

Due to the termination of the statewide COVID-19 State of Emergency by the Governor of California, effective March 1, 2023, all meetings of the Oakland Police & Fire Retirement System Board and its Committees will be conducted in person.

Meetings are held in wheelchair accessible facilities.

The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

For additional information, contact the Retirement Unit by calling (510) 238-7295. or send an email to mvisaya@oaklandca.gov



AGENDA

AUDIT COMMITTEE MEMBERS

John C. Speakman
Chairperson

R. Steven Wilkinson
Member

Martin J. Melia
Member

**In the event a quorum of the Board participates in the Committee meeting, the meeting is noticed as a Special Meeting of the Board; however, no final Board action can be taken. In the event that the Audit Committee does not reach quorum, this meeting is noticed as an informational meeting between staff and the Chair of the Audit Committee.*

MEETING of the AUDIT & OPERATIONS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

WEDNESDAY, MARCH 29, 2023

10:00 AM

ONE FRANK H. OGAWA PLAZA, HEARING ROOM 1
OAKLAND, CA 94612

OBSERVE

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/82880493983> at the noticed meeting time.
 - To listen to the meeting by phone, please call the numbers below at the noticed meeting time: Dial (for higher quality, dial a number based on your current location):
 - iPhone one-tap: US: +16699006833, 82880493983# or +13462487799, 82880493983#
 - US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
 - International numbers available: <https://us02web.zoom.us/j/82880493983>
 - Webinar ID: 828 8049 3983.
- If asked for a participant ID or code, press #.

PUBLIC COMMENTS

There are two ways to submit public comments:

- Speaker Card: All persons wishing to address the Board must complete a speaker's card, stating their name and the agenda item they wish to address, including "Open Forum".
- eComment: To send your comment directly to staff BEFORE the meeting starts, please email to mvisaya@oaklandca.gov with "PFRS Board Meeting" in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time**.

If you have any questions, please email Maxine Visaya, Administrative Assistant II at mvisaya@oaklandca.gov

ORDER OF BUSINESS

- | | |
|----|--|
| 1. | Subject: Oakland Police and Fire Retirement System ("PFRS") Audit Committee Meeting Minutes |
| | From: Staff of the PFRS Board |
| | Recommendation: APPROVE the February 22, 2023 Audit Committee Meeting Minutes |
- | | |
|----|---|
| 2. | Subject: Administrative Expenses Report |
| | From: Staff of the PFRS Board |
| | Recommendation: ACCEPT informational report regarding PFRS administrative expenses as of January 31, 2023 |
- | | |
|----|--|
| 3. | Subject: PFRS 2-Year Administrative Budget for Fiscal Years 2023/2024 and 2024/2025 |
| | From: Staff of the PFRS Board |
| | Recommendation: RECOMMEND BOARD APPROVAL of PFRS 2-Year Administrative Budget for Fiscal Years 2023/2024 and 2024/2025 |
- | | |
|----|---|
| 4. | Subject: PFRS Annual Report for Year Ended June 30, 2022 |
| | From: Staff of the PFRS Board |
| | Recommendation: RECOMMEND BOARD APPROVAL of printing and publication of the Annual Report of the Oakland Police & Fire Retirement System Year Ended June 30, 2022 |
5. REVIEW OF PENDING AUDIT COMMITTEE MEETING AGENDA ITEMS
6. OPEN FORUM
7. FUTURE SCHEDULING
8. ADJOURNMENT

A MEETING OF THE AUDIT & OPERATIONS COMMITTEE of the Oakland Police and Fire Retirement System (“PFRS”) was held Wednesday, February 22, 2023 via Zoom Webinar.

Committee Members	▪ John C. Speakman	Chairperson
	▪ Martin J. Melia	Member (EXCUSED)
	▪ R. Steven Wilkinson	Member
Additional Attendees	▪ David Jones	PFRS Secretary & Plan Administrator
	▪ Téir Jenkins	PFRS Investment & Operations Manager
	▪ Mitesh Bhakta	PFRS Legal Counsel
	▪ Selia Warren	PFRS Legal Counsel
	▪ Maxine Visaya	PFRS Staff Member
	▪ Annie Louie	Macias Gini & O’Connell (MGO)
	▪ Linda Hurley	Macias Gini & O’Connell (MGO)

The meeting was called to order at 10:04 a.m. Pacific

- 1. PFRS Audit & Operations Committee Meeting Minutes** – Chairperson Speakman made a motion to approve the January 25, 2023 Audit & Operations Committee Meeting minutes, second by Member Wilkinson. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

- 2. Informational Overview Regarding Management Audits** – Lind Hurley of MGO acknowledged Audit Committee and Management discussions regarding if some form of assessment would be appropriate at this time and presented an informational overview regarding management audits for consideration in their decision-making process. The presentation included an overview of Public Employee Retirement System structures and how PFRS fits into that structure; types of assessments to help clarify concerns/questions regarding the general governance of the organization; the process of an evaluation; and noted the holistic 2006 Management Audit was comprehensive and resulted in recommended improvements, many of which were implemented. L. Hurley also noted the annual financial audits have resulted in clean opinions over the years with no material weaknesses or significant deficiencies in internal controls and would not recommend PFRS conduct a holistic management audit at this time. PFRS Investment & Operations Manager Jenkins noted PFRS’ current organizational structure meets and exceeds the standards as they relate to investment activities, benefit administration, and general operations; and overall, we have a strong staff that performs at a high-level. Plan Administrator Jones supported those comments and added staff have several checks & balances in place and are excellent in the essentials of communication and planning.

MOTION: Chairperson Speakman made a motion to accept the informational overview and forward to the Board for further discussion, second by Member Wilkinson. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

3. **Review of Pending Audit Committee Meeting Agenda Items** – PFRS Secretary & Plan Administrator Jones reported on the three (3) pending items on the Audit and Committee Agenda. Item 1) Staff Review of the 2006 Management Audit: MGO presented an informational overview regarding Management Audits for consideration today. Item 2) Status Report of the Ad Hoc Committee regarding the Actuarial Funding Date of July 1, 2026: There were scheduling conflicts which resulted in two cancelled meetings and staff is working to reschedule as availability permits. Item 3) Monitor & Update PFRS Board of Upcoming City Council Agendas Regarding Discussion of the 2026 Actuarial Funding Date: Legal Counsel Bhakta advised here are no updates to report at this time and Legal Counsel will continue to monitor and provide updates as available.
4. **Open Forum** – PFRS Secretary & Plan Administrator Jones thanked PFRS Legal Counsel Bhakta for his service to the PFRS Board on behalf of Staff and the City and wished him well in his future endeavors and noted today will be his last day of service. Legal Counsel Bhakta thanked Plan Administrator Jones and advised he will introduce his successor at the Full Board Meeting this afternoon.
5. **Future Scheduling** – The next Audit & Operations Committee Meeting will be held in-person and is tentatively scheduled to occur March 29, 2023.
6. **Adjournment** – Chairperson Speakman made a motion to adjourn, second by Member Wilkinson. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

The meeting adjourned at 10:42 a.m. Pacific

JOHN C. SPEAKMAN
COMMITTEE CHAIRPERSON

DATE

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of January 31, 2023

	Approved Budget				
		January 2023	FYTD	Remaining	Percent Remaining
Internal Administrative Costs					
PFRS Staff Salaries	\$ 1,330,000	\$ 98,915	\$ 663,138	\$ 666,862	50.1%
Board Travel Expenditures	52,500	-	-	52,500	100.0%
Staff Training	20,000	-	-	20,000	100.0%
Staff Training - Tuition Reimbursement	7,500	-	-	7,500	100.0%
Board Hospitality	3,600	-	-	3,600	100.0%
Payroll Processing Fees	40,000	-	-	40,000	100.0%
Miscellaneous Expenditures	45,000	2,716	26,618	18,382	40.8%
Internal Service Fees (ISF)	88,000	-	44,073	43,927	49.9%
Contract Services Contingency	50,000	-	1,500	48,500	97.0%
Internal Administrative Costs Subtotal :	\$ 1,636,600	\$ 101,631	\$ 735,328	\$ 901,272	55.1%
Actuary and Accounting Services					
Audit	\$ 50,500	\$ -	\$ 33,883	\$ 16,617	32.9%
Actuary	47,900	10,474	23,168	24,733	51.6%
Actuary and Accounting Subtotal:	\$ 98,400	\$ 10,474	\$ 57,051	\$ 41,350	42.0%
Legal Services					
City Attorney Salaries	\$ 194,000	\$ -	\$ 28	\$ 193,972	100.0%
Legal Contingency	150,000	-	-	150,000	100.0%
Legal Services Subtotal:	\$ 344,000	\$ -	\$ 28	\$ 343,972	100.0%
Investment Services					
Money Manager Fees	\$ 1,353,000	\$ 110,607	\$ 272,645	\$ 1,080,355	79.8%
Custodial Fee	124,000	-	-	124,000	100.0%
Investment Consultant	100,000	-	50,000	50,000	50.0%
Investment Subtotal:	\$ 1,577,000	\$ 110,607	\$ 322,645	\$ 1,254,355	79.5%
Total Operating Budget	\$ 3,656,000	\$ 222,712	\$ 1,115,052	\$ 2,540,948	69.50%

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of January 31, 2023

	January 2023
Beginning Cash as of 1/1/2023	\$ 8,002,044
Additions:	
City Pension Contribution - January	\$ 2,726,000
Investment Draw	\$ 2,000,000
Misc. Receipts	-
Total Additions:	\$ 4,726,000
Deductions:	
Pension Payment (December Pension Paid on 1/2/2023)	(4,245,368)
Expenditures Paid	(217,967)
Total Deductions	\$ (4,463,335)
Ending Cash Balance as of 1/31/2023*	<u><u>\$ 8,264,709</u></u>

* On 2/1/2023, January pension payment of appx \$4,224,000 will be made leaving a cash balance of \$4,041,000.

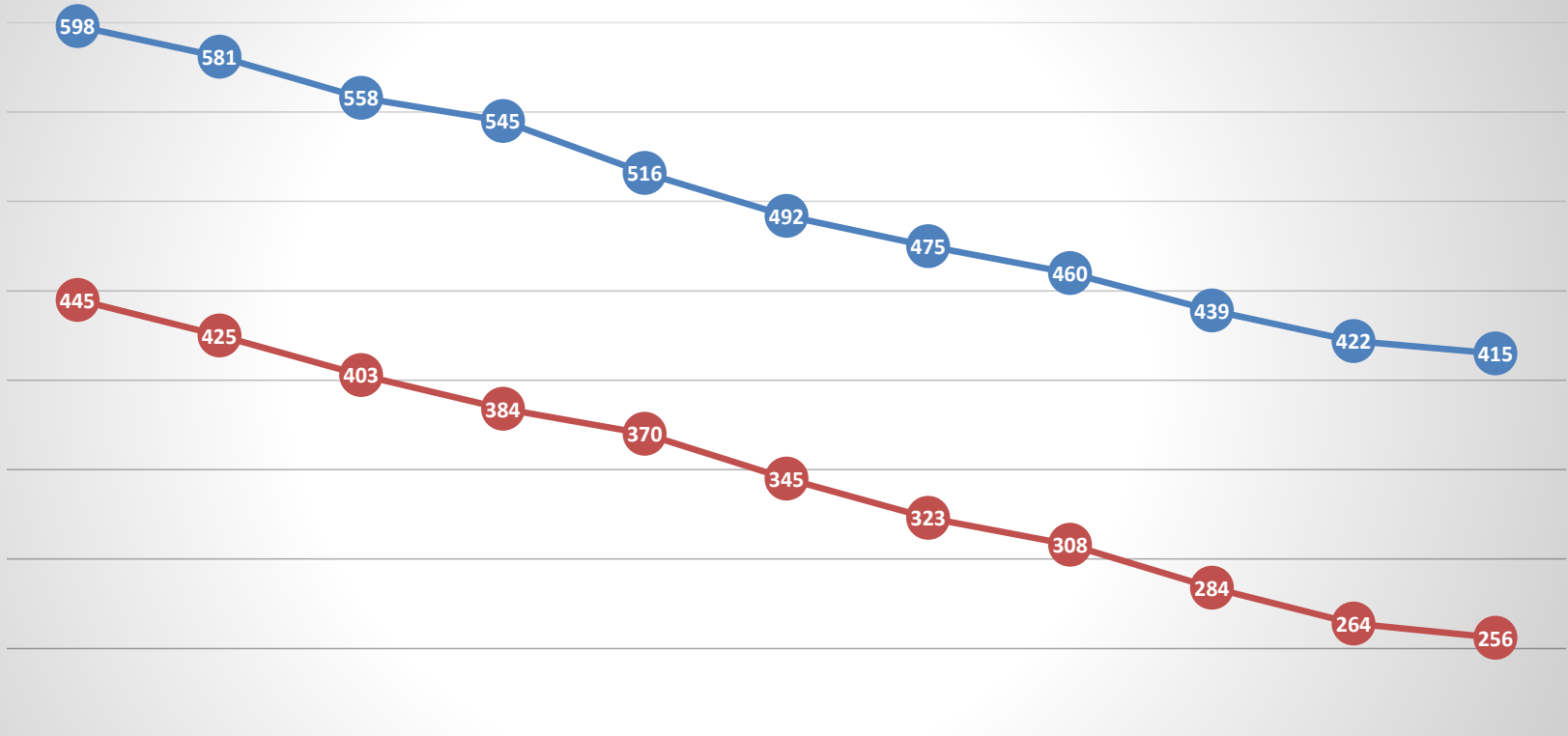
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of January 31, 2023

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	288	165	453
Beneficiary	127	91	218
<i>Total Retired Members</i>	415	256	671
<i>Total Membership:</i>	415	256	671

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	278	128	406
Disability Retirement	127	117	244
Death Allowance	10	11	21
<i>Total Retired Members:</i>	415	256	671
<i>Total Membership as of January 31, 2023:</i>	415	256	671
<i>Total Membership as of June 30, 2022:</i>	422	264	686
<i>Annual Difference:</i>	-7	-8	-15

Oakland Police and Fire Retirement System Pension Plan Membership Count As of January 31, 2023 (FY 2013 - FY 2023)



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 FYTD
Police	598	581	558	545	516	492	475	460	439	422	415
Fire	445	425	403	384	370	345	323	308	284	264	256
Total	1043	1006	961	929	886	837	798	768	723	686	671



AGENDA REPORT

TO: Oakland Police and Fire Retirement System Board **FROM:** David Jones

SUBJECT: Proposed 2-year PFRS Administrative Budget for FY 2023/2024 and FY 2024/2025 **DATE:** March 21, 2023

RECOMENDATION

Staff recommends that the Board of the Oakland Police and Fire Retirement System (“PFRS Board”) approve the new two-year PFRS administrative budget for FY 2023/2024 and FY 2024/2025 as shown in **Table 1**.

SUMMARY

In order to be consistent with the City of Oakland budget process, PFRS staff is presenting a two-year administrative budget that reflects proposed PFRS expenditures for FY 2023/2024 and FY 2024/2025. Staff will work to incorporate the PFRS Board approved budget into the City of Oakland overall budget.

The overall PFRS budget is projected to be \$3,807,400 in FY 2023/2024 and \$3,878,100 in FY 2024/2025. The proposed budget changes reflect expected costs within the specified line items. The total proposed annual budget is approximately 0.92% of the Plan's current investment portfolio. The total PFRS Operating Budget is projected to increase 4.14% in FY 2023/2024 and an additional 1.86% in FY 2024/2025.

KEY CHANGES

Internal Administrative Costs

Staff costs are projected to increase by \$129,000 in FY 2023/2024 and an additional \$59,000 in FY 2024/2025. These increases are mostly due to projected increases in the City of Oakland staff fringe benefits costs and projected staff cost of living increases, per the approved MOU between the City of Oakland and the local union.

Internal Service Fees (“ISF”) are required costs for all City of Oakland funds. These costs are associated with city-wide services such as special setup, facilities general support, city accounting services, city contract services, phone and IT support and printing. Overall, Internal Administrative costs are projected to increase \$129,000 in FY 2023/2024 and \$59,000 in FY 2024/2025.

Agenda Item B2
PFRS Board Meeting
March 29, 2023

OAKLAND POLICE & FIRE RETIREMENT SYSTEM

AGENDA REPORT – Proposed 2-year PFRS Administrative Staff Budget for FY 2023/2024 and FY 2024/2025

March 21, 2023

PAGE 2

Actuary and Accounting Services

Actuary and Auditing services are both scheduled to increase by 3% based on annual increases in their current contracts. The expenses for Audit Services are expected to increase \$2,300 in FY 2023/2024 and \$1,600 in FY 2024/2025. The expenses for Actuary Services are expected to increase \$1,500 in FY 2023/2024 and an additional \$1,500 in FY 2024/2025.

Investment Services

The Money Manager budget is based on the fees charged by each PFRS money manager and the amount of funds they manage on behalf of the PFRS's investment portfolio. The Custodial Fee budget and the Investment Consultant's fees are fixed annual amounts based on the current contracts.

Respectfully submitted,



David Jones, Plan Administrator
Oakland Police and Fire Retirement System

Attachments (1):

- **Table 1:** *Oakland Police and Fire Retirement System – Two-year Proposed Administrative Budgets*

ATTACHMENT 1

Table 1

**Oakland Police and Fire Retirement System
Two-year Proposed Administrative Budgets
FY2023/2024 & FY 2024/2025**

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Two Year Proposed Administrative Budgets
FY 2023-2024 and FY 2024-2025

	FY 2022-2023	Proposed Budget		Budget Changes	
	Approved Budget	FY 2023-2024	FY 2024-2025	FY 2023-2024	FY 2024-2025
Internal Administrative Costs					
PFRS Staff Salaries	\$ 1,330,000	\$ 1,459,000	\$ 1,518,000	\$ 129,000	\$ 59,000
Board Travel Expenditures	52,500	52,500	52,500	-	-
Staff Training	20,000	20,000	20,000	-	-
Staff Training - Tuition Reimbursement	7,500	7,500	7,500	-	-
Board Hospitality	3,600	3,600	3,600	-	-
Payroll Processing Fees	40,000	40,000	40,000	-	-
Miscellaneous Expenditures	45,000	45,000	45,000	-	-
Internal Service Fees (ISF)	88,000	88,000	88,000	-	-
Contract Services Contingency	50,000	50,000	50,000	-	-
Internal Administrative Costs Subtotal :	\$ 1,636,600	\$ 1,765,600	\$ 1,824,600	\$ 129,000	\$ 59,000
Actuary and Accounting Services					
Audit	\$ 50,500	\$ 52,800	\$ 54,400	\$ 2,300	\$ 1,600
Actuary	47,900	49,400	50,900	1,500	1,500
Actuary and Accounting Subtotal:	\$ 98,400	\$ 102,200	\$ 105,300	\$ 3,800	\$ 3,100
Legal Services					
City Attorney Salaries	\$ 194,000	\$ 212,100	\$ 220,700	\$ 18,100	\$ 8,600
Legal Contingency	150,000	150,000	150,000	-	-
Legal Services Subtotal:	\$ 344,000	\$ 362,100	\$ 370,700	\$ 18,100	\$ 8,600
Investment Services					
Money Manager Fees	\$ 1,353,000	\$ 1,353,000	\$ 1,353,000	\$ -	\$ -
Custodial Fee	124,000	124,500	124,500	500	-
Investment Consultant	100,000	100,000	100,000	-	-
Investment Subtotal:	\$ 1,577,000	\$ 1,577,500	\$ 1,577,500	\$ 500	\$ -
Total Operating Budget	\$ 3,656,000	\$ 3,807,400	\$ 3,878,100	\$ 151,400	\$ 70,700
				4.14%	1.86%



A G E N D A R E P O R T

TO: Oakland Police and Fire Retirement System Board (PFRS) **FROM:** David F. Jones
Plan Administrator & Secretary

SUBJECT: Approve Printing & Distribution of PFRS Annual Report for the Fiscal Year Ended June 30, 2022 **DATE:** March 29, 2023

RECOMMENDATION

The PFRS Annual Report for the Fiscal Year ended June 30, 2022 has been completed and is submitted here for the Board approval for Printing and Distribution.

Respectfully submitted,

David F. Jones
Plan Administrator & Secretary
Oakland Police & Fire Retirement Systems

CITY OF OAKLAND

POLICE & FIRE RETIREMENT SYSTEM



ANNUAL REPORT
Fiscal Year Ended June 30, 2022



CONTENTS

SECTION 1: INTRODUCTION

President of the Board: Letter of Transmittal to the City Council	5
Plan Administrator: Letter of Transmittal to the Board of Administration	6
Members of the Board of Administration	9
Administrative Staff	10
Professional Services	10
Board Meeting Information	10

SECTION 2: FINANCIAL

Independent Auditor's Report for the Years Ended June 30, 2022 and 2021	13
Management's Discussion and Analysis (Unaudited)	15

Financial Statements

Statements of Fiduciary Net Position – June 30, 2022 and 2021	22
Statements of Changes in Fiduciary Net Position – Years Ended June 30, 2022 and 2021	23

Notes to the Basic Financial Statements

1. Description of the Oakland Police and Fire Retirement System	24
2. Summary of Significant Accounting Policies	26
3. Contributions	27
4. Cash, Deposits and Investments	28
5. Net Pension Liability	42
6. Reserves	45
7. Administrative Expenses	45

Required Supplementary Information

Schedule of Changes in Employer's Net Pension Liability and Related Ratios (Unaudited)	46
Schedule of Employer Contributions (Unaudited)	47
Schedule of Investment Returns (Unaudited)	47

Notes to Required Supplementary Information

Methods and Assumptions Used to Determine Contribution Rates	48
--	----

SECTION 3: INVESTMENT

Investment Consultant's Report	51
List of Investment Professionals	52
Investment Manager Fees and Other Investment Expenses	52
Largest Stock Holdings, as of June 30, 2022	53
Largest Bond Holdings, as of June 30, 2022	53
Investments by Manager/Exchange-Traded Funds, as of June 30, 2022	54
Asset Allocation, as of June 30, 2022	54

CONTENTS

(Continued)

SECTION 4: ACTUARIAL

Actuary's Certification Letter	57
Summary of Actuarial Value, Assumptions and Funding Methods	60
Purpose of Actuarial Valuation	60
Valuation Summary	62
Actuarial Definitions	62
Actuarial Methods and Assumptions	63
Actuarial Methods	63
Actuarial Value of Plan Assets	63
Actuarial Assumptions	63
Rate of Return	64
Cost of Living Adjustments and Long-Term Salary Increases.....	64
Inflation	65
Rates of Termination, Disability and Retirement	65
Rates of Mortality for Healthy Lives (for service retirees and beneficiaries)	65
Rates of Mortality for Disabled Retirees	65
Mortality Improvement	65
Survivor Continuance	65
Changes in Assumptions since the Last Valuation	65
Administrative Expenses	65
Service Retired Participants	66
Disability Retired Participants	66
Beneficiaries	67
Participant Data Summary	68

IN MEMORIAM

Retiree and Beneficiary Deaths in Fiscal Year 2021-2022	71
---	----

Production Credits

-Layout: Maxine Visaya, Retirement Systems, City of Oakland
 -Print Production: City of Oakland Copy Services

SECTION 1

INTRODUCTION



Arthur Nichols Jr.
Sergeant of Police

Served with Oakland Police Department
October 1973 to August 2001

this page intentionally left blank

LETTERS OF TRANSMITTAL

CITY OF OAKLAND



150 FRANK H. OGAWA PLAZA, SUITE 3349 · OAKLAND, CALIFORNIA 94612-2021

Finance Department
Treasury Bureau
Retirement Unit

(510) 238-3307
FAX (510) 238-7129
CA RELAY 711

March 29, 2023

Oakland City Council
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Honorable Mayor Thao and Members of the City Council:

I am pleased to present the annual report of the Oakland Police and Fire Retirement System for the fiscal year ended June 30, 2022. Provided in this report are the Plan's Financial Information, Investment Performance, and Actuarial Valuations and Statistical Information for the corresponding year.

The members of the Board express their appreciation to the Mayor and City Council, City Administrator, City Attorney, the various City Agencies and Departments and the members of their staff for their cooperation and assistance.

Respectfully submitted,

Walter L. Johnson, Sr., President
Oakland Police and Fire Retirement System

LETTERS OF TRANSMITTAL

CITY OF OAKLAND



150 FRANK H. OGAWA PLAZA, SUITE 3349 · OAKLAND, CALIFORNIA 94612-2021

Finance Department
Treasury Bureau
Retirement Unit

(510) 238-3307
FAX (510) 238-7129
CA RELAY 711

March 17, 2023

Oakland Police and Fire Retirement Board
150 Frank H. Ogawa Plaza, Suite 3349
Oakland CA 94612

Board of Trustees:

I am pleased to present the Annual Report of the Oakland Police and Fire Retirement System for the fiscal year ending June 30, 2022.

ACCOUNTING SYSTEM

The accompanying financial statements have been prepared in compliance with the City Charter and in accordance with the accounting and reporting requirements of the Governmental Accounting Standards Board (GASB) and the reporting requirements prescribed by the Government Finance Officers' Association of the United States and Canada (GFOA).

The method for recording revenues and expenses is on an accrual basis. Revenue is taken into account when earned, regardless of the date of the collection, and expenses are recorded when the corresponding liabilities are incurred instead of when payment is made. Amortization of bond premiums and discounts are over the life of the investment security and actuarial reserves are funded via the entry age normal cost method.

ADDITIONS

Additions to the plan includes all income received into the Plan for the Fiscal Year. Pension Plan's sources of income include items such as contributions and investment income. Total additions for the fiscal year ended June 30, 2022 were -\$4,134,760.

LETTERS OF TRANSMITTAL

This amount includes a net investment loss of -\$47,954,760. Net investment loss includes appreciation or depreciation in fair value of investments, interest income and dividend income less investment expenses during the fiscal year. In addition, the City contributed \$43,820,000 during the fiscal year. As of June 30, 2022, all the System's members are retired.

DEDUCTIONS

Total deductions to the plan in the fiscal year ended June 30, 2022 were \$52,910,654. This amount includes deductions of \$51,450,001 for pension payments to members and qualified beneficiaries.

RESERVES AND FUNDING

The Police and Fire Retirement System most recent actuarial study values the Plan as of July 1, 2021. Details regarding this actuarial study can be found in Section 4 of this annual report.

As of the most recent actuarial study dated July 1, 2021, the System's Unfunded Actuarial Liability is approximately \$159.3 million, and the System had a Funded Ratio of 80.2 percent on a Market Value of Assets (MVA) basis. During fiscal year 2022, the City of Oakland contributed \$43.8 million to the System. The next required City contribution is projected to be approximately \$32.7 million in FY 2022-2023.

INVESTMENTS

The Police and Fire Retirement System Investment Policy is used as a guideline for all investment activities. The Investment Policy includes an asset allocation plan. The plan consists of six asset classes: Domestic Stocks, International Stocks, Fixed Income Instruments, Credit, Covered Calls and Crisis Risk Offset (CRO). In addition, the Policy also allocates among the different investment management styles.

The System's net investment losses for the year ended June 30, 2022 were \$48.0 million mainly due to net depreciation in fair value of the investment portfolio. The actual money-weighted annual investment return for fiscal year 2022 was -10.24%. GASB requires that investments be reported at fair value. The appreciation (depreciation) in fair value of investments held by PFRS is recorded as an increase (decrease) in investment income based on the valuation of investments at year-end.

LETTERS OF TRANSMITTAL

The historical annualized money-weighted rates of return on the portfolios are as follows:

Total Returns %			
	1 Year	3 Year	5 Year
Total Fund	-10.24%	4.58%	6.14%

ACKNOWLEDGEMENTS

The compilation of this report reflects the combined efforts of the Retirement System Administration Staff, the Board of Trustees, and various professional consultants. Its intent is to provide complete and reliable information to the beneficiaries of the Plan, to serve as a basis for making management decisions, and to ensure compliance with legal provisions affecting the administration of the Plan.

Respectfully submitted,



David F. Jones
Plan Administrator

MEMBERS OF THE BOARD OF ADMINISTRATION



Jaime T. Godfrey
Vice President
Bank Representative



Walter L. Johnson, Sr.
President
Community Representative



John C. Speakman
Fire Department Representative



R. Steven Wilkinson
Insurance Representative

Plan Administrator
David F. Jones
Treasury Administrator

Legal Advisor, City of Oakland

Mitesh Bhakta
Deputy City Attorney



Kevin R. Traylor
Alternating Fire/Police Department Representative



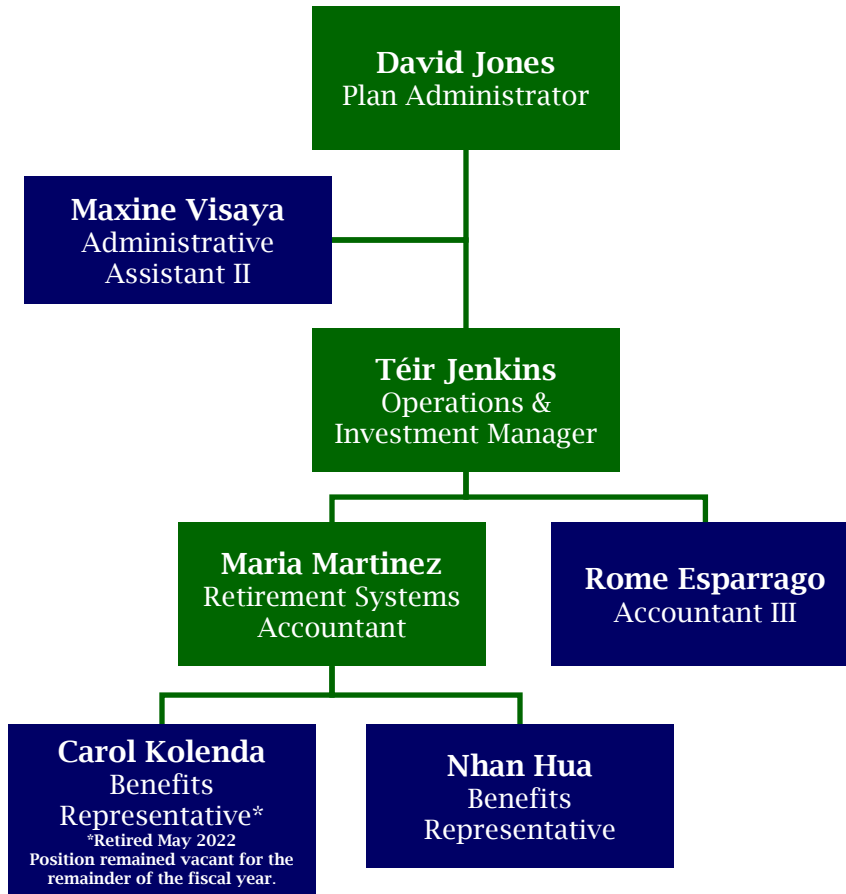
Robert W. Nichelini
Police Representative



Erin Roseman
Mayoral Designate

ADMINISTRATIVE STAFF

Retirement Unit



PROFESSIONAL SERVICES

Over the past year the Board of Administration has engaged the following consultants to

Actuary	Cheiron, Inc.
Auditors	Macias Gini & O'Connell LLP
Custodial Service	The Northern Trust Company
Investment Consultant	Meketa Investment Group

assist in making investments and in developing a sound retirement plan:

A complete list of Investment Professionals is included on page 52 of this Annual Report.

