340	30,870	29,523	27,861
Net investment income/(loss)	249,173	175,400	(161,785)	610,554	50,389	142,964	166,514	243,210	9,171	47,148
Benefit payments, including refunds of member contributions and transfer outs	(280,352)	(273,504)	(262,660)	(249,713)	(242,143)	(237,389)	(227,576)	(223,667)	(216,409)	(204,403)
Administrative Expenses	(4,870)	(1,373)	(2,564)	(1,930)	(2,509)	(793)	(377)	(380)	(234)	(414)
Net change in plan fiduciary net position	\$ 231,719	\$ 141,409	\$ (195,340)	\$ 756,854	\$ 21,039	\$ 105,620	\$ 200,907	\$ 202,186	\$ (58,105)	\$ (12,716)
Plan fiduciary net position - beginning	\$ 3,384,095	\$ 3,242,687	\$ 3,438,027	\$ 2,681,173	\$ 2,660,134	\$ 2,554,514	\$ 2,353,607	\$ 2,151,421	\$ 2,209,526	\$ 2,222,242
Plan fiduciary net position - ending	\$ 3,615,814	\$ 3,384,096	\$ 3,242,687	\$ 3,438,027	\$ 2,681,173	\$ 2,660,134	\$ 2,554,514	\$ 2,353,607	\$ 2,151,421	\$ 2,209,526
Net Pension Liability	\$ 1,531,480	\$ 1,500,066	\$ 1,480,604	\$ 1,103,772	\$ 1,732,941	\$ 1,741,691	\$ 1,671,532	\$ 1,775,845	\$ 1,832,716	\$ 1,766,381
Plan fiduciary net position as a percentage of the total pension liability										
	70.25%	69.29%	68.65%	75.70%	60.74%	60.43%	60.45%	57.00%	54.00%	55.57%
Covered payroll	\$ 750,171	\$ 653,263	\$ 595,304	\$ 580,451	\$ 568,089	\$ 561,938	\$ 526,667	\$ 521,295	\$ 473,974	\$ 460,441
Net pension liability as a percentage of covered payroll	204.15%	229.63%	248.71%	190.16%	305.05%	309.94%	317.38%	340.66%	386.67%	383.63%

* May not sum due to rounding

Required Supplementary Information (Continued)

Schedule of Employer Contributions – Last 10 Fiscal Years (in thousands)

Schedule of Employer Contributions	Actuarial Determined Contribution	Actual Contributions	Contribution Deficiency (Excess)	Covered Payroll	Actual Contributions As A Percentage of Covered Payroll
2023-24	\$ 192,538	\$ 210,701	\$ (18,163)	\$ 750,171	28.09%
2022-23	179,616	193,136	(13,520)	653,263	29.56%
2021-22	167,843	178,319	(10,476)	595,304	29.95%
2020-21	178,090	357,382	(179,292)	580,451	61.57%
2019-20	175,947	175,947	-	568,089	30.97%
2018-19	165,796	165,796	-	561,938	29.50%
2017-18	159,006	229,006	(70,000)	526,667	43.48%
2016-17	152,153	152,153	-	521,295	29.19%
2015-16	119,844	119,844	-	473,974	25.28%
2014-15	117,092	117,092	-	484,309 *	24.18%

* For fiscal year 2014-15, the Plan's actuary was calculating covered payroll based on their assumption this was an estimated amount. For subsequent reports, the actuary began using actual amounts which slightly changed the amounts previously reported.

Schedule of Investment Returns

	2024	2023	2022	2021	2020
Annual money-weighted rate of return, net of investment expenses	7.30%	5.40%	-4.70%	22.80%	1.40%
	2019	2018	2017	2016	2015
Annual money-weighted rate of return, net of investment expenses	6.20%	7.10%	7.30%	0.60%	2.19%

Notes to the Required Supplementary Information

In July 2020, the COPERS Board adopted several new actuarial assumptions based upon the recommendations from its actuary, GRS, for the purpose of determining contribution rates. The 2020 adopted changes are:

1. The discount rate was lowered to 7.00%.
2. The rate of inflation was lowered to 2.30%.
3. The payroll growth rate lowered to 2.50%.
4. Pension Equalization Reserve (PER) was valued for future benefits payable through the PER as a 1.25% annual compound cost-of-living adjustment (COLA).
5. Wage inflation was lowered to 2.80%.
6. Individual merit/promotion increases were changed to be service based rates ranging from 4.20% to 0.00%.
7. Unused sick leave, vacation time and compensation time was updated to be valued explicitly with a 1.50% load included for adverse experience.
8. Post-retirement, active life and disable life mortality was updated to be based on the Pub-2010 tables with multipliers for healthy annuitant mortality and projected with the ultimate rates from the MP projection scales.
9. Rates of disability, retirement and termination were updated to reflect recent experience.

In July and August 2017, the COPERS Board adopted several new actuarial assumptions based upon the recommendations from its actuary, GRS, for the purpose of determining contribution rates. The 2017 adopted changes were:

1. The discount rate was lowered to 7.25%.
2. The rate of inflation was lowered to 2.50%.
3. The payroll growth rate lowered to 3.00%.
4. Pension Equalization Reserve (PER) was valued for future benefits payable through the PER as a 1.5% annual compound cost-of-living adjustment (COLA).

In August and October 2015, the COPERS Board adopted new actuarial assumptions and methods, based upon the recommendations from its actuary, Cheiron, for the purpose of determining contributions and to meet the GASB 67 implementation requirements to be applied to the financial reporting for the fiscal year ending June 30, 2015. The 2015 adopted changes were the following:

1. PER was valued for future benefits payable through the PER as a 1.5% annual compound COLA. Amortization method for the unfunded actuarial liability (UAL) was amortized over a 20-year period as a level percentage of payroll with a four-year phase-in to the full amortization rate. Future gains and losses are amortized over closed 20-year periods as a level percentage of payroll from the valuation date in which they are first recognized. For Tier 1, members contribute 5% of pay and the City contributes the remainder of the total contribution rate. For the Tier 2, the members and the City each pay half of the total contribution rate.
2. Revised data tables for merit/salary increases, retirement rates, termination rates, disability incidence rates, and mortality rates.

In September 2013, the COPERS Board adopted new assumptions and methods, based upon the recommendations from its actuary, Cheiron, for the purpose of determining contributions and to meet the GASB 67 implementation requirements to be applied to the financial reporting for the fiscal year ending June 30, 2014. The September 2013 adopted changes were the following:

1. Discount rate was lowered to 7.5% based on the expected return on assets.
2. Salary increase rate was changed for price inflation to 3.00%, real wage growth to 0.50% and wage inflation to 3.5%.
3. Amortization method for the unfunded actuarial liability (UAL) was amortized over a 25-year period as a level percentage of payroll with a four-year phase-in to the full amortization rate. Future gains and losses are amortized over closed 20-year periods as a level percentage of payroll from the valuation date in which they are first recognized. For Tier 1, members contribute 5% of pay and the City contributes the remainder of the total contribution rate. For the Tier 2, the members and the City each pay half of the total contribution rate.
4. The administrative expense assumption was added. In prior years, the discount rate was assumed to be net of administrative expenses.

Supplementary Information

Schedule of Investment Expenses for the Fiscal Years Ended June 30, 2024 and 2023 (in thousands)

Payee	Fees		Nature of Services
	2024	2023	
Adler	\$ 0	\$ 367	Investment Management
American Landmark	0	\$ 208	Investment Management
Artisan Global Opportunities	1,476	1,665	Investment Management
Ascentris Value Add Fund III	170	179	Investment Management
Ascentris Fund B III	13	194	Investment Management
Baillie Gifford	880	883	Investment Management
BNY Mellon	231	222	Master Custodian
Brevan Howard (BH-DG)	420	483	Investment Management
Brigade Capital Management	439	308	Investment Management
Carlson Capital	-	748	Investment Management
Cramer Rosenthal McGlynn	480	346	Investment Management
DDJ Capital Management	426	388	Investment Management
Driehaus	185	163	Investment Management
Eagle Asset Management	384	264	Investment Management
Fir Tree	732	662	Investment Management
First Eagle	594	548	Investment Management
FOCUS Healthcare Partners	545	216	Investment Management
GQG	535	458	Investment Management
Hammes Partners III	170	311	Investment Management
Hammes Partners IV	-	140	Investment Management
HSI Real Estate V	4	8	Investment Management
J P Morgan	668	824	Investment Management
JDM Partners	-	-	Investment Management
Logan Circle (MetLife)	440	528	Investment Management
Longfellow	235	288	Investment Management
LSV Asset Management	1,200	973	Investment Management
Morgan Stanley	737	749	Investment Management
Neuberger Fund LP	58	-	Investment Management
Neuberger Sonoran A	178	156	Investment Management
Neuberger Sonoran B	438	612	Investment Management
Neuberger Sonoran C	436	513	Investment Management
Neuberger Sonoran D	313	751	Investment Management
Neuberger Sonoran E	496	-	Investment Management
Neuberger Sonoran F	445	-	Investment Management
Northwood GP, LLC IV	51	178	Investment Management
Northwood Series V	376	239	Investment Management
Northwood RE TE	136	-	Investment Management
One River	170	-	Investment Management
PAAMCO	57	313	Investment Management
Pacific Asset Management	175	313	Investment Management
PIMCO All Asset	659	843	Investment Management
Realterm Logistics	130	180	Investment Management
RECAP IV	-	154	Investment Management
RECAP V	189	123	Investment Management
Robeco Investment Management	520	485	Investment Management

Supplementary Information (Continued)

**Schedule of Investment Expenses for the Fiscal Years Ended June 30, 2024 and 2023
(in thousands) (continued)**

Payee	Fees		Nature of Services
	2024	2023	
SC Core Fund	-	289	Investment Management
SSgA FTSE RAFI Developed ex-U.S. Low Volatility	86	78	Investment Management
SSgA FTSE RAFI U.S. Low Volatility	101	96	Investment Management
SSgA U.S. TIPS	47	35	Investment Management
SSgA US Aggregate Bond	20	30	Investment Management
SSA Short-Term Bond	21	-	Investment Management
Western Asset	191	223	Investment Management
Whelock Partners	-	3	Investment Management
Whelock II	66	96	Investment Management
Whelock VI	-	243	Investment Management
Whelock VII	225	-	Investment Management
Total	\$ 16,548	\$ 18,076	
Net Securities Lending Expenses	\$ 3,763	\$ 1,942	Agent Fees/Broker Rebates

Supplementary Information (Continued)

Schedule of Administrative Expenditures and Encumbrances (Non-GAAP Budgetary Basis) Paid by the City of Phoenix for the Fiscal Years Ended June 30, 2024 and 2023

	2024		2023	
	Original Budget	Actual	Original Budget	Actual
Personal Services				
Staff Salaries and Benefits	\$ 1,575,660	\$ 1,211,151	\$ 1,415,934	\$ 1,317,235
Insurance	242,438	240,129	274,222	225,745
Social Security and Medicare	99,493	81,238	100,158	86,863
Retirement Contributions	479,849	386,925	457,886	468,898
Total Personal Services	\$ 2,397,440	\$ 1,919,443	\$ 2,248,200	\$ 2,098,741
Professional Services				
Consultants	\$ 980	\$ 1,513	\$ 980	\$ 1,208
Audit and Accounting	127,797	144,821	134,000	108,541
Medical Advisors	4,250	-	-	4,271
Total Professional Services	\$ 133,027	\$ 146,334	\$ 134,980	\$ 109,749
Communications				
Printing	\$ 13,000	\$ 9,747	\$ 14,000	\$ 17,315
Postage and Mailing	20,300	20,542	15,300	20,708
Telephone	2,700	1,182	1,700	2,428
Subscriptions and Memberships	2,190	3,120	2,190	4,515
Total Communications	\$ 38,190	\$ 34,591	\$ 33,190	\$ 44,966
Miscellaneous				
Supplies	\$ 5,000	\$ 7,481	\$ 7,600	\$ 5,157
Office Furniture		55		4,114
Computer Equipment	-	2,594	-	513
Other	(215,853)	(29,332)	(11,937)	(62,140)
Total Miscellaneous	\$ (210,853)	\$ (19,202)	\$ (4,337)	\$ (52,356)
Total Administrative Expenditures and Encumbrances	\$ 2,357,804	\$ 2,081,166	\$ 2,412,033	\$ 2,201,100

Note: The schedule above represents administrative expenditures of COPERS that are budgeted and paid by the City of Phoenix through the general fund. They are recognized as offsetting contributions and deductions on the Statement of Changes in Fiduciary Net Position.