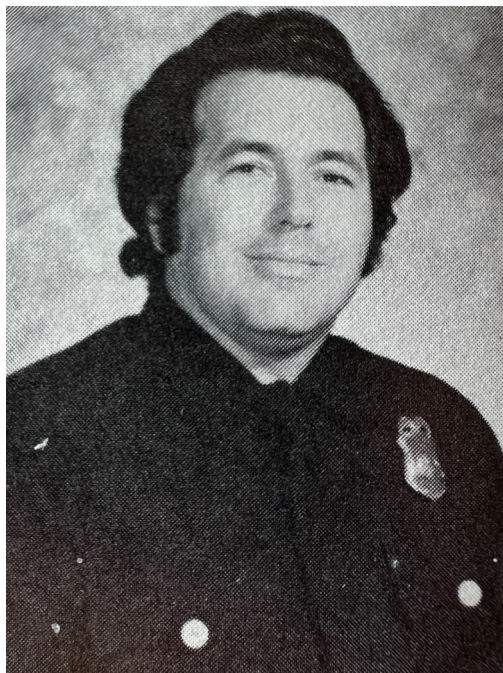
BOARD MEETING INFORMATION

On-Site Meeting Location	1 Frank H. Ogawa Plaza, Oakland, CA 94612
Virtual Meeting	Zoom Webinar
Date	Last Wednesday of each month

For more information, visit our website at www.oaklandca.gov.

SECTION 2

FINANCIAL



Peter G. Caponio
Firefighter

*Served with Oakland Fire Department
April 1968 to January 1987*

this page intentionally left blank

Independent Auditor's Report

For Years Ended June 30, 2022 and 2021



Certified
Public
Accountants

Independent Auditor's Report

Board of Administration
Oakland Police and Fire Retirement System
Oakland, California

Opinion

We have audited the accompanying financial statements of the Oakland Police and Fire Retirement System (System), a pension trust fund of the City of Oakland, California (City), as of and for the years ended June 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

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

Basis for Opinions

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

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal 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 System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS 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.

Macias Gini & O'Connell LLP
2121 N. California Boulevard, Suite 750
Walnut Creek, CA 94596

www.mgocpa.com

Independent Auditor's Report

For Years Ended June 30, 2022 and 2021

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 System'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 System'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, the schedule of changes in the employer's net pension liability and related ratios, the schedule of employer contributions, and the schedule of investment returns as listed in the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

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

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



Walnut Creek, California
December 5, 2022

Management's Discussion & Analysis

(Unaudited)

As management of the Oakland Police and Fire Retirement System (System), we offer readers of the System's financial statements this narrative overview and analysis of the financial activities of the System for the years ended June 30, 2022 and 2021. We encourage readers to consider the information presented here in conjunction with the System's financial statements that follow this section. These discussions and analyses are presented in the following sections:

- Organizational Overview and Highlights
- Financial Statement Overview
- Financial Analysis: 2022 vs. 2021
- Financial Analysis: 2021 vs. 2020
- Requests for Additional Information

ORGANIZATIONAL OVERVIEW AND HIGHLIGHTS

The City of Oakland City Charter established the System and provides for its funding. Accordingly, the System is an integral part of the City of Oakland (City) and its operations have been reported as a Pension Trust Fund in the City's basic financial statements. The System is a closed, single employer, defined benefit pension plan that provides retirement, disability and survivor benefits for eligible sworn safety employees of the City. The System serves the City's sworn employees hired prior to July 1, 1976 who have not transferred to the California Public Employees' Retirement System (CalPERS). The System is governed by a board of seven trustees: the Mayor or his/her designate, three Mayoral appointees approved by the City Council, an elected active or retired member of the Police Department, an elected active or retired member from the Fire Department, and an elected member position which alternates between the Police Department and Fire Department membership. Trustees receive no compensation.

The System has been funded by periodic employee and City contributions at actuarially determined amounts sufficient to accumulate the necessary assets to pay benefits when due as specified by the City Charter, unless the Board and the City have agreed to other funding options. In accordance with the City Charter, active members hired after July 1, 1951, and prior to July 1, 1976, contribute a percentage of their earned salaries based upon entry age as determined by consulting actuaries. During the years ended June 30, 2022 and 2021, the employee contribution rate was 0% for both years. There are no active participants in the Plan as of June 30, 2022 and 2021.

Management's Discussion & Analysis

(Unaudited)

In July 2012, the City deposited \$210 million in pension obligation bond proceeds into the System and entered into a funding agreement with the System Board, which suspended contributions until the fiscal year beginning July 1, 2017.

As of June 30, 2022, the total pension liability of \$553.3 million less the fiduciary net position of \$401.5 million results in a net pension liability of approximately \$151.8 million. The fiduciary net position as a percentage of the total pension liability is 72.6%.

As of June 30, 2021, the total pension liability of \$578.6 million less the fiduciary net position of \$458.5 million results in a net pension liability of approximately \$120.0 million. The fiduciary net position as a percentage of the total pension liability is 79.3 %.

The System membership at June 30, 2022 is 686, which includes 461 retirees and 225 beneficiaries. The System membership at June 30, 2021 is 723. The following are the significant assumptions used to compute contribution requirements in the July 1, 2021 Actuarial Valuation Report:

- Select and ultimate rates, equal to 5.19% single equivalent investment rate of return
- 2.75% inflation rate, U.S.
- 2.85% inflation rate, Bay Area
- 3.25% long-term post-retirement benefit increases

City contributions are based on spreading costs as a level percentage of the City's total uniform payroll to July 1, 2026. The System uses the entry age normal cost method for its disclosure and reporting. During fiscal years 2022 and 2021, the City contributions were \$43.8 million and \$43.6 million to the System. The next required City contribution is projected to be approximately \$32.7 million in fiscal year 2023.

FINANCIAL STATEMENT OVERVIEW

This annual financial report consists of three parts - management's discussion and analysis (this section), the basic financial statements and required supplementary information. The basic financial statements include *Statements of Fiduciary Net Position*; *Statements of Changes in Fiduciary Net Position*; and the *Notes to the Basic Financial Statements*.

Management's Discussion & Analysis

(Unaudited)

The *Statements of Fiduciary Net Position* and the *Statements of Changes in Fiduciary Net Position* report information to assist readers in determining whether the System's finances as a whole have improved or deteriorated as a result of the year's activities. These statements report the net position of the System and the activities that caused the changes in the net position during the year, respectively.

The *Statements of Fiduciary Net Position* present information on all System assets and liabilities, with the difference between the two reported as net position restricted for pensions. Over time, increases or decreases in net position restricted for pensions may serve as a useful indicator of whether the financial condition of the System is improving or deteriorating.

While the *Statements of Fiduciary Net Position* provide information about the nature and amount of resources and obligations at year-end, the *Statements of Changes in Fiduciary Net Position* present the results of the System's activities during the fiscal year and information on the change in the net position restricted for pensions during the fiscal year. The *Statements of Changes in Fiduciary Net Position* measure the results of the System's investment performance as well as its additions from contributions and investment income and deductions for payment of benefits and administrative expenses. The *Statements of Changes in Fiduciary Net Position* can be viewed as indicators of the System's progress on the set goals of fully funding all current and past service costs and possessing sufficient additional resources to pay for current refunds of contributions and administrative and investment expenses.

The *Notes to the Basic Financial Statements* and *Required Supplementary Information* provide explanations and other information that is helpful to a full understanding of the data provided in the financial statements. The *Notes to the Basic Financial Statements* and *Required Supplementary Information* are found starting on page 24 and page 46, respectively.

Management's Discussion & Analysis

(Unaudited)

FINANCIAL ANALYSIS 2022 vs. 2021

Table 1 summarizes net position restricted for pensions as of June 30, 2022 and 2021:

Table 1 Statements of Fiduciary Net Position As of June 30, 2022 and 2021				
	June 30		Change	
	2022	2021	Amount	Percentage
Assets				
Cash and Deposits	\$ 7,494,971	\$ 6,323,835	\$ 1,171,136	18.5%
Receivables	6,218,664	2,469,425	3,749,239	151.8%
Investments	<u>448,337,582</u>	<u>503,773,621</u>	<u>(55,436,039)</u>	-11.0%
Total Assets	<u>462,051,217</u>	<u>512,566,881</u>	<u>(50,515,664)</u>	-9.9%
Liabilities				
Accounts payable	3,200	1,110	2,090	188.2%
Benefits payable	4,183,604	4,294,620	(111,016)	-2.6%
Investments payable	7,700,505	422,993	7,277,512	1720.5%
Investment management fees	300,676	361,228	(60,552)	-16.8%
Securities lending liabilities	<u>48,375,771</u>	<u>48,954,055</u>	<u>(578,284)</u>	-1.2%
Total liabilities	<u>60,563,756</u>	<u>54,034,006</u>	<u>6,529,750</u>	12.1%
Net Position				
Restricted for pensions	<u>\$ 401,487,461</u>	<u>\$ 458,532,875</u>	<u>\$ (57,045,414)</u>	-12.4%

Net position restricted for pensions decreased \$57.0 million from June 30, 2021 to June 30, 2022. The main reasons of this decrease were net investment losses of \$48.0 million and benefit payments of \$51.4 million exceeded the City pension contribution of \$43.8 million. The remaining fluctuations in receivables and investments payable are primarily due to investment trading at year-end, where the outstanding balances represent investments either sold or purchased, but not yet settled.

Management's Discussion & Analysis

(Unaudited)

Table 2 summarizes changes in net position restricted for pensions for the years ended June 30, 2022 and 2021.

Table 2 Statements of Changes in Fiduciary Net Position For the Years Ended June 30, 2022 and 2021				
	June 30		Change	
	2022	2021	Amount	Percentage
Additions				
Contributions from the City	\$ 43,820,000	\$ 43,648,000	\$ 172,000	0.4%
Net investment income/(loss)	(47,954,760)	90,191,309	(138,146,069)	-153.2%
Other additions	-	908	(908)	-100.0%
Total additions	<u>(4,134,760)</u>	<u>133,840,217</u>	<u>(137,974,977)</u>	-103.1%
Deductions				
Benefits to members and beneficiaries	51,450,001	52,697,378	(1,247,377)	-2.4%
Administrative expenses	<u>1,460,653</u>	<u>1,584,654</u>	<u>(124,001)</u>	-7.8%
Total deductions	<u>52,910,654</u>	<u>54,282,032</u>	<u>(1,371,378)</u>	-2.5%
Changes in net position	(57,045,414)	79,558,185	(136,603,599)	-171.7%
Net position restricted for pensions				
Beginning of year	<u>458,532,875</u>	<u>378,974,690</u>	<u>79,558,185</u>	21.0%
End of year	<u>\$ 401,487,461</u>	<u>\$ 458,532,875</u>	<u>\$ (57,045,414)</u>	-12.4%

During fiscal year 2022, the City of Oakland contributed \$43.8 million to the System. In addition, the System's net investment losses for the year ended June 30, 2022 were \$48.0 million, mainly due to net depreciation in fair value of the investment portfolio. The time-weighted annual return for the year ended June 30, 2022 was -10.4%, compared to a benchmark return of -11.9% and an actuarial expected rate of return of 5.19 %.

Management's Discussion & Analysis

(Unaudited)

FINANCIAL ANALYSIS 2021 vs. 2020

Table 3 summarizes net position restricted for pensions as of June 30, 2021 and 2020.

Table 3 Statements of Fiduciary Net Position As of June 30, 2021 and 2020				
	June 30		Change	
	2021	2020	Amount	Percentage
Assets				
Cash and cash equivalents	\$ 6,323,835	\$ 6,345,777	\$ (21,942)	-0.3%
Receivables	2,469,425	8,099,428	(5,630,003)	-69.5%
Investments	503,773,621	404,700,887	99,072,734	24.5%
Total Assets	<u>512,566,881</u>	<u>419,146,092</u>	<u>93,420,789</u>	22.3%
Liabilities				
Accounts payable	1,110	8,161	(7,051)	-86.4%
Benefits payable	4,294,620	4,431,728	(137,108)	-3.1%
Investments payable	422,993	13,548,872	(13,125,879)	-96.9%
Investment management fees payable	361,228	278,835	82,393	29.5%
Securities lending liabilities	48,954,055	21,903,806	27,050,249	123.5%
Total liabilities	<u>54,034,006</u>	<u>40,171,402</u>	<u>13,862,604</u>	34.5%
Net Position				
Restricted for pensions	<u>\$ 458,532,875</u>	<u>\$ 378,974,690</u>	<u>\$ 79,558,185</u>	21.0%

Net position restricted for pensions increased \$79.6 million from June 30, 2021 to June 30, 2022. The main sources of this increase were City contribution of \$43.6 million and net investment income of \$90.2 million were more than offset by benefit payments of \$52.7 million. The remaining fluctuations in receivables and investments payable are primarily due to investment trading at year-end, where the outstanding balances represent investments either sold or purchased, but not yet settled.

Management's Discussion & Analysis

(Unaudited)

Table 4 summarizes changes in net position restricted for pensions for the years ended June 30, 2021 and 2020.

Table 4 Statements of Changes in Fiduciary Net Position For the Years Ended June 30, 2021 and 2020				
	June 30		Change	
	2021	2020	Amount	Percentage
Additions				
Contributions	\$ 43,648,000	\$ 43,409,000	\$ 239,000	0.6%
Net investment income	90,191,309	6,996,833	83,194,476	1189.0%
Other additions	908	132	776	587.9%
Total additions	<u>133,840,217</u>	<u>50,405,965</u>	<u>83,434,252</u>	165.5%
Deductions				
Benefits to members and beneficiaries	52,697,378	54,619,079	(1,921,701)	-3.5%
Administrative expenses	<u>1,584,654</u>	<u>1,522,910</u>	<u>61,744</u>	4.1%
Total deductions	<u>54,282,032</u>	<u>56,141,989</u>	<u>(1,859,957)</u>	-3.3%
Changes in net position	79,558,185	(5,736,024)	85,294,209	1487.0%
Net position restricted for pensions				
Beginning of year	378,974,690	384,710,714	(5,736,024)	-1.5%
End of year	<u>\$ 458,532,875</u>	<u>\$ 378,974,690</u>	<u>\$ 79,558,185</u>	21.0%

During fiscal year 2021, the City of Oakland contributed \$43.6 million to the System. In addition, the System's net investment income for the year ended June 30, 2021 was \$90.1 million, mainly due to net appreciation in fair value of the investment portfolio. The time-weighted annual return for the year ended June 30, 2021 was 24.2%, compared to a benchmark return of 22.3% and an actuarial expected rate of return of 5.29 %.

REQUESTS FOR ADDITIONAL INFORMATION

This financial report is designed to provide a general overview of the System's finances and to account for the money that the System receives. Questions concerning any of the information provided in this report or requests for additional information should be addressed to:

Retirement System
City of Oakland
150 Frank H Ogawa Plaza, Suite 3349
Oakland, CA 94612

Financial Statements

Oakland Police and Fire Retirement System **Statements of Fiduciary Net Position** **June 30, 2022 and 2021**

	2022	2021
Assets		
Cash and Cash Equivalents	\$ 7,494,971	\$ 6,323,835
Receivables:		
Interest Receivable	813,441	758,877
Dividends Receivable	279,524	271,634
Investments Receivable	4,911,786	1,228,684
Retired Members and Beneficiaries	102,906	103,688
Miscellaneous	111,007	106,542
Total Receivables	6,218,664	2,469,425
Investments, at Fair Value:		
Short-Term Investments	7,474,421	7,786,908
Bonds	130,126,766	134,380,629
Domestic Equities and Mutual Funds	158,144,787	210,506,356
International Equities and Mutual Funds	47,911,190	58,539,803
Alternative Investments	56,334,733	44,016,067
Foreign Currency Contracts, Net	-	(7,612)
Securities Lending Collateral	48,345,685	48,551,470
Total Investments	448,337,582	503,773,621
Total Assets	462,051,217	512,566,881
Liabilities		
Accounts Payable	3,200	1,110
Benefits Payable	4,183,604	4,294,620
Investments Payable	7,700,505	422,993
Investment Management Fees Payable	300,676	361,228
Securities Lending Liabilities	48,375,771	48,954,055
Total Liabilities	60,563,756	54,034,006
Net Position Restricted for Pensions	\$ 401,487,461	\$ 458,532,875

See accompanying notes to the basic financial statements.

Financial Statements

Oakland Police and Fire Retirement System Statements of Changes in Fiduciary Net Position Years Ended June 30, 2022 and 2021

	2022	2021
Additions		
Contributions from the City	\$ 43,820,000	\$ 43,648,000
Investment Income:		
Net Appreciation/(Depreciation) in Fair Value of Investments	(54,534,753)	84,719,944
Interest	4,134,111	3,965,167
Dividends	3,768,733	2,735,230
Less: Investment Expenses	(1,475,655)	(1,354,640)
Securities Lending Income:		
Securities Lending Earnings	264,447	105,651
Securities Lending Expenses, Net of Rebates	(111,643)	19,957
Net Securities Lending Income	152,804	125,608
Net Investment Income/(Loss)	\$ (47,954,670)	90,191,309
Claims and Settlements	-	26
Other Income	-	882
Total Additions	(4,134,760)	133,840,217
Deductions		
Benefits to Members and Beneficiaries:		
Retirement	31,495,125	32,157,272
Disability	18,418,545	18,803,904
Death	1,536,331	1,736,202
Total Benefits to Members and Beneficiaries	51,450,001	52,697,378
Administrative Expenses	1,460,653	1,584,654
Total Deductions	52,910,654	54,282,032
Change in Net Position	\$ (57,045,414)	79,558,185
Net Position Restricted for Pensions		
Beginning of Year	458,532,875	378,974,690
End of Year	\$ 401,487,461	\$ 458,532,875

See accompanying notes to the basic financial statements.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

1. Description of the Oakland Police and Fire Retirement System

The Oakland Police and Fire Retirement System (System) is a closed, single-employer defined benefit pension plan (Plan) established by the City of Oakland (City) Charter. The System is governed by a board of seven trustees (Board); the City Mayor or his/her designate, three Mayoral appointees approved by the City Council, an elected active or retired member of the Police Department, an elected active or retired member from the Fire Department, and an elected member position which alternates between the Police Department and Fire Department membership. Trustees receive no compensation. As a result of a City Charter amendment, known as Measure R, approved by the electorate on June 8, 1976, membership in the Plan is limited to uniformed employees hired prior to July 1, 1976.

The System is exempt from the regulations of the Employee Retirement Income Security Act of 1974. The System is also exempt from federal and California income taxes.

The System is considered to be a part of the City's financial reporting entity and is included in the City's basic financial statements as a pension trust fund. The financial statements of the System are intended to present only the plan net position and changes in plan net position of the System. They do not purport to, and do not, present fairly the financial position of the City as of June 30, 2022 and 2021, and the changes in its financial position for the years then ended in conformity with accounting principles generally accepted in the United States of America. The City's basic financial statements can be obtained from the Finance Department, Controller's Bureau, City of Oakland, 150 Frank H. Ogawa Plaza, Suite 6353; Oakland, California 94612.

a) System Membership

At June 30, 2022 and 2021, the System membership consisted of only retirees and beneficiaries. The System's membership is as follows:

Retirees and Beneficiaries Currently Receiving Benefits		
	2022	2021
Police	422	439
Fire	264	284
Total	686	723

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

b) Basic Benefit Provisions

The City Charter establishes plan membership, contribution, and benefit provisions. The System provides that any member who completes at least 25 years of service, regardless of age, or completes 20 years of service and attains age 55, or has attained age 65, is eligible for retirement benefits. The basic retirement allowance equals 50% of the compensation attached to the average rank held during the three years immediately preceding retirement, plus an additional allowance of 1 and 2/3% of such compensation for each year of service (up to ten) subsequent to (a) qualifying for retirement and (b) July 1, 1951. However, any member retiring at age 65 with less than 20 years of service shall receive a reduced retirement allowance based upon the number of years of service. A member is eligible for early retirement benefits after 20 to 24 years of service with a retirement allowance based upon 40% to 48% of the compensation attached to the average rank held during the three years preceding retirement. Additionally, a member with 10 to 19 years of service may retire and, on or after the 25th anniversary of his/her date of employment may receive a retirement allowance based upon 20% to 38% of the compensation attached to the average rank held during the three years preceding retirement.

The System also provides for various death, disability, and survivors' benefits. Death and disability benefits are paid to eligible members who became disabled or passed away prior to retirement. If the member's death or disability is duty related, then the surviving spouse or member is paid a pension equivalent to an immediate service retirement. The duty related death or disability pension is paid at a level no less than 50% of the pay attached to the rank. If a death occurs after retirement, then a one-time payment of \$1,000 is paid to the member's designated beneficiary.

After retirement, members receive benefits based on a fixed monthly dollar amount. Pension amounts change based on changes to the compensation attached to the average rank. Upon a retiree's death, benefits are continued to an eligible surviving spouse at a two-thirds level for service and non-duty disabled retirees and at a 100% level for retirements for duty disability.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

2. Summary of Significant Accounting Policies

a) Basis of Presentation

The financial statements are prepared in accordance with U.S. generally accepted accounting principles as applicable to governmental organizations. The System adheres to the reporting requirements established by the Governmental Accounting Standards Board (GASB).

b) Measurement Focus and Basis of Accounting

The financial statements are prepared on a flow of economic resources measurement focus using the accrual basis of accounting. Contributions are recognized in the period in which the contributions are due pursuant to legal requirements as well as statutory or contractual requirements, and benefits and refunds are recognized when payable under plan provisions.

c) Methods Used to Value Investments

Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Investments that do not have an established market are reported at estimated fair values based on the net asset value as determined by the fund manager based on quoted market prices of fund holdings or values provided by the custodian or the applicable money manager. Purchases and sales of investments are recorded on a trade date basis.

d) Use of Estimates

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

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

3. Contributions

In accordance with the City Charter, active members hired after July 1, 1951, and prior to July 1, 1976, contributed a percentage of their earned salaries based upon entry age as determined by consulting actuaries. Since fiscal year 2015, there were no remaining active members in the System.

In March 1997, the City issued pension obligation bonds and deposited \$417 million into the System to pay the City's contributions through June 2011. In accordance with an agreement entered into at the time the pension obligation bonds were issued in 1997, the City was not expected to contribute until July 2011. In the year ended June 30, 2005, the City transferred excess proceeds of \$17.7 million from the Oakland Joint Powers Financing Authority Refunding Revenue 2005 Series B Bond to fund a portion of the City's future obligation to the System.

Effective July 1, 2011, the City resumed contributing to the System. The City contributed \$45.5 million in the year ended June 30, 2012. Using the current actuarial cost method, these contributions are based on spreading costs as a level percentage of all uniformed employees' compensation through June 30, 2026. Budgeted administrative expenses are included in the City contribution rates. The City must contribute, at a minimum, such amounts as are necessary, on an actuarial basis, to provide assets sufficient to meet benefits to be paid to plan members.

On July 30, 2012, the City contributed \$210 million to the System. As a result of a funding agreement entered into between the System's Board and the City no additional contributions were required until July 1, 2017. The City resumed contributions to the System on July 1, 2017. The City contributed \$43.82 million and \$43.65 million in the years ended June 30, 2022 and 2021, respectively. The next required contribution for fiscal year 2023 is \$32.71 million.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

4. Cash, Deposits and Investments

a) Investment Policy

The System's investment policy authorizes investment in U.S. equities, international equities, U.S. fixed income instruments including U.S. Treasury notes and bonds, government agency mortgage backed securities, U.S. corporate notes and bonds, collateralized mortgage obligations, Yankee bonds and non-U.S.-issued fixed income securities denominated in foreign currencies. The System's investment portfolio is managed by external investment managers, except for the bond iShares which are managed internally. During the years ended June 30, 2022 and 2021, the number of external investment managers was eleven and twelve, respectively.

The System investments are also restricted by the City Charter. In November 2006, City voters passed Measure M to amend the City Charter to allow the System's Board to invest in non-dividend paying stocks and to change the asset allocation structure from 50% equities and 50% fixed income to the Prudent Person Standard as defined by the California Constitution.

The System's investment policy limits fixed income investments to a maximum average duration of 10 years and a maximum remaining term to maturity (single issue) at purchase of 30 years, with targeted portfolio duration of between 3 to 8 years and targeted portfolio maturity of 15 years. The System's investment policy allows the fixed income managers to invest in fixed income instruments and some exposure to investments below an investment grade rating, as long as the portfolio maintains an average credit quality of BBB (investment grade using Standard & Poor's, Moody's or Fitch ratings).

The System's investment policy states that investments in securities known as collateralized mortgage obligations (CMOs) shall be limited to a maximum of 20% of a broker account's fair value with no more than 5% in any one issue. CMOs are mortgage-backed securities that create separate pools of pass-through rates for different classes of bondholders with varying maturities. The fair values of CMOs are considered sensitive to interest rate changes because they have embedded options.

The investment policy allows for each fixed income asset manager to have a maximum of 10% of any single security investment in their individual portfolios with the exception of U.S. government securities, which is allowed to have a maximum of 25% in each manager's portfolio.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The following was the Board's adopted asset allocation policy as of June 30, 2022 and 2021:

Target Allocation		
Asset Class	June 30, 2022	June 30, 2021
Fixed Income	21%	21%
Credit	2	2
Covered Calls	5	5
Domestic Equity	40	40
International Equity	12	12
Crisis Risk Offset	20	20
Total	100%	100%

The Board's target allocation does not include cash and cash equivalents, which are designated for approved administrative budget purposes.

b) Concentrations

GASB Statement No. 67 require the disclosure of investments in any one organization that represent 5 percent or more of the System's fiduciary net position. As of June 30, 2022, the System had investments issued by the following organizations that exceeded 5% of its fiduciary net position: Northern Trust Company (18.4%), Vanguard Group (7.3%), and Wellington Select Quality Equity, LP (5.2%). As of June 30, 2021, the System's investment in the Northern Trust Russell 1000 Growth Index Fund represented 24.23% of its fiduciary net position.

c) Rate of Return

The money-weighted rate of return is a measure of the rate of return for an asset or portfolio of assets that incorporates the size and timing of cash flows. For the years ended June 30, 2022 and 2021, the annual money-weighted rates of return on pension plan investments, net of pension plan investment expenses, were -10.24% and 24.43%, respectively.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

d) Cash and Cash Equivalents

As of June 30, 2022 and 2021, cash and cash equivalents consisted of cash in treasury held in the City's cash and investment pool as well as cash deposits held in bank and with a custodian. Funds in the City Treasury are invested according to the investment policy adopted by the City Council. Interest earned in the City Treasury is allocated monthly to all participants based on the average daily cash balance maintained by the respective funds. Information regarding the characteristics of the entire investment pool can be found in the City's June 30, 2022 and 2021 basic financial statements. As of June 30, 2022 and 2021, the System's share of the City's investment pool totaled \$7,487,892 and \$6,318,773, respectively. The System also had cash not included in the City's investment pool. As of June 30, 2022 and 2021, the System's cash and cash deposits not held in the City's investment pool totaled \$7,079 and \$5,062, respectively.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

e) Hierarchy of Inputs

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; and Level 3 inputs are significant unobservable inputs.

The System has the following recurring fair value measurements as of June 30, 2022:

Recurring Fair Value Measurements As of June 30, 2022				
	2022			
	Level One	Level Two	Level Three	Total
Investments by fair value level:				
Short-Term Investments	\$ -	\$ 1,497,607	\$ -	\$ 1,497,607
Bonds	15,606,180	99,275,321	-	114,881,501
Domestic Equities and Mutual Funds	63,509,351	-	-	63,509,351
International Equities and Mutual Funds	47,543,916	-	367,274	47,911,190
Alternative Investments	30,599,372	-	-	30,599,372
Total investments by fair value level	<u>\$ 157,258,819</u>	<u>\$100,772,928</u>	<u>\$ 367,274</u>	<u>258,399,021</u>
Investments measured at net asset value (NAV):				
Short-Term Investment Funds				5,976,814
Fixed Income Funds				15,245,265
Domestic Equities and Mutual Funds				94,635,436
Hedge Fund				9,894,309
Venture Capital Fund				15,841,052
Securities Lending Collateral - Short-Term Investment Fund				48,345,685
Total investments measured at NAV				<u>189,938,561</u>
Total investments measured at fair value				<u>\$448,337,582</u>

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The System has the following recurring fair value measurements as of June 30, 2021:

Recurring Fair Value Measurements As of June 30, 2021			
	2021		
	Level One	Level Two	Total
Investments by fair value level:			
Bonds	\$ 12,635,465	\$ 104,543,460	\$ 117,178,925
Domestic Equities and Mutual Funds	93,555,401	707,364	94,262,765
International Equities and Mutual Funds	58,539,803	-	58,539,803
Alternative Investments	43,940,518	75,549	44,016,067
Total investments by fair value level	<u>\$ 208,671,187</u>	<u>\$ 105,326,373</u>	<u>313,997,560</u>
Investments measured at net asset value (NAV):			
Short-Term Investment Funds			7,786,908
Fixed Income Funds			17,201,704
Domestic Equities and Mutual Funds			116,243,591
Foreign Currency Contracts, Net			(7,612)
Securities Lending Collateral - Short-Term Investment Fund			48,551,470
Total investments measured at NAV			<u>189,776,061</u>
Total investments measured at fair value			<u>\$ 503,773,621</u>

Investments measured at NAV represent commingled funds where fair value is measured based on the System's pro rata share of the total NAV.