Schedule of Administrative Expenses (Plan Assets) for the Fiscal Years Ended June 30, 2024 and 2023

Expense Category	Fees Paid	
	2024	2023
Technology	\$ 2,421,512	\$ 776,175
Consulting	564,091	357,595
Actuarial Consulting	39,550	57,663
Legal Services	432,243	39,738
Administrative - Other	1,412,638	141,385
Total	\$ 4,870,034	\$ 1,372,556

Supplementary Information (Continued)

Schedule of Payments to Consultants (Plan Assets) for the Fiscal Years Ended June 30, 2024 and 2023

Consultant	2024	2023
Alignium/Aksia	\$ 145,422	\$ 117,258
Elkins Mc Sherry	-	10,000
Meketa Investment Group	418,669	230,337
Total	\$ 564,091	\$ 357,595





Investment section

*The **Investment Section** contains the Plan's report on investment activity, its investment policies, schedules of investment results and related information.*





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December 13, 2024

Board of Trustees
City of Phoenix Employees' Retirement System
c/o Scott Steventon
Retirement Program Administrator
200 W. Washington Street, 10th Floor
Phoenix, AZ 85003

Dear Board Members,

Please find below a summary of the market environment and System performance for the 2024 fiscal year.

Fiscal 2024 Year in Review

As it turned out, fiscal year 2024 began right around the same time as the Fed last increased interest rates in the battle against the pandemic-induced inflation. Where we stand today, following the end of fiscal year 2024, we could be close to the first interest rate cut in this cycle. It has been a year that, despite numerous predictions to the contrary, economic growth remained positive, inflation has leveled out or declined, depending on the measure, and the labor market has remained relatively strong despite some recent softening.

The last increase in the Federal Funds rate was in July of 2023, to a range of 5.25% - 5.5%. At the time, given the Fed's hawkish comments and above expectations economic data, investors started to recognize that rates could stay higher for longer, with no forthcoming interest rate cut. Combined with a downgrade in US debt and weakening economic data out of Europe and China, equity markets began to decline. Of the major asset classes, the US equity market (Russell 3000) fell by 3.3% in the first quarter of fiscal 2024. Outside the US, developed markets (MSCI EAFE) lost 4.1% and emerging market equities (MSCI Emerging Markets) were down 2.9%. Within emerging markets, Chinese equities (MSCI China) were down 1.9% in the first quarter of fiscal 2024.

Treasury rates continued to drift upward in the first quarter of fiscal 2024 with rates on longer-dated maturities increasing the most, driving a flattening of the yield curve. The two-year Treasury rose slightly from 4.9% to 5.1% while the ten-year Treasury increased from 3.8% to 4.6%. Higher rates resulted in negative returns for investment grade bonds. The broad US investment grade bond market (Bloomberg US Aggregate) fell 3.2%. Returns for High Yield bonds (Bloomberg High Yield) remained robust on few signs of distress and increased by 0.5% over the period.

As the second quarter of fiscal 2024 began, futures markets were still pricing in a small chance of an additional rate hike in the cycle, with two to three potential rate decreases in 2024. Markets continued searching for overall direction though, on the path of inflation, growth, and interest rates both in the US and abroad. As the quarter progressed, economic data started to come in below expectations and

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optimism built that major central banks could start cutting rates in 2024. This shift in sentiment rekindled the broad risk-on environment experienced earlier in calendar year 2023.

Among equity asset classes, the US equity market (Russell 3000) returned an impressive 12.1% in the second quarter of fiscal 2024. Outside the US, developed markets (MSCI EAFE) increased by 10.4% in the second quarter of fiscal 2024 with more than half the gains coming from a depreciating US dollar. Emerging market equities (MSCI Emerging Markets) were up 7.9% over the same period. Within emerging markets, Chinese equities (MSCI China) were down 4.2%, despite the enthusiasm around the globe.

Following a softening in inflation and expectations of lower policy rates, interest rates fell significantly in the second quarter of fiscal 2024, resulting in positive returns for investment grade asset classes. The two-year Treasury fell from 5.1% to 4.3%¹ while the ten-year Treasury declined from 4.6% to 3.9%¹. The broad US investment grade bond market (Bloomberg US Aggregate) was up 6.8%, the strongest quarterly performance on record for that benchmark. Returns for high yield bonds (Bloomberg High Yield) continued the positive trend and increased by 7.2% over the second quarter of fiscal 2024.

The third quarter of fiscal 2024 began with the same optimism from the end of the previous quarter that inflation was in decline and that interest rate cuts would be forthcoming. However, as we moved forward it was likely that the resilient economic data that was driving global equities higher was also pushing out the timing of the expected first Fed rate cut, weighing on bonds. At that time major central banks had largely paused interest rate hikes with expectations that many would eventually cut rates. The uneven pace of falling inflation and economic growth across countries led to speculation that the pace of rate cuts could vary between central banks.

Inflation pressures had significantly eased in most countries from their pandemic peaks, but levels were still above most central bank targets with questions about how inflation would track going forward. Headline inflation in the US rose in March 2024 (3.2% to 3.5%) by more than expected, while core inflation was unchanged (3.8%) when it was predicted to decline to 3.7%.

Among equity asset classes, US markets (Russell 3000 Index) rose 10.0% in the third quarter of fiscal 2024. The technology sector continued to perform well, with energy likely gaining on geopolitical tensions. Non-US developed equity markets (MSCI EAFE) increased 5.8% in the quarter, helped by Japanese equities which hit multi-decade highs. A strengthening US dollar drove the weaker relative results for US investors with returns in local currency terms (MSCI EAFE Local) 4.2% higher (10.0% versus 5.8%) over the third quarter of fiscal 2024.

During the third quarter of fiscal 2024, emerging market equities (MSCI Emerging Markets) had the weakest equity returns (+2.4%), depressed by China (MSCI China) at -2.2%. Slowing economic growth, lingering issues in the property sector, and efforts by the US to discourage investments in China all weighed on results. The stronger dollar also hurt performance in emerging markets for US investors



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with returns in local currency terms (MSCI Emerging Markets Local) 2.1% higher (4.5%) during the same quarter.

Higher inflation and rising interest rates weighed on bonds with the broad US bond market (Bloomberg Aggregate) returning -0.8% for the third quarter of fiscal 2024. High Yield Bonds (Barclays High Yield) remained positive, up 1.5% for the same quarter, as risk appetite remained strong and all-in yields attractive.

The final quarter of fiscal 2024 began with investors recognizing that interest rates may have to stay higher for longer given resilient economic data. Stronger than expected inflation and employment data in the US weighed on both stocks and bonds in April. However, by May and June, sentiment changed as the Fed confirmed it was unlikely they would increase interest rates and economic data started largely coming in below expectations. Headline year-over-year inflation in the US fell 0.5% over the quarter to 3.0% with several readings coming in below expectations. Core CPI also fell 0.5% in the quarter, finishing at 3.3%. Outside the US, inflation readings continued to decline in many developed markets, enough so that central banks in Canada, Sweden, Switzerland, and the EU all cut interest rates in the final quarter of fiscal 2024.

Among equity asset classes, US markets (Russell 3000 Index) rose 3.2% in the fourth quarter of fiscal 2024. Large capitalization technology companies again performed well driven by continued excitement over artificial intelligence. Enthusiasm surrounding artificial intelligence also benefited utilities, although to a lesser extent, with the market recognizing the massive computing power and energy needed to incorporate these technologies into many facets of everyday life. Non-US developed equity markets (MSCI EAFE) decreased 0.4% in the final quarter of fiscal 2024. A strengthening US dollar drove the weaker relative results for US investors with returns in local currency terms (MSCI EAFE Local) 1.4% higher (+1.0% versus -0.4%). Emerging market equities had the best returns in the final quarter of fiscal 2024, with the MSCI Emerging Markets Index returning +5.0%, partially attributed to China (MSCI China) at +7.1%.

Rising interest rates weighed on bonds with income balancing capital losses. The broad US bond market (Bloomberg Aggregate) returned 0.1% for the final quarter of fiscal 2024. High Yield Bonds (Barclays High Yield) remained positive, up 1.1% for the quarter.

Somewhat surprisingly for many, the 2024 fiscal year saw continued high policy rates with many economies avoiding recessions. In the US the Fed kept policy rates steady at 5.25%-5.50%, a level not seen in decades, for almost the entire fiscal year. Despite that, GDP growth in the US remained robust, with growth rates at 4.9%,² 3.4%,² 1.4%,² and 2.8%² for the first, second, third, and fourth quarters of fiscal year 2024, respectively. Unemployment increased 0.5% over the fiscal year, starting at 3.6% and ending at 4.1%,³ but remained low relative to history. All of this occurred while the headline year-over-year inflation number ended where it began, at 3.0%,³ while the core CPI number declined from 4.8% to 3.3%.³

Outside the US, unemployment and inflation painted a stable picture. The Eurozone ended fiscal year 2024 with unemployment numbers at 6.5%,¹ the same level as the beginning of the fiscal year. Japan



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ended with an unemployment figure of 2.5%,¹ slightly down from where it started for the year. Inflation in the Eurozone ended the fiscal year at 2.5%,¹ down from 5.5%¹ a year earlier. Inflation in Japan ended fiscal year 2024 at 2.8%¹ versus 2.6%¹ at the beginning of the fiscal year. China notably had inflation levels at the end of the fiscal year at 0.2%,¹ up slightly from 0.0% at the beginning of the fiscal year, given a disappointing reopening after Covid, issues in the property sector, geopolitical tensions, and increasingly protectionist trade measures around the globe.

Fiscal Year 2025 Outlook

In fiscal year 2024, the US economy defied most expectations, with inflation moderating without significant damage to the economy, despite historically high interest rates. The Federal Funds rate ended the year above 5%, where it started, while economic growth remained far from recessionary territory. This, combined with excitement over AI, led to strong results in many equity markets, while fixed income markets were positive on softening inflation expectations. As we look toward fiscal 2025, there are several areas that could guide markets, both positively and negatively. These include:

→ The path of inflation and monetary policy.

- In fiscal 2025 we will be watching as the Fed continues their attempt to manage a “soft landing” of the US economy.⁴ A soft landing is when the Fed is able to sufficiently reduce inflation without increasing unemployment and turning growth negative.⁵ Economic growth has continued to remain positive in the US, and while the US unemployment rate has increased to 4.1%,³ it is still near historic lows.
- The current Federal Funds rate stood at 5.25% - 5.5% for most of fiscal 2024. At time of this publication, futures markets were pricing in an almost 100%⁶ chance of a rate cut in September of 2024, followed by one or two more by the end of the calendar year. Should this play out as the futures markets expect, the next question might be how many more, if any, rate cuts could be expected in the second half of fiscal 2025. From there we will be watching how lower interest rates impact the economy.
- Inflation, after surging during and after the global pandemic, has significantly declined from its peak in the US and other advanced economies. However, inflation remains above the Fed’s average 2% target, largely driven by the “stickier”⁷ services sectors. In June 2024, the Consumer Price Index (“CPI”) was at 3.0%, well below its peak of 9.1% in June of 2022.⁸ Core CPI, which strips out the volatile food and fuel components, finished the fiscal year at 3.3%¹, down from a 6.6% peak.⁹ Core inflation is higher than headline inflation, as price increases for parts of the services sector, particularly shelter, medical care, and auto insurance, remain elevated. How inflation tracks on this final leg toward the Fed’s average 2.0% target will be key in the upcoming fiscal year and will heavily influence the path of interest rates and the overall economy.
- The US labor market remains relatively healthy, despite some recent softening. Jobs continue to be added to the economy and wage growth remains strong. The unemployment rate has ticked up though, largely from people re-entering the work force. Initial claims for unemployment have also recently started to increase and the ratio of the number of jobs to



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unemployed has returned to pre-pandemic levels. Labor markets can deteriorate relatively quickly so we expect the Federal Reserve to be more focused on labor markets as they consider lowering interest rates.

- Will gains in the US equity market broaden out or remain focused in the technology sector?
- The US equity market had impressive gains over the fiscal year, but results were largely driven by several large technology companies that benefited from optimism over artificial intelligence.
 - Signs of a healthy stock market advance usually include broader participation from companies across many sectors and capitalization sizes.
 - We have recently seen some rotation into smaller company stocks given the prospect of lower interest rates and the economy potentially avoiding a recession. These companies are typically more interest rate sensitive and domestic focused, so recent developments have particularly benefited them.
 - As we move ahead, we will be watching how the large cap technology companies perform and if this recent rotation into other areas of the equity market persists.
- Will China, the world's second largest economy, be able to manage economic pressures while also deleveraging the economy and addressing the faltering property sector?
- The MSCI China Index returned 1.6% for fiscal year 2024. However, the same index returned +7.1% in the fourth quarter of fiscal 2024. Government purchases of shares, improving economic data, and returning foreign investors have all been supportive.
 - Despite the recent gains, concerns remain about China's property sector, as well as tensions with the US and growing protectionist policies globally.
 - Other shadow debt should continue to keep a ceiling on economic growth. While hard to measure, it is estimated that local government debt, which is not typically included in official government figures, totals between \$7 and \$11 trillion,¹⁰ roughly two times the amount of China's office central government debt. The central government could help to bailout local provinces, which may encourage more borrowing, or tolerate the default of the local funding vehicles, which could risk contagion to other areas of China's financial system.
 - Market-friendly policies and openness are waning, while Chinese Communist Party ideology and nationalism are growing. The traditional playbook of building things to continue growth in China is not favored by current leadership, making a resolution of these deleveraging issues paramount in order transition China's economy to a more sustainable path.
- Geopolitical risks.
- Ongoing and latent regional conflicts have the potential to destabilize markets at any time. The war in Ukraine continues to demand more military and financial support.¹¹ Hamas' attack on Israel and the response of the Israeli Defense Force in Gaza has placed Israel's allies in a difficult position.



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- China, with its own troubled domestic economy and real estate crisis, could continue to favor pro-nationalist policies over economic growth. Politically, China might try to thwart US multilateral efforts to restore peace in the Middle East and contain President Putin. Despite Chinese policy makers scrambling to restore investor confidence and battle deflation, public markets in China declined in fiscal 2024.
- Fiscal year 2024 has also been a busy year in elections, with votes happening in India, Mexico, Iran, the European Union, and Britain, among others. Of course, in addition to the November presidential election in the US, other possibly consequential elections are set to occur in Moldova and Romania, which could have some impact on the path of the war in Ukraine.
- Given these geopolitical risks, it seems incongruous that the index of volatility in the stock market, the VIX, has been trading around one standard deviation below its long-term average at the end of the fiscal year, as continued strength in technology stocks and weakening economic data has moderated fear in the markets.
- We will continue to evaluate these geopolitical concerns, with an eye toward their impact on inflation and growth. Increases in geopolitical conflicts could hamper supply chains and once again might drive-up inflation. As the world's second largest economy, the health of the Chinese economy is important to many corporations and investors.

Return and treasury rate data from Bloomberg unless otherwise indicated.

¹ Source: Bloomberg.

² Source: Bureau of Economic Analysis.

³ Source: Bureau of Labor Statistics.

⁴ Source: Federal Reserve of St. Louis, "K. Engermann, "" A Soft Landing for the Economy: What it Means and What Data to Look at," October 11, 2023. The Fed was not able to tame inflation in the late 1970s and early 1980s without triggering economic recessions and raising unemployment.

⁵ Source: Federal Reserve of St. Louis, "K. Engermann, "" A Soft Landing for the Economy: What it Means and What Data to Look at," October 11, 2023.

⁶ Source: CME Group.

⁷ Source: Federal Reserve Bank of Cleveland, M. Bryan, "Are Some Prices More Forward Looking than Others? We Think So", May 19, 2010. Sticky prices are the prices for goods and services that do not respond quickly to aggregate demand. Medical care, personal services, insurance, and education are some examples of sticky-price services and goods. About 70% of headline CPI includes goods and services with another 30% of the index reflecting goods and services that change prices more quickly in response to consumer demand.

⁸ Source: Bureau of Labor Statistics as of February 13, 2024.

⁹ Source: Bureau of Labor Statistics as of February 13, 2024. In January 2024, shelter costs accounted for two-thirds of inflation.

¹⁰ Source: Wall Street Journal "Trillions in Hidden Debt Drove China's Growth. Now It Threatens Its Future" July 14, 2024.

¹¹ Source: Financial Times, C. Miller, "Active Defense [sic]: How Ukraine Plans to Survive in 2024," January 18, 2024.



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Retirement System Investment Results

The System's net of fees return was +7.3%. Over the most recent three-year period, the System's net of fee return was +2.5%, +6.1% over five years, and +5.7% over ten years. As of June 30, 2024, the System's actuarial assumed rate of return was 7.0%. The System uses a time-weighted rate of return methodology. Returns are calculated by an independent third party (Meketa Investment Group) using data provided by the custodian.

As of June 30, 2024, the System's assets were allocated to growth (48.7%), income (9.7%), inflation hedging (22.5%), and crisis risk offset (19.1%).

In March 2023, the Board adopted a new asset allocation policy with a 20-year expected return of 8.2%, slightly above the actuarial assumed rate of return of 7.0%. During the fiscal year, the System continued to implement the approved asset allocation policy, which included updating fixed income manager mandates, along with terminating one and funding two new investment managers in the crisis risk offset functional category. As mentioned in the previous letter, moving to the long-term targets will be a multi-year process. We look forward to continuing our work with Staff and the Board to move the Retirement System towards its new policy targets, with the ultimate goal of allowing the Retirement System to continue to meet its obligations to participants.

If you have any questions, please contact us at (760) 795-3450.

Sincerely,

Larry Witt, CFA
Managing Principal

Paola Nealon
Managing Principal

Imran Zahid
Investment Analyst

LW/PN/IZ/nca



Outline of Investment Policies and Objectives

COPERS' asset allocation targets (at fair value) as of June 30, 2024 were:

Asset Class	Target Allocation
Domestic Equity	16%
Developed Market Equity	9%
Public Emerging Market Equities	8%
Private Equity	9%
High Yield Bonds	5%
Bank Loans	3%
Emerging Market Bonds	3%
Private Debt	10%
TIPS	6%
Real Estate	12%
Infrastructure	4%
Natural Resources	4%
Short Duration Bonds	6%
Risk Mitigating Strategies	5%
Hedge Funds	0%
GTAA	0%
Cash Equivalents	0%

- A. In March 2023, the COPERS Board adopted a new asset allocation that more closely aligns the Board's risk tolerance and expected returns.
- B. Each asset class will be broadly diversified to be similar to the market for the asset class. The market for equities shall be represented by the Russell 3000 Value Index, MSCI EAFE Index, MSCI Emerging Markets. The market for bonds shall be represented by the Barclays Capital Aggregate and Barclays High Yield. The market for real estate shall be represented by the NCREIF ODCE Property Index.
- C. Multiple managers will be employed. Allocations among the managers will be controlled by the Trustees to maintain both diversification and policy guidelines.
- D. Investments will conform to the Phoenix City Charter, Chapter XXIV, Part II, Section 34 (See Note 8).
- E. COPERS' main investment objective is to achieve a rate of return that exceeds inflation by at least 3% over time. The actuarial assumed rate of return is 7.00%.

Investment Services Under Contract (as of June 30, 2024)
Equity Managers

Artisan Partners	Ting Rattanaphasouk	San Francisco, CA
Baillie Gifford	Kathrin Hamilton	Edinburgh, SCT
Cramer Rosenthal McGlynn	Emily Ackers	Stamford, CT
Driehaus	Sarah Greene	Chicago, IL
Eagle Asset Management	Clay Lindsey	St. Petersburg, FL
First Eagle	Karin Penkala	New York, NY
GQG	Elizabeth Colquitt	Ft. Lauderdale, FL
LSV	Jason Ciaglo	Chicago, IL
Robeco Investment Management	William Supple	Boston, MA

Fixed Income Managers

Brigade Capital Management	Joseph Turilli	New York, NY
DDJ Capital Management (Polen Capital Management)	Jim Haymes	Waltham, MA
Logan Circle Partners	Angus Campbell	Philadelphia, PA
Longfellow Investment Management	Corrine Larson	Boston, MA
Pacific Asset Management	Michael Spitler	Newport Beach, CA
PIMCO	Kerrisha Jenkins	Newport Beach, CA
State Street Global Advisors	Sonya Park	San Francisco, CA
Western Asset Management	Kevin Gore	Pasadena, CA

Hedge Fund Managers

36 South Capital Advisors	Timothy Evans	London, ENG
Brevan Howard US LLC	Janna Keatseangsilp	New York, NY
Fir Tree Partners	Benjamin Ghriskey	New York, NY
One River Asset Management	Ian Malloch	Stamford, CT

Transition Managers

Russell Implementation Services, Inc	Steve Cauble	Seattle, WA
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Private Equity, Infrastructure and Natural Resources

Neuberger Berman	Kaci Boyer	Dallas, TX
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Real Estate Managers

Adler Real Estate	John Meyer	Miami, FL
American Landmark Apartments	David Tepperman	New York, NY
Ascentris	Rob Toomey	Denver, CO
FOCUS Healthcare Partners	Michael Feinstein	Chicago, IL
Hammes Partners	Patrick Hammes	Milwaukee, WI
JP Morgan	Akash Patel	San Francisco, CA
Hemisferio Sul Investments	Diogo Bustani	Sao Paulo, BRA
Morgan Stanley	Lauren Chan	New York, NY

Investment Services Under Contract (as of June 30, 2024) (Continued)

Real Estate Managers (continued)

Northwood Real Estate Partners	Blair Drossner	New York, NY
Realterm Logistics Income	Shannon McAuliffe	Washington, DC
RECAP II, III, IV, SC Core	Chris Van Beek	Singapore, CHN
Wheelock Street Real Estate	Ewen Makarewicz	Greenwich, CT

Real Estate Consultant

Aksia	Dan Krivinkas Mark Bartmann	Chicago, IL
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Investment Consultant

Meketa Investment Group	Larry Witt Imran Zahid	Carlsbad, CA
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Schedule of Investment Results For the Fiscal Year Ended June 30, 2024