Investments Measured at Net Asset Value As of June 30, 2022			
	2021		
	June 30, 2022	Redemption Frequency	Redemption Notice Period
Investments measured at net asset value (NAV):			
Short-Term Investment Funds	\$ 5,976,814	n/a	n/a
Fixed Income Funds	6,741,756	n/a	n/a
Fixed Income Funds	8,503,509	n/a	15 days for < \$10 million; 60 days for ≥ \$10 million
Domestic Equities and Mutual Funds	20,739,219	Monthly	10 days
Domestic Equities and Mutual Funds	73,896,217	n/a	n/a
Hedge Fund	9,894,309	Monthly*	30 days
Venture Capital Fund	15,841,052	Monthly	10 days
Securities Lending Collateral - Short-Term Investment Fund	<u>48,345,685</u>	n/a	n/a
Total investments measured at NAV	<u>\$ 189,938,561</u>		
* For full redemptions, a 5% audit holdback is applied that is then paid after the audit is finalized.			

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

f) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. As described previously, the System's investment policy limits fixed income investments to a maximum average duration of 10 years and a maximum remaining term to maturity (single issue) at purchase of 30 years, with targeted portfolio duration of between 3 to 8 years and targeted portfolio maturity of 15 years. The weighted average duration for the System's fixed income investment portfolio excluding fixed income short-term investments, foreign currency contracts, and securities lending investments was 7.59 years as of June 30, 2022, and 7.37 years as of June 30, 2021.

The following summarizes the System's fixed income investments by category as of June 30, 2022 and 2021. As of June 30, 2022, the System held exchange cleared swaps of \$70,497 in a liability position that is not included in the tables below.

Short-Term Investment Duration				
Investment Type	2022		2021	
	Fair Value	Modified Duration (Years)	Fair Value	Modified Duration (Years)
Short-Term Investment Funds	\$7,474,421	n/a	\$7,786,908	n/a
Foreign Currency Exchange Contracts, Net	-	n/a	(7,612)	n/a

Long-Term Investment Duration				
Investment Type	2022		2021	
	Fair Value	Modified Duration (Years)	Fair Value	Modified Duration (Years)
Fixed Income Investments				
U.S. Government Bonds				
U.S. Treasuries	\$ 25,417,687	6.53	\$ 18,816,292	5.79
Government Agencies	29,893,654	8.41	32,516,334	8.26
Total U.S. Government Bonds	55,311,341		51,332,626	
Corporate and Other Bonds				
Corporate Bonds	74,807,108	7.63	82,957,273	7.38
Other Government Bonds	78,814	6.97	90,730	7.90
Total Corporate and Other Bonds	74,885,922		83,048,003	
Total Fixed Income Investments	\$ 130,197,263	7.59	\$134,380,629	7.37
Securities Lending Collateral	\$ 48,345,685		\$ 48,551,470	

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

g) Fair Value Highly Sensitive to Change in Interest Rates

The terms of a debt investment may cause its fair value to be highly sensitive to interest rate changes. The System has invested in CMOs, which are mortgage-backed bonds that pay pass-through rates with varying maturities. The fair values of CMOs are considered sensitive to interest rate changes because they have embedded options, which are triggers related to quantities of delinquencies or defaults in the loans backing the mortgage pool. If a balance of delinquent loans reaches a certain threshold, interest and principal that would be used to pay junior bondholders is instead directed to pay off the principal balance of senior bondholders, shortening the life of the senior bonds.

The following are the System's investments in CMOs at June 30, 2022:

Investments in CMOs at June 30, 2022				
Investment Type	Weighted Average Coupon Rate	Weighted Average Maturity (Years)	Fair Value	Percent of Total Investments Fair Value
Mortgage-backed securities	2.39%	24.36	\$20,820,467	4.64%

The following are the System's investments in CMOs at June 30, 2021:

Investments in CMOs at June 30, 2020				
Investment Type	Weighted Average Coupon Rate	Weighted Average Maturity (Years)	Fair Value	Percent of Total Investments Fair Value
Mortgage-backed securities	2.72%	23.28	\$20,789,617	4.13%

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

h) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation.

The following provides information concerning the credit risk of fixed income securities as of June 30, 2022 and 2021:

Short-Term Investment Ratings				
Investment Type	2022		2021	
	S&P / Moody's Rating	Fair Value	S&P / Moody's Rating	Fair Value
Short-Term Investment Funds	Not Rated	\$7,474,421	Not Rated	\$7,786,908
Foreign Currency Exchange Contracts, Net	Not Rated	-	Not Rated	(7,612)

Long-Term Investment Ratings				
S&P / Moody's Rating	2022		2021	
	Fair Value	Percentage of Total Fair Value	Fair Value	Percentage of Total Fair Value
AAA/Aaa	\$ 64,115,811	49.5%	\$ 53,058,908	39.4%
AA/Aa	27,835,706	21.1%	34,226,943	25.5%
A/A	12,809,876	9.8%	14,322,857	10.7%
BBB/Baa	15,713,952	12.1%	19,359,029	14.4%
BB/Ba	1,196,674	0.9%	1,831,903	1.4%
B/B	21,734	0.0%	9,550,906	7.1%
CCC/CCC	8,503,509	6.5%	-	-
Unrated	(70,497)	0.0%	2,030,083	1.5%
	<u>\$130,126,766</u>	<u>100.00%</u>	<u>\$134,380,629</u>	<u>100.00%</u>

Securities Lending Ratings		
S&P / Moody's Rating	2022 Fair Value	2021 Fair Value
Not Rated	\$ 48,345,685	\$ 48,551,470

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

i) Custodial Credit Risk

Custodial credit risk is the risk that, in the event of a failure of a depository financial institution or counterparty to a transaction, there will be an inability to recover the value of deposits, investments, or collateral securities in the possession of an outside party.

The California Government Code requires that governmental securities or first trust deed mortgage notes be used as collateral for demand deposits and certificates of deposit at 110 percent and 150 percent, respectively, of all deposits not covered by federal deposit insurance. As the City holds cash and certificates of deposit on behalf of the System, the collateral must be held by the pledging financial institution's trust department and is considered held in the City's name. For all other System deposits, the collateral must be held by the pledging financial institution's trust department and is considered held in the System's name.

The City, on behalf of the System, does not have any funds or deposits that are not covered by depository insurance, which are either uncollateralized, collateralized with securities held by the pledging financial institution, or collateralized with securities held by the pledging financial institution's trust department or agent, but not in the City's name. The System does not have any investments that are not registered in the name of the System and are either held by the counterparty or the counterparty's trust department or agent but not in the System's name.

j) Foreign Currency Risk

Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair values of an investment or deposit. Currency hedging is allowed under the System's investment policy for defensive purposes only. The investment policy limits currency hedging to a maximum of 25% of the portfolio value.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The following summarizes the System's investments denominated in foreign currencies as of June 30, 2022 and 2021:

Investments Denominated in Foreign Currencies As of June 30, 2022 and 2021		
Foreign Currency	Fair Value	
	June 30, 2022	June 30, 2021
Australian Dollar	\$ 1,993,400	\$ 1,456,518
Brazilian Real	772,622	901,768
British Pound	3,154,218	3,406,619
Canadian Dollar	3,290,894	3,395,211
Danish Krone	895,274	1,386,946
Euro	6,894,262	8,778,172
Hong Kong Dollar	3,464,161	3,664,544
Indonesian Rupiah	555,889	221,352
Japanese Yen	4,662,742	5,888,554
Malaysian Ringgit	65,343	-
Mexican Peso	375,149	108,650
New Israeli Shekel	310,309	-
Singapore Dollar	-	839,140
South African Rand	654,291	575,339
South Korean Won	-	212,370
Swedish Krona	831,667	1,488,233
Swiss Franc	1,734,147	2,344,951
Turkish Lira	133,896	524,786
Total	<u>\$ 29,788,264</u>	<u>\$ 35,193,153</u>

k) Securities Lending Transactions

The System's investment policy authorizes participation in securities lending transactions, which are short-term collateralized loans of the System's securities to broker-dealers with a simultaneous agreement allowing the System to invest and receive earnings on the collateral received. All securities loans can be terminated on demand by either the System or the borrower, although the average term of loans is one week.

The administrator of the System's securities lending activities is responsible for maintaining an adequate level of collateral in an amount equal to at least 102% of market value of loaned U.S. government securities, common stock and other equity securities, bonds, debentures, corporate debt securities, notes, and mortgages or other obligations held in U.S. Dollars. The minimum collateral level is 105% of market value of loaned securities for any securities held in currencies other than the U.S. Dollar. Collateral received may include cash, letters of credit, or securities. The term to maturity of the loaned securities is generally not matched with the term to maturity of the investment of the said collateral. If securities collateral is received, the System cannot pledge or sell the collateral securities unless the borrower defaults.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

As of June 30, 2022 and 2021, management believes the System has minimized its credit risk exposure to borrowers because the amounts held by the System as collateral exceeded the securities loaned by the System. The System's contract with the administrator requires it to indemnify the System if the borrowers fail to return the securities (and if the collateral is inadequate to replace the securities borrowed) or fails to pay the System for income distributions by the securities' issuers while the securities are on loan.

The following summarizes investments in securities lending transactions and collateral received at June 30, 2022 and 2021:

Securities Lending as of June 30, 2022			
Investment Type	Fair Value of Loaned Securities		
	For Cash Collateral	For Non-Cash Collateral	Total
Securities on Loan for Cash Collateral			
U.S. Government and Agencies	\$ 8,379,326	\$ -	\$ 8,379,326
U.S. Corporate Bonds	10,881,429	-	10,881,429
U.S. Equities	28,047,680	7,249,351	35,297,031
Non-U.S. Equities	-	252,473	252,473
Total investments in securities lending transactions	<u>\$ 47,308,435</u>	<u>\$ 7,501,824</u>	<u>\$54,810,259</u>
Collateral Received	<u>\$ 48,376,771</u>	<u>\$ 7,742,587</u>	<u>\$56,119,358</u>

Securities Lending as of June 30, 2021			
Investment Type	Fair Value of Loaned Securities		
	For Cash Collateral	For Non-Cash Collateral	Total
Securities on Loan for Cash Collateral			
U.S. Government and Agencies	\$ 9,621,902	\$ 5,095,643	\$ 14,717,545
U.S. Corporate Bonds	8,852,719	-	8,852,719
U.S. Equities	29,098,075	97,296	29,195,371
Non-U.S. Equities	182,194	514,214	696,408
Total investments in securities lending transactions	<u>\$ 47,754,890</u>	<u>\$ 5,707,153</u>	<u>\$ 53,462,043</u>
Collateral Received	<u>\$ 48,954,055</u>	<u>\$ 5,840,751</u>	<u>\$ 54,794,806</u>

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

l) Derivative Instruments

The Retirement System reports its derivative instruments under the provisions of GASB Statement No. 53, *Accounting and Financial Reporting for Derivatives Instruments*. Pursuant to the requirements of this statement, the Retirement System has provided a summary of derivative instrument activities during the reporting periods presented and the related risks.

As of June 30, 2022 and 2021, the derivative instruments held by the Retirement System are considered investments and not hedges for accounting purposes. All investment derivatives are reported as investments at fair value in the statements of fiduciary net position. The gains and losses arising from this activity are recognized as incurred in the statement of changes in fiduciary net position. All investment derivatives discussed below are included within the investment risk schedules, which precede this subsection. Investment derivative instruments are disclosed separately to provide a comprehensive and distinct view of this activity and its impact on the overall investment portfolio valuation methods used by the System are described in more detail in Note 2.c). The fair value of the exchange traded derivative instruments, such as futures, options, rights, and warrants are based on quoted market prices. The fair values of forward foreign currency contracts are determined using a pricing service, which uses published foreign exchange rates as the primary source. The fair values of swaps are determined by the System's investment managers based on quoted market prices of the underlying investment instruments.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The tables below present the notional amounts, the fair values, and the related net appreciation (depreciation) in the fair value of derivative instruments that were outstanding at June 30, 2022 and 2021:

As of and for the Year Ended June 30, 2022			
Derivative Type / Contract	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Options			
Equity Contracts	\$ 59	(243,640)	(244,104)
Swaps			
Credit Contracts	2,554,200	(70,497)	(147,933)
Total	<u>\$ 2,554,259</u>	<u>\$ (314,137)</u>	<u>\$ (96,171)</u>

As of and for the Year Ended June 30, 2021			
Derivative Type / Contract	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Forwards			
Foreign Currency Exchange Contracts	\$ -	\$ (7,612)	\$ -
Options			
Equity Contracts	72	(351,506)	(58,431)
Swaps			
Credit Contracts	1,990,000	50,816	7,768
Total	<u>\$ 1,990,072</u>	<u>\$ (308,302)</u>	<u>\$ (50,663)</u>

Counterparty Credit Risk

The System is not exposed to credit risk on non-exchange traded derivative instruments that are in liability positions. As of June 30, 2022 and 2021, the System held forward currency contracts in liability positions of \$0 and \$7,612, respectively. The System's counterparties to these contract held credit ratings of A or better, as assigned by one or more of the major credit rating organizations (S&P, Moody's and/or Fitch).

Custodial Credit Risk

The custodial credit risk disclosure for exchange traded derivative instruments is made in accordance with the custodial credit risk disclosure requirements of GASB Statement No. 40. At June 30, 2022 and 2021, all of the System's investments in derivative instruments are held in the System's name and are not exposed to custodial credit risk.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

Interest Rate Risk

The tables below describe the maturity periods of the derivative instruments exposed to interest rate risk at June 30, 2022 and 2021.

Derivative Interest Rate Risk as of June 30, 2022			
Derivative Type / Contract	Fair Value	Maturities	
		Less than 1 Year	1-5 years
Options			
Equity Contracts	\$ (243,640)	\$ (243,640)	\$ -
Swaps			
Credit Contracts	(70,497)	-	(70,497)
Total	<u>\$ (314,137)</u>	<u>\$ (243,640)</u>	<u>\$ (70,497)</u>

Derivative Interest Rate Risk as of June 30, 2021			
Derivative Type / Contract	Fair Value	Maturities	
		Less than 1 Year	1-5 years
Forwards			
Forward Foreign Currency Exchange Contracts	\$ (7,612)	\$ (7,612)	\$ -
Options			
Equity Contracts	(351,506)	(351,506)	-
Swaps			
Credit Contracts	50,816	-	50,816
Total	<u>\$ (308,302)</u>	<u>\$ (359,118)</u>	<u>\$ 50,816</u>

Foreign Currency Risk

At June 30, 2022, the System had no foreign currency risk. At June 30, 2021 the System was exposed to foreign currency risk on \$7,612 of its investments in forwards denominated in the Mexican peso.

Contingent Features

At June 30, 2022 and 2021, the System held no positions in derivatives containing contingent features.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

5. Net Pension Liability

The components of the net pension liability of the City at June 30, 2022 and 2021, are as follows:

Net Pension Liability of the City At June 30, 2022 and 2021		
	June 30, 2022	June 30, 2021
Total pension liability	\$ 553,287,414	\$ 578,579,190
Less: Plan fiduciary net position	(401,487,461)	(458,532,875)
City's net pension liability	<u>\$ 151,799,953</u>	<u>\$ 120,046,315</u>
Plan fiduciary net position as a percentage of the total pension liability	72.6%	79.3%

a) Actuarial Method and Assumptions

The total pension liability as of June 30, 2022 was determined based on an actuarial valuation as of June 30, 2021, using the entry age normal actuarial cost method and the following actuarial assumptions, applied to all periods included in the measurement.

Actuarial Assumptions	
Investment Rate of Return	5.19%
Inflation Rate, U.S.	2.75%
Inflation Rate, Bay Area	2.85%
Long-term Post-Retirement Benefit Increases	3.25%

Measurements as of the June 30, 2022 are based on the fair value of assets as of June 30, 2022 and the total pension liability as of the valuation date, June 30, 2021, updated to June 30, 2022. There were no significant events between the valuation date and the measurement date. The update only included the addition of interest cost, offset by actual benefit payments. There are no active members of the plan, and thus no service cost.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

Mortality rates for healthy lives were based on the CalPERS Healthy Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016. Mortality rates for disabled lives were based on the CalPERS Industrial Disability Mortality Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016. The mortality tables are projected to improve with MP-2017 generational mortality improvement tables, with improvements projected from a base year of 2014 (the mid-point of the CalPERS base tables).

The total pension liability as of June 30, 2021 was determined based on an actuarial valuation as of June 30, 2020, updated to June 30, 2021, using the entry age normal actuarial cost method and the actuarial assumptions as described above for the June 30, 2021 valuation, except for the assumed investment rate of return was 5.29%. Measurements as of June 30, 2021 are based on the fair value of assets as of June 30, 2021 and the total pension liability as of the valuation date, June 30, 2020, updated to June 30, 2021.

The actuarial assumptions used in the June 30, 2021 and 2020 valuations were based on the results of actuarial experience studies for the period of July 1, 2014 through June 30, 2017.

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

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

Best estimates of geometric real rates of return for each major class included in the pension plan's target asset allocation as of June 30, 2022 and 2021 are summarized in the following table:

Long-Term Expected Real Rate of Return		
Asset Class	June 30, 2021	June 30, 2020
Fixed Income	0.20%	(0.30)%
Domestic Equity	4.60	4.70
International Equity	5.50	5.00
Covered Calls	3.58	2.60
Crisis Risk Offset	1.83	1.95
Credit	2.30	2.10
Cash	(0.50)	(1.00)

b) Discount Rate

The discount rates used to measure the total pension liability were 5.19% and 5.29% as of June 30, 2022 and 2021, respectively. The projection of cash flows used to determine the discount rate assumed that the City would contribute to the Plan based on its July 1, 2012 funding agreement with the System. This agreement suspended City contributions until the fiscal year beginning July 1, 2017, after which they would resume, based upon the recommendation of the actuary, with a City Charter requirement that the Plan's liabilities be fully funded by July 1, 2026. A cash flow projection showed that the projected fiduciary net position would be greater than or equal to the benefit payments projected for each future period. Therefore, the long-term expected rate of return on Plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

c) Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the City, calculated using the discount rate, as well as what the Plan's net pension liability would be if it were calculated using a discount rate of 1-percentage-point lower or 1-percentage-point higher than the discount rate.

City's Net Pension Liability June 30, 2022			
	1% Decrease (4.19%)	Current Discount Rate (5.19%)	1% increase (6.19%)
City's net pension liability	\$199,655,233	\$151,799,953	\$110,388,515

City's Net Pension Liability June 30, 2021			
	1% Decrease (4.29%)	Current Discount Rate (5.29%)	1% increase (6.29%)
City's net pension liability	\$171,086,474	\$120,046,315	\$76,004,962

6. Reserves

Retired Member Contribution Reserve represents the total accumulated transfers from active member contributions and investments, less payments to retired members and beneficiaries.

Employer Reserve represents the total accumulated employer contributions for retirement payments. Additions include contributions from the employer, investment earnings and other income; deductions include payments to retired members and beneficiaries and administrative expenses.

The aggregate total of the System's major reserves as of June 30, 2022 and 2021 equals net position restricted for pensions and comprises the following:

Aggregate Total of the System's Major Reserves		
	2021	2021
Retired member contribution reserve	\$ 24,543,634	\$ 26,828,201
Employer reserve	376,943,827	431,704,674
Total	<u>\$ 401,487,461</u>	<u>\$ 458,532,875</u>

7. Administrative Expenses

The City provides the System with accounting and other administrative services. Staff salaries included in administrative expenses for the years ended June 30, 2022 and 2021 were \$1,250,884 and \$1,388,825, respectively.

Required Supplementary Information

For Years Ended June 30, 2022 and 2021

Schedule of Changes in the Employer's Net Pension Liability and Related Ratios (Unaudited)									
	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability									
Interest (includes interest on service cost)	\$ 33,193,734	\$ 34,680,418	\$ 36,078,037	\$ 37,621,301	\$ 44,320,094	\$ 44,931,829	\$ 42,480,394	\$ 41,262,826	\$ 42,333,496
Differences between expected and actual experience	(7,035,509)	(7,375,711)	(5,699,459)	(7,915,210)	(10,656,139)	3,027,944	6,977,470	(21,208,627)	-
Changes of assumptions	-	-	-	(1,475,030)	17,858,013	-	43,480,232	34,219,433	-
Benefit payments, including refunds of member contributions	(51,450,001)	(51,697,378)	(54,619,079)	(56,212,013)	(55,998,595)	(57,375,815)	(58,441,353)	(59,007,536)	(57,409,113)
Net change in total pension liability	(25,291,776)	(24,392,671)	(24,240,501)	(27,980,952)	(4,476,627)	(9,416,042)	34,496,743	(4,733,904)	(15,075,617)
Total pension liability – beginning	578,579,190	603,971,861	628,212,362	656,193,314	660,669,941	670,085,983	635,589,240	640,323,144	655,398,761
Total pension liability – ending (a)	<u>\$553,287,414</u>	<u>\$579,579,190</u>	<u>\$603,971,861</u>	<u>\$628,212,362</u>	<u>\$656,193,314</u>	<u>\$660,669,941</u>	<u>\$670,085,983</u>	<u>\$635,589,240</u>	<u>\$640,323,144</u>
Plan Fiduciary Net Position									
Contributions - employer	\$ 43,820,000	\$ 43,448,000	\$ 43,409,000	\$ 44,821,000	\$ 44,860,000	\$ -	\$ -	\$ -	\$ 4,441
Net investment income	(47,954,760)	90,191,309	6,996,833	21,557,961	35,446,275	50,158,795	(1,418,645)	5,438,586	66,392,409
Benefit payments, including refunds of member contributions	(51,450,001)	(52,697,378)	(54,619,079)	(56,212,013)	(55,998,595)	(57,375,815)	(58,441,353)	(59,007,536)	(57,409,113)
Administrative expense	(1,460,653)	(1,584,654)	(1,522,910)	(1,446,361)	(1,543,412)	(1,261,641)	(1,375,749)	(985,227)	(776,112)
Claims and settlements	-	908	132	13,856	9,145	70,282	3,593,096	-	-
Net change in plan fiduciary net position	(57,045,414)	79,358,185	(5,736,024)	8,734,443	22,773,413	(8,408,379)	(57,642,651)	(44,554,177)	8,211,625
Plan fiduciary net position – beginning	458,532,875	378,974,690	384,710,714	375,976,271	353,202,858	361,611,237	419,253,888	463,808,065	455,596,440
Plan fiduciary net position – ending (b)	<u>\$401,487,461</u>	<u>\$458,332,875</u>	<u>\$378,974,690</u>	<u>\$384,710,714</u>	<u>\$375,976,271</u>	<u>\$353,202,858</u>	<u>\$361,611,237</u>	<u>\$419,253,888</u>	<u>\$463,808,065</u>
City's net pension liability – ending (a) – (b)	<u>\$151,799,953</u>	<u>\$120,046,315</u>	<u>\$224,997,171</u>	<u>\$243,501,648</u>	<u>\$280,217,043</u>	<u>\$307,467,083</u>	<u>\$308,474,746</u>	<u>\$216,335,352</u>	<u>\$176,515,079</u>
Plan fiduciary net position as a percentage of the total pension liability	73%	79%	63%	61%	57%	53%	54%	66%	72%
Covered payroll	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net pension liability as a percentage of covered payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: This is a 10-year schedule. Information for additional years will be presented when available.

Required Supplementary Information

For Years Ended June 30, 2022 and 2021

Schedule of Employer Contributions (Unaudited) (dollars in millions)

	2022	2021	2020	2019	2018	2017*	2016*	2015*	2014*	2013**
Actuarially determined contribution	\$ 43.8	\$ 43.6	\$ 43.4	\$ 44.8	\$ 44.9	N/A	N/A	N/A	\$ 20.3	\$ 34.2
Contributions in relation to the actuarially determined contribution	\$ 43.8	\$ 43.6	\$ 43.4	\$ 44.8	\$ 44.9	\$ -	\$ -	\$ -	\$ -	\$ 210.0
Contribution deficiency/(excess)	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A	N/A	\$ 20.3	\$(175.8)
Covered payroll	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.1
Contributions as a percentage of covered payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	210000%

* Actuarially determined contributions are calculated based on the actuarial valuation one year prior to the beginning of the fiscal year. Although actuarial valuations were performed as of June 30, 2014, June 30, 2015, and June 30, 2016, the System did not determine an actuarially determined contribution for FY 2015-2017, based on the City's funding policy.

** In July 2012, the City of Oakland contributed \$210 million in Pension Obligation Bond (POB) proceeds to the Plan.

Schedule of Investment Returns (Unaudited)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Annual money-weighted rate of return net of investment expense	-10.24%	24.43%	2.04%	6.10%	10.57%	15.57%	-0.75%	3.90%	16.40%	9.70%

Note to Required Supplementary Information

For Years Ended June 30, 2022 and 2021

Note to Schedule of Employer Contributions

Actuarially determined contribution rates are calculated based on the actuarial valuation one year prior to the beginning of the fiscal year in which contributions are reported. Methods and assumptions used to determine contribution rates are:

Methods and Assumptions Used to Determine Contribution Rates					
Fiscal Year	Valuation Date	Discount Rate	Cost-of-Living Adjustments	Mortality	Other Significant Assumption Changes from Prior Year
2022	6/30/2020	5.19%	3.25%	CalPERS Mortality Table from the 2012-2015 experience study, excluding the 15-year projection using 90% of Scale MP-2016	None
2021	6/30/2019	5.50%	3.25%		None
2020	6/30/2018	5.50%	3.25%		Longevity Pay assumption for Fire Members was added
2019	6/30/2017	5.50%	3.25%		None
2018	6/30/2016	6.44%	3.25%		None
2017	6/30/2015	6.50%	3.25%	CalPERS Mortality Table from the 2006-2011 experience study, excluding the 20-year projection using Scale BB	None
2016	6/30/2014	6.54%	3.25%		None
2015	6/30/2013	6.75%	3.975%	RP-2000 Mortality Table from the 1997-2007 experience study, projected with Scale AA	None
2014	6/30/2012	6.75%	3.975%		None
2013	6/30/2011	6.75%	3.975%		None
2012	6/30/2010	7.00%	4.50%	RP-2000 Mortality Table from the 1997-2007 experience study	None

A complete description of the methods and assumptions used to determine contribution rates can be found in the corresponding actuarial valuation reports.

SECTION 3

INVESTMENT



Frank O. Morris
Lieutenant

Served with Oakland Police Department
April 1962 to October 1983

this page intentionally left blank

Investment Consultant's Report



2175 NW Raleigh Street
Suite 300A
Portland, OR 97210

503.226.1050
Meketa.com

December 31, 2022

Retirement Board
City of Oakland Police and Fire Retirement System
150 Frank Ogawa Plaza, Suite: 3332
Oakland, CA 94612

Dear Board Members:

This letter reviews the investment performance of the City of Oakland Police and Fire Retirement System ("the System" or "OPFRS") for the fiscal year ended June 30, 2022. During this 12-month period, the OPFRS total investment portfolio decreased -10.0% on a money-weighted, net of fees basis, while outperforming the Policy Benchmark's time-weighted return of -11.9%. The System has been effective in using its resources in a cost-effective manner to ensure that benefits continue to flow to plan participants.

Meketa serves as OPFRS' independent investment consultant. Performance data is provided by the System's custodian, Northern Trust, and is independently calculated by Meketa's performance measurement team.

A major factor influencing overall investment performance is the allocation of the OPFRS portfolio across major asset classes. As of June 30, 2022, the Covered Calls and Cash were overweight, while Fixed Income was moderately underweight relative to policy.

Over the latest 3-year period, the OPFRS portfolio produced an annualized money-weighted, net of fee return of 4.5%, outperforming its benchmark's time-weighted return of 4.1% by 40 basis points. Over the latest 5-year period, OPFRS' average annual money-weighted net return of 5.7% outperformed the Policy Benchmark by 30 basis points.

OPFRS Annualized Money-Weighted Returns As of 06/30/2022

	1 Year	3 Year	5 Year
Total Portfolio ¹	-10.0	4.5	5.7
Policy Benchmark ²	-11.9	4.1	5.4
Excess Return	1.9	0.4	0.3

Sincerely,

David Sancewich, Managing Principal, Meketa Investment Group

¹ Money-weighted & net of fees. Performance since 2005 includes securities lending.

² Evolving Policy Benchmark is time-weighted and consists of 48% Russell 3000, 12% MSCI ACWI ex USA, 20% Bbg US Universal, 20% CBOE BXM through 12/2018; 40% Russell 3000, 12% MSCI ACWI ex USA, 33% Bbg US Universal, 5% CBOE BXM, 6.7% SG Multi Alt Risk Premia, 3.3% Bbg US Treasury Long from 01/2019 through 05/2022; and 40% Russell 3000, 12% MSCI ACWI ex USA, 31% Bbg US Universal, 5% CBOE BXM, 10% SG Multi Alt Risk Premia, 2% Bbg US High Yield thereafter.