	Annualized		
	1-Year	3-Years	5-Years
Total Portfolio:			
COPERS	7.3%	2.5%	6.1%
Policy Benchmark	10.5	3.6	7.1
Meketa All Pension Plans > \$1B Net Median	10.4	3.6	7.0
Bank Loans			
Pacific Asset Management	10.9	6.4	5.6
Credit Suisse Leveraged Loan Index	11.0	6.0	5.4
Emerging Market Bonds			
MetLife Emerging Markets Debt ⁽⁹⁾	7.2	(1.3)	-
MetLife Custom Benchmark	6.3	(1.8)	0.5
Equity Funds			
Artisan Global Opportunities	20.3	1.2	11.4
MSCI AC World Growth	19.4	5.4	10.8
Baillie Gifford	7.7	(5.9)	4.2
MSCI ACWI Ex USA	9.9	(2.6)	5.5
Cramer Rosenthal McGlynn	14.3	3.1	6.1
Russell 2000 Value Index	10.9	(0.5)	7.1
Driehaus International ⁽¹⁾	14.2	(2.9)	-
MSCI ACWI Ex USA Small Growth Index	8.8	(4.4)	5.5
Eagle Asset Management	13.2	(4.5)	6.9
Russell 2000 Growth Index	9.1	(4.9)	6.2
First Eagle ⁽¹¹⁾	7.0	1.8	-
MSCI EAFE Value Index	13.7	5.5	6.1
GQG ⁽²⁾	31.0	3.4	-
MSCI Emerging Markets Growth	11.1	(8.7)	3.2
LSV ⁽¹⁰⁾	25.4	6.1	-
MSCI Emerging Markets Value	14.1	(1.1)	2.9
Robeco Investment Management	21.0	9.1	12.1
Russell 1000 Value Index	13.1	5.5	9.0
SSgA FTSE RAFI US Low Vol	10.4	6.6	8.6
FTSE RAFI US Low Vol Index	10.4	6.7	8.7
SSgA FTSE RAFI Dev ex-US Low Vol	8.6	4.3	4.7
FTSE RAFI US Dev ex-US Low Vol Index	8.4	4.2	4.5
Hedge Fund of Funds			
Fir Tree International	19.6	0.8	6.3
HFRI Event-Driven (Total) Index	10.8	2.8	6.2
High Yield Bonds			
Brigade Capital Management	8.7	0.9	4.2
Bloomberg US High Yield Index	10.4	1.6	3.9
Polen Capital Management	9.2	2.4	4.0
Bloomberg US High Yield	10.4	1.6	3.9

Schedule of Investment Results (continued) For the Fiscal Year Ended June 30, 2027

	Annualized		
	1-Year	3-Years	5-Years
Private Equity Funds			
Neuberger Berman Sonoran (Tranche A) ⁽⁶⁾	-	6.9	13.1
Neuberger Berman Sonoran (Tranche B)	4.6	14.8	16.0
Natural Resources			
Neuberger Berman Sonoran (Tranche C) ⁽⁷⁾	9.7	24.9	-
S&P Global Natural Resources	5.7	9.5	9.0
Infrastructure			
Neuberger Berman Sonoran (Tranche D) ⁽⁸⁾	7.9	9.0	-
S&P Global Natural Resources	6.6	8.8	7.3
Real Estate Funds			
Core	(7.8)	2.8	3.5
Non-Core	(7.4)	1.6	3.4
Real Return Fund			
PIMCO All Asset	6.5	0.2	4.9
All Asset Index	8.1	1.2	4.0
Risk Mitigating Strategies			
BH-DG Systematic Trading ⁽⁴⁾	(4.7)	8.0	9.1
SG Trend Index	4.0	10.4	9.4
One River Dynamic Convexity ⁽¹²⁾	-	-	-
CBOE Eurekahedge Long Volatility	(3.7)	(1.4)	1.6
36 South Capital ⁽¹³⁾	-	-	-
CBOE Eurekahedge Long Volatility	-3.7	-1.4	1.6
Short Duration Bonds			
SSgA US 1-3 Year Government ⁽¹⁴⁾	4.3	(2.5)	0.1
SSGA Custom Benchmark	4.6	(2.4)	0.2
Longfellow Core Fixed Income ⁽⁵⁾	4.4	(2.6)	0.3
Longfellow Custom Benchmark	4.0	(2.6)	-
Western Asset Management	2.5	(4.0)	(0.5)
Western Asset Custom Benchmark	1.9	(3.2)	(0.4)
TIPS			
SSgA US TIPS ⁽³⁾	2.7	(1.4)	2.0
Bloomberg US TIPS Index	2.7	(1.3)	2.1

⁽¹⁾ Driehaus International was added as an equity manager effective May 1, 2021. Performance figures would not be representative of the benchmark index.

⁽²⁾ GQG was added as an equity manager effective January 1, 2020. Performance figures would not be representative of the benchmark index.

⁽³⁾ SSGA US TIPS was added on February 1, 2018.

⁽⁴⁾ BH-DG Systematic Trading was added March 1, 2018.

⁽⁵⁾ Longfellow Cored Fixed Income was added on May 1, 2018

Schedule of Investment Results (continued)
For the Fiscal Year Ended June 30, 2027

	Annualized		
	1-Year	3-Years	5-Years
⁽⁶⁾ Neuberger Berman Sonoran Tranche A was added April 1, 2015.			
⁽⁷⁾ Neuberger Berman Sonoran Tranche C was added September 1, 2019.			
⁽⁸⁾ Neuberger Berman Sonoran Tranche D was added September 1, 2019.			
⁽⁹⁾ MetLife was added as a high yield bonds manager effective March 27, 2019.			
⁽¹⁰⁾ LSV was added as an equity manager effective November 1, 2019. Performance figures would not be representative of the benchmark index.			
⁽¹¹⁾ First Eagle was added as an equity manager effective December 1, 2020. Performance figures would not be representative of the benchmark index.			
⁽¹²⁾ One River Dynamic Convexity was added as a risk-mitigating strategy effective February 1, 2024. Performance figures would not be representative of the benchmark index.			
⁽¹³⁾ 36 South Capital was added as a risk-mitigating strategy effective February 1, 2024. Performance figures would not be representative of the benchmark index.			
⁽¹⁴⁾ SSGA US 1-3 Year Government was added on April 1, 2018.			

The calculations above were prepared by COPERS' consultant, using a time-weighted rate of return, based on fair value. Core and Non-Core real estate performance is calculated as an IRR.

Asset Allocation by Manager
For the Fiscal Year Ended June 30, 2024

Manager	Style	Management (in thousands)	% of Portfolio
Cash And Cash Equivalents Funds			
Brigade Capital Management	Fixed Income	\$ 2,768	0.08%
COPERS Cash Account	Core Plus Fixed Income	139,304	3.93
Cramer Rosenthal McGlynn	Small Cap Growth	1,930	0.05
DDJ Capital Management	Small Cap Growth	7,446	0.21
Eagle Asset Management	Core Plus Fixed Income	962	0.03
Longfellow Core Fixed	Core Plus Fixed Income	4,349	0.12
Robeco Investment Management	Large Cap Value	3,147	0.09
Western Asset Management	Core Plus Fixed Income	5,089	0.14
Total Cash & Cash Equivalent Funds		164,995	4.65
Domestic Equities Funds			
36 South Series	Bonds	41,206	1.16
Brigade Capital Management	Bonds	3,920	0.11
Cramer Rosenthal McGlynn	Small Cap Value	64,971	1.83
DDJ Capital Management	Bonds	932	0.03
Eagle Asset Management	Small Cap Growth	74,974	2.11
One River Dynamic	Bonds	40,547	1.14
State St US Low Vol	Large Cap Core	244,899	6.90
Robeco Investment Management	Large Cap Value	214,485	6.04
State St US Ag Bnd Ind	Bonds	160,775	4.53
State St US TIPS Ind	Bonds	151,903	4.28
Total Domestic Equities Funds		998,612	28.14
Fixed Income Funds			
Brigade Capital Management	Fixed Income	75,673	2.13
DDJ Capital Management	Fixed Income	71,426	2.01
Logan Circle	Fixed Income	82,152	2.31
Longfellow Core Fixed	Core Plus Fixed Income	100,790	2.84
Pacific Asset Management	Bank Loans	103,800	2.92
Western Asset Management	Core Plus Fixed Income	97,464	2.75
Total Fixed Income Funds		531,305	14.97
Hedge Funds			
BH DG SYS TRD FD	Hedge Fund of Funds	44,835	1.26
Fir Tree Partners	Hedge Fund of Funds	54,148	1.53
Total Hedge Funds		98,983	2.79
Global Commingled Funds			
Artisan Partners	International	236,478	6.66
Total Global Commingled Funds		236,478	6.66

Asset Allocation by Manager For the Fiscal Year Ended June 30, 2024

Manager	Style	Management (in thousands)	% of Portfolio
International Equities Funds			
Baillie Gifford	Large Cap Growth	\$ 151,668	4.27%
Driehaus International	International	25,103	0.71
First Eagle	International	82,863	2.33
State St Dev ex-US	Large Cap Core	80,704	2.27
GQG Emerging Market	International	121,730	3.43
LSV Emerging Market	International	110,554	3.12
Total International Equities Funds		572,622	16.14
Private Equity Funds			
Neuberger	Private Equity	463,615	13.06
Total Private Equity Funds		463,615	13.06
Real Estate Funds			
Adler	Non-Core Real Estate	9,574	0.27
American Landmark III	Non-Core Real Estate	36,028	1.02
American Landmark IV	Non-Core Real Estate	12,607	0.36
Ascentris Fund A III	Non-Core Real Estate	1,347	0.04
Ascentris Fund B III	Non-Core Real Estate	9,080	0.26
Focus Sh Fund I	Non-Core Real Estate	33,660	0.95
Focus Sh Fund II	Non-Core Real Estate	3,829	0.11
Hammes Partners III	Non-Core Real Estate	17,220	0.49
Hammes Partners IV	Core Real Estate	826	0.02
HSI Real Estate V	Non-Core Real Estate	170	0.00
JPM Strategic Property	Core Real Estate	69,205	1.95
Morgan Stanley Prime Property	Core Real Estate	84,557	2.38
Northwood IV	Non-Core Real Estate	28,575	0.81
Northwood V	Non-Core Real Estate	35,124	0.99
RealTerm LIF	Core Real Estate	36,946	1.04
RECAP III	Non-Core Real Estate	3,668	0.10
RECAP IV	Non-Core Real Estate	8,439	0.24
RECAP V	Non-Core Real Estate	17,836	0.50
SC Core Fund LP	Non-Core Real Estate	28,902	0.81
Wheelock Real Estate Fund	Non-Core Real Estate	6,045	0.17
Wheelock Street Partners	Non-Core Real Estate	2,464	0.07
Wheelock Street Partners II	Non-Core Real Estate	6,637	0.19
Wheelock Street Partners V	Non-Core Real Estate	11,563	0.33
Wheelock Street Partners VI	Non-Core Real Estate	17,924	0.51
Total Real Estate Funds		482,226	13.59
Total Portfolio Before Securities Lending		\$ 3,548,836	100.00%
Securities Lending		110,225	
Total Investments		\$ 3,659,061	

List of Largest Assets Held As of June 30, 2024 (in thousands)

Ten Largest Bond Holdings (Fair Value)

Par Value	Description	Interest Rate	Due	Rating	Fair Value
\$ 8,803	US Treasury Note	4.88	11/30/2025	AA	\$ 8,770
8,392	US Treasury Note	4.63	11/15/2026	AA	8,307
6,505	US Treasury Note	1.50	2/15/2025	AA	6,568
5,804	US Treasury Note	4.00	2/15/2026	AA	5,766
5,016	US Treasury Note	5.00	10/31/2025	AA	4,960
3,736	US Treasury Note	3.63	5/15/2026	AA	3,757
3,752	US Treasury Bill*	-	8/01/2024	AA	3,752
3,538	US Treasury Note	3.13	8/15/2025	AA	3,534
3,152	US Treasury Note	1.38	12/31/2028	AA	3,093
3,221	Baffinland Iron Mines	8.75	7/15/2026	B6	2,949

*Does not have a fixed interest rate.

Ten Largest Stock Holdings (Fair Value)

Shares	Stock	Fair Value
178,321	Cenovus Energy Inc.	3,506
109,576	ACV Auctions Inc.	2,000
105,520	Mueller Water Products Inc.	1,886
95,910	Central Pacifica Financial Corp.	2,033
70,913	COPT Defense Properties	1,775
69,114	Wells Fargo & Co.	4,105
62,086	ChampionX Corp.	2,062
59,622	Horace Mann Educators Corp.	1,945
59,100	Walmart Inc.	4,002
56,215	Viper Energy Inc.	2,110

A complete list of portfolio holdings is available at the COPERS office.

Schedule of Investment Related Fees (in thousands)
For the Fiscal Year Ended June 30, 2024

	Management	Fees
Cash And Cash Equivalents Funds		
Brigade Capital Management	\$ 2,768	\$ -
COPERS Cash Account	139,304	-
Cramer Rosenthal McGlynn	1,930	480
DDJ Capital Management	7,446	426
Eagle Asset Management	962	384
Longfellow Core Fixed	4,349	-
Robeco Investment Management	3,147	520
Western Asset Management	5,089	-
Total Cash & Cash Equivalent Funds	\$ 164,995	1,810
Investments		
Domestic Equities Funds		
Brigade Capital Management	3,920	-
Cramer Rosenthal McGlynn	64,971	-
DDJ Capital Management	932	-
Eagle Asset Management	74,974	-
State St US Low Vol	244,899	101
Robeco Investment Management	214,485	-
State St US Ag Bond Ind	160,775	20
State St US TIPS Ind	151,903	47
State St Short-Term Bond	-	21
One River	40,547	170
Kohinoor Ser Cymm Fund	41,206	-
Total Domestic Equities Funds	998,612	359
Fixed Income Funds		
Brigade Capital Management	75,673	439
DDJ Capital Management	71,426	-
Longfellow Core Fixed	100,790	235
Logan Circle	82,152	440
Pacific Asset Management	103,800	175
Western Asset Management	97,464	191
Total Fixed Income Funds	531,305	1,480
Global Commingled Funds		
Artisan Partners	236,478	1,476
Total Global Commingled Funds	236,478	1,476
Hedge Funds		
BH DG Sys Trd FD LP	44,835	420
Fir Tree Partners	54,148	732
Total Hedge Funds	98,983	1,152

Schedule of Investment Related Fees (in thousands) (continued)
For the Fiscal Year Ended June 30, 2024

International Equities Funds		
Baillie Gifford	151,668	880
Driehaus International	25,103	185
First Eagle	82,863	594
GQG	80,704	535
LSV	121,730	1,200
State St Dev ex-US	110,554	86
Total International Equities	572,622	3,480
Private Equity		
Neuberger	463,615	2,364
Total Private Equity Funds	463,615	2,364
Real Estate Funds		
Adler	9,574	-
American Landmark III	36,028	-
American Landmark IV	12,607	-
Ascentris Fund A III	1,347	170
Ascentris Fund B III	9,080	13
Focus I	33,660	232
Focus II	3,829	313
Hammes Partners III	17,220	170
Hammes Partners IV	826	-
HSI Real Estate V	170	4
JP Morgan Strategic Property	69,205	668
Morgan Stanley Prime Property	84,557	737
Northwood GP LLC IV	28,575	51
Northwood Series V	35,124	512
PIMCO All Asset	-	659
PAAMCO	-	57
RealTerm LIF	36,946	130
RECAP III	3,668	-
RECAP IV	8,439	-
RECAP V	17,836	189
SC Core	28,902	-
Wheelock Real Estate Fund	6,045	-
Wheelock Street Partners	2,464	-
Wheelock Street Partners II	6,637	66
Wheelock Street Partners V	11,563	-
Wheelock Street Partners VI	17,924	225
Total Real Estate	482,226	4,196
Master Custodian Fees		
BNY Mellon	-	231
Total Master Custodian Fees	-	231
Total Securities Lending	110,225	
Total Investments	\$ 3,548,836	\$ 16,548
Total Cash & Cash Equivalents And Investments	\$ 3,659,061	

Investment Summary by Sector For the Fiscal Year Ended June 30, 2024

Type of Investment	Fair Value (in thousands)	Percent of Total Fair Value
Cash and Cash Equivalents:		
Cash & Cash Equivalents	\$ 164,995	4.65%
Total Cash and Cash Equivalents	164,995	4.65
Domestic Equities:		
Basic Materials	5,426	0.15
Commingled	640,147	18.04
Consumer Discretionary	7,425	0.21
Consumer Goods	10,458	0.29
Consumer Services	32,059	0.90
Consumer Staples	6,320	0.18
Energy Related	32,258	0.91
Financials	67,720	1.91
Health Care	46,155	1.30
Industrials	70,317	1.98
Information Technology	11,076	0.31
Real Estate Fund	9,339	0.26
Technology	59,912	1.69
Total Domestic Equities	998,612	28.14
Fixed Income:		
Asset Backed	37,657	1.06
Corporate Bonds	328,855	9.27
Derivatives	9	0.00
Foreign Bonds	4,821	0.14
Foreign Debt	82,153	2.31
Government Agency	770	0.02
Mortgage Backed	18,144	0.51
Municipal Bond	1,519	0.04
US Government Guaranteed	57,377	1.62
Total Fixed Income	531,305	14.97
Global Commingled:		
Other	236,478	6.66
Total Global Commingled	236,478	6.66
Hedge Funds:		
Other	98,983	2.79
Total Hedge Funds	98,983	2.79
International Equities:		
Commingled	232,372	6.55
International	340,250	9.59
Total International Equities	572,622	16.14
Private Equity:		
Private Equity	\$ 463,615	13.06

Investment Summary by Sector (continued) For the Fiscal Year Ended June 30, 2024

Type of Investment	Fair Value (in thousands)	Percent of Total Fair Value
Total Private Equity	463,615	13.06
Real Estate:		
Real Estate Fund	482,226	13.59
Total Real Estate	482,226	13.59
Securities Lending	110,225	-
Total Investments	\$ 3,659,061	100%

Schedule of Commissions For the Fiscal Year Ended June 30, 2024

Brokerage Firm	Number of Shares Traded	Total Commissions	Commissions Per Share
Jefferies & Co., LLC, NY	912,911	\$ 24,716	\$ 0.030
Goldman Sachs & Co., NY	584,173	14,427	\$ 0.020
UBS Securities LLC, CT	376,286	13,030	\$ 0.030
JP Morgan Securities LLC, NY	438,981	12,951	\$ 0.030
Morgan Stanley & Co., LLC, NY	484,449	12,528	\$ 0.030
Keefe Bruyette & Woods Inc., NY	309,861	12,244	\$ 0.040
National Financial Services Corp., NY	510,058	11,977	\$ 0.020
All Other Brokers ⁽¹⁾	3,483,419	103,659	
Total	7,100,138	\$ 205,532	

⁽¹⁾ Includes brokers with total commissions less than \$10,000 each.



An aerial photograph of a city skyline during the golden hour. Several construction cranes are visible against the sky, and various modern buildings are under construction or recently completed. The foreground shows a mix of older and newer residential or commercial buildings, with palm trees and streets visible. A large, semi-transparent blue circle is overlaid on the right side of the image, containing the text.

Actuarial section

*The **Actuarial Section** contains the actuary's certification letter, supporting schedules prepared by the actuary and a summary of plan provisions.*



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November 18, 2024

Mr. Scott Steventon
Retirement Program Administrator
City of Phoenix Employees' Retirement System
200 W. Washington Street, 10th Floor
Phoenix, Arizona 85003

Re: City of Phoenix Employees' Retirement System Actuarial Certification

Dear Mr. Steventon:

At the request of the City of Phoenix Employees' Retirement System ("COPERS"), Gabriel Roeder Smith & Company (GRS) has performed the actuarial valuation of the benefits associated with the COPERS defined benefit pension plan. The information in the Actuarial Section is based on our annual actuarial valuation report, with the most recent valuation conducted as of June 30, 2024. The Actuarial Section is intended to be used in conjunction with the full report.

The information in the Financial Section is based on the GASB 67 and 68 valuation report, with the most recent report conducted as of June 30, 2024. The Financial Section is intended to be used in conjunction with the full report.

This letter and the schedules listed below represent GRS' certification of the funded status as required for the financial report for the fiscal year ended June 30, 2024. GRS prepared the following schedules (information prior to 2017 was provided by COPERS):

- Actuarial Section
 - Summary of Benefit Provisions
 - Summary of Census Data
 - Summary of Actuarial Assumptions and Methods
 - Added To and Removed From Rolls
 - Solvency Test
 - Analysis of Financial Experience
- Financial Section
 - Sensitivity of Net Pension Liability to Changes in Discount Rate
 - Schedule of Changes in Net Pension Liability and Related Ratios
 - Schedule of Employer Contributions

Data

The valuation was based upon information as of June 30, 2024, furnished by COPERS staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees

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Mr. Scott Steventon
November 18, 2024
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and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by COPERS staff.

Actuarial Assumptions and Methods

The Board accepted GRS's recommendations on both the economic and demographic assumptions based on the most recent experience study that analyzed data from July 1, 2014 through June 30, 2019. The new assumptions were adopted in July 2020. The assumptions regarding sick leave, vacation time, and compensation time were adopted in August 2020.

We believe the assumptions are internally consistent and are reasonable, based on the actual experience of COPERS.

The actuarial assumptions and methods used to develop the Net Pension Liability, Discount Rate Sensitivity, Schedule of Changes in the Net Pension Liability, and Schedule of Net Pension Liability, noted above, meet the parameters set forth in the disclosures presented in the Financial Section by Government Accounting Standards Board Statement No. 67 including the use of the Entry Age Normal actuarial cost method to calculate the total pension liability.

Furthermore, the assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. A review of the impact of a different set of assumptions on the funded status of COPERS is outside the scope of this actuarial valuation.

The current actuarial assumptions are outlined in the section titled "Summary of Actuarial Assumptions and Methods."

Benefits

There were no changes to the plan provisions during the past year. The current benefit provisions are outlined in the section titled "Summary of Benefit Provisions."

Funding Policy and Objectives

The Actuarially Determined Contribution is determined by taking the sum of the normal cost, a component to amortize the unfunded liability and a component to cover administrative expenses. The Board's current funding policy is to contribute an amount each year based on the most recently calculated Actuarially Determined Contribution.

The unfunded accrued liability is comprised of experience gains and losses, assumption changes, and benefit changes. A base is established in each year for changes in the unfunded accrued liability arising



Mr. Scott Steventon
November 18, 2024
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from these sources. In September 2013, the Board adopted amortization payment methods that amortize the pre-assumption change liability as of July 1, 2013 over a closed 25-year period as a level percentage of payroll; amortizes the assumption change liability as of July 1, 2013 over a closed 25-year period as a level percentage of payroll; amortizes the assumption change liability as of July 1, 2015 over a closed 20-year period as a level percentage of payroll with a four-year phase in; and amortizes future gains and losses over a closed 20-year period. Future gains cannot be amortized over a period shorter than the period remaining on the 25-year amortization schedule. Since the 2023 actuarial valuation, the actuarially determined contribution has decreased from 33.96% of pay to 33.02% of pay. The decrease is primarily due to an increase in the contributory payroll and the contribution experience.

Assuming all actuarial assumptions are met, this method of payment of the unfunded liability will result in full funding of the unfunded accrued liability in 20 years. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code, and ERISA.