List of Investment Professionals

Domestic Equity Managers

Brown Advisory
Earnest Partners
Northern Trust Investments
Rice Hall James and Associates
Wellington Management

Fixed Income Managers

Polen Capital Credit
Ramirez Asset Management
Reams Asset Management
Wellington Management

International Equity Managers

Strategic Global Advisors

Investment Consultant

Meketa Investment Group

Covered Calls

Parametric Portfolio Associates

Custodian

Northern Trust

Crisis Risk Offset

Kepos Capital
Versor Investments

Security Lending

Northern Trust

Investment Manager Fees and Other Investment Expenses

Years Ended June 30, 2022 and June 30, 2021

	2022	2021
Investment Manager Fees		
Domestic Equity Managers	\$ 595,488	\$ 508,064
International Equity Managers	261,104	251,072
Domestic Fixed Income Managers	276,287	259,176
Covered Calls	126,276	119,828
Total Investment Manager Fees	\$ 1,259,155	\$ 1,138,140
Other Investment Fees		
Investment Consulting	\$ 100,000	\$ 100,000
Custodian Fees	116,500	116,500
Total Other Investment Fees	\$ 216,500	\$ 216,500
Total Investment Fees	\$ 1,475,655	\$ 1,354,640

Largest Stock Holdings (by Fair Value)
As of June 30, 2022

Stock	Fair Value
1. Apple	\$ 2,033,847
2. Microsoft	1,858,422
3. Republic Services	1,347,176
4. Coterra Energy	1,287,102
5. Progressive	1,139,562
6. Keysight Technologies	1,066,270
7. CBRE	1,039,741
8. Albemarle	992,028
9. D.R. Horton	976,898
10. Masco	967,877

Note: The above schedules do not reflect holdings in index funds. A complete list is available upon request.

Largest Bond Holdings (by Fair Value)
As of June 30, 2022

Description	Interest Rate	Maturity Date	Fair Value
1. U.S. Treasury	2.88%	08/15/2028	\$ 5,097,112.50
2. U.S. Treasury	2.75%	05/15/2025	4,366,312.50
3. U.S. Treasury	0.88%	09/30/2026	2,803,773.44
4. U.S. Treasury	1.63%	04/30/2023	2,440,061.13
5. U.S. Treasury	2.38%	05/15/2051	2,110,449.23
6. U.S. Treasury	1.75%	01/31/2029	1,567,386.72
7. Federal National Mortgage Association	2.50%	07/25/2052	1,389,172.27
8. U.S. Treasury	2.38%	05/15/2027	1,219,739.07
9. U.S. Treasury	2.00%	08/15/2051	1,167,005.86
10. North Shore Long Island Jewish Health Care	6.15%	11/01/2043	1,165,588.86

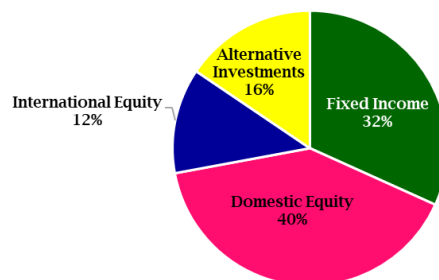
Note: The above schedules do not reflect holdings in index funds. A complete list is available upon request.

Investments by Manager/Exchange-Traded Funds (ETF)

Investment Firm	Portfolio Type	Amount
<u>Fixed Income Managers</u>		
Reams Asset Management	Core Plus	\$ 30,371,284
Ramirez Asset Management	Core	70,378,598
Vanguard Long-Term Treasury Index Fund ETF	Long Duration	10,950,584
Wellington Management	Core	6,741,756
DDJ Capital Management	High Yield/ Bank Loans	8,503,602
Total Fixed Income		\$ 126,945,824
<u>Domestic Equity Managers</u>		
Northern Trust Investments	Large Cap Core	\$ 73,995,521
Earnest Partners	Mid Cap Core	42,840,233
Rice Hall James and Associates	Small Cap Growth	13,425,905
Brown Advisory	Small Cap Value	9,922,899
Wellington Management	Defensive Equity	20,739,219
Transition Account	Short-Term	473,371
Total Domestic Equity		\$ 161,397,148
<u>International Equity Managers</u>		
Strategic Global Advisors	International	\$ 34,539,908
Vanguard Developed Markets Index Fund ETF	International	14,974,751
Total International Equity		\$ 49,514,659
<u>Alternative Managers</u>		
Parametric Portfolio Associates	Covered Calls	\$ 36,405,984
Kepos Capital	Crisis Risk Offset	9,894,309
Versor Investments	Crisis Risk Offset	\$ 15,841,052
Total Alternative Investments		62,141,345
Total Investments		<u>\$ 399,998,976</u>

The amounts presented above may vary from the amounts presented in the financial statements due to the investments by manager summary including cash and cash equivalents and presenting amounts at the manager level and the financial statements presenting amounts at the security level.

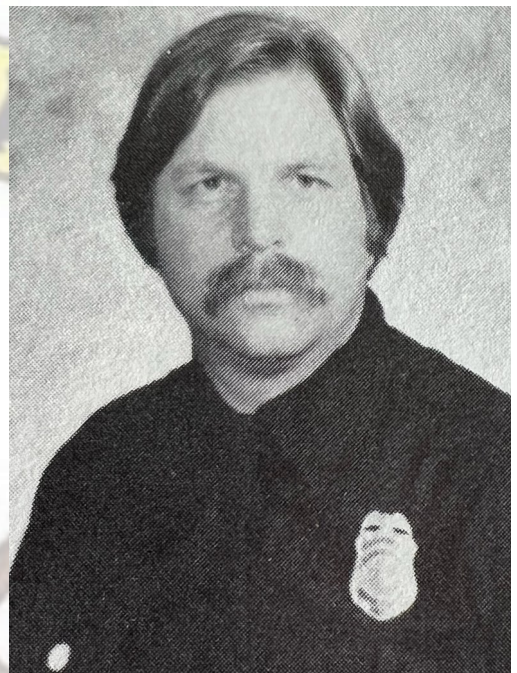
Asset Allocation As of June 30, 2022



■ Fixed Income
 ■ Domestic Equity
 ■ International Equity
 ■ Alternative Investments

SECTION 4

ACTUARIAL



Lloyd E. Salsbery

Engineer

*Served with Oakland Fire Department
December 1972 to June 2000*

this page intentionally left blank

Actuary's Certification Letter



Classic Values, Innovative Advice

Via Electronic Mail

February 17, 2023

Actuarial Certification

This is the Actuary's Certification Letter for the Actuarial Section of the Annual Report for the Oakland Police and Fire Retirement System (PFRS, the Plan) as of June 30, 2022. This letter includes references to two documents produced by Cheiron for the Plan: the Actuarial Valuation report as of June 30, 2021 (transmitted January 13, 2022) and the GASB 67/68 report as of June 30, 2022 (transmitted November 3, 2022).

Actuarial Valuation Report as of June 30, 2021

The purpose of the annual actuarial valuation report as of June 30, 2021 is to determine the actuarial funding status of the Plan on that date and to calculate an actuarially determined contribution amount in accordance with the Plan's funding agreement with the City of Oakland. The prior review was conducted by Cheiron as of June 30, 2020.

Actuarial funding is based on the Entry Age Normal Cost Method. Under this method, the employer contribution amount provides for current cost (normal cost and expected administrative expenses) plus an amount to amortize the Unfunded Actuarial Liability (UAL). All members of the Plan have retired; therefore, no normal cost has been computed, and the actuarially determined contributions are equal to the unfunded liability amortization payment plus administrative expenses.

As part of the funding agreement with the City, the UAL is expected to be amortized as level percentage of overall City Safety payroll, with payments commencing in the fiscal year beginning July 1, 2017, and completed in the year ending June 30, 2026.

For actuarial valuation purposes, Plan assets are valued at actuarial value. Under this method, the Actuarial Value of Assets recognizes one-fifth of the difference between the expected asset value (based on the 6.00% return assumption for the current Plan year) and the actual market value each year. The actuarial value is restricted to fall between 90% and 110% of the market value.

The Retirement System Board is responsible for establishing and maintaining the funding policy of the Plan.

We prepared the following schedules, which we understand will be used in the Actuarial Section of the 2022 PFRS Annual Report, based on the June 30, 2021 actuarial valuation. All historical information prior to the June 30, 2013 actuarial valuation shown in these schedules is based on information reported by Bartel Associates, who served as the actuary prior to 2013.

www.cheiron.us 1.877.CHEIRON (243.4766)

Actuary's Certification Letter

Actuarial Certification
February 17, 2023
Page 2

- Statement of Actuarial Assumptions and Methods
- Summary of Participant Data
- Development of Actuarial Gain/Loss (Analysis of Financial Experience)
- Schedule of Funding Status
- Summary of Plan Provisions

The assumptions used in this report reflect the results of an experience study performed by Cheiron covering the period from July 1, 2014 through June 30, 2017 and adopted by the Board. The assumptions used are intended to produce results that, in aggregate, reasonably approximate the anticipated future experience of the Plan.

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for funding purposes meet the requirements of the Actuarial Standards of Practice, in particular Standards No. 4, 27, 35, and 44.

GASB 67/68 Report as of June 30, 2022

The purpose of the GASB 67/68 report as of June 30, 2022 is to provide accounting and financial reporting information under GASB 67 for the Plan and under GASB 68 for the City of Oakland. This report is not appropriate for other purposes, including the measurement of funding requirements for the Plan.

For financial reporting purposes, the Total Pension Liability (TPL) is based on the June 30, 2021 actuarial valuation updated to the measurement date of June 30, 2022. The update included the addition of interest cost offset by actual benefit payments.

Beginning of year measurements are based on the actuarial valuation as of June 30, 2020, updated to the measurement date of June 30, 2021. The June 30, 2022 Total Pension Liability (TPL) presented in the GASB 67/68 report was based upon the same data, plan provisions, actuarial methods, and assumptions as were used in the actuarial valuation report as of June 30, 2021.

Please refer to our GASB 67 report as of June 30, 2022 for additional information related to the financial reporting of the System. We prepared the following schedules for inclusion in the Financial Section of the 2022 PFRS Annual Report based on the June 30, 2022 GASB 67/68 report:

- Change in Net Pension Liability
- Sensitivity of Net Pension Liability to Changes in Discount Rate
- Schedule of Changes in Net Pension Liability and Related Ratios
- Schedule of Employer Contributions
- Notes to the Schedule of Employer Contributions



Actuary's Certification Letter

Actuarial Certification
February 17, 2023
Page 3

We certify that the letter was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for disclosure purposes have been prepared in accordance with our understanding of generally accepted accounting principles as promulgated by the GASB.

Disclaimers

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

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

Cheiron utilizes ProVal, an actuarial valuation application leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect our reports.

These reports are for the use of the Plan, the participating employer, and their auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of these reports is not an intended user and is considered a third party.

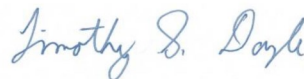
Cheiron's reports were prepared solely for the Plan for the purposes described herein, except that the Plan and its auditors may rely on these reports solely for the purpose of completing an audit related to the matters herein. Other users of these reports are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. These reports do not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

Respectfully Submitted,
Cheiron



Graham A. Schmidt, ASA, EA, FCA, MAAA
Consulting Actuary
703-893-1456, x1137
gschmidt@cheiron.us



Timothy S. Doyle, ASA, EA, MAAA
Consulting Actuary
703-893-1456, x1140
tdoyle@cheiron.us



Summary of Actuarial Value, Assumptions and Funding Methods

PURPOSE OF ACTUARIAL VALUATION

The Oakland Police and Fire Retirement System (PFRS) is a closed defined benefit pension plan. It was closed to new members on June 30, 1976. As of June 30, 2022, there are no active members. All members are retirees and beneficiaries.

The actual costs of a defined benefit plan are determined entirely by the amount of the benefit promise, the actual salaries and service of the plan participants, and how long they and their beneficiaries live to receive payments. In addition, the actuarial methodology provides a reasonable plan, or method, towards funding the expected costs of the plan. This information assists the plan trustees so they can make informed decisions regarding plan investments and how much in contributions will be required from the employer to eventually fully pay for the plan's costs.

The most recent actuarial valuation was as of June 30, 2021. The key results of the actuarial valuation are as follows:

- The actuarially determined employer contribution amount for Fiscal Year 2022-2023 is \$32.7 million, based on projecting the Actuarial Liabilities and the Actuarial Value of Assets to the end of the 2021-2022 Fiscal Year. This represents a decrease of \$12.1 million from the estimated amount in the prior valuation for the same Fiscal Year. The contribution is assumed to be paid in equal installments throughout the year, or on average at approximately January 1, 2023.
- During the year ended June 30, 2021, the return on Plan assets was 24.14% on a market value basis net of investment expenses, as compared to the 6.00% assumption for the 2020-2021 Plan year. This resulted in a market value gain on investments of \$67.8 million. The Actuarial Value of Assets (AVA) is calculated as the expected AVA plus 20% of the difference between the market value and the expected AVA, which is restricted to be between 90% and 110% of the MVA. This smoothed value of assets returned 14.16%, for an actuarial asset gain of \$29.9 million. Without the 10% corridor, the actuarial asset gain would have been \$15.1 million.
- The Plan experienced a gain on the Actuarial Liability of \$6.6 million, the net result of changes in the population and changes in benefits. The primary factor was an excess of deaths above the number expected. Combining the liability and asset gains, the Plan experienced a total gain of \$36.5 million.

- The Plan's smoothed funded ratio, the ratio of Actuarial Value of Assets over Actuarial Liability, increased from 62.2% last year to 72.2% as of June 30, 2021.
- The Plan's funded ratio increased from 63.5% to 80.2% on a Market Value of Assets (MVA) basis.
- The Unfunded Actuarial Liability (UAL) is the excess of the Plan's Actuarial Liability over the Actuarial Value of Assets. The Plan experienced a decrease in the UAL from \$225.5 million to \$159.3 million as of July 1, 2021.
- Overall participant membership decreased compared to last year. 29 members died, 12 of whom had their benefits continue to a surviving spouse. In addition, 28 surviving beneficiaries died. There are no active members of the Plan.
- If the contribution were determined using a projected asset value based on the current market (i.e., non-smoothed) value of assets, the contribution for FY 2022-2023 would be \$22.3 million. The contribution is smaller than that determined using the projected AVA, because the current market value reflects the full amount of prior investment gains, while under the AVA projection a portion of those gains are deferred until years after FY 2022-2023 .

VALUATION SUMMARY

Table I-1 summarizes all the key results of the valuation with respect to membership, assets and liabilities, and contributions. The results are presented and compared for both the current and prior plan year.

Table I-1 Summary of Principal Plan Results (\$ in Thousands)			
	July 1, 2020	July 1, 2021	% Change
Participant Counts			
Active Participants	0	0	
Participants Receiving a Benefit	768	723	-5.9%
Total	768	723	-5.9%
Annual Pay of Active Members	\$ 0	\$ 0	
Assets and Liabilities			
Actuarial Liability (AL)	\$ 597,014	\$ 571,942	-4.2%
Actuarial Value of Assets (AVA)	\$ 371,467	\$ 412,680	11.1%
Unfunded Actuarial Liability (UAL)	\$ 225,547	\$ 159,262	-29.4%
Funded Ratio (AVA)	62.2 %	72.2 %	9.9%
Funded Ratio (MVA)	63.5%	80.2%	16.7%
Contributions			
Employer Contribution (FY2021-22)	\$ 43,820	N/A	
Employer Contribution (FY2022-23)	\$ 44,828	\$ 32,712	-27.0%

ACTUARIAL DEFINITIONS

The **Present Value of Future Benefits** (PVFB) is used for measuring all future Plan obligations, the obligations of the Plan earned as of the valuation date and those to be earned in the future by current plan participants under the current Plan provisions, if all assumptions are met.

The **Actuarial Liability** (AL) is used for funding calculations, this liability is calculated taking the Present Value of Future Benefits and subtracting the Present Value of Future Normal Costs under an acceptable actuarial funding method. Because the Plan has no active members, the Actuarial Liability is equal to the Present Value of Future Benefits (i.e., all benefits are fully accrued).

The **Unfunded Actuarial Liability** (UAL) is the excess of the Actuarial Liability over the Actuarial Value of Assets.

The **Actuarial Value of Assets** (AVA) is the value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values.

ACTUARIAL METHODS AND ASSUMPTIONS

ACTUARIAL METHODS

The actuarial funding method used to determine the normal cost and the Unfunded Actuarial Liability is the Entry Age Normal Cost Method.

The normal cost rate is determined with the normal cost percentage equal to the total Projected Value of Benefits at Entry Age, divided by Present Value of Future Salary at Entry Age. Since there are no longer any active employees, the normal cost for this plan is \$0.

The excess of the Plan's Actuarial Liability (AL) over the Actuarial Value of Assets (AVA) is the Unfunded Actuarial Liability (UAL). In accordance with the Plan's funding agreement with the City of Oakland, the UAL must be amortized by July 1, 2026, with contributions resuming in the 2017-2018 fiscal year. The projected fiscal year 2021-2022 contribution has been calculated using level percent of pay amortization, based on total projected City payroll for all Safety employees.

ACTUARIAL VALUE OF PLAN ASSETS

In determining the recommended employer contribution to the PFRS, we use a smoothed Actuarial Value of Assets. The asset smoothing method dampens the volatility in asset values that could occur because of the fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process. Assets are assumed to be used exclusively for the provision of retirement benefits and expenses.

ACTUARIAL ASSUMPTIONS

The assumptions used in this report reflect the results of an Experience Study performed by Cheiron covering the period from July 1, 2014 through June 30, 2017 and adopted by the Board. More details on the rationale for the demographic and economic assumptions can be found in the Experience Analysis presented to the Board on February 28, 2018.

Rate of Return

The expected annual rates of return, net of investment expenses, on all Plan assets are shown in the table below. The equivalent single discount rate for these returns using the Plan's expected projected benefit payments is 5.28%.

Benefit Payment Year	Expected Return
2021 - 2026	6.000 %
2027	5.725 %
2028	5.450 %
2029	5.175 %
2030	4.900 %
2031	4.625 %
2032	4.350 %
2033	4.075 %
2034	3.800 %
2035	3.525 %
2036+	3.250 %

Cost of Living Adjustments and Long-Term Salary Increases

Cost-of-living adjustments are based on salary increases for a retiree's rank at retirement. The long-term rate of salary increase is assumed to be 3.25% (2.85% inflation plus 0.4% productivity). The following schedule shows salary increases based on the current Police contract which expires on June 30, 2023, and the Fire contract which expires on December 31, 2023. All increases shown after those dates are assumptions.

Post-Retirement Benefit Increases (Based on Salary Increases for Rank at Retirement)		
Date of Increase	Police	Fire
July 1, 2021	3.00%	1.50%
January 1, 2022	N/A	2.00%
July 1, 2022	3.50%	1.00%
July 1, 2023	3.50%	0.00%
December 1, 2023	N/A	2.00%
Annual Increases Starting July 1, 2024	3.25%	3.25%

Inflation

The assumed rate of general inflation is 2.75% (entire US) and local inflation is 2.85% (Bay Area). The general inflation rate is used in the determination of the investment return assumptions. The local inflation rate is used in the determination of the growth in expenses and salaries (which determine the COLA increases).

Rates of Termination, Disability and Retirement

None

Rates of Mortality for Healthy Lives **(for service retirees and beneficiaries)**

CalPERS Healthy Annuitant Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016.

Rates of Mortality for Disabled Retirees

CalPERS Industrial Disability Mortality Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016.

Mortality Improvement

The mortality tables are projected to improve with the MP-2017 generational mortality improvement tables, with improvements projected from a base year of 2014 (the mid-point of the CalPERS base tables).

Survivor Continuance

30% of disabled retirees' deaths are assumed to be related to injuries arising out of the performance of duty, entitling the surviving spouse to a 100% continuance.

Changes in Assumptions since the Last Valuation

No changes were made to the actuarial assumptions.

Administrative Expenses

Administrative expenses for the Fiscal Year Ended June 30, 2022 are assumed to be \$1,692,500 , growing at 2.85% per year.

Membership Information

Service Retired Participants

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	0	\$0	0	\$0	0	\$0
60-64	0	\$0	0	\$0	0	\$0
65-69	14	\$1,079,118	0	\$0	14	\$1,079,118
70-74	61	\$5,242,761	17	\$1,238,231	78	\$6,480,992
75-79	91	\$6,963,191	32	\$2,724,679	123	\$9,687,870
80-84	34	\$2,688,651	12	\$1,057,125	46	\$3,745,776
85-89	9	\$955,482	13	\$1,153,800	22	\$2,109,282
90-94	8	\$665,829	11	\$990,570	19	\$1,656,399
95-99	2	\$213,433	5	\$434,021	7	\$647,454
100+	1	\$99,129	0	\$0	1	\$99,129
Total	220	\$17,907,594	90	\$7,598,426	310	\$25,506,020

Disability Retired Participants

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	0	\$0	0	\$0	0	\$0
60-64	0	\$0	0	\$0	0	\$0
65-69	0	\$0	3	\$245,477	3	\$245,477
70-74	43	\$3,358,268	26	\$1,843,805	69	\$5,202,073
75-79	27	\$1,971,071	34	\$2,697,441	61	\$4,668,512
80-84	11	\$876,714	18	\$1,523,229	29	\$2,399,943
85-89	5	\$393,996	7	\$585,972	12	\$979,967
90-94	2	\$192,181	3	\$271,703	5	\$463,884
95-99	0	\$0	1	\$67,653	1	\$67,653
100+	0	\$0	0	\$0	0	\$0
Total	88	\$6,792,229	92	\$7,235,279	180	\$14,027,508

Membership Information

Beneficiaries

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	1	\$52,095	0	\$0	1	\$52,095
60-64	3	\$175,604	2	\$148,362	5	\$323,966
65-69	9	\$576,640	7	\$446,609	16	\$1,023,248
70-74	30	\$1,542,683	14	\$852,980	44	\$2,395,663
75-79	32	\$1,701,659	18	\$1,073,595	50	\$2,775,254
80-84	15	\$797,091	16	\$917,976	31	\$1,715,067
85-89	16	\$1,026,060	21	\$1,216,295	37	\$2,242,356
90-94	17	\$1,022,988	18	\$967,371	35	\$1,990,359
95-99	7	\$359,375	6	\$366,607	13	\$725,981
100+	1	\$80,379	0	0	1	\$80,379
Total	131	\$7,334,574	102	\$5,989,793	233	\$13,324,367

Membership Information

Participant Data Summary

	July 1, 2020			July 1, 2021		
	Police	Fire	Total	Police	Fire	Total
Active Participants						
Number	0	0	0	0	0	0
Number Vested	0	0	0	0	0	0
Average Age	00.0	00.0	00.0	00.0	00.0	00.0
Average Service	00.0	00.0	00.0	00.0	00.0	00.0
Average Pay	\$0	\$0	\$0	\$0	\$0	\$0
Service Retirees						
Number	229	95	324	220	90	310
Average Age	76.6	81.5	78.1	77.5	81.8	78.7
Average Annual Benefit	\$78,850	\$81,876	\$79,737	\$81,398	\$84,427	\$82,277
Disabled Retirees						
Number	99	96	195	88	92	180
Average Age	75.9	77.1	76.5	76.7	78.0	77.4
Average Annual Benefit	\$74,864	\$75,923	\$75,385	\$77,184	\$78,644	\$77,931
Beneficiaries						
Number	132	117	249	131	102	233
Average Age	80.5	83.1	81.7	80.2	82.7	81.3
Average Annual Benefit	\$55,725	\$56,194	\$55,946	\$55,989	\$58,723	\$57,186
All Inactive						
Number	460	308	768	439	284	723
Average Age	77.6	80.8	78.8	78.1	80.9	79.2
Average Annual Benefit	\$71,356	\$70,265	\$70,919	\$72,971	\$73,322	\$73,109

Data pertaining to active and inactive Members and their beneficiaries as of the valuation date was supplied by the Plan Administrator.

In Memoriam



this page intentionally left blank

***Oakland Police and Fire Department
Retiree & Beneficiary Deaths
Fiscal Year
2021—2022***

Fire Members

Geraldine Brazil	Beneficiary
Shirley Brown	Beneficiary
Evelyn Byrne	Beneficiary
Jean Christian	Beneficiary
Gertrude Davis	Beneficiary
Jeffrey Davis	Retiree
John Fahey	Retiree
Ronald Graham	Retiree
Mary Healey	Beneficiary
James Hayworth	Retiree
Jayne M. Kersch	Beneficiary
Norman Kotler	Retiree
David Lindsay	Retiree
Barbara Marchant	Beneficiary
William Moore	Retiree
Roy Nason	Retiree
Walter Pierson	Retiree
Beverly Risch	Beneficiary
Willard Rodman	Retiree
Richard Schuller	Retiree
Herbert Soares	Retiree
Paul Taylor	Retiree
James Wiley	Retiree
Don Williams	Retiree

Police Members

June T. Aboussleman	Beneficiary
William Boyd	Retiree
Barbara Davis	Beneficiary
William Foskett	Retiree
Hazel Gaudinier	Beneficiary
Bernard Gerhard	Retiree
Ronald Gunar	Retiree
Jerry Jahn	Retiree
James Mahanay	Retiree
Edward Marquez	Retiree
Larry Newman	Retiree
Renate C. Owen	Beneficiary
Bette Peters	Beneficiary
Waller Prentice	Retiree
Sarah Robinson	Beneficiary
George Rothacher	Retiree
Virginia Schwab	Beneficiary
Judith Terracina	Beneficiary
Hadwick Thompson	Retiree
Robert Thorp	Retiree
David Whiteman	Retiree
Louise Williams	Beneficiary
Marvin Young	Retiree

this page intentionally left blank



A G E N D A R E P O R T

TO: Oakland Police and Fire
Retirement System Audit &
Operation Committee

FROM: David F. Jones
Plan Administrator & Secretary

SUBJECT: Audit Committee Agenda
Pending List

DATE: March 29, 2023

	SUBJECT	TENTATIVE SCHEDULED MTG DATE	STATUS
1	Status Report of the Ad Hoc Committee regarding Actuarial Funding date of July 1, 2026	TBD	TBD
2	Monitor & Update PFRS Board of Upcoming City Council Agendas Regarding Discussion of the July 1, 2026 Actuarial Funding Date	Ongoing	Ongoing

Respectfully submitted,

David F. Jones
Plan Administrator & Secretary
Oakland Police & Fire Retirement Systems

Due to the termination of the statewide COVID-19 State of Emergency by the Governor of California, effective March 1, 2023, all meetings of the Oakland Police & Fire Retirement System Board and its Committees will be conducted in person.

Meetings are held in wheelchair accessible facilities.

The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

For additional information, contact the Retirement Unit by calling (510) 238-7295. or send an email to mvisaya@oaklandca.gov



AGENDA

INVESTMENT COMMITTEE MEMBERS

Jaime T. Godfrey
Chairperson

R. Steven Wilkinson
Member

Robert W. Nichelini
Member

**In the event a quorum of the Board participates in the Committee meeting, the meeting is noticed as a Special Meeting of the Board; however, no final Board action can be taken. In the event that the Investment Committee does not reach quorum, this meeting is noticed as an informational meeting between staff and the Chair of the Investment Committee.*

REGU MEETING of the INVESTMENT AND FINANCIAL MATTERS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

WEDNESDAY, MARCH 29, 2023

10:30 AM

ONE FRANK H. OGAWA PLAZA, HEARING ROOM 1
OAKLAND, CA 94612

OBSERVE

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/82880493983> at the noticed meeting time.
- To listen to the meeting by phone, please call the numbers below at the noticed meeting time: Dial (for higher quality, dial a number based on your current location):
- iPhone one-tap: US: +16699006833, 82880493983# or +13462487799, 82880493983#
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
- Webinar ID: 828 8049 3983.
- If asked for a participant ID or code, press #.

PUBLIC COMMENTS

There are two ways to submit public comments.

- Speaker Card: All persons wishing to address the Board must complete a speaker's card, stating their name and the agenda item they wish to address, including "Open Forum".
- eComment: To send your comment directly to staff BEFORE the meeting starts, please email to mvisaya@oaklandca.gov with "PFRS Board Meeting" in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time**.

If you have any questions, please email Maxine Visaya, Administrative Assistant II at mvisaya@oaklandca.gov

ORDER OF BUSINESS

1. **Subject:** Police and Fire Retirement System (“PFRS”) Investment and Financial Matters Committee Meeting Minutes

From: Staff of the PFRS Board

Recommendation: **APPROVE** the February 22, 2023 Investment and Financial Matters Committee Meeting Minutes
2. **Subject:** Investment Manager Performance Review – Polen Capital Credit

From: Meketa Investment Group

Recommendation: **ACCEPT** Meketa Investment Group’s review and evaluation of Polen Capital Credit, LLC a PFRS High Yield Fixed Income Investment Strategy Manager regarding a firm overview and managerial assessment; investment portfolio performance; peer ranking, watch status update; and recommendation to maintain/terminate the current professional services agreement. **DISCUSS** and **RECOMMEND BOARD APPROVAL** of the Committees recommended course of action with regard to Polen Capital Credit, LLC
3. **Subject:** Investment Market Overview as of February 28, 2023

From: Meketa Investment Group

Recommendation: **ACCEPT** informational report regarding the Global Investment Markets as of February 28, 2023
4. **Subject:** Preliminary Investment Fund Performance Update as of February 28, 2023

From: Meketa Investment Group

Recommendation: **ACCEPT** informational report regarding the Preliminary Investment Fund Performance Update as of February 28, 2023
5. **Subject:** \$14.2 Million Drawdown for Member Retirement Allowances (Fiscal Year 2022/2023; Quarter Ending June 30, 2023)

From: Meketa Investment Group

Recommendation: **ACCEPT** informational report and **RECOMMEND BOARD APPROVAL** the Meketa Investment Group recommendation for a \$14.2 million drawdown, which includes a \$8.2 Million contribution from the City of Oakland and a \$6.0 Million contribution from the PFRS Investment Fund, to be used to pay the April 1, 2023 through June 30, 2023 Member Retirement Allowances

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
INVESTMENT COMMITTEE MEETING
MARCH 29, 2023**

- 6. Subject: 2023 10-year Capital Market Assumptions Review**
From: Meketa Investment Group
-
- Recommendation: ACCEPT** informational report and **RECOMMEND BOARD APPROVAL**
of the 2023 10-year Capital Market Assumptions Review

- 7. Schedule of Pending Investment Committee Meeting Agenda Items**
- 8. Open Forum**
- 9. Future Scheduling**
- 10. Adjournment**

PFRS INVESTMENT & FINANCIAL MATTERS COMMITTEE
MEETING MINUTES
FEBRUARY 22, 2023
PAGE 1 OF 4

A MEETING OF THE INVESTMENT AND FINANCIAL MATTERS COMMITTEE of the Oakland Police and Fire Retirement System ("PFRS") was held Wednesday, February 22, 2023 via Zoom Webinar.