The signing actuaries are independent of COPERS sponsor. All signing actuaries are Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



Paul Wood, ASA, FCA, MAAA
Senior Consultant



Bill Detweiler, ASA, EA, FCA, MAAA
Consultant



Summary Of Benefit Provisions

Membership

Full-time employees of the City of Phoenix other than police officers, firefighters, or elected officials who are covered by another retirement system to which the City contributes.

Members who were hired before July 1, 2013, as well as members who joined the City between July 1, 2013 and December 31, 2015 who were members of ASRS prior to July 1, 2011 and did not withdraw their contributions are Tier 1 members.

Members hired into employment with the City between July 1, 2013 and December 31, 2015 who are not Tier 1 members are Tier 2 members.

Members hired into employment with the City on or after July 1, 2016 who are not Tier 1 members or Tier 2 members are Tier 3 members.

Final Average Compensation (FAC)

Tier 1/Tier 2

The average of annual compensation for the period of 3 consecutive years producing the highest average contained within the last 10 years immediately preceding retirement.

Tier 3

The average of annual compensation for the period of 5 consecutive years producing the highest average contained within the last 10 years immediately preceding retirement. Annual compensation will be limited to the first \$125,000 of compensation, indexed to inflation (CPI-U) each January 1, commencing on January 1, 2017.

Credited Service

Credited service is determined based on Section 14 of Chapter XXIV of the Phoenix City Charter as well as COPERS administrative policy number 43. In no case is more than a year of service credited to any member for all service rendered in any calendar year. The amount of service credited to members varies by Tier, as detailed below.

Tier 1

A member is credited with a month of service for each calendar month in which the member performs at least 10 days of City service. A member is credited with a year of service for any calendar year in which the member has at least 10 months of credited service. If a member has less than 10 months of credited service for any calendar year, they are credited for the actual number of months.

Tier 2/Tier 3

A member is credited with a month of service for each calendar month in which the member performs at least 20 days of City service. A member is credited with a year of service for any calendar year in which the member has at least 12 months of credited service. If a member has less than 12 months of credited service for any calendar year, they are credited for the actual number of months.

Summary of Benefit Provisions (Continued)

Voluntary Retirement (no reduction for age)

Tier 1

Eligibility:

Sum of age and credited service equals 80 or more, age 60 with 10 or more years of credited service or age 62 with 5 or more years of credited service.

Annual Benefit:

Eligible unused sick leave service multiplied by 2% of FAC plus 2% of FAC times credited service up to 32.5 years plus 1% of FAC times service in excess of 32.5 years plus 0.5% of FAC times service in excess of 35.5 years. Minimum monthly pension is \$250 (\$500 if member has 15 or more years of service).

Tier 2/Tier3

Eligibility:

Sum of age and credited service equals 87 or more, age 60 with 10 or more years of credited service or age 62 with 5 or more years of credited service.

Annual Benefit:

Eligible unused sick leave service multiplied by 2% of FAC for Tier 2 members only plus FAC times credited service times the corresponding accrual rate:

Tier 2		Tier 3	
Years of Service	Accrual Rate	Years of Service	Accrual Rate
0 < Service ≤ 20	2.10%	0 < Service ≤ 10	1.85%
20 < Service ≤ 25	2.15%	10 < Service ≤ 20	1.90%
25 < Service ≤ 30	2.20%	20 < Service ≤ 30	2.00%
Service > 30	2.30%	Service > 30	2.10%

Note that for Tier 2 and Tier 3, the same accrual rate will apply for each year of service based on the total years of service.

Deferred Vested Retirement

Eligibility:

Termination of City employment prior to age 62 with 5 or more years of credited service.

Annual Benefit:

Accrued regular retirement amount based on credited service, unused sick leave service, and FAC at time of termination, payable beginning at age 62.

Summary of Benefit Provisions (Continued)**Duty Disability Retirement*****Eligibility:***

Total and permanent disability incurred in line of duty with the City.

Annual Benefit:

Computed in the same manner as the regular retirement amount based on FAC and credited service at time of disability retirement. Minimum is 15% of FAC for Tier 1 members and 15.75% for Tier 2 and Tier 3 members. Maximum during workers' compensation period is the difference between final compensation and annualized workers' compensation. At expiration of workers' compensation period, amount is recomputed to include years during which workers' compensation was paid.

Non-Duty Disability Retirement***Eligibility:***

Total and permanent disability after 10 or more years of credited service.

Annual Benefit:

Computed in the same manner as the regular retirement amount based on FAC and credited service at time of disability retirement.

Pre-Retirement Duty Death Benefit***Eligibility:***

Death in line of duty with the City and compensable under worker's compensation.

Annual Benefit:

To the spouse: Joint and 100% survivor actuarial equivalent of accrued regular retirement amount based on FAC and credited service and unused sick leave service at time of death. Minimum of 10 years of service is credited. To the children of a deceased member with 10 or more years of credited service: each child shall receive a monthly pension of \$200 until adoption, marriage, death or attainment of age 18.

Pre-Retirement Non-Duty Death Benefit***Eligibility:***

10 or more years of credited service.

Annual Benefit:

Same as Pre-Retirement Duty Death Benefit.

Summary of Benefit Provisions (Continued)

Refund of Contributions

Eligibility:

Termination of covered service employment prior to eligibility for any other benefits.

Annual Benefit:

No annual benefit. Accumulated member contribution with interest at no more than 3.75% annually after July 1, 2016.

Pension Equalization Reserve (PER)

The PER is credited with Excess Earnings, if any, each calendar year. Excess Earnings are defined as the excess over 8.00% of the annual average of the time-weighted rates of return for the immediately preceding five calendar years. The amounts credited to the PER are either used to fund percentage increases to pension amounts or one-time post retirement distribution benefits (13th checks).

On January 1 of each year, persons in receipt of a pension for at least 36 months receive a percentage increase based on the lesser of:

1. Phoenix area Consumer Price Index (CPI) and
2. The amount the balance in the PER can fully fund

The increase, subject to the availability of funds in the PER, is payable beginning with the April 1 payment each year, retroactive to January 1 of the same year.

Also, after each plan year's return is known, all pensioners (excluding minors) as of the end of the plan year are eligible to receive a one-time post retirement distribution (13th check). The 13th check is a percentage of the pensioner's annual benefits based on the lesser of:

1. One half of the Phoenix Area Consumer Price Index (CPI) and
2. The excess of the rate of return over the assumed interest rate

The percentage cannot be more than three percent, but must be at least one percent and is subject to the availability of funds in the PER. The 13th check is payable on December 1.

The PER is only applicable for Tiers 1 and 2.

Projected Percentage

Actuarially determined normal cost rate plus an amortization rate on the unfunded actuarial liability and a rate for administrative expenses, stated as a percentage of projected member compensation.

Member Contribution Rates

Tier 1: 5% of pay

Tier 2/Tier 3: 50% of the Projected Percentage not to exceed 11% of pay on or after January 1, 2016

City Contribution Rates

Total Projected Percentage less Member Contribution Rates for each Tier.

Summary of Census Data

	2024	2023	2022	2021	2020
Active Members					
Counts	8,766	8,407	7,938	7,969	8,027
Annual Compensation	\$ 751,455,022	\$ 653,605,811	\$ 595,761,181	\$ 580,866,220	\$ 568,646,484
Average Annual Compensation	\$ 85,724	\$ 77,745	\$ 75,052	\$ 72,891	\$ 70,842
Change in Average Annual Compensation	10.3%	3.5%	3.0%	2.9%	-0.1%
Average Age	46.0	46.2	46.7	46.8	46.8
Average Service	10.9	11.0	11.8	12.2	12.1
Deferred Vested Members					
Counts	1,144	1,149	1,109	1,053	1,033
Annual Deferred Benefits	\$ 15,703,638	\$ 16,206,791	\$ 15,707,186	\$ 14,506,046	\$ 14,115,513
Average Benefit	\$ 13,727	\$ 14,105	\$ 14,163	\$ 13,776	\$ 13,665
Retired Members					
Counts	6,620	6,547	6,363	6,183	6,109
Annual Deferred Benefits	\$ 246,754,366	\$ 242,086,009	\$ 234,156,480	\$ 221,252,111	\$ 214,952,799
Average Benefit	\$ 37,274	\$ 36,977	\$ 36,800	\$ 35,784	\$ 35,186
Disability					
Counts	223	213	222	233	233
Annual Deferred Benefits	\$ 3,891,688	\$ 3,737,831	\$ 3,885,565	\$ 3,898,236	\$ 3,830,503
Average Benefit	\$ 17,452	\$ 17,549	\$ 17,503	\$ 16,731	\$ 16,440
Beneficiaries and QDROs					
Counts	1,222	1,226	1,195	1,171	1,160
Annual Benefits	\$ 27,507,711	\$ 26,834,995	\$ 25,842,433	\$ 24,608,323	\$ 23,551,335
Average Benefit	\$ 22,510	\$ 21,888	\$ 21,625	\$ 21,015	\$ 20,303
Refunds Eligible Count ⁽¹⁾	3,013	N/A	N/A	N/A	N/A
Total Members Included in Valuation	20,988	17,542	16,827	16,609	16,562

	2019	2018	2017	2016	2015
Active Members					
Counts	7,941	7,977	8,030	7,783	7,463
Annual Compensation	\$ 562,988,925	\$ 527,160,824	\$ 521,709,266	\$ 496,332,801	\$ 484,853,108
Average Annual Compensation	\$ 70,896	\$ 66,085	\$ 64,970	\$ 63,771	\$ 64,968
Change in Average Annual Compensation	7.3%	1.7%	1.9%	-1.8%	-1.4%
Average Age	46.6	46.6	46.5	46.5	46.7
Average Service	12.2	12.4	12.3	12.2	12.6
Deferred Vested Members					
Counts	1,008	943	925	885	901
Annual Deferred Benefits	\$ 13,619,208	\$ 12,167,691	\$ 11,638,455	\$ 11,080,138	\$ 11,207,455
Average Benefit	\$ 13,511	\$ 12,903	\$ 12,582	\$ 12,520	\$ 12,439
Retired Members					
Counts	6,013	5,813	5,661	5,576	5,419
Annual Deferred Benefits	\$ 210,707,173	\$ 202,550,837	\$ 195,912,247	\$ 191,137,835	\$ 185,103,085
Average Benefit	\$ 35,042	\$ 34,844	\$ 34,607	\$ 34,279	\$ 34,158
Disability					
Counts	245	249	247	249	251
Annual Deferred Benefits	\$ 3,963,226	\$ 4,069,714	\$ 4,000,756	\$ 3,895,823	\$ 3,873,354
Average Benefit	\$ 16,176	\$ 16,344	\$ 16,197	\$ 15,646	\$ 15,432
Beneficiaries and QDROs					

Summary of Census Data

Counts	1,110	1,076	1,072	1,060	1,018
Annual Benefits	\$ 22,007,859	\$ 21,231,243	\$ 20,639,481	\$ 20,103,429	\$ 18,896,049
Average Benefit	\$ 19,827	\$ 19,732	\$ 19,253	\$ 18,965	\$ 18,562
Refunds Eligible Count ⁽¹⁾	N/A	N/A	N/A	N/A	N/A
Total Members Included in Valuation	16,317	16,058	15,935	15,553	15,052

Summary of Actuarial Cost Methods and Assumptions

The assumptions were adopted by the City of Phoenix Employees' Retirement System based on the most recent experience study covering the period of July 1, 2014 through June 30, 2019. New assumptions, including updated mortality and economic assumption, were adopted in July of 2020 and were first used in the June 30, 2020 valuation.

Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial liability.

1. The valuation is prepared on the projected benefit basis. The present value of each participant's expected benefit payable at retirement or termination is determined, based on age, service, sex, compensation, and the interest rate assumed to be earned in the future (7.00%). The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.
2. The employer contributions required to support the benefits of the Plan are determined following a level percent of pay funding approach and consist of a normal cost contribution and an unfunded accrued liability contribution, plus a component to cover administrative expenses.
3. The normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using the individual entry age actuarial cost method having the following characteristics of (i) the annual normal costs for each active member, payable from the date of entry into the system to the date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement, and (ii) each annual normal cost is constant percentage of the member's year-by-year projected covered pay.
4. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. Amortization bases are established each year and amortized over periods in accordance with the following amortization methods.
 - a. The UAL as of June 30, 2013, developed prior to implementing the September 2013 assumption changes, is amortized over a closed 25-year period as a level percentage of payroll.
 - b. The impact of the September 2013 assumption changes on the UAL is amortized over a closed 25-year period as a level percentage of payroll with a four-year phase-in to the full amortization rate. The phase-in is calculated by multiplying the first year amortization payment by 25 percent. For the second year, the amortization schedule is recalculated reflecting the 25 percent payment in the first year and the remaining 24-year period and the calculated amortization payment is then multiplied by 50 percent. The process is repeated until the full amortization payment is made beginning in the fourth year of the 25-year period.
 - c. The impact of the August 2015 assumption changes on the UAL is amortized over a closed 20-year period as a level percentage of payroll with a four-year phase-in to the full amortization rate. The phase-in is calculated by multiplying the first year amortization payment by 25 percent. For the second year, the amortization schedule is recalculated reflecting the 25 percent payment in the first year and the remaining 19-year period and the calculated amortization payment is then multiplied by 50 percent. The process is repeated until the full amortization payment is made beginning in the fourth year of the 20-year period.
 - d. Future gains and losses are amortized over closed 20-year periods as a level percentage of payroll from the valuation date in which they are first recognized. However, gains will not be amortized over a shorter period than the remaining period on the amortization of the 2013 UAL.

Summary of Actuarial Cost Methods and Assumptions (Continued)

Actuarial Value of Assets

The actuarial value of assets is determined by recognizing market value gains and losses over a four-year period. Gain and loss bases to be spread over the four-year period are determined by comparing expected returns based on the market value of assets and cash flows during the year to actual investment returns. The actuarial value of assets must be between 80 and 120% of market value.

Actuarial Assumptions

Economic Assumptions

1. Investment return: 7.00% per annum, compounded annually. Inflation is assumed to be 2.30%.
2. Salary increase rate: Individual salary increases are composed of a price inflation component, a real wage growth component, and a merit or longevity component that varies by age. The table below combines the various components of salary increases for sample ages. Growth in the total payroll is assumed to be 2.50%.

Attained Years of Service	Percentage Increase in Salary			Total
	Price Inflation	Real Wage Growth	Merit or Longevity	
1-7	2.30%	0.5%	4.20%	7.00%
8-14	2.30%	0.5%	1.30%	4.10%
15+	2.30%	0.5%	0.00%	2.80%

3. COLA Due to Pension Equalization Reserve (PER): The PER only applies to Tier 1 and Tier 2 benefits. Future benefits payable through the PER are valued as an annual compound cost-of-living adjustment (COLA) payable January 1, equal to 1.00% from 2024-2029, and then 1.25% thereafter.
4. Administrative expenses are assumed to be equal to the prior year's amount, increased by 2.50%.

Demographic Assumptions

1. Rates of Mortality for Healthy and Disabled Lives: Mortality rates are based on the sex- distinct employee and annuitant mortality tables described below, including adjustment factors applied to the published tables for each group. Half of active member deaths are assumed to be duty related. Future mortality improvements are reflected by applying the MP-2019 Ultimate projection scales on a generational basis to the adjusted base tables from the base year shown below.

(i) Non-Annuitant – Pub-2010, Amount-Weighted, General, Employee Mortality Table

Gender	Adjustment Factor	Base Year
Male	1.000	2010
Female	1.000	2010

(ii) Healthy Annuitant - Pub-2010, Amount-Weighted, General, Health Retiree Mortality Table

Gender	Adjustment Factor	Base Year
Male	1.090	2010
Female	1.040	2010

Summary of Actuarial Cost Methods and Assumptions (Continued)

(iii) Disabled Annuitant - Pub-2010, Amount-Weighted, General, Disabled Retiree Mortality Tables

Gender	Adjustment Factor	Base Year
Male	1.000	2010
Female	1.000	2010

Sample Rates with Projections to 2024 (not including adjustment factors)

Age	Probability of Death Pre-Retirement		Probability of Death Post-Retirement		Probability of Death Post-Disability	
	Men	Women	Men	Women	Men	Women
20	0.032%	0.011%	0.035%	0.012%	0.358%	0.202%
25	0.024	0.008	0.027	0.008	0.242	0.142
30	0.031	0.013	0.034	0.014	0.308	0.223
35	0.041	0.020	0.045	0.021	0.398	0.348
40	0.057	0.031	0.062	0.033	0.560	0.546
45	0.085	0.049	0.104	0.059	0.875	0.856
50	0.129	0.072	0.282	0.201	1.394	1.288
55	0.190	0.107	0.408	0.258	1.837	1.513
60	0.277	0.162	0.582	0.347	2.174	1.699
65	0.407	0.257	0.865	0.554	2.644	1.960
70	0.611	0.425	1.445	0.960	3.389	2.486
75	0.952	0.702	2.529	1.701	4.511	3.478
80	13503	1.155	4.521	3.036	6.384	5.219
85	6.275	4.633	8.135	5.606	9.395	8.106
90	12.873	10.079	14.032	10.482	14.260	11.989

- Disability Rates. The disability incidence rates are 20% of the Arizona State Retirement System disability table. Half of disabilities are assumed to be duty-related. Sample disability rates of active members are provided in the table below. The rates apply to both male and female COPERS members.

Sample Attained Ages	Probability of Disablement
25	0.0100%
30	0.0121
35	0.0185
40	0.0294
45	0.0454
50	0.0677
55	0.0794
60	0.0863

Summary of Actuarial Cost Methods and Assumptions (Continued)

3. Termination rates (for causes other than death, disability or retirement): Termination rates are based on age and service. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates at selected ages are shown.

Age	Probability of Termination Years of Service					
	0	1	2	3	4	5+
20	19.00%	17.00%	11.00%	10.00%	8.25%	8.00%
25	19.00	17.00	11.00	10.00	8.25	8.00
30	17.00	13.25	10.00	8.75	7.25	5.00
35	17.00	10.75	9.00	7.50	6.50	4.00
40	17.00	9.50	8.25	6.50	6.00	3.10
45	17.00	8.50	7.50	6.50	6.00	2.10
50	14.00	9.00	5.00	5.00	4.50	1.50
55	14.00	9.00	5.00	5.00	4.50	1.50
60	14.00	9.00	5.00	5.00	4.50	1.50

4. Retirement Rates

Age	Probability of Retirement Years of Service			
	< 15	15-24	25-31	≥ 32
50-51	0.00%	0.00%	40.00%	42.50%
52	0.00	0.00	40.00	35.00
53	0.00	0.00	40.00	27.50
54	0.00	0.00	30.00	27.50
55	0.00	0.00	30.00	27.50
56	0.00	37.50	25.00	27.50
57	0.00	37.50	22.50	22.50
58	0.00	25.00	22.50	22.50
59	0.00	22.50	20.00	22.50
60	10.00	22.50	20.00	22.50
61	10.00	20.00	20.00	22.50
62	13.00	20.00	25.00	32.50
63	13.00	20.00	25.00	37.50
64	10.00	17.50	15.00	25.00
65	20.00	27.50	25.00	35.00
66	25.00	32.50	40.00	37.50
67	25.00	35.00	40.00	37.50
68	25.00	35.00	40.00	37.50
69	25.00	35.00	40.00	47.50
70	100.00	100.00	100.00	100.00

Other Assumptions

1. Percent married: 90% of employees are assumed to be married.
2. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
3. Unused Vacation and Compensatory Time: For Tier 1 and Tier 2 members, compensatory service credits and lump sum payments for unused vacation and compensatory time are explicitly valued. An additional load of 1.5% is also included as margin for adverse deviation.
4. Member Contribution Crediting Rate: Member contributions are assumed to be credited with interest at 3.75% per annum.

Summary of Actuarial Cost Methods and Assumptions (Continued)

5. Non-Vested Terminated Members Due Refunds: Current non-vested terminated members with refunds of the member account balances due are assumed to take the refund at age 65.
6. Decrement Timing: Middle of the Year.

Schedule of Retired Members Added to and Removed from Rolls

Year Ended	Added to Rolls		Removed		Total		Average Annual Pension	% Increase in Pensions
	Count	Annual Pensions*	Count	Annual Pensions*	Count	Annual Pensions*		
6/30/2015	578	\$ 22,483	192	\$ 4,225	6,541	\$ 205,816	\$ 31,466	9.7
6/30/2016	375	11,573	182	4,329	6,734	213,061	31,640	3.5
6/30/2017	321	9,317	233	4,395	6,822	218,364	32,009	2.5
6/30/2018	370	11,314	218	4,825	6,974	225,644	32,355	3.3
6/30/2019	417	13,109	196	4,398	7,195	234,341	32,570	3.9
6/30/2020	378	12,025	251	6,530	7,322	239,836	32,756	2.3
6/30/2021	396	14,541	312	7,105	7,406	247,218	33,381	3.1
6/30/2022	477	21,208	287	7,196	7,596	261,231	34,391	5.7
6/30/2023	440	14,761	243	6,085	7,793	269,906	34,634	3.3
6/30/2024	326	11,992	252	6,555	7,867	275,342	35,000	2.0

* Represents in thousands

Solvency Test (in thousands)

Valuation Date	Aggregated Accrued Liabilities for				Portion of Actuarial Liability Covered by Reported Assets		
	Active Member Contributions	Retirees and Beneficiaries and Vested Terminations	Members (Employer Financed Portion)	Actuarial Value Assets	(5)/(2)	[(5) - (2)]/(3)	[(5) - (2)] - (3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
6/30/2015	383,029	2,465,862	1,127,017	2,202,923	100.00%	73.8%	0.0
6/30/2016	393,626	2,522,989	1,067,522	2,283,216	100.00%	74.9%	0.0
6/30/2017	406,651	2,638,084	1,084,717	2,402,707	100.00%	75.7%	0.0
6/30/2018	417,314	2,704,971	1,103,761	2,562,847	100.00%	79.3%	0.0
6/30/2019	420,431	2,804,775	1,176,619	2,677,353	100.00%	80.5%	0.0
6/30/2020	437,719	2,857,254	1,119,141	2,811,163	100.00%	83.1%	0.0
6/30/2021	453,509	2,945,664	1,142,626	3,211,142	100.00%	93.6%	0.0
6/30/2022	456,197	3,124,986	1,142,108	3,361,409	100.00%	93.0%	0.0
6/30/2023	472,120	3,233,320	1,178,722	3,517,451	100.00%	94.2%	0.0
6/30/2024	512,345	3,303,886	1,331,063	3,738,075	100.00%	97.6%	0.0

Summary of Actuarial Cost Methods and Assumptions (Continued)
Analysis of Financial Experience (in thousands)

	2024	2023	2022	2021	2020
(1) UAAL at Start of Year	1,366,711	1,361,882	1,330,656	1,602,951	1,724,473
(2) Normal Cost for Year*	93,886	82,934	82,433	80,573	83,628
(3) Expected Contributions	(222,628)	(202,152)	(218,122)	(222,103)	(213,142)
(4) Assumed Investment Income Accrual on (1), (2) and (3)	91,240	91,230	88,477	107,337	120,412
(5) Expected UAAL Before Changes	1,329,209	1,333,894	1,283,444	1,568,758	1,715,371
(6) Effect of Assumption/Method Changes	-	-	-	-	(62,386)
(7) Effect of Benefit Changes	-	-	-	-	-
(8) Expected UAAL After Changes	1,329,209	1,333,894	1,283,444	1,568,758	1,652,985
(9) Actual UAAL	1,409,218	1,366,711	1,361,882	1,330,656	1,602,951
(10) Gain/Loss [8. - 9.]	(80,009)	(32,817)	(78,438)	238,102	50,034
(11) As % of AAL at Start of Year	-1.64%	-0.69%	-1.73%	5.39%	1.14%