Committee Members	<ul style="list-style-type: none">▪ Jaime T. Godfrey▪ Robert W. Nichelini▪ R. Steven Wilkinson	Chairperson Member Member and Acting Chairperson
Additional Attendees	<ul style="list-style-type: none">▪ David F. Jones▪ Téir Jenkins▪ Mitesh Bhakta▪ Selia Warren▪ Maxine Visaya▪ David Sancewich▪ Jason Leong Campbell▪ Paola Nealon▪ Jeff Jackson▪ Dinkar Singh	PFRS Secretary & Plan Administrator PFRS Investment & Operations Manager PFRS Legal Counsel PFRS Legal Counsel (JOINED AT 11:05 AM) PFRS Staff Member Meketa Investment Group Meketa Investment Group Meketa Investment Group Earnest Partners, LLC Earnest Partners, LLC

The meeting was called to order at 10:45 a.m. Pacific

1. **Approval of Investment & Financial Matters Committee Meeting Minutes** – Member Nichelini made a motion to approve the January 25, 2023 Investment & Financial Matters Committee Meeting Minutes, as written, second by Member Wilkinson. Motion Passed.

[GODFREY – ABSTAIN / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 1 / ABSENT: 0 / EXCUSED: 0)

2. **Investment Manager Performance Update – Earnest Partners, LLC** – Jeff Jackson and Dinkar Singh of Earnest Partners, a PFRS Domestic Equity Mid-Cap Core Investment Strategy Manager, presented an informational report regarding a firm overview and managerial assessment; investment strategy and PFRS investment portfolio performance; local brokerage usage; and the firm's Diversity, Equity, & Inclusion policy and practices.

Member Wilkinson and Investment & Operations Manager Jenkins made inquiries to further discussion regarding the firm's Diversity, Equity, & Inclusion policy and practices; the firm's strategy for success in team member retention; and their investment strategy looking forward.

MOTION: Member Wilkinson made a motion to accept the informational report presented by Earnest Partners, and forward to the Board, second by Member Nichelini. Motion passed.

[GODFREY – Y / NICHELINI – Y / WILKINSON – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 0)

3. **Investment Manager Performance Review – Earnest Partners, LLC** – David Sancewich of Meketa Investment Group (“Meketa”) provided an overview memo regarding a review and evaluation of Earnest Partners, a PFRS Domestic Equity Mid-Cap Core Investment Strategy Manager, and noted Earnest continues to perform well from an investment standpoint and Meketa has no concerns at this time.

MOTION: Member Nichelini made a motion to accept Meketa’s overview, evaluation, and recommendation regarding Earnest Partners, second by Member Wilkinson. Motion passed.

[GODFREY – Y / NICHELINI – Y / WILKINSON – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 0)

4. **Resolution 8074** – Resolution Authorizing a One-Year Extension of the Professional Services Agreement with Earnest Partners, LLC for the Provision of Domestic Equity Mid-Cap Core Investment Strategy Manager Services.

MOTION: Member Nichelini made a motion to recommend Board approval of Resolution 8074, second by Member Wilkinson. Motion passed.

[GODFREY – Y / NICHELINI – Y / WILKINSON – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 0)

5. **Investment Market Overview as of January 31, 2023** – Paola Nealon of Meketa presented an informational report regarding the Investment Market Overview as of January 31, 2023. P. Nealon highlighted Domestic Equity Returns; Foreign Equity Returns; Fixed Income Returns and current factors impacting outcomes.

MOTION: Chairperson Godfrey made a motion to accept the informational report presented by Meketa regarding the Investment Market Overview as of January 31, 2023 and forward to the Board, second by Member Wilkinson. Motion passed.

[GODFREY – Y / NICHELINI – Y / WILKINSON – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 0)

6. **Preliminary Investment Performance Update as of January 31, 2023** – Chairperson Godfrey, in the interest of time, forwarded this item to the Full Board Meeting.

MOTION: No action was taken on this item, as it was forwarded to the Full Board Meeting.

7. **Investment Fund Quarterly Performance Update as of December 31, 2022** – Chairperson Godfrey, in the interest of time, forwarded this item to the Full Board Meeting.

MOTION: No action was taken on this item, as it was forwarded to the Full Board Meeting.

8. **Asset Class Reviews (Verbal)** – David Sancewich noted there are several Asset Class Reviews scheduled to occur regarding Credit; Fixed-Income; and Small-Cap Investment Strategies and Meketa wanted to revisit the issue within the framework of best use of time, cost-efficiency, the 2026 Actuarial Funding Date, and active efforts to de-risk the portfolio. D. Sancewich proposed rather than conduct three separate Asset Class Reviews, Meketa would incorporate an in-depth manager comparison as part of the watch status update reviews and this course of action will enable us to address the Board's concerns.

MOTION: Member Nichelini made a motion to accept Meketa's informational review and recommendation to forego the three separate Asset Class Reviews and incorporate the in-depth manager comparison into the watch status updates and forward to the Board, second by Chairperson Godfrey. Motion passed.

[GODFREY – Y / NICHELINI – Y / WILKINSON – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 0)

9. **July 1, 2026 Actuarial Funding Date (Verbal)** – David Sancewich of Meketa noted that while there has been much discussion regarding City funding requirements as per the Charter mandate; however, we need to start looking at it from an investment standpoint and recommended to accelerate the de-risking process. D. Sancewich advised, over the next few months, Meketa will be reviewing their 2023 Capital Market Assumptions and the new Return Expectations for PFRS and working on various components of the portfolio that might have too much associated risk relative to the 6% actuarial rate we are trying to achieve.

MOTION: Member Nichelini made a motion to accept the verbal informational report presented by Meketa regarding the July 1, 2026 Actuarial Funding Date and forward to the Board, second by Chairperson Godfrey. Motion passed.

[GODFREY – Y / NICHELINI – Y / WILKINSON – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 0)

10. **Schedule of Pending Investment Committee Meeting Agenda Items** – David Sancewich presented Meketa's 2023 Strategic Investment Agenda Plan for discussion. No changes or additions were proposed.

11. **Open Forum** – PFRS Secretary & Plan Administrator Jones thanked PFRS Legal Counsel Bhakta for his service and support to this Committee and the PFRS Board; wished him well in his future endeavors; and noted today will be his last day of service. Legal Counsel Bhakta thanked Plan Administrator Jones and advised he will introduce his successor at the Full Board Meeting this afternoon.

12. **Future Scheduling** – The next Investment Committee Meeting will be held in-person and is tentatively scheduled to occur March 29, 2023.

13. **Adjournment** – Member Nichelini made a motion to adjourn, second by Member Wilkinson. Motion passed.

[GODFREY – Y / NICHELINI – Y / WILKINSON – Y]
(AYES: 3 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 0)

The meeting adjourned at 11:45 a.m. Pacific

JAMIE T. GODFREY
COMMITTEE CHAIRPERSON

DATE

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: March 29, 2023
RE: Polen US High Yield—Manager Update

Manager: Polen Capital Management (“Polen”)

Inception Date:	February 2015	OPFRS AUM (2/28/2023)	\$8.9 million
Strategy:	Credit	Firm-wide AUM (12/31/2022)	\$54.8 billion
Benchmark:	ICE BofA High Yield	Strategy AUM (12/31/2022)	\$4.4 billion

Summary & Recommendation

Polen (formerly DDJ) has managed OPFRS’s Credit portfolio as the sole manager since February 2015. As of 2/28/2023, the portfolio is approximately \$8.9 million or about 2% of OPFRS’s total plan.

The strategy was put on the Watch status since May 2019 initially for performance concerns; as of the last two reviews in January and September 2022, the performance concerns were alleviated but it continued to be on the Watch status due to the merger between Polen and DDJ at the beginning of 2022.

Since the last review, the strategy has performed within expectations and guidelines for the portfolio and no major organizational changes or personnel turnover in the portfolio management team have been observed. *Therefore, Meketa does not have any major concerns with Polen from investment management and performance perspective, and recommend that it be removed from the Watch status.*

Investment Performance Review Summary¹

As of 2/28/2023, Polen High Yield strategy has outperformed benchmark on net-of-fees basis over 1- and 3-year trailing periods as well as since inception in February 2015. Over the most recent quarter, it has lagged the benchmark. Relative to other US high yield fixed income managers, Polen ranks above average for the most recent quarter, as well as the 1- and 3-year trailing periods, while ranking barely below average at the 51st percentile over the 5-year trailing period.

As of 2/28/2023	Market Value (\$000)	2022-Q4	1 YR	3 YR	5 YR	Since Inception	Inception Date
Polen (Gross)	8,933.5	2.0	-2.9	4.5	3.3	5.1	02/2015
<i>ICE BofA High Yield</i>	---	4.0	-5.5	1.2	2.7	3.9	---
Excess Return (Gross)	---	-2.0	2.6	3.4	0.6	1.2	---
Polen (Net)	---	1.8	-3.4	3.8	2.7	4.4	---
Excess Return (Net)	---	-2.2	2.1	2.6	0.0	0.5	---
Peer Group Ranking (Net)²	---	36	27	5	51	---	---
Reference: Median Return (Net)	---	1.6	-4.7	1.5	2.7	---	---
Number of Peers in Peer Group	---	121	121	120	116	---	---

Product and Organization Review Summary

A review of Polen Capital Management and the US High Yield strategy revealed no concerning organizational issues or changes since last review in September 2022.

Polen Capital Management		Areas of Potential Impact			
	Level of Concern	Investment Process	Investment Team	Performance Track Record	Team/Firm Culture
Product					
Key people changes	None				
Changes to team structure/individuals' roles	None				
Product client gain/losses	None				
Investment process changes	None				
Personnel turnover	None				
Organization					
Ownership changes	None				
Key people changes	None				
Firm wide client gain/losses	None				
Recommended Action	None - X	Watch Status		Termination	

¹ Performance is annualized for periods longer than one year.

² Peer group is eVestment US High Yield Fixed Income Managers Net.

Investment Philosophy & Process, per Manager

The US High Yield strategy is based upon the belief that by actively managing a relatively concentrated portfolio of high-yield bonds and leveraged loans, the manager can generate superior returns at a lower risk profile than a BB/B high-yield benchmark. The manager's philosophy involves deriving an accurate real-time valuation of a company's enterprise value and targeting only investments in that company's capital structure which offer a significant margin of safety and strong return potential.

The segments targeted by the strategy include lower rated securities (B and below), middle-market issuers, split-rated or recently downgraded securities, shorter duration debt, near maturity subordinated debt, secured bonds, and bank debt. The manager seeks to exploit inefficiencies by adhering to a fundamental-oriented investment process and applying value investing principles to the credit markets through financial, structural, and legal analysis. The strategy targets liquid issues rated B and above, while tactically allocating to CC bonds and loans that it believes has a low risk of default and offer attractive risk-adjusted returns. The strategy may invest in derivatives to hedge currency exposure in certain portfolios, although this is not a focus of the strategy.

DS/PN/JLC/mn



Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Economic and Market Update

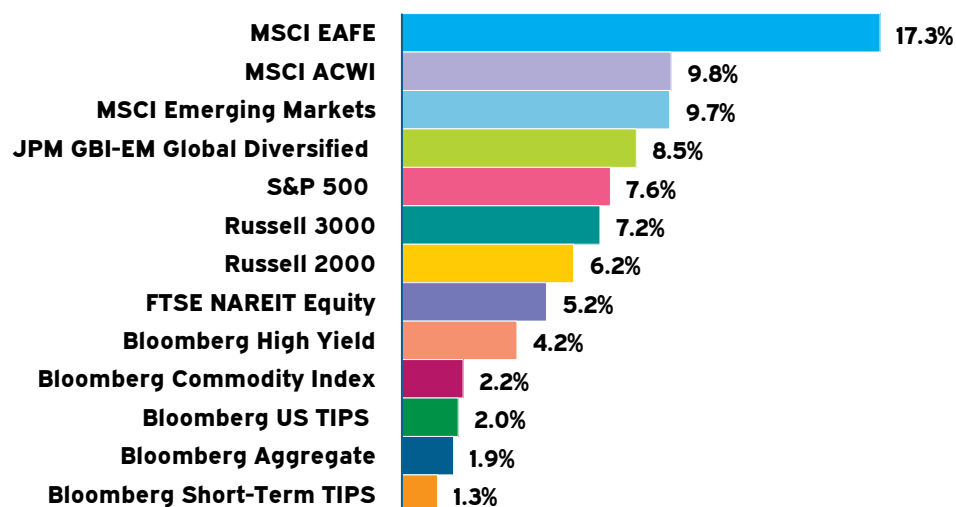
February 2023 Report

Commentary

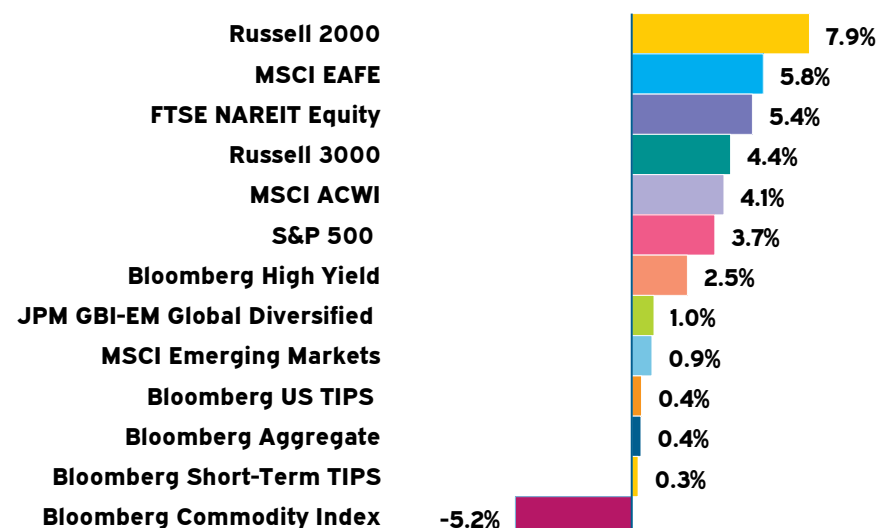
- After a strong start to the year, markets sold-off as better-than-expected economic data pushed investors to raise their inflation and interest rate expectations. Despite the sell-off most asset classes remain positive year-to-date.
- Chair Powell's February press conference where he reiterated previous messaging on high and persistent inflation and the need for an extended period of high interest rates weighed on both stocks and bonds.
 - US equity markets declined in February with the Russell 3000 falling 2.3% and growth continuing to outperform value.
 - Developed equity markets outside the US were up slightly in local terms for the month but a strengthening dollar brought returns negative for US investors. The MSCI EAFE fell 2.1% for the month.
 - Emerging market equities had the weakest returns in February (-6.5%) driven by renewed tensions between the US and China, as well as the strengthening dollar.
 - On expectations for higher rates for longer, bonds gave back most of their January gains with the broad US bond market (Bloomberg Aggregate) declining 2.6%.
 - After month-end, concerns in the banking sector created considerable market volatility with dramatic declines in interest rates and significant pressure in the financial sector. Support from the Fed and others in the US related to Silicon Valley and Signature Banks helped somewhat to ease concerns but risks remain.
- This year, the path of inflation and monetary policy, slowing global growth, China reopening its economy, and the war in Ukraine, as well as recent pressures in the banking sector, will all be key.

Index Returns¹

Fourth Quarter 2022



YTD 2023



→ After a strong fourth quarter and start to 2023, markets sold off in February as investors revised higher their interest rate assumptions for the year.

¹ Source: Bloomberg and FactSet. Data is as of February 28, 2023.

Domestic Equity Returns¹

Domestic Equity	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-2.4	7.6	3.7	-7.7	12.1	9.8	12.2
Russell 3000	-2.3	7.2	4.4	-8.1	11.8	9.4	11.9
Russell 1000	-2.4	7.2	4.2	-8.2	11.9	9.7	12.1
Russell 1000 Growth	-1.2	2.2	7.0	-13.3	12.0	11.5	14.2
Russell 1000 Value	-3.5	12.4	1.5	-2.8	10.9	7.2	9.6
Russell MidCap	-2.4	9.2	5.7	-5.0	11.4	8.4	10.7
Russell MidCap Growth	-1.0	6.9	7.7	-8.3	8.7	8.7	11.4
Russell MidCap Value	-3.2	10.5	4.6	-3.4	11.9	7.3	9.6
Russell 2000	-1.7	6.2	7.9	-6.0	10.1	6.0	9.1
Russell 2000 Growth	-1.1	4.1	8.8	-7.9	6.5	5.1	9.3
Russell 2000 Value	-2.3	8.4	7.0	-4.4	12.9	6.4	8.5

US Equities: Russell 3000 Index fell 2.3% in February after rising sharply in January.

- US stocks fell in February as persistently strong labor and inflation data prompted investors to expect further interest rate increases by the Federal Reserve.
- Growth stocks again outperformed value stocks across the market capitalization spectrum. Technology stocks continue to fare better this year after steep declines in 2022. This contributed to the divergence between the growth and value indices year-to-date.
- Energy was the worst performing sector in the S&P 500 index. Investors lowered their expectations for global growth as central banks continue to fight inflation.

¹ Source: Bloomberg. Data is as of February 28, 2023.

Foreign Equity Returns¹

Foreign Equity	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-3.5	14.3	4.3	-7.2	5.3	1.6	3.9
MSCI EAFE	-2.1	17.3	5.8	-3.1	6.8	2.6	4.8
MSCI EAFE (Local Currency)	0.6	8.7	7.0	5.5	9.4	5.7	7.5
MSCI EAFE Small Cap	-2.2	15.8	5.1	-9.7	5.3	0.7	6.1
MSCI Emerging Markets	-6.5	9.7	0.9	-15.3	1.0	-1.9	1.5
MSCI Emerging Markets (Local Currency)	-4.7	6.6	1.6	-10.5	3.1	1.1	4.7
MSCI China	-10.4	13.5	0.2	-16.1	-6.2	-5.5	2.4

Foreign Equity: Developed international equities (MSCI EAFE) fell 2.1% in February and emerging markets (MSCI EM) declined 6.5%.

- Non-US equities also reversed course in February after a strong start to the year.
- Developed market equities were up for the month in local terms but the strengthening US dollar made them negative for US investors. An improved economic outlook for Europe and a rebound in tourism for Japan both contributed to results.
- Emerging market equities were the worst performer for the month, driven by returns from China. The MSCI China index was down sharply in February due to heightened tensions with the US. The strong US dollar also proved an additional headwind for emerging market equities.

¹ Source: Bloomberg. Data is as of February 28, 2023.

Fixed Income Returns¹

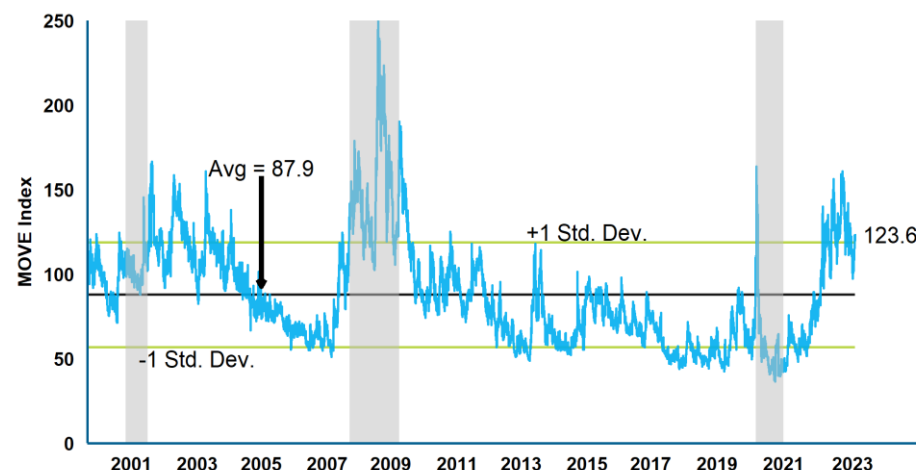
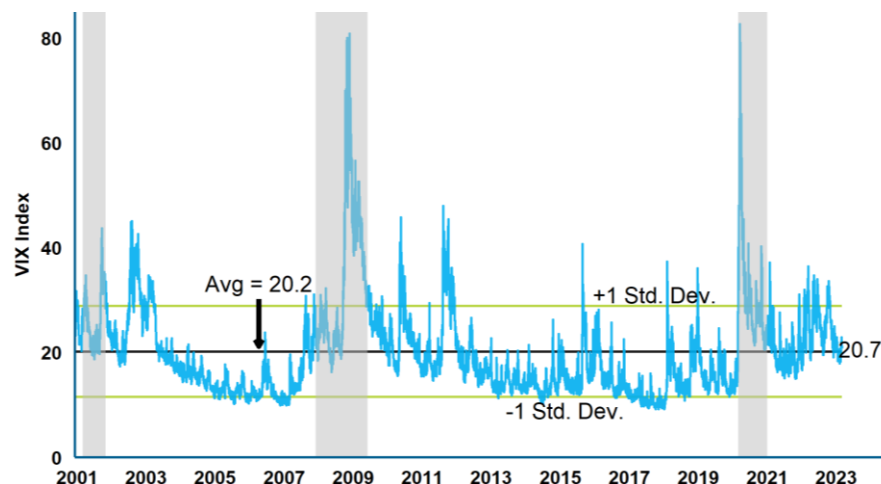
Fixed Income	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Barclays Universal	-2.5	2.2	0.6	-9.3	-3.4	0.7	1.4	5.2	6.2
Bloomberg Barclays Aggregate	-2.6	1.9	0.4	-9.7	-3.8	0.5	1.1	4.8	6.5
Bloomberg Barclays US TIPS	-1.4	2.0	0.4	-10.4	0.2	2.6	1.2	4.6	7.0
Bloomberg Short-term TIPS	-0.4	1.3	0.3	-2.9	2.3	2.7	1.4	5.1	2.5
Bloomberg Barclays High Yield	-1.3	1.3	2.5	-5.5	1.3	2.9	4.1	8.6	4.3
JPM GBI-EM Global Diversified (USD)	-3.2	8.5	1.0	-6.1	-4.3	-3.0	-2.0	7.1	5.0

Fixed Income: The Bloomberg Universal fell 2.5% in February as global sovereign debt yields rose on monetary policy expectations.

- Global inflation risks have been improving, but the pace of price declines slowed over the month, prompting central bank officials to recast expectations for higher policy rates in the coming year.
- TIPS outperformed the broad US bond market (Bloomberg Aggregate) on a modest increase in longer-dated inflation expectations.
- High yield debt declined less than the broad US bond market while emerging market debt was the worst performer for the month.

¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of February 28, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

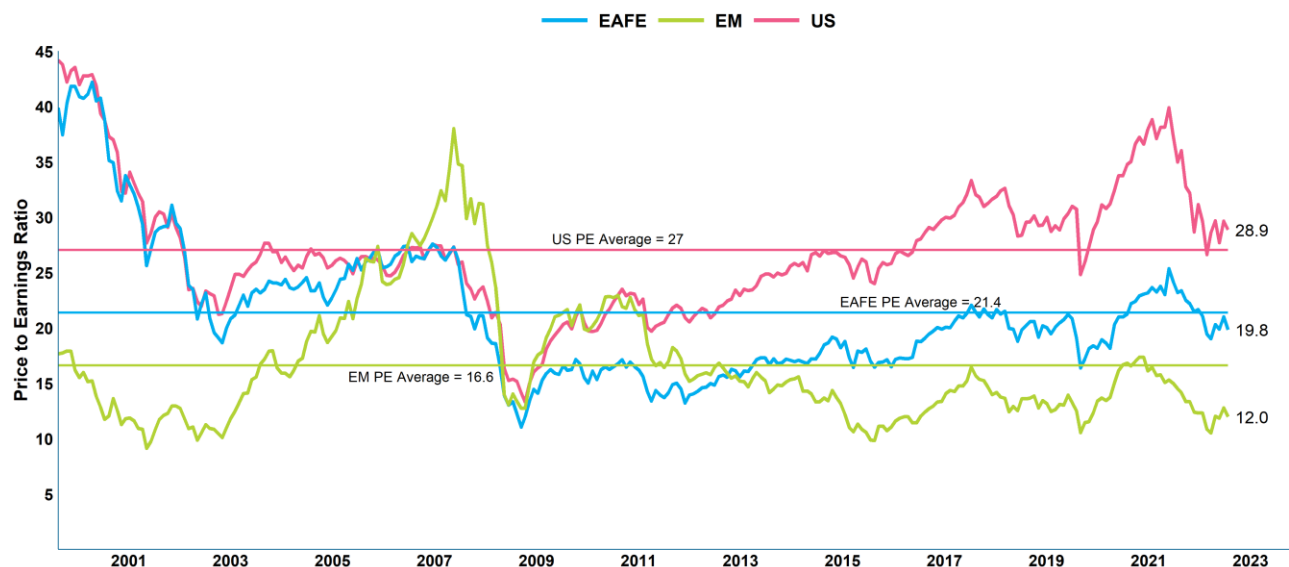
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) remained subdued through the end of February as investors continue to anticipate the end of the Fed's policy tightening.
- The Fed's continued hawkish stance on inflation has led to the more policy sensitive MOVE (fixed income volatility) to remain well above its long-run average though.

¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of February 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and February 2023.

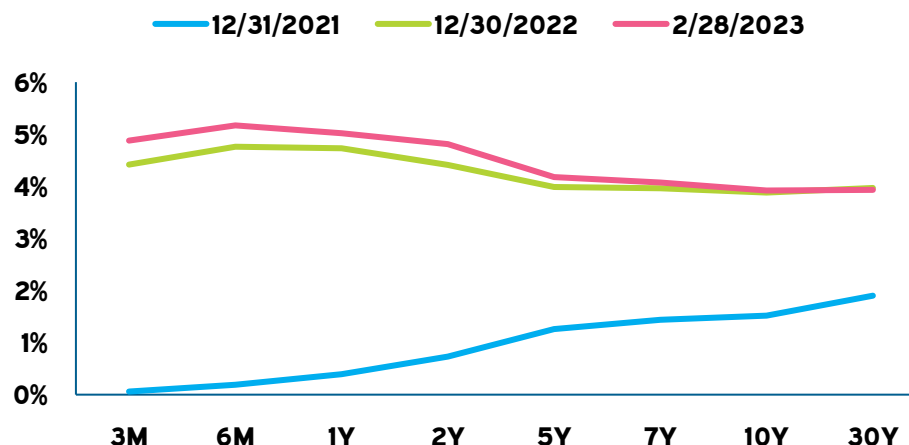
Equity Cyclically Adjusted P/E Ratios¹



- The US equity price-to-earnings ratio remains slightly above its long-run (21st century) average.
- International developed market valuations are slightly below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of February 2023. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

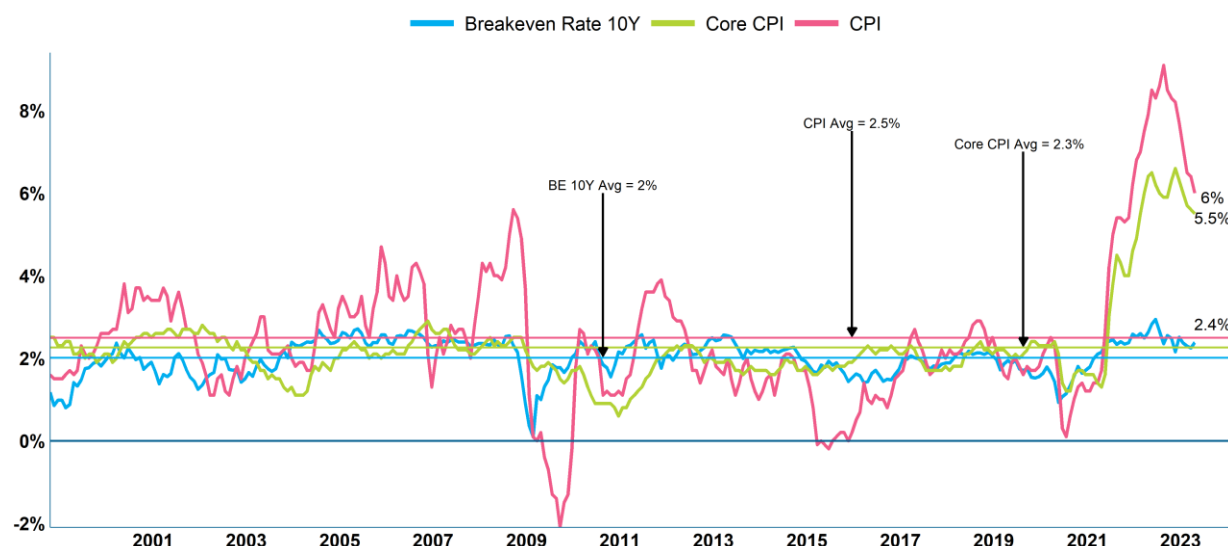
US Yield Curve¹



- In February, policy-sensitive interest rates at the front-end of the curve rose, with the two-year Treasury yield increasing from 4.2% to 4.8%. Longer dated ten-year Treasury yields rose (3.5% to 3.9%) to a level close to where they started the year.
- The yield spread between two-year and ten-year Treasuries widened to -0.90% in February a level not seen since the early 1980s. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Inversions in the yield curve have often preceded recessions.
- The Fed remained committed to fighting inflation, as it increased rates another 25 basis points to a range of 4.5% to 4.75% at its February meeting. Questions remain about the pace of future rate hikes and the ultimate terminal rate as the Fed tries to balance fighting inflation and maintaining stability in markets.

¹ Source: Bloomberg. Data is as of February 28, 2023.

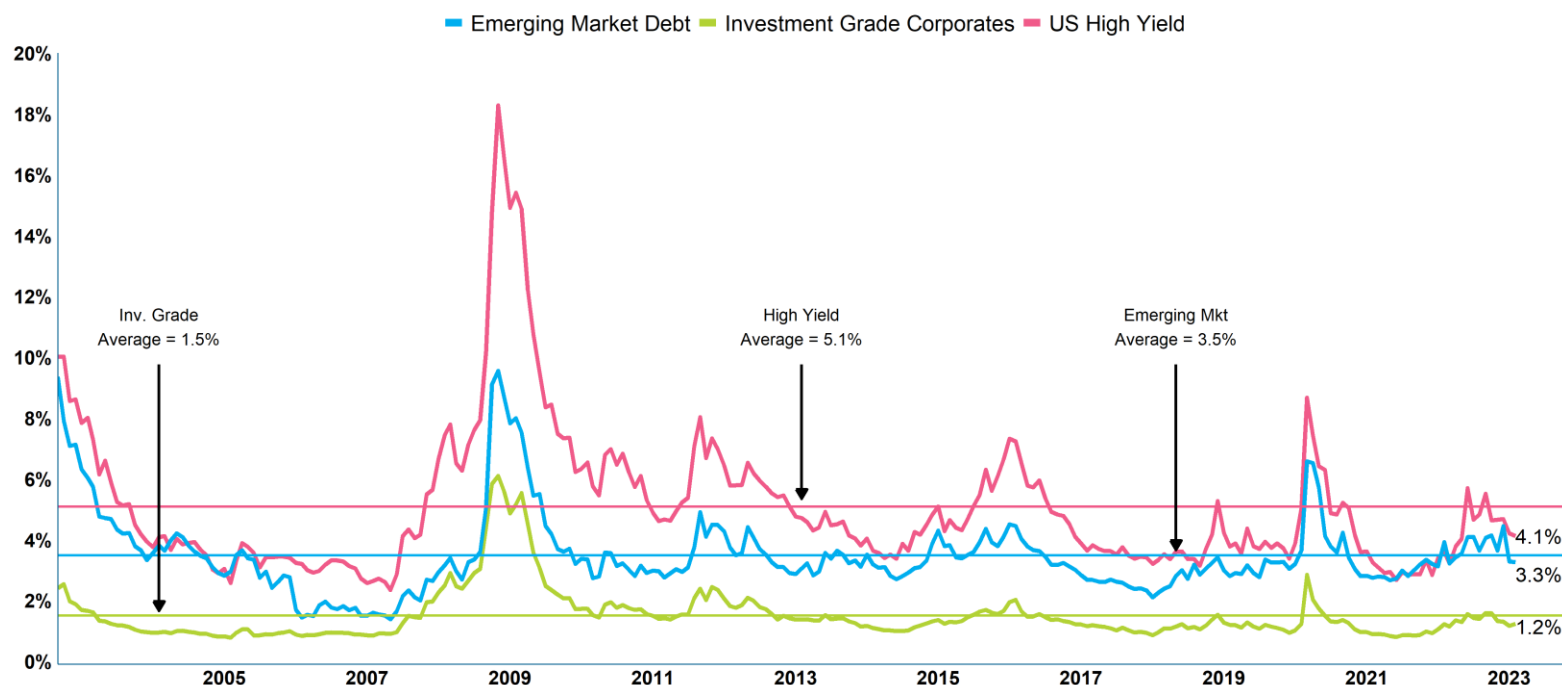
Ten-Year Breakeven Inflation and CPI¹



- Inflation continued to decline in February with the year-over-year reading falling from 6.4% to 6.0% matching expectations. Prices rose 0.4% month-over-month with food prices increasing (0.4%) and energy prices falling (-0.6%).
- Core inflation – excluding food and energy – also continued to decline year-over-year (5.5% versus 5.6%) but increased month-over-month (0.5% versus 0.4%) driven by housing.
- Inflation expectations (breakevens) rose over the month but remain well below current inflation levels as investors anticipate a significant moderation in inflation.

¹ Source: Bloomberg. Data is as of February 2023. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

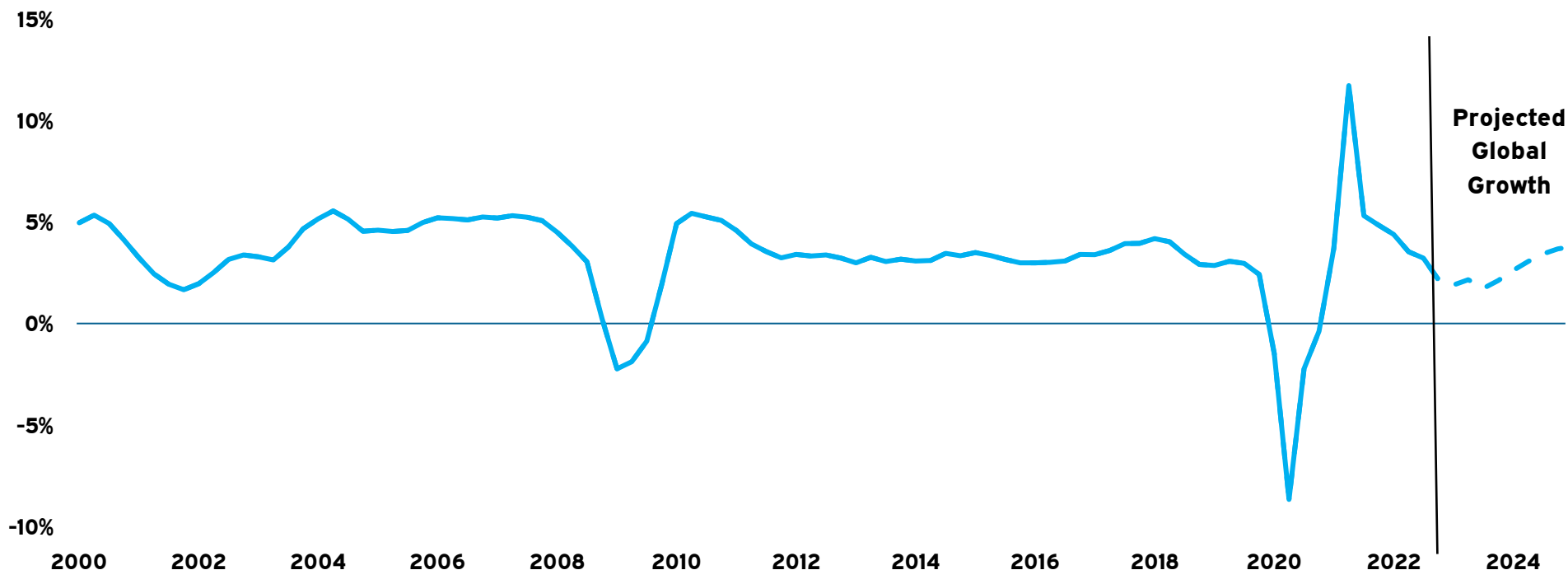
Credit Spreads vs. US Treasury Bonds¹



- Spreads (the added yield above a comparable maturity Treasury) largely remained the same in February as both credit markets and government bonds declined on the anticipation that rates would stay higher for longer.
- High yield spreads fell from 4.2% to 4.1% in February while investment grade spreads remained steady at 1.2%. Emerging market spreads were also stable at 3.3%.

¹ Sources: Bloomberg. Data is as of February 28, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

Global Real Gross Domestic Product (GDP) Growth¹

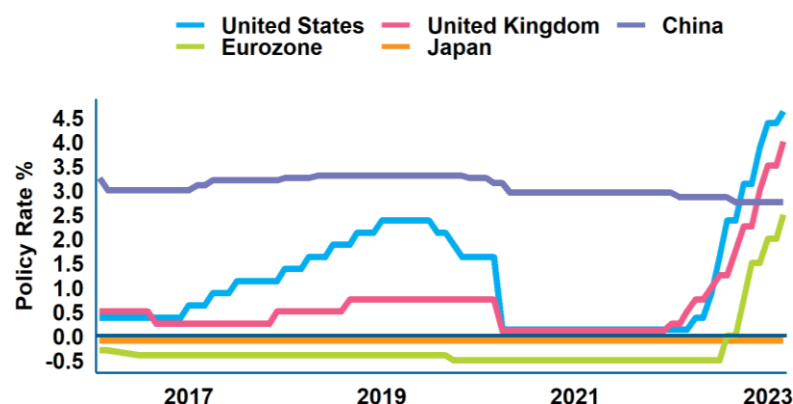


- Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

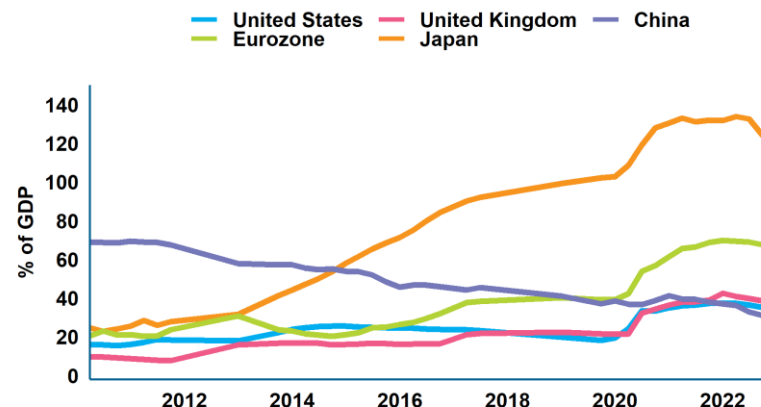
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated February 2023.

Central Bank Response¹

Policy Rates



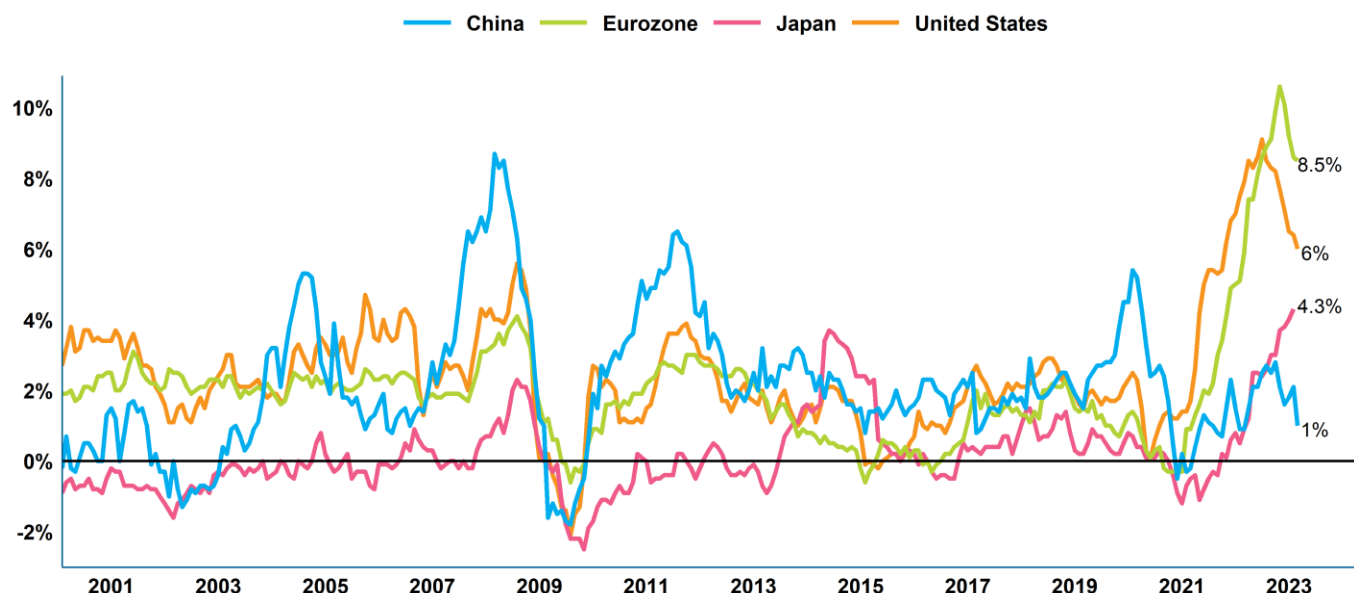
Balance Sheet as % of GDP



- In 2022 many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking the most aggressive approach. However, global inflation has begun to moderate, and markets anticipate a slowing in the rate of policy tightening in the future.
- In December, the Bank of Japan relaxed its target yield for the 10-year bond which may mark an incremental step toward policy normalization after eight years of quantitative easing.
- China's central bank is expected to maintain its accommodative monetary stance to support consumer demand and investment as well as offer liquidity to the troubled real estate sector.
- The risk remains for a policy error, particularly overtightening, as record inflation and aggressive tightening to date could heavily weigh on global growth. The Federal Reserve's policy rate path could diverge from others this year given their strong early start to tightening.

¹ Source: Bloomberg. Policy rate data is as of February 28, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of December 31, 2022.

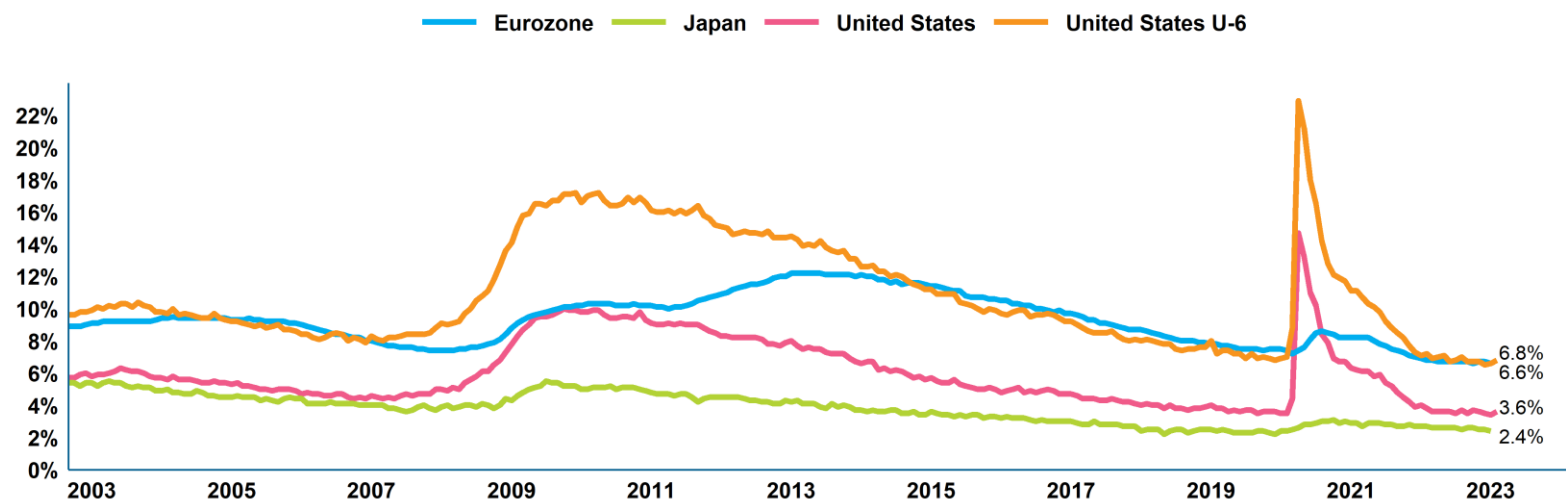
Inflation (CPI Trailing Twelve Months)¹



- Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- Inflation pressures are slowly declining in the US as supply issues ease, but they remain elevated, while in Europe they have also started to fall as energy prices have eased.
- Lingering supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher commodity prices driven by the war in Ukraine have been key global drivers of inflation.

¹ Source: Bloomberg. Data is as of February 2023. The most recent Japanese inflation data is as of January 2023.

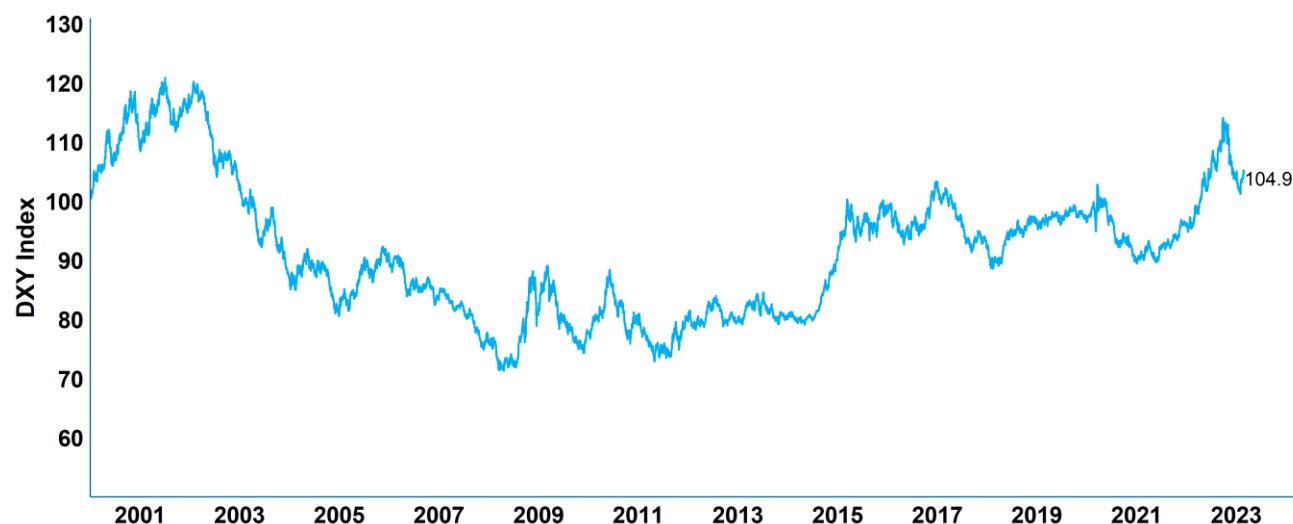
Unemployment¹



- Labor markets have significantly improved from the pandemic as economies have largely reopened.
- Despite slowing growth and high inflation, the US labor market remains a particular bright spot. Unemployment in the US, which experienced the steepest rise, recently has returned to pre-pandemic levels. Broader measures of unemployment (U-6) remain higher at 6.8% but have also declined dramatically from their peak.
- The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to higher unemployment.

¹ Source: Bloomberg. Data is as February 28, 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of January 31, 2023.

US Dollar versus Broad Currencies¹



- The dollar finished 2022 much higher than it started, due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows. Late last year and into early this year, the dollar experienced some weakness though as investors anticipated the end of Fed tightening.
- Overall, the US dollar appreciated in February as better-than-forecasted economic data drove expectations for higher interest rates in the US.
- This year, the track of inflation across economies and the corresponding monetary policies will likely be key drivers of currency moves.

¹ Source: Bloomberg. Data as of February 28, 2023.

Summary

Key Trends:

- The impacts of record high inflation will remain key, with market volatility likely to stay high.
- Recent issues related to the banking sector have created a delicate balance for central banks to continue to fight inflation but also try to maintain financial stability.
- Global monetary policies could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors remains elevated given persistent inflation pressures and a strong US labor market.
- Growth is expected to slow globally this year, with many economies likely falling into recessions. Inflation, monetary policy, and the war will all be key.
- In the US, the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices could weigh on consumer spending.
- Valuations have significantly declined in the US to around long-term averages, largely driven by price declines. The key going forward will be whether earnings can remain resilient if growth continues to slow.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

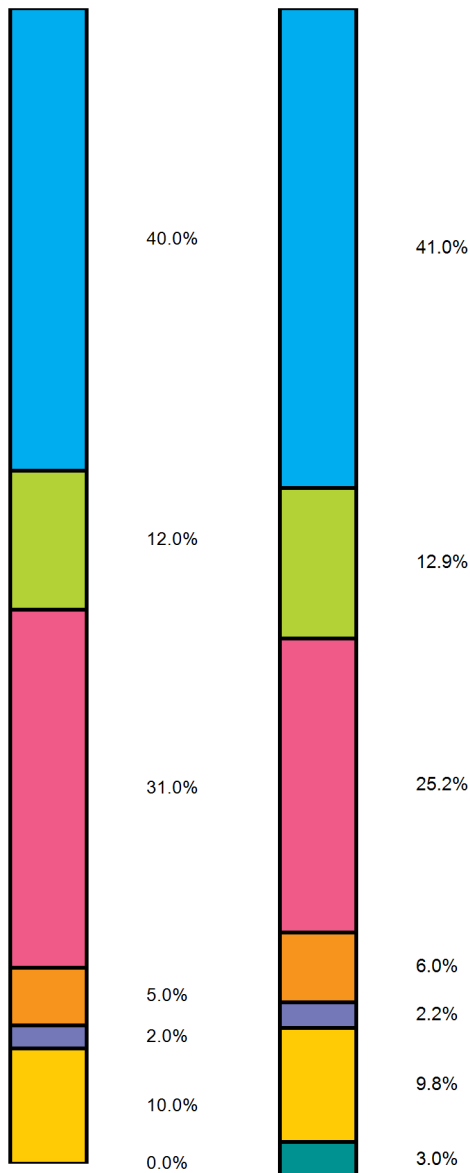
PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Oakland Police and Fire Retirement System

March 29, 2023

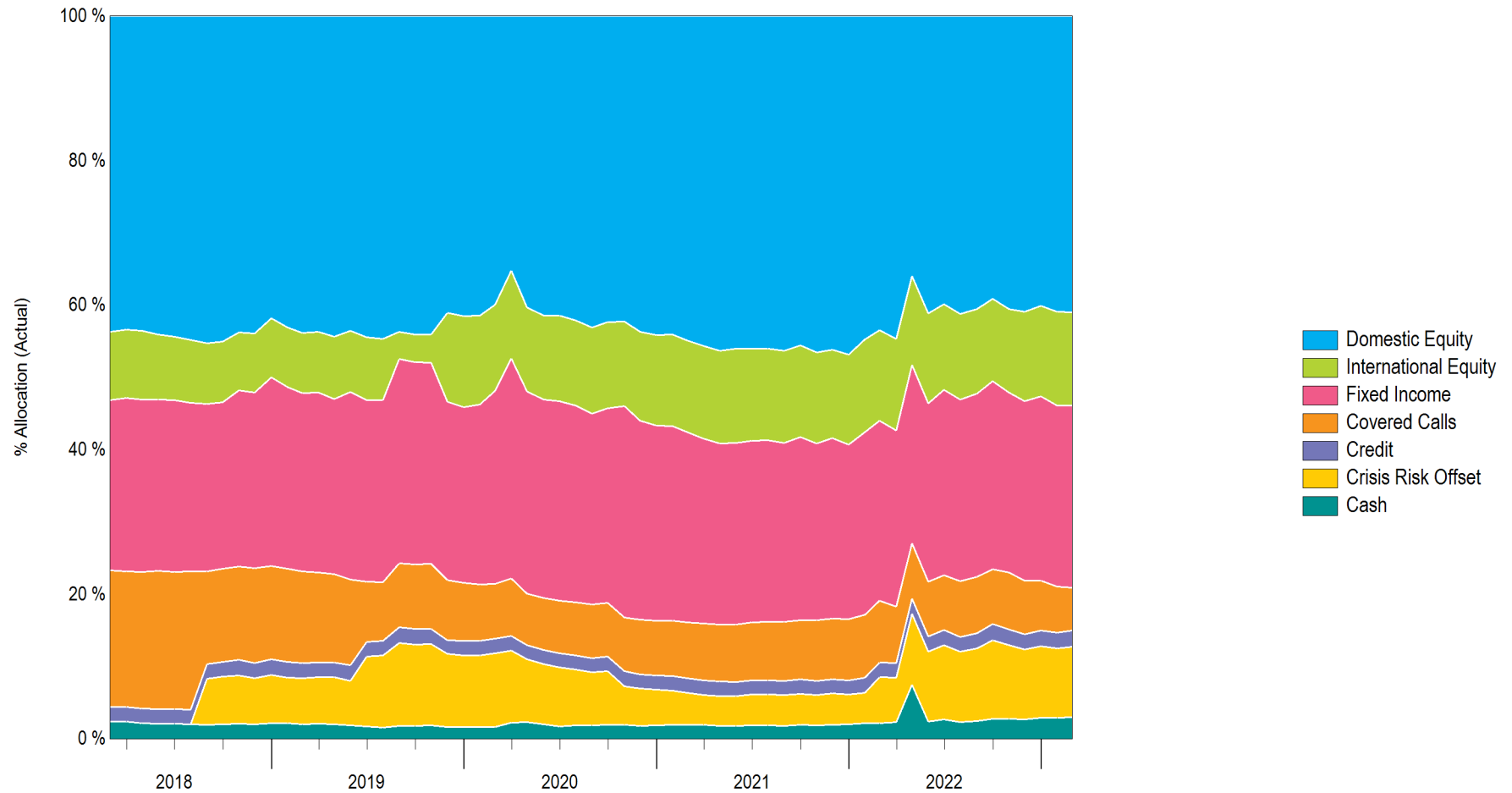
February Flash Report

As of February 28, 2023



Allocation vs. Targets and Policy							
		Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
	Domestic Equity	\$167,350,976	41.0%	40.0%	1.0%	30.0% - 50.0%	Yes
	International Equity	\$52,524,030	12.9%	12.0%	0.9%	8.0% - 14.0%	Yes
	Fixed Income	\$102,708,922	25.2%	31.0%	-5.8%	25.0% - 40.0%	Yes
	Covered Calls	\$24,354,365	6.0%	5.0%	1.0%	5.0% - 10.0%	Yes
	Credit	\$8,933,462	2.2%	2.0%	0.2%	0.0% - 100.0%	Yes
	Crisis Risk Offset	\$39,910,349	9.8%	10.0%	-0.2%	5.0% - 15.0%	Yes
	Cash	\$12,240,413	3.0%	0.0%	3.0%	0.0% - 5.0%	Yes
	Total	\$408,022,517	100.0%	100.0%			

Asset Allocation History 5 Years Ending February 28, 2023



As of February 28, 2023

Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	408,022,517	100.0	-2.1	3.3	4.0	-6.2	5.1	4.9	7.0	6.5	Dec-88
<i>OPFRS Policy Benchmark</i>			<u>-2.0</u>	<u>2.9</u>	<u>4.1</u>	<u>-6.9</u>	<u>4.6</u>	<u>4.5</u>	<u>6.7</u>	<u>7.8</u>	<u>Dec-88</u>
Excess Return			-0.1	0.4	-0.1	0.7	0.5	0.4	0.3	-1.3	
Domestic Equity	167,350,976	41.0	-2.3	4.7	7.9	-5.3	12.1	9.1	11.9	8.7	Jun-97
<i>Russell 3000 (Blend)</i>			<u>-2.3</u>	<u>4.4</u>	<u>6.9</u>	<u>-8.1</u>	<u>11.8</u>	<u>9.4</u>	<u>11.9</u>	<u>8.8</u>	<u>Jun-97</u>
Excess Return			0.0	0.3	1.0	2.8	0.3	-0.3	0.0	-0.1	
International Equity	52,524,030	12.9	-3.3	5.4	9.7	-5.9	5.7	2.6	5.4	5.2	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<u>-3.5</u>	<u>4.3</u>	<u>7.4</u>	<u>-7.2</u>	<u>5.3</u>	<u>1.6</u>	<u>3.9</u>	<u>4.9</u>	<u>Jan-98</u>
Excess Return			0.2	1.1	2.3	1.3	0.4	1.0	1.5	0.3	
Fixed Income	102,708,922	25.2	-2.2	1.1	-1.5	-9.2	-3.0	1.1	1.7	4.7	Dec-93
<i>Bloomberg Universal (Blend)</i>			<u>-2.5</u>	<u>0.6</u>	<u>-1.8</u>	<u>-9.3</u>	<u>-3.4</u>	<u>0.7</u>	<u>1.4</u>	<u>4.5</u>	<u>Dec-93</u>
Excess Return			0.3	0.5	0.3	0.1	0.4	0.4	0.3	0.2	
Credit	8,933,462	2.2	0.3	3.9	5.5	-2.9	4.5	3.3	--	5.1	Feb-15
<i>Bloomberg US High Yield TR</i>			<u>-1.3</u>	<u>2.5</u>	<u>6.1</u>	<u>-5.5</u>	<u>1.3</u>	<u>2.9</u>	<u>4.1</u>	<u>4.0</u>	<u>Feb-15</u>
Excess Return			1.6	1.4	-0.6	2.6	3.2	0.4		1.1	
Covered Calls	24,354,365	6.0	-1.4	3.2	5.5	-4.3	10.9	8.1	--	8.4	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<u>-0.2</u>	<u>4.0</u>	<u>2.7</u>	<u>-4.8</u>	<u>5.7</u>	<u>3.8</u>	<u>5.9</u>	<u>5.2</u>	<u>Apr-14</u>
Excess Return			-1.2	-0.8	2.8	0.5	5.2	4.3		3.2	
Crisis Risk Offset	39,910,349	9.8	-1.2	1.1	-3.7	-8.9	-13.4	-8.0	--	-8.7	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>			<u>1.7</u>	<u>2.2</u>	<u>4.7</u>	<u>7.1</u>	<u>0.6</u>	<u>--</u>	<u>--</u>	<u>0.0</u>	<u>Aug-18</u>
Excess Return			-2.9	-1.1	-8.4	-16.0	-14.0			-8.7	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding. Fiscal year begins on July 1.