	2019	2018	2017	2016	2015
(1) UAAL at Start of Year	1,663,199	1,726,745	1,700,921	1,772,985	1,494,084
(2) Normal Cost for Year	74,048	73,449	73,256	80,757	75,310
(3) Expected Contributions	(198,860)	(187,324)	(183,023)	(178,288)	(157,314)
(4) Assumed Investment Income Accrual on (1), (2) and (3)	116,137	121,133	123,527	129,383	109,037
(5) Expected UAAL Before Changes	1,654,524	1,734,003	1,714,681	1,804,837	1,521,117
(6) Effect of Assumption/Method Changes	-	-	2,420	(69,420)	254,870
(7) Effect of Benefit Changes	-	-	-	(3,229)	-
(8) Expected UAAL After Changes	1,654,524	1,734,003	1,717,101	1,732,188	1,775,987
(9) Actual UAAL	1,724,473	1,663,199	1,726,745	1,700,921	1,772,985
(10) Gain/Loss [8. - 9.]	(69,949)	70,804	(9,644)	31,267	3,002
(11) As % of AAL at Start of Year	-1.66%	1.71%	-0.24%	0.80%	0.10%

*Includes administrative expenses beginning in 2017





Statistical section

*The **Statistical** section provides
financial and demographic data
pertaining to COPERS.*



Introduction

The purpose of the statistical section is to provide the reader with data which is considered to be pertinent to the financial and economic condition of the retirement plan. Each schedule is defined below with an explanation of the schedule and an identification of the source of the data.

Schedule of Changes in Fiduciary Net Position

This schedule provides the additions and deductions to the plan for the past ten years. The change in net position is provided to illustrate whether the plan's assets are growing or not. This schedule is developed using the Statement of Changes in Fiduciary Net Position for the past ten years.

Schedule of Benefit Expenses by Type

This schedule provides the benefit expenses of the plan by type for the last ten years. COPERS benefits include service retirement payments, disability benefits, death in service benefits, child benefits, payment to alternate payees and survivor benefits. This schedule is developed using reports from the pension administration system. The total expenses can be found in COPERS' Statement of Changes in Fiduciary Net Position for the past ten years.

Schedule of Refunds by Type

This schedule provides the annual amount of refunds issued to employees and beneficiaries upon separation from City employment. This schedule is compiled using information from the pension administration system and the payroll system.

Schedule of Retired Members by Type of Benefit

This schedule provides the number of retired members in each benefit category. COPERS plan benefits include payments for deferred benefits, normal retirement benefits, disability benefits, survivor benefits, death benefits and payments to alternate payees. The schedule is developed using the pension administration system.

Schedule of Average Benefit Payment Amounts

This schedule provides the average benefit payments by years of credited service. This information is provided to illustrate how benefit payments increase as the years of credited service increases. This schedule is developed using the pension administration system.

Schedule of Changes in Fiduciary Net Position (in thousands)
Last Ten Fiscal Years

	2024	2023	2022	2021	2020
Additions					
Employer Contributions	\$ 210,701	\$ 193,136	\$ 178,319	\$ 357,382	\$ 175,947
Member Contributions	57,067	47,749	53,350	40,561	39,356
Retirement Office Administration	2,081	2,201	2,122	2,047	2,134
Net Investment Income (Loss)	249,174	175,400	(161,784)	610,554	50,389
Total Additions	519,023	418,486	72,007	1,010,544	267,826
Deductions					
Benefit Payments	\$ 276,224	\$ 268,868	\$ 257,782	\$ 246,214	\$ 239,407
Refunds of Contributions	4,000	4,120	4,436	3,047	2,526
Inter-System Transfers (Note 11)	129	515	443	452	211
Retirement Office Administration	2,081	2,201	2,122	2,047	2,134
Administrative Expenses	4,871	1,373	2,564	1,930	2,509
Total Deductions	287,305	277,077	267,347	253,690	246,787
Change In Net Position Restricted For Pensions	\$ 231,718	\$ 141,409	\$ (195,340)	\$ 756,854	\$ 21,039
	2019	2018	2017	2016	2015
Additions					
Employer Contributions	\$ 165,796	\$ 229,006	\$ 152,153	\$ 119,844	\$ 117,092
Member Contributions	35,042	33,340	30,870	29,306	27,861
Funds from Other Systems	-	-	-	217	199
Inter-System Transfers	375	484	43	-	-
Retirement Office Administration	1,986	1,863	-	-	-
Net Investment Income (Loss)	142,964	166,514	243,210	9,171	47,149
Total Additions	346,163	431,207	426,276	158,538	192,301
Deductions					
Benefit Payments	\$ 234,301	\$ 224,454	\$ 220,276	\$ 213,047	\$ 201,178
Refunds of Contributions	3,012	3,472	3,227	3,047	3,004
Inter-System Transfers (Note 11)	451	134	207	315	-
Retirement Office Administration	1,986	1,863	-	-	-
Funds to Other Systems	-	-	-	-	421
Administrative Expenses	793	377	380	234	414
Total Deductions	240,543	230,300	224,090	216,643	205,017
Change In Net Position Restricted For Pensions	\$ 105,620	\$ 200,907	\$ 202,186	\$ (58,105)	\$ (12,716)

Schedule of Benefit Expenses by Type (in thousands) Last Ten Fiscal Years

Age & Service			Death & Disability Benefits (Retirees)						
Fiscal Year	Benefits (Retirees)	Death In Service	Duty	Non-Duty	Survivors	Deferred	Child	Alternate Payee	Total Benefits
2023-2024	\$ 241,702	\$ 3,263	\$ 491	\$ 3,035	\$ 19,080	\$ 6,019	\$ 33	\$ 2,601	\$ 276,224
2022-2023	234,301	3,651	539	3,235	20,122	4,519	42	3,111	268,868
2021-2022	223,163	3,595	561	3,313	19,212	4,238	42	3,658	257,782
2020-2021	214,074	3,292	587	3,390	18,378	3,979	45	2,469	246,214
2019-2020	209,454	3,341	606	3,278	16,639	3,675	47	2,367	239,407
2018-2019	205,349	3,260	625	3,409	15,985	3,422	51	2,200	234,301
2017-2018	196,573	3,281	642	3,426	15,256	3,085	58	2,133	224,454
2016-2017	193,048	3,271	672	3,311	15,038	2,801	61	2,074	220,276
2015-2016	186,802	3,324	686	3,273	14,150	2,721	62	2,029	213,047
2014-2015	176,699	3,109	710	3,184	12,958	2,582	47	1,889	201,178

Schedule Refunds by Type (in thousands) Last Ten Fiscal Years

Fiscal Year	Beneficiaries	Separation	Total Refunds
2023-2024	\$ 898	\$ 3,102	\$ 4,000
2022-2023	1,129	2,991	4,120
2021-2022	1,224	3,212	4,436
2020-2021	942	2,105	3,047
2019-2020	481	2,045	2,526
2018-2019	496	2,516	3,012
2017-2018	332	3,140	3,472
2016-2017	518	2,709	3,227
2015-2016	589	2,413	3,002
2014-2015	725	2,279	3,004

**Schedule of Retired Members by Type of Benefit
For the Fiscal Year ended June 30, 2024**

Monthly Benefit	Number of Retirees	Type of Retirement						
		Deferred	Normal or Voluntary	Duty Disability	Non-Duty Disability	Survivor Payment	Death Benefit	Alternate Payee
Deferred	1,144	1,144	-					
\$1 - \$300	81		40	0	0	12	15	14
\$301 - \$400	112		75	4	1	20	-	12
\$401 - \$500	123		76	5	2	29	0	11
\$501 - \$600	148		103	5	4	21	2	13
\$601 - \$700	158		87	3	6	47	3	12
\$701 - \$800	171		100	1	9	45	4	12
\$801 - \$900	169		92	2	18	34	6	17
\$901 - \$1,000	160		105	1	7	30	6	11
\$1,001 - \$1,100	188		120	3	11	34	6	14
\$1,101 - \$1,200	205		130	2	12	41	8	12
\$1,201 - \$1,300	179		121	1	14	32	2	9
\$1,301 - \$1,400	187		123	0	17	28	8	11
\$1,401 - \$1,500	182		133	0	13	24	8	4
\$1,501 - \$2,000	905		672	14	32	127	39	21
\$2,001 - \$2,500	931		796	1	11	98	16	9
\$2,501 - \$3,000	929		822	0	12	75	12	8
\$3,001 - \$4,000	1,383		1,275	0	9	79	17	3
\$4,001 - \$5,000	870		824	0	3	35	6	2
\$5,001+	984		926	0	0	51	4	3
Totals	9,209	1,144	6,620	42	181	862	162	198

**Schedule of Average Benefit Payment Amounts
By Year of Retirement (Last Five Fiscal Years)**

Retirement Effective Dates For Fiscal Years Ending June 30:	Years of Credited Service					
	5-9	10-14	15-19	20-24	25-29	30+
2024						
Average Monthly Benefit	\$ 663.01	\$ 1,587.98	\$ 1,870.89	\$ 3,051.92	\$ 4,460.58	\$ 5,153.74
Mean Monthly Final Average Compensation	5,170.62	7,147.71	5,477.79	6,976.53	8,211.00	7,979.30
Number of New Retirees	28	28	26	55	78	32
2023						
Average Monthly Benefit	\$ 775.10	\$ 1,394.46	\$ 2,046.20	\$ 2,952.31	\$ 3,986.87	\$ 4,869.16
Mean Monthly Final Average Compensation	5,984.96	6,003.69	5,923.60	6,583.79	7,315.32	7,530.66
Number of New Retirees	34	22	60	70	102	53
2022						
Average Monthly Benefit	\$ 1,032.43	\$ 1,332.74	\$ 1,957.11	\$ 2,856.56	\$ 4,119.39	\$ 5,022.63
Mean Monthly Final Average Compensation	7,828.58	5,449.40	6,024.17	6,578.22	7,608.57	7,631.67
Number of New Retirees	18	21	57	90	94	64
2021						
Average Monthly Benefit	\$ 794.64	\$ 1,417.07	\$ 1,856.51	\$ 2,828.72	\$ 3,881.98	\$ 4,913.68
Mean Monthly Final Average Compensation	6,229.33	5,603.37	5,495.05	6,477.60	7,131.53	7,595.83
Number of New Retirees	25	37	42	74	75	43
2020						
Average Monthly Benefit	\$ 595.25	\$ 1,292.48	\$ 1,959.94	\$ 2,726.63	\$ 3,573.48	\$ 4,472.53
Mean Monthly Final Average Compensation	4,524.39	5,386.73	5,734.01	6,178.95	6,618.61	6,940.39
Number of New Retirees	27	31	39	69	61	57
From July 1, 2020 to June 30, 2024						
Average Monthly Benefit	\$ 772.09	\$ 1,404.95	\$ 1,938.13	\$ 2,883.23	\$ 4,004.46	\$ 4,886.35
Mean Monthly Final Average Compensation	5,947.58	5,918.18	5,730.92	6,559.02	7,377.01	7,535.57
Average Number of New Retirees	26	28	45	72	82	50





City of Phoenix
Employees' Retirement System
200 W. Washington St, 10th Floor
Phoenix, AZ 85003

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FISCAL YEARS ENDING
JUNE 30, 2024 AND 2023

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