As of February 28, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Cash	12,240,413	3.0	-0.3	-0.3	-0.3	-0.3	0.1	1.0	0.7	0.6	Mar-11
<i>FTSE T-Bill 3 Months TR</i>			<u>0.3</u>	<u>0.7</u>	<u>2.1</u>	<u>2.2</u>	<u>0.9</u>	<u>1.3</u>	<u>0.8</u>	<u>0.7</u>	<u>Mar-11</u>
Excess Return			-0.6	-1.0	-2.4	-2.5	-0.8	-0.3	-0.1	-0.1	

As of February 28, 2023

Performance Summary												
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	408,022,517	100.0	--	-2.1	3.3	4.0	-6.2	5.1	4.9	7.0	6.5	Dec-88
OPFRS Policy Benchmark				-2.0	2.9	4.1	-6.9	4.6	4.5	6.7	7.8	Dec-88
Excess Return				-0.1	0.4	-0.1	0.7	0.5	0.4	0.3	-1.3	
Domestic Equity	167,350,976	41.0	41.0	-2.3	4.7	7.9	-5.3	12.1	9.1	11.9	8.7	Jun-97
Russell 3000 (Blend)				-2.3	4.4	6.9	-8.1	11.8	9.4	11.9	8.8	Jun-97
Excess Return				0.0	0.3	1.0	2.8	0.3	-0.3	0.0	-0.1	
Northern Trust Russell 1000	72,647,457	17.8	43.4	-2.4	4.2	6.6	-8.3	11.8	9.6	12.0	12.7	Jun-10
Russell 1000				-2.4	4.2	6.6	-8.2	11.9	9.7	12.1	12.8	Jun-10
Excess Return				0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	
EARNEST Partners	46,733,889	11.5	27.9	-1.9	7.2	9.0	-3.2	14.5	11.4	13.2	10.3	Apr-06
Russell MidCap				-2.4	5.7	11.4	-5.0	11.5	8.4	10.7	8.6	Apr-06
Excess Return				0.5	1.5	-2.4	1.8	3.0	3.0	2.5	1.7	
Wellington Select Quality Equity	21,765,770	5.3	13.0	-2.7	-2.0	4.9	--	--	--	--	-1.1	May-22
Russell 1000				-2.4	4.2	6.6	-8.2	11.9	9.7	12.1	-2.5	May-22
Excess Return				-0.3	-6.2	-1.7					1.4	
Brown Fundamental Small Cap Value	11,668,792	2.9	7.0	-1.1	7.0	18.4	4.9	--	--	--	5.3	Apr-21
Russell 2000 Value				-2.3	7.0	10.7	-4.4	12.9	6.4	8.5	-1.6	Apr-21
Excess Return				1.2	0.0	7.7	9.3				6.9	
Rice Hall James	14,535,068	3.6	8.7	-4.1	9.3	8.1	-7.5	9.9	5.2	--	7.6	Jul-17
Russell 2000 Growth				-1.1	8.8	13.5	-7.9	6.5	5.1	9.3	6.6	Jul-17
Excess Return				-3.0	0.5	-5.4	0.4	3.4	0.1		1.0	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

As of February 28, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
International Equity	52,524,030	12.9	12.9	-3.3	5.4	9.7	-5.9	5.7	2.6	5.4	5.2	Jan-98
<i>MSCI ACWI ex US (Blend)</i>				<i>-3.5</i>	<i>4.3</i>	<i>7.4</i>	<i>-7.2</i>	<i>5.3</i>	<i>1.6</i>	<i>3.9</i>	<i>4.9</i>	<i>Jan-98</i>
Excess Return				0.2	1.1	2.3	1.3	0.4	1.0	1.5	0.3	
Vanguard Developed Markets ETF	14,790,987	3.6	28.2	-3.5	5.2	9.9	-4.8	6.8	--	--	5.9	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>				<i>-2.5</i>	<i>5.5</i>	<i>11.0</i>	<i>-4.7</i>	<i>7.4</i>	<i>3.0</i>	<i>5.2</i>	<i>6.2</i>	<i>Sep-19</i>
Excess Return				-1.0	-0.3	-1.1	-0.1	-0.6			-0.3	
SGA ACWI ex-U.S. Equity	37,733,043	9.2	71.8	-3.2	5.4	9.6	-6.8	5.4	--	--	2.0	Dec-19
<i>MSCI ACWI ex USA</i>				<i>-3.5</i>	<i>4.3</i>	<i>7.4</i>	<i>-7.2</i>	<i>5.3</i>	<i>1.6</i>	<i>3.9</i>	<i>2.7</i>	<i>Dec-19</i>
Excess Return				0.3	1.1	2.2	0.4	0.1			-0.7	
Fixed Income	102,708,922	25.2	25.2	-2.2	1.1	-1.5	-9.2	-3.0	1.1	1.7	4.7	Dec-93
<i>Bloomberg Universal (Blend)</i>				<i>-2.5</i>	<i>0.6</i>	<i>-1.8</i>	<i>-9.3</i>	<i>-3.4</i>	<i>0.7</i>	<i>1.4</i>	<i>4.5</i>	<i>Dec-93</i>
Excess Return				0.3	0.5	0.3	0.1	0.4	0.4	0.3	0.2	
Ramirez	69,805,247	17.1	68.0	-2.1	1.1	-1.7	-9.3	-3.4	1.0	--	1.3	Jan-17
<i>Bloomberg US Aggregate TR</i>				<i>-2.6</i>	<i>0.4</i>	<i>-2.6</i>	<i>-9.7</i>	<i>-3.8</i>	<i>0.5</i>	<i>1.1</i>	<i>0.7</i>	<i>Jan-17</i>
Excess Return				0.5	0.7	0.9	0.4	0.4	0.5		0.6	
Wellington Core Bond	6,607,123	1.6	6.4	-2.5	1.2	-1.9	-10.2	--	--	--	-6.3	Apr-21
<i>Bloomberg US Aggregate TR</i>				<i>-2.6</i>	<i>0.4</i>	<i>-2.6</i>	<i>-9.7</i>	<i>-3.8</i>	<i>0.5</i>	<i>1.1</i>	<i>-5.9</i>	<i>Apr-21</i>
Excess Return				0.1	0.8	0.7	-0.5				-0.4	
Reams	26,296,553	6.4	25.6	-2.4	1.1	-0.8	-8.5	0.6	3.4	2.6	5.1	Feb-98
<i>Bloomberg Universal (Blend)</i>				<i>-2.5</i>	<i>0.6</i>	<i>-1.8</i>	<i>-9.3</i>	<i>-3.4</i>	<i>0.7</i>	<i>1.4</i>	<i>4.1</i>	<i>Feb-98</i>
Excess Return				0.1	0.5	1.0	0.8	4.0	2.7	1.2	1.0	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

Though Vanguard Developed Markets ETF is a passive strategy, short-term performance may appear to diverge from the index it tracks more than what would be expected. This is due to Fair Value Pricing (FVP) adjustments that address the pricing discrepancies that may arise from time-zone differences among global securities markets. The resulting temporary divergence is expected to correct itself when the foreign markets reopen."

As of February 28, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Credit	8,933,462	2.2	2.2	0.3	3.9	5.5	-2.9	4.5	3.3	--	5.1	Feb-15
<i>Bloomberg US High Yield TR</i>				<i>-1.3</i>	<i>2.5</i>	<i>6.1</i>	<i>-5.5</i>	<i>1.3</i>	<i>2.9</i>	<i>4.1</i>	<i>4.0</i>	<i>Feb-15</i>
Excess Return				1.6	1.4	-0.6	2.6	3.2	0.4		1.1	
Polen Capital	8,933,462	2.2	100.0	0.3	3.9	5.5	-2.9	4.5	3.3	--	5.1	Feb-15
<i>ICE BofA High Yield Master TR</i>				<i>-1.3</i>	<i>2.6</i>	<i>5.9</i>	<i>-5.5</i>	<i>1.2</i>	<i>2.7</i>	<i>4.0</i>	<i>3.9</i>	<i>Feb-15</i>
Excess Return				1.6	1.3	-0.4	2.6	3.3	0.6		1.2	
Covered Calls	24,354,365	6.0	6.0	-1.4	3.2	5.5	-4.3	10.9	8.1	--	8.4	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>-0.2</i>	<i>4.0</i>	<i>2.7</i>	<i>-4.8</i>	<i>5.7</i>	<i>3.8</i>	<i>5.9</i>	<i>5.2</i>	<i>Apr-14</i>
Excess Return				-1.2	-0.8	2.8	0.5	5.2	4.3		3.2	
Parametric BXM	12,284,176	3.0	50.4	-0.7	2.6	3.8	-3.8	8.4	5.9	--	6.6	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>-0.2</i>	<i>4.0</i>	<i>2.7</i>	<i>-4.8</i>	<i>5.7</i>	<i>3.8</i>	<i>5.9</i>	<i>5.2</i>	<i>Apr-14</i>
Excess Return				-0.5	-1.4	1.1	1.0	2.7	2.1		1.4	
Parametric DeltaShift	12,070,189	3.0	49.6	-2.0	3.9	7.3	-5.0	13.1	9.9	--	10.3	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>-0.2</i>	<i>4.0</i>	<i>2.7</i>	<i>-4.8</i>	<i>5.7</i>	<i>3.8</i>	<i>5.9</i>	<i>5.2</i>	<i>Apr-14</i>
Excess Return				-1.8	-0.1	4.6	-0.2	7.4	6.1		5.1	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

As of February 28, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Crisis Risk Offset	39,910,349	9.8	9.8	-1.2	1.1	-3.7	-8.9	-13.4	-8.0	--	-8.7	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				<i>1.7</i>	<i>2.2</i>	<i>4.7</i>	<i>7.1</i>	<i>0.6</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>Aug-18</i>
Excess Return				-2.9	-1.1	-8.4	-16.0	-14.0			-8.7	
Kepos Alternative Risk Premia	10,221,366	2.5	25.6	1.6	4.0	7.6	3.7	--	--	--	2.8	Feb-22
<i>SG Multi Alternative Risk Premia Index</i>				<i>1.7</i>	<i>2.2</i>	<i>4.7</i>	<i>7.1</i>	<i>0.6</i>	<i>--</i>	<i>--</i>	<i>5.7</i>	<i>Feb-22</i>
Excess Return				-0.1	1.8	2.9	-3.4				-2.9	
Versor Trend Following	15,733,286	3.9	39.4	0.4	-1.5	-5.3	--	--	--	--	4.9	Apr-22
<i>SG Trend Index</i>				<i>1.9</i>	<i>0.5</i>	<i>-0.7</i>	<i>27.4</i>	<i>16.4</i>	<i>10.5</i>	<i>6.3</i>	<i>16.2</i>	<i>Apr-22</i>
Excess Return				-1.5	-2.0	-4.6					-11.3	
Vanguard Long-Term Treasury ETF	13,955,697	3.4	35.0	-4.7	2.1	-8.9	-23.8	-11.0	--	--	-4.9	Jul-19
<i>Bloomberg US Govt Long TR</i>				<i>-4.7</i>	<i>1.4</i>	<i>-8.9</i>	<i>-24.0</i>	<i>-10.9</i>	<i>-0.7</i>	<i>1.0</i>	<i>-4.9</i>	<i>Jul-19</i>
Excess Return				0.0	0.7	0.0	0.2	-0.1			0.0	
Cash	12,240,413	3.0	3.0	-0.3	-0.3	-0.3	-0.3	0.1	1.0	0.7	0.6	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.3</i>	<i>0.7</i>	<i>2.1</i>	<i>2.2</i>	<i>0.9</i>	<i>1.3</i>	<i>0.8</i>	<i>0.7</i>	<i>Mar-11</i>
Excess Return				-0.6	-1.0	-2.4	-2.5	-0.8	-0.3	-0.1	-0.1	
Cash - Money Market	3,848,413	0.9	31.4	-1.0	-1.0	-1.0	-1.0	0.1	1.0	0.6	0.5	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.3</i>	<i>0.7</i>	<i>2.1</i>	<i>2.2</i>	<i>0.9</i>	<i>1.3</i>	<i>0.8</i>	<i>0.7</i>	<i>Mar-11</i>
Excess Return				-1.3	-1.7	-3.1	-3.2	-0.8	-0.3	-0.2	-0.2	
Cash - Treasury	8,392,000	2.1	68.6									

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

As of February 28, 2023

Cash Flow Summary				
Month to Date				
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Brown Fundamental Small Cap Value	\$11,802,575	\$0	-\$133,783	\$11,668,792
Cash - Money Market	\$3,888,432	\$0	-\$40,019	\$3,848,413
Cash - Treasury	\$8,238,000	\$154,000	\$0	\$8,392,000
EARNEST Partners	\$47,621,448	\$0	-\$887,559	\$46,733,889
Kepos Alternative Risk Premia	\$10,068,926	\$0	\$152,440	\$10,221,366
Northern Trust Russell 1000	\$74,412,427	\$0	-\$1,764,971	\$72,647,457
Parametric BXM	\$13,373,131	-\$1,000,000	-\$88,955	\$12,284,176
Parametric DeltaShift	\$13,316,051	-\$1,000,000	-\$245,862	\$12,070,189
Polen Capital	\$8,909,576	\$0	\$23,886	\$8,933,462
Ramirez	\$71,321,528	\$0	-\$1,516,281	\$69,805,247
Reams	\$26,932,045	\$0	-\$635,492	\$26,296,553
Rice Hall James	\$15,155,688	\$0	-\$620,620	\$14,535,068
Securities Lending Northern Trust	\$0	-\$8,409	\$8,409	\$0
SGA ACWI ex-U.S. Equity	\$38,983,207	\$0	-\$1,250,164	\$37,733,043
Vanguard Developed Markets ETF	\$15,323,422	\$0	-\$532,435	\$14,790,987
Vanguard Long-Term Treasury ETF	\$14,685,291	\$0	-\$729,593	\$13,955,697
Versor Trend Following	\$15,669,452	\$0	\$63,834	\$15,733,286
Wellington Core Bond	\$6,778,017	\$0	-\$170,895	\$6,607,123
Wellington Select Quality Equity	\$22,376,261	\$0	-\$610,491	\$21,765,770
Total	\$418,855,478	-\$1,854,409	-\$8,978,552	\$408,022,517

As of February 28, 2023

Benchmark History

As of February 28, 2023

OPFRS Total Plan

6/1/2022	Present	40% Russell 3000 / 12% MSCI ACWI ex USA / 31% Bloomberg US Universal TR / 5% CBOE BXM / 10% SG Multi Alternative Risk Premia Index / 2% Bloomberg US High Yield TR
1/1/2019	5/31/2022	40% Russell 3000 / 12% MSCI ACWI ex USA Gross / 33% Bloomberg US Universal TR / 5% CBOE BXM / 6.7% SG Multi Alternative Risk Premia Index / 3.3% Bloomberg US Treasury Long TR
5/1/2016	12/31/2018	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% Bloomberg US Universal TR / 20% CBOE BXM
10/1/2015	4/30/2016	43% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% Bloomberg US Universal TR / 15% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
1/1/2014	9/30/2015	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% Bloomberg US Universal TR / 10% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
3/1/2013	12/31/2013	40% Russell 3000 / 10% MSCI ACWI ex USA Gross / 17% Bloomberg US Universal TR / 33% ICE BofA 3M US Treasury TR USD
8/1/2012	2/28/2013	20% Russell 3000 / 7% MSCI ACWI ex USA Gross / 18% Bloomberg US Universal TR / 55% ICE BofA 3M US Treasury TR USD
10/1/2007	7/31/2012	53% Russell 3000 / 17% MSCI ACWI ex USA Gross / 30% Bloomberg US Universal TR
4/1/2006	9/30/2007	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% Bloomberg US Universal TR
1/1/2005	3/31/2006	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% Bloomberg US Aggregate TR
4/1/1998	12/31/2004	50% Bloomberg US Aggregate TR / 10% Russell 1000 / 20% Russell 1000 Value / 5% Russell MidCap / 15% MSCI EAFE
12/1/1988	3/31/1998	40% S&P 500 / 55% Bloomberg US Aggregate TR / 5% FTSE T-Bill 3 Months TR

As of February 28, 2023

Benchmark History

As of February 28, 2023

Domestic Equity

1/1/2005	Present	Russell 3000
4/1/1998	12/31/2004	28.57% Russell 1000 / 57.14% Russell 1000 Value / 14.29% Russell MidCap
6/1/1997	3/31/1998	S&P 500

International Equity

1/1/2005	Present	MSCI ACWI ex USA
1/1/1998	12/31/2004	MSCI EAFE Gross

Fixed Income

4/1/2006	Present	Bloomberg US Universal TR
12/31/1993	3/31/2006	Bloomberg US Aggregate TR

Covered Calls

4/1/2014	Present	CBOE S&P 500 BuyWrite USD
----------	---------	---------------------------

Crisis Risk Offset

8/1/2018	Present	SG Multi Alternative Risk Premia Index
----------	---------	--

Cash

3/1/2011	Present	FTSE T-Bill 3 Months TR
----------	---------	-------------------------

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Oakland Police and Fire Retirement System

March 29, 2023

Recommendation for
Apr to Jun 2023 Cash Flows

Asset Class / Manager Liquidity

Asset Class	Fund	Liquidity Tier
Domestic Equity	Northern Trust Russell 1000	1
Domestic Equity	EARNEST Partners	3
Domestic Equity	Wellington Select Quality Equity	3
Domestic Equity	Rice Hall James	3
Domestic Equity	Brown Small Cap Value	3
International Equity	SGA MSCI ACWI ex-US	3
International Equity	Vanguard Developed ETF	1
Domestic Fixed Income	Ramirez	2
Domestic Fixed Income	Reams	2
Domestic Fixed Income	Wellington Core Bond	3
Credit	Polen Capital High Yield	2
Covered Calls	Parametric	2
Crisis Risk Offset	Vanguard Long Duration ETF	1
Crisis Risk Offset	Versor Trend Following	3
Crisis Risk Offset	Kepos Alternative Risk Premia	3
Cash	Cash	1

Description of Liquidity Tiers

Tier	Description	Market Value (\$M)	In Months ¹
1	Public, Scheduled Withdrawal Allowances	113.6	18.9
2	Public, Accommodating of Withdrawals	129.4	21.6
3	Public, Must Plan Withdrawals	165.0	27.5
4	Closely Held	0.0	-
Total		408.0	

¹ Illustrates Liquidity in Months assuming a net outflow of \$6 million per month; that is, the illustrated figure demonstrates the number of months it would take to withdraw \$6 million per month from each liquidity tier.

Oakland PFRS Asset Allocation as of February 28, 2023¹

	Market Value		Target	Variance		Actual Cash Flows for Jan – Mar Benefits ¹		Suggested Cash Flows for Apr – Jun Benefits ¹	
	(\$M)	(%)	(%)	(\$M)	(%)	Inflow (\$M)	Outflow (\$M)	Inflow (\$M)	Outflow (\$M)
Northern Trust Russell 1000	72.6	17.8%	20.0	(9.0)	(2.2%)	--	--	--	--
EARNEST Partners	46.7	11.5%	8.0	14.1	3.5%	--	--	--	(6.0)
Wellington Select Quality Equity	21.8	5.3%	6.0	(2.7)	(0.7%)	--	--	--	--
Rice Hall James	14.5	3.6%	3.0	2.3	0.6%	--	--	--	--
Brown Small Cap Value	11.7	2.9%	3.0	(0.6)	(0.1%)	--	--	--	--
Total Domestic Equity	167.4	41.0%	40.0	4.1	1.0%	--	--	--	(6.0)
SGA MSCI ACWI ex-US	37.7	9.2%	8.4	3.5	0.8%	--	--	--	--
Vanguard Developed ETF (BlackRock) ²	14.8	3.6%	3.6	0.1	0.0%	--	--	--	--
Total International Equity	52.5	12.9%	12.0	3.6	0.9%	--	--	--	--
Total Public Equity³	219.9	53.9%	52.0	7.7	1.9%	--	--	--	(6.0)
Parametric	24.4	6.0%	5.0	4.0	1.0%	--	(6.0)	--	--
Total Covered Calls	24.4	6.0%	5.0	4.0	1.0%	--	(6.0)	--	--
Long Duration ETF (BlackRock) ²	14.0	3.4%	3.3	0.4	0.1%	--	--	--	--
Versor Trend Following	15.7	3.9%	3.3	2.3	0.6%	--	--	--	--
Kepos Alternative Risk Premia	10.2	2.5%	3.3	(3.2)	(0.8%)	--	--	--	--
Total Crisis Risk Offset	39.9	9.8%	10.0	(0.9)	(0.2%)	--	--	--	--
Ramirez	69.8	17.1%	17.0	0.4	0.1%	--	--	--	--
Reams	26.3	6.4%	12.0	(22.7)	(5.6%)	--	--	--	--
Wellington Core Bond	6.6	1.6%	2.0	(1.6)	(0.4%)	--	--	--	--
Polen Capital High Yield	8.9	2.2%	2.0	0.8	0.2%	--	--	--	--
Total Public Fixed Income	111.6	27.4%	33.0	(23.0)	(5.6%)	--	--	--	--
Cash	12.2	3.0%	0.0	12.2	3.0%	8.2	(8.2)	8.2	(8.2)
Total Stable³	123.9	30.4%	33.0	(10.8)	(2.6%)	8.2	(8.2)	8.2	(8.2)
Total Portfolio	408.0	100.0%	100			8.2	(14.2)	8.2	(14.2)

¹ Benefit payments estimated at \$14.2 million on a quarterly basis per OPFRS. Report reflects quarterly City contributions of \$8.2 million. The City's current quarterly contribution amount is based on FY 2022/2023 actuarial annual required contribution of \$32.8 million. Benefits are payable on first of each month.

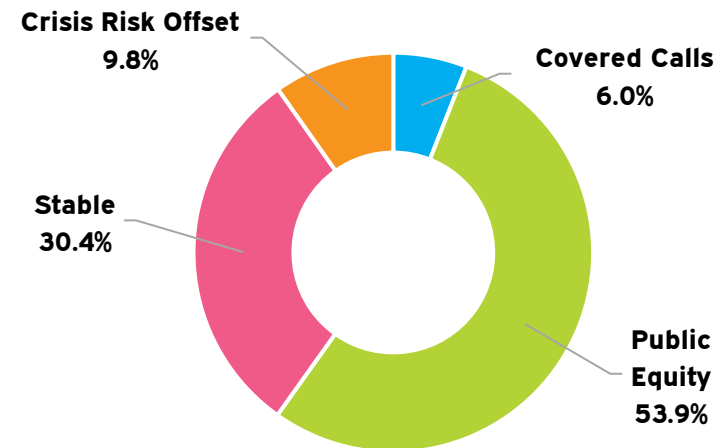
² Manager names in parentheses indicates selected, yet unfunded managers for replacement.

³ Public Equity is the sum of Domestic Equity and International Equity; Stable is the sum of Public Fixed Income and Cash.

Market Value by Portfolio Segment Before Cash Flows

Portfolio Segment	Market Value (\$M)
Domestic Equity	167.4
International Equity	52.5
Public Equity ¹	219.9
Covered Calls	24.4
Crisis Risk Offset	39.9
Public Fixed Income	111.6
Stable ¹	123.9
Total Portfolio	408.0

Projected Equity to Fixed Income Allocation After Cash Flows



Suggested Cash Withdrawals

Portfolio Segment	Market Value (\$M)
Cash in Treasury	8.2
EARNEST Partners	6.0
Total Withdrawal	14.2

→ Market value difference in Public Equity from 52% allocation: \$7.7 million

¹ Public Equity is the sum of Domestic Equity and International Equity; Stable is the sum of Public Fixed Income and Cash (not shown on this page).

Projected OPFRS Asset Allocation as of June 30, 2023¹

	Estimated Market Value		Target	Projected Variance from Target	
	(\$M)	(%)	(%)	(\$M)	(%)
Northern Trust Russell 1000	72.6	18.3%	20.0%	(6.6)	(1.7%)
EARNEST Partners	40.7	10.3%	6.0%	17.0	4.3%
Wellington Select Quality Equity	21.8	5.5%	8.0%	(9.9)	(2.5%)
Rice Hall James	14.5	3.7%	3.0%	2.7	0.7%
Brown Small Cap Value	11.7	2.9%	3.0%	(0.2)	(0.1%)
Total Domestic Equity	161.4	40.7%	40.0%	2.9	0.7%
SGA MSCI ACWI ex-US	37.7	9.5%	3.6%	23.5	5.9%
Vanguard Developed Markets ETF	14.8	3.7%	8.4%	(18.5)	(4.7%)
Total International Equity	52.5	13.3%	12.0%	5.0	1.3%
Total Public Equity	213.9	54.0%	52.0%	7.9	2.0%
Parametric	18.4	4.6%	5.0%	(1.4)	(0.4%)
Total Covered Calls	18.4	4.6%	5.0%	(1.4)	(0.4%)
Vanguard Long Duration ETF	14.0	3.5%	3.3%	0.8	0.2%
Versor Trend Following	15.7	4.0%	3.3%	2.5	0.6%
Kepos Alternative Risk Premia	10.2	2.6%	3.3%	(3.0)	(0.7%)
Total Crisis Risk Offset	39.9	10.1%	10.0%	0.3	0.1%
Ramirez	69.8	17.6%	12.0%	22.3	5.6%
Reams	26.3	6.6%	2.0%	18.4	4.6%
Wellington Core Bond	6.6	1.7%	19.0%	(68.6)	(17.3%)
Polen Capital High Yield	8.9	2.3%	2.0%	1.0	0.3%
Total Public Fixed Income	111.6	28.2%	33.0%	(19.0)	(4.8%)
Cash	12.2	3.1%	0.0%	12.2	3.1%
Total Stable	123.9	31.3%	33.0%	(6.8)	(1.7%)
Total Portfolio	396.0	100%	100%		

¹ Benefit payments estimated at \$14.2M on a quarterly basis per OPFRS. Report reflects quarterly City contributions of \$8.2M. The City's current quarterly contribution amount is based on FY 2022/2023 actuarial annual required contribution of \$32.8M.

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: March 29, 2023
RE: 2023 Long-term Investment Return Expectations

The general theme of the 2023 Meketa Capital Market Assumptions are higher future expected returns across all asset classes. This is a theme which is consistent across the board in the industry and largely driven by the environment with rising interest rates, widening spreads, and the lower valuation of risk assets.

Higher expected interest rates result in higher expected returns for most yield oriented asset classes as starting yield is often a fairly reasonable predictor of future returns for many fixed income related classes. At the same time, despite lower growth projections globally, the price decline experienced by equities and many other risk assets has improved their forward-looking returns.

It's important to remember that our capital market assumptions and those of other practitioners and peers have a significant range of error in terms of potential future outcomes. For example, the higher the expected standard deviation, the higher the range of possible outcomes is expected to be for any asset class or portfolio. It should also be noted that the long-term expected portfolio compound return assumes net-of-fee returns, with no attempt to seek added value via active management.

Additionally, our capital market assumptions are over a 20-year time horizon which is different from the time horizon used by OPFRS's actuary, Cheiron, which projects out over 30-years. Further summary comments of our 2023 capital market assumptions and the detailed projections by asset class are shown on the following page.

Summary Comments on 2023 Capital Market Expectations

- In 2023, our cash return expectations increased from 2022 from 1.7% to 2.9% (change of +1.2%).
- Fixed income yields across the maturity and quality spectrum increased during 2022 increasing return expectations for Fixed Income, High Yield, and Long Duration (a part of Crisis Risk Offset) asset classes.
 - While expected risk, as measured by standard deviation, has remained constant for Fixed Income and High Yield classes, it has significantly increased for Long Duration signifying a higher range of possible outcomes for this asset class.
- US and International Equities, Credit, and Covered Calls are projected to achieve a compound return above 6.5% over the next 20 years.
- Fixed Income and Crisis Risk Offset (composed of Alternative Risk Premia, Systematic Trend Following, and Long Duration) are expected to get a compound return 4.7% and 5.1% respectively.
- Over the next 20 years, the OPFRS long-term policy portfolio is projected to produce a compound return of 7.6%.

Long-Term Policy Portfolio Risk-Return Expectations (Based on Meketa's 2023 20-Year Capital Market Expectations)

Investment Class	Target Allocation (%)	Expected Return (%)	Expected Risk ¹ (%)
US Equity	40	8.7	18.0
International Equity	12	9.8	19.0
Fixed Income	21	4.7	4.0
Credit	2	7.3	11.0
Covered Calls	5	7.2	13.0
Crisis Risk Offset ²	20	5.1	11.7
Cash	---	2.9	1.0
Total	100	7.6	10.3

¹ Measured as standard deviation.

² Crisis Risk Offset is composed of three components: Alternative Risk Premia, Systematic Trend Following, and Long Duration.



Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Meketa Investment Group

March 29, 2023

Capital Markets Expectations

Setting Capital Market Expectations

- Capital markets expectations (CMEs) are the inputs needed to determine the long-term risk and returns expectations for a portfolio.
 - They serve as the starting point for determining asset allocation.
- Consultants (including Meketa) generally set them once a year.
 - Our results are published in January and based on data as of December 31 for public markets and September 30 for private markets.
 - Changes are driven by many factors, including interest rates, credit spreads, cap rates, and equity prices.
- Setting CMEs involves crafting long-term forecasts for:
 - Returns
 - Standard Deviation
 - Correlations (i.e., covariance)
- We created inputs for 104 “asset classes” for our 2023 Capital Markets Expectations.
- Our process relies on both quantitative and qualitative methodologies.

Building 10-year Forecasts

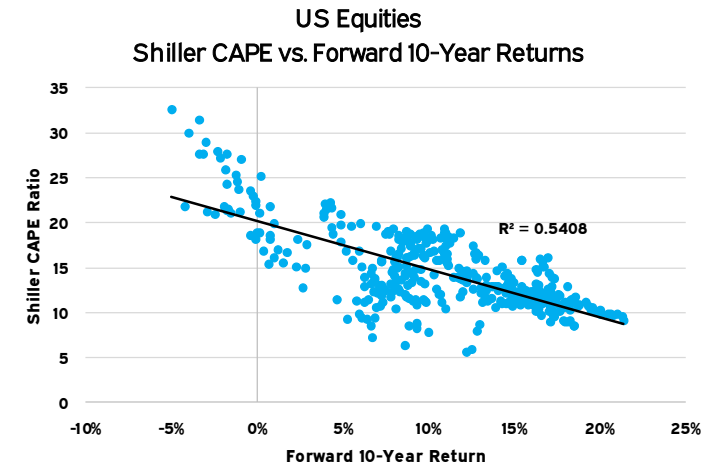
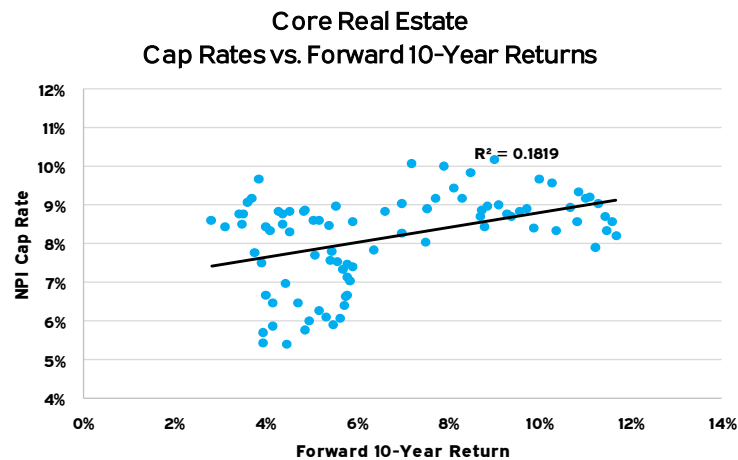
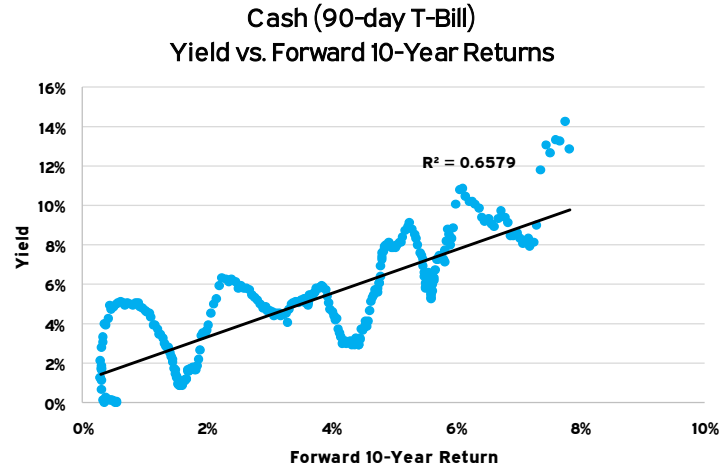
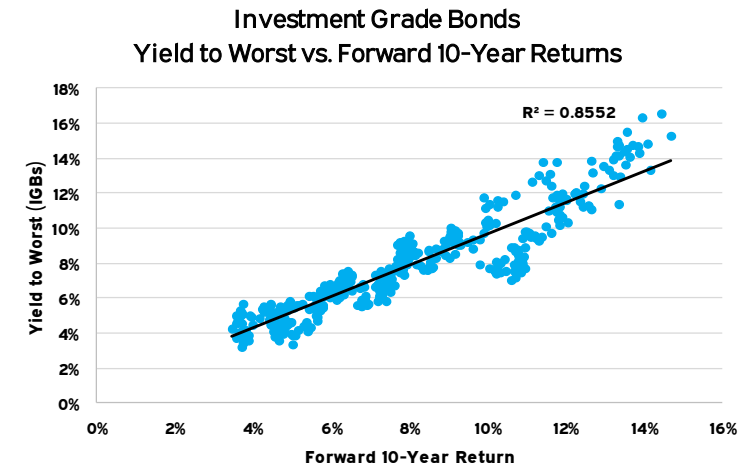
→ Our first step is to develop 10-year forecasts based on fundamental models.

- Each model is based on the most important factors that drive returns for that asset class:

Asset Class Category	Major Factors
Equities	Dividend Yield, GDP Growth, Valuation
Bonds	Yield to Worst, Default Rate, Recovery Rate
Commodities	Collateral Yield, Roll Yield, Inflation
Infrastructure	Public IS Valuation, Income, Growth
Natural Resources	Price per Acre, Income, Public Market Valuation
Real Estate	Cap Rate, Yield, Growth
Private Equity	EBITDA Multiple, Debt Multiple, Public VC Valuation
Hedge Funds and Other	Leverage, Alternative Betas

- The common components are income, growth, and valuation.

Some factors are naturally more predictive than others



Sources: Bloomberg, FRED, NCREIF, S&P, Robert Shiller (Yale University), and Meketa Investment Group.

10-year Model Example: Bonds

→ The short version for investment grade bond models is:

$$E(R) = \text{Current YTW (yield to worst)}$$

→ Our models assume that there is a reversion to the mean for spreads (though not yields).

→ For TIPS, we add the real yield of the TIPS index to the breakeven inflation rate.

→ As with equities, we make currency adjustments when necessary for foreign bonds.

→ For bonds with credit risk, Meketa Investment Group estimates default rates and loss rates in order to project an expected return:

$$E(R) = \text{YTW} - (\text{Annual Default Rate} \times \text{Loss Rate})$$

10-year Model Example: Equities

→ We use a fundamental model for equities that combines income and capital appreciation.

$$E(R) = \text{Dividend Yield} + \text{Expected Earnings Growth} + \text{Multiple Effect} + \text{Currency Effect}$$

→ Meketa evaluates historical data to develop expectations for dividend yield, earnings growth, the multiple effect, and currency effect.

- Earnings growth is a function of Real GDP growth, inflation, and exposure to foreign revenue sources.
- We assume that long-term earnings growth is linked to regional economic growth.
- However, many factors can cause differences between economic growth and EPS growth.

→ Our models assume that there is a reversion toward mean pricing over this time frame.

Moving from 10-Year to 20-Year Forecasts

- Our next step is to combine our 10-year forecasts with projections for years 11-20 for each asset class.
- We use a risk premia approach to forecast 10-year returns in ten years (i.e., years 11-20).
 - We start with an assumption (market informed, such as the 10-year forward rate) for what the risk-free rate will be in ten years,
 - We then add a risk premia for each asset class.
 - We use historical risk premia as a guide, but many asset classes will differ from this, especially if they have a shorter history.
 - We seek consistency with finance theory (i.e., riskier assets will have a higher risk premia assumption).
- Essentially, we assume mean-reversion over the first ten years (where appropriate), and consistency with CAPM thereafter.
- The final step is to make any qualitative adjustments.
 - The Investment Policy Committee reviews the output and may make adjustments.

The Other Inputs: Standard Deviation and Correlation

→ Standard deviation:

- We review the trailing fifteen-year standard deviation, as well as skewness.
- Historical standard deviation serves as the base for our assumptions.
- If there is a negative skew, we increased the volatility assumption based on the size of the historical skewness.

Asset Class	Historical Standard Deviation (%)	Skewness	Assumption (%)
Bank Loans	7.4	-2.6	10.0
FI/L-S Credit	6.5	-2.5	9.0

- We also adjust for private market asset classes with “smoothed” return streams.

→ Correlation:

- We use trailing fifteen-year correlations as our guide.
- Again, we make adjustments for “smoothed” return streams.

→ Most of our adjustments are conservative in nature (i.e., they increase the standard deviation and correlation).

Summary of Changes

- 2022 was a difficult year, with losses experienced for most asset classes, as interest rates increased, spreads widened, and most risk assets declined in value.
 - However, there is a notable silver lining to this story – increased return assumptions.
- The changes relative to last year are being driven by what happened in the market.
 - Bond yields increased by the largest amount since the 1990s, driving up future returns for fixed income assets.
 - Despite lower growth projections globally, the price decline experienced by equities and many other risk assets has improved their forward-looking returns.
- Higher expected interest rates also provide a tailwind, as the bridge from 10 to 20 years is made via a risk premia being added to a (higher) future risk-free rate.
 - The risk-free rate jumped from 2.78% to 4.17%
- The net result is the largest increase in return assumptions in our 20+ year history of creating capital market expectations (CMEs).

Rising Rates = Higher Yields

→ Rising interest rates and wider credit spreads resulted in higher yields across every major sector of the global bond market.

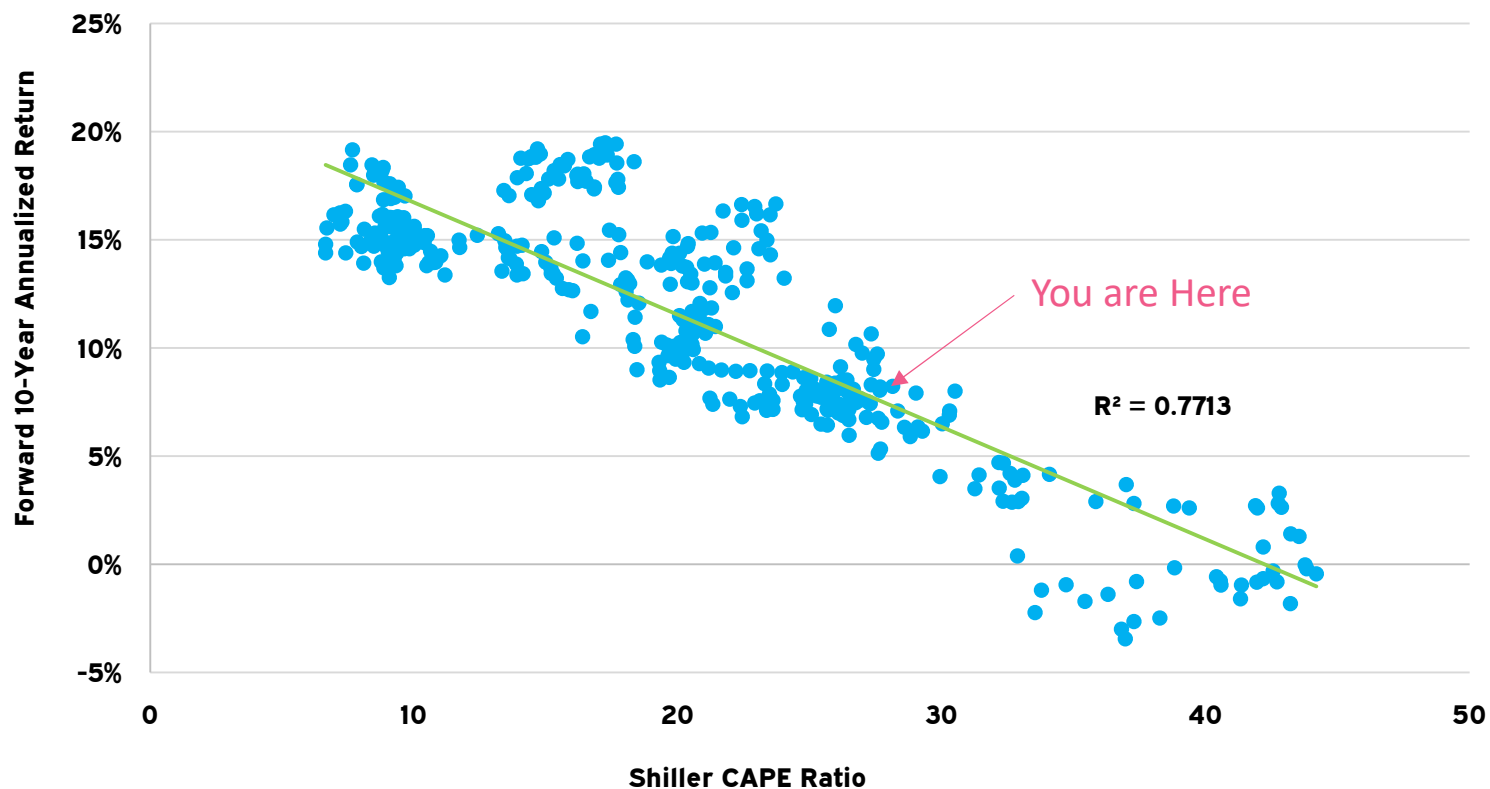
Index	Yield to Worst 12/31/22 (%)	Yield to Worst 12/31/21 (%)
Fed Funds Rate	4.25-4.50	0-0.25
10-year Treasury	3.88	1.51
Bloomberg Aggregate	4.68	1.75
Bloomberg Corporate	5.42	2.33
Bloomberg Securitized	4.75	1.98
Bloomberg Global Aggregate	3.73	1.31
Bloomberg EM Local Currency Government	4.42	3.83
Bloomberg EM Hard Currency Aggregate	7.26	3.96
Bloomberg US Corporate High Yield	8.96	4.21

Source: Bloomberg. Data is as of December 31, 2022 and 2021.

Impact of Equity Prices on Returns

- Relative prices have been indicative of future equity returns.
- Higher prices have led to lower future returns, and vice versa.

US Equities: Shiller CAPE vs. Forward 10-Year Returns



Source: Robert Shiller, Yale University, and Meketa Investment Group. Data is based on monthly returns and Cyclically Adjusted P/E ratio on S&P 500 Index for the period from January 1980 through December 2022.

20-year Geometric Expected Returns Rate Sensitive

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Cash Equivalents	2.9	1.7	1.2	Higher yields
Short-term Investment Grade Bonds	3.5	1.9	1.6	Higher yields
Investment Grade Bonds	4.7	2.4	2.3	Higher yields
Intermediate Government Bonds	3.7	1.9	1.8	Higher yields
Long-term Government Bonds	5.0	2.8	2.2	Higher yields
Mortgage Backed Securities	4.6	2.5	2.1	Higher yields
Investment Grade Corporate Bonds	5.4	3.0	2.4	Higher yields
Long-term Corporate Bonds	5.7	3.7	2.0	Higher yields
Short-term TIPS	3.6	1.9	1.7	Higher yields
TIPS	4.5	2.4	2.1	Higher yields
Long-term TIPS	5.2	3.2	2.0	Higher yields
Global ILBs	4.7	2.3	2.4	Higher yields
Foreign Bonds	4.0	2.3	1.7	Higher yields
US Inflation	2.6	2.2	0.4	Higher long-term economist and market projections

20-year Geometric Expected Returns Credit

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
High Yield Bonds	7.3	4.4	2.9	Higher yields
Higher Quality High Yield	6.7	4.2	2.5	Higher yields
Bank Loans	7.0	4.0	3.0	Higher yields
Collateralized Loan Obligations (CLOs)	7.2	4.2	3.0	Higher yields
Convertible Bonds	6.4	3.9	2.5	Higher yields
Emerging Market Bonds (major)	6.4	4.2	2.2	Higher yields
Emerging Market Bonds (local)	6.0	4.6	1.4	Higher yields
Private Debt	9.0	7.3	1.7	Higher yields
Direct Lending	8.3	7.1	1.2	Higher yields
Asset Based Lending	9.0	7.3	1.7	Higher yields
Special Situations Lending	10.2	NA		New

20-year Geometric Expected Returns Equities

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
US Equity	8.7	6.8	1.9	Lower valuations and higher risk-free rate
US Small Cap	9.3	7.4	1.9	Lower valuations and higher risk-free rate
Developed Non-US Equity	9.8	7.5	2.3	Lower valuations and higher risk-free rate
Dev. Non-US Small Cap	10.1	7.4	2.7	Lower valuations and higher risk-free rate
Emerging Market Equity	10.0	8.4	1.6	Lower valuations and higher risk-free rate
Emerging Market Small Cap	10.0	8.2	1.8	Lower valuations and higher risk-free rate
Emerging Market ex-China	10.3	NA		<i>New</i>
China Equity	9.3	NA		<i>New</i>
Frontier Market Equity	10.7	8.7	2.0	Lower valuations and higher risk-free rate
Global Equity	9.2	7.2	2.0	Lower valuations and higher risk-free rate
Low Volatility Equity	8.3	6.5	1.8	Lower valuations and higher risk-free rate
Private Equity	11.0	10.0	1.0	Lower valuations and higher risk-free rate
Buyouts	10.7	9.8	0.9	Lower valuations and higher risk-free rate
Growth Equity	11.2	10.1	1.1	Lower valuations and higher risk-free rate
Venture Capital	11.6	10.3	1.3	Lower valuations and higher risk-free rate

20-year Geometric Expected Returns Real Estate & Infrastructure

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Real Estate	7.8	7.4	0.4	Higher REIT yields, risk-free rate, and borrowing costs
US REITs	8.0	7.1	0.9	Higher REIT yields and risk-free rate
Core Private Real Estate	6.5	6.1	0.4	Higher borrowing costs and risk-free rate
Value-Added Real Estate	8.3	8.1	0.2	Higher borrowing costs and risk-free rate
Opportunistic Real Estate	9.6	9.6	0.0	Higher borrowing costs and risk-free rate
Infrastructure	8.3	7.7	0.6	Higher borrowing costs offset by higher risk-free rate
Infrastructure (Public)	8.8	7.4	1.4	Lower valuations and higher risk-free rate
Infrastructure (Core Private)	7.8	7.3	0.5	Higher borrowing costs and risk-free rate
Infrastructure (Non-Core Private)	9.5	9.3	0.2	Higher borrowing costs and risk-free rate

20-year Geometric Expected Returns Natural Resources & Commodities

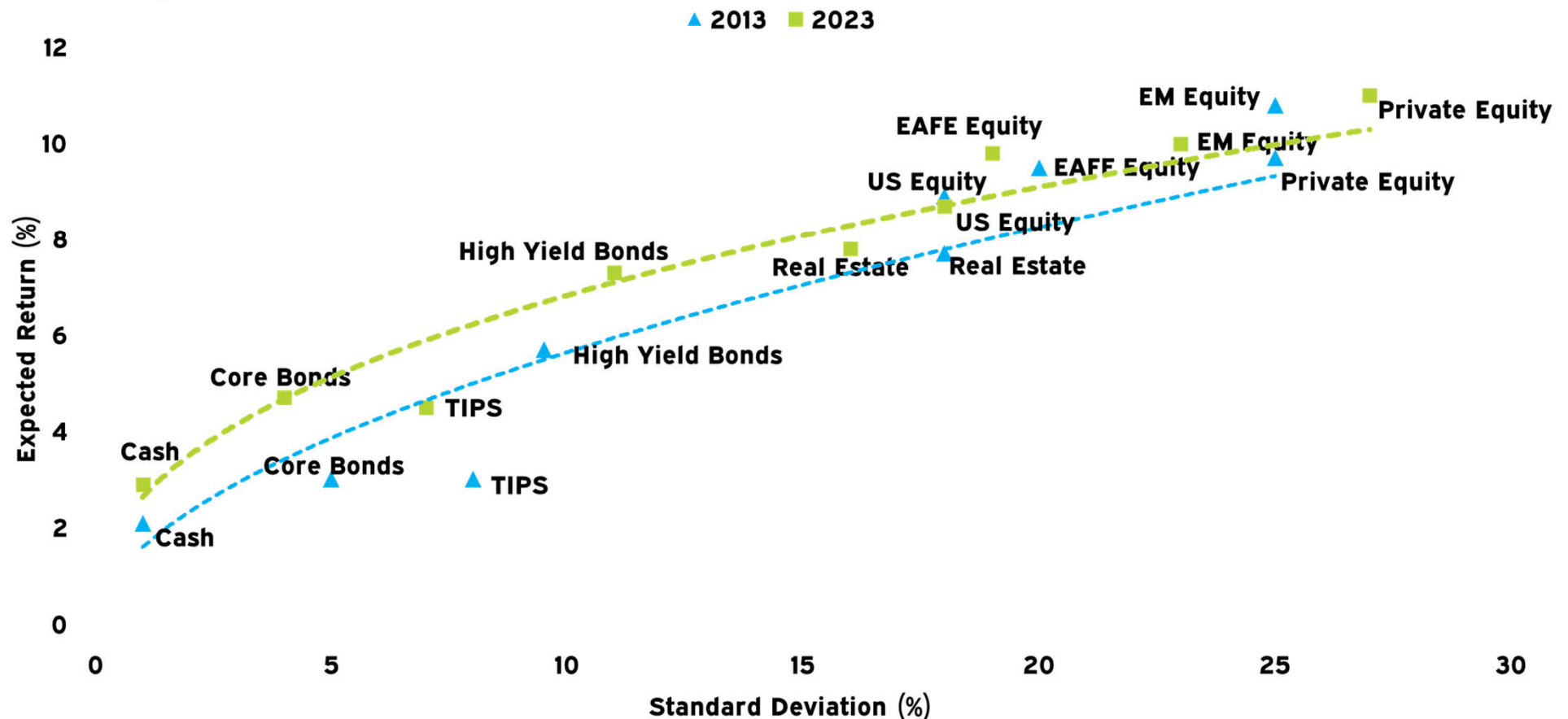
	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Natural Resources (Public)	8.7	7.7	1.0	Higher earnings and risk-free rate
Natural Resources (Private)	9.8	8.5	1.3	Higher earnings in some sectors and higher risk-free rate partly offset by higher valuation and borrowing costs
Energy	10.4	8.9	1.5	Higher earnings and risk-free rate
Mining	10.2	8.5	1.7	Lower valuations and higher risk-free rate
Timberland	7.4	6.8	0.6	Higher risk-free rate
Farmland	6.5	7.2	-0.7	Higher valuations and borrowing costs
Sustainability	10.3	9.3	1.0	Higher earnings and risk-free rate
MLPs	7.4	7.2	0.2	Higher valuations offset by higher risk-free rate
Gold Mining	9.7	8.2	1.5	Lower valuations and higher risk-free rate
Gold (Metal)	3.3	2.8	0.5	Higher long-term inflation expectations
Commodities	5.7	4.6	1.1	Higher cash yield and risk-free rate

20-year Geometric Expected Returns Alternative Strategies (Other)

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Hedge Funds	6.1	4.4	1.7	Higher yields and risk-free rate
Long-Short	5.6	4.1	1.5	Lower equity prices & higher cash yield
Event Driven	7.7	5.2	2.5	Higher yields and risk-free rate
Global Macro	5.7	5.0	0.7	Higher cash yield and risk-free rate
CTA – Trend Following	4.8	4.8	0.0	Lower beta assumption
Fixed Income/L-S Credit	6.5	3.8	2.7	Higher yields and risk-free rate
Relative Value/Arbitrage	6.7	5.1	1.6	Higher cash yield and risk-free rate
Long Vol	1.1	NA		<i>New</i>
Insurance Linked Strategies	6.2	5.0	1.2	Lower expected default rates
Alternative Risk Premia	5.6	4.6	1.0	Higher cash yield and risk-free rate
Risk Parity (10% vol)	7.7	5.2	2.5	Higher yields and risk-free rate
TAA	5.7	4.5	1.2	Higher yields and risk-free rate
Digital Currencies	3.3	NA		<i>New</i>

The Big Picture: Higher Return for the ~Same Risk¹

- The relationship between long-term return expectations and the level of risk accepted is not static.
- We anticipate many investors can take on less risk than they have over the past decade if they want to achieve their target returns.



¹ Expected return and standard deviation are based upon Meketa Investment Group's 2013 and 2023 20-year capital market expectations.

Return and Risk Data

Asset Class	10-year Expected Return (%)	20-year Expected Return (%)	Standard Deviation (%)	11-20 year Risk Premia ¹ (%)
Cash Equivalents	3.1	2.9	1.0	-1.5
Investment Grade Bonds	4.8	4.7	4.0	0.4
Long-term Government Bonds	4.3	5.0	12.0	1.5
TIPS	4.3	4.5	7.0	0.5
High Yield Bonds	8.0	7.3	11.0	2.5
Bank Loans	7.6	7.0	10.0	2.2
Emerging Market Debt (local)	6.4	6.0	12.0	1.5
Private Debt	9.4	9.0	15.0	4.6
US Equity	7.8	8.7	18.0	5.5
Developed Non-US Equity	10.1	9.8	19.0	5.4
Emerging Non-US Equity	10.3	10.0	23.0	5.6
Global Equity	8.8	9.2	18.0	5.5
Private Equity	9.7	11.0	27.0	8.0
Real Estate	5.9	7.8	16.0	5.5
Infrastructure	6.9	8.3	15.0	5.6
Commodities	6.3	5.7	17.0	1.0
Hedge Funds	5.4	6.1	7.0	2.6
Inflation	2.5	2.6	3.0	-1.5

¹ Risk Premia are calculated relative to the market's projection for the yield on the 10-year Treasury in ten years..

Correlation Data

	Inv. Grade Bonds	Long- term Gov't Bonds	TIPS	High Yield Bonds	US Equity	Dev. Non-US Equity	Em. Market Equity	Private Equity	Real Estate	Commod.	Infra.	Hedge Funds
Investment Grade Bonds	1.00											
Long-term Government Bonds	0.83	1.00										
TIPS	0.76	0.54	1.00									
High Yield Bonds	0.28	-0.17	0.46	1.00								
US Equity	0.10	-0.24	0.27	0.75	1.00							
Developed Non-US Equity	0.16	-0.22	0.30	0.77	0.89	1.00						
Emerging Market Equity	0.20	-0.18	0.36	0.76	0.77	0.87	1.00					
Private Equity	0.00	-0.10	0.05	0.70	0.85	0.80	0.75	1.00				
Real Estate	0.20	0.05	0.10	0.50	0.50	0.45	0.40	0.45	1.00			
Commodities	0.00	-0.28	0.31	0.54	0.52	0.59	0.63	0.30	0.15	1.00		
Infrastructure	0.29	0.09	0.31	0.64	0.63	0.65	0.58	0.50	0.57	0.41	1.00	
Hedge Funds	0.08	-0.30	0.30	0.78	0.86	0.87	0.84	0.60	0.45	0.67	0.65	1.00

2022 Peer Survey

- Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.¹
- The Horizon survey is a useful tool to determine whether a consultant's expectations for returns (and risk) are reasonable.

Asset Class	Horizon 10-Year Average (%)	Meketa 10-Year (%)	Horizon 20-Year Average (%)	Meketa 20-Year (%)
Cash Equivalents	1.5	1.1	2.0	1.7
TIPS	2.0	1.6	2.6	2.4
US Core Bonds	2.6	1.7	3.5	2.4
US High Yield Bonds	4.0	3.3	5.0	4.4
Emerging Market Debt	4.6	4.3	5.3	4.4
Private Debt	6.9	6.7	7.1	7.3
US Equity (large cap)	5.9	5.4	6.5	6.8
Developed Non-US Equity	6.5	6.7	7.1	7.5
Emerging Non-US Equity	7.3	8.1	7.9	8.4
Private Equity	9.2	8.9	9.8	10.0
Real Estate	5.4	6.4	6.0	7.4
Infrastructure	6.4	7.1	6.9	7.7
Commodities	3.7	4.3	4.2	4.6
Hedge Funds	4.8	3.4	5.5	4.4
Inflation	2.5	2.6	2.4	2.2

¹ The 10-year horizon included all 40 respondents, and the 20-year horizon included 24 respondents. Figures are based on Meketa's 2022 CMEs.

These materials are intended solely for the recipient and may contain information that is not suitable for all investors. This presentation is provided by Meketa Investment Group ("Meketa") for informational purposes only and no statement is to be construed as a solicitation or offer to buy or sell a security, or the rendering of personalized investment advice. The views expressed within this document are subject to change without notice. These materials include general market views and each client may have unique circumstances and investment goals that require tactical investments that may differ from the views expressed within this document. There is no agreement or understanding that Meketa will provide individual advice to any advisory client in receipt of this document. There can be no assurance the views and opinions expressed herein will come to pass. Any data and/or graphics presented herein is obtained from what are considered reliable sources; however, its delivery does not warrant that the information contained is correct. Any reference to a market index is included for illustrative purposes only, as an index is not a security in which an investment can be made and are provided for informational purposes only. For additional information about Meketa, please consult the Firm's Form ADV disclosure documents, the most recent versions of which are available on the SEC's Investment Adviser Public Disclosure website (www.adviserinfo.sec.gov) and may otherwise be made available upon written request.

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: March 29, 2023
RE: 2023 Ongoing Strategic Investment Agenda

On an ongoing (monthly) basis, Meketa develops a list of projects that we expect to work closely with OPFRS to complete over throughout the calendar year (see table below). In an attempt to coordinate the scheduling of these tasks, this memo details a Preliminary Investment Project Agenda by calendaring and prioritizing the expected tasks and deliverables that would be required to fulfill the Agenda. Meketa welcomes any suggestions and/or modifications to the proposed timeline.

2023 Preliminary Investment Project Agenda

Expected Completion Date	Task
April 2023	Flash Performance (2023 Mar) Crisis Risk Offset (CRO) Benchmark Review Watchlist Review & Manager Update: Rice Hall James
May 2023	Flash Performance (2023 Apr) Quarterly Performance Report (1Q 2023) Annual Diversity Survey Results as of 12/31/2022 Manager Update: Wellington Core Bonds
June 2023	Flash Performance (2023 May) Cash Flow Report (3Q 2023) Informational Item: TBD Manager Update: Brown Advisory
July 2023	Flash Performance (2023 Jun) Manager Update: Wellington Select Equity Manager Update: Northern Trust Asset Management
August 2023	Flash Performance (2023 Jul) Quarterly Performance Report (2Q 2023) Manager Update: Kepos

Expected Completion Date	Task
September 2023	Flash Performance (2023 Aug) Cash Flow Report (4Q 2023) Thermal Coal List Update: 2023 Manager Update: Versor
October 2023	Flash Performance (2023 Sep) Informational Item: TBD Manager Update: Parametric Contract Renewal: Parametric
November 2023	Flash Performance (2023 Oct) Quarterly Performance Report (3Q 2023) Manager Update: Strategic Global Advisors
December 2023	Flash Performance (2023 Nov) Cash Flow Report (1Q 2024) Manager Update: Ramirez Informational Item: TBD

This agenda includes only major strategic items. Meketa also expects to work with the Staff and Board to complete more routine tasks and projects, as expected.

DS/PN/JLC/mn

Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Due to the termination of the statewide COVID-19 State of Emergency by the Governor of California, effective March 1, 2023, all meetings of the Oakland Police & Fire Retirement System Board and its Committees will be conducted in person.

Meetings are held in wheelchair accessible facilities.

The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

For additional information, contact the Retirement Unit by calling (510) 238-7295, or send an email to mvisaya@oaklandca.gov



Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

AGENDA

RETIREMENT BOARD MEMBERS

Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Martin J. Melia
Member

Robert W. Nichelini
Member

John C. Speakman
Member

R. Steven Wilkinson
Member

Erin Roseman
Member

REGULAR MEETING of the BOARD OF ADMINISTRATION of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

WEDNESDAY, MARCH 29, 2023

11:30 AM

ONE FRANK H. OGAWA PLAZA, HEARING ROOM 1
OAKLAND, CA 94612

OBSERVE

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/82880493983> at the noticed meeting time.
- To listen to the meeting by phone, please call the numbers below at the noticed meeting time: Dial (for higher quality, dial a number based on your current location):
- iPhone one-tap: US: +16699006833, 82880493983# or +13462487799, 82880493983#
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
- Webinar ID: 828 8049 3983.
- If asked for a participant ID or code, press #.

PUBLIC COMMENTS

There are two ways to submit public comments.

- **Speaker Card:** All persons wishing to address the Board must complete a speaker's card, stating their name and the agenda item they wish to address, including "Open Forum".
- **eComment:** To send your comment directly to staff BEFORE the meeting starts, please email to mvisaya@oaklandca.gov with "PFRS Board Meeting" in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time.**

If you have any questions, please email Maxine Visaya, Administrative Assistant II at mvisaya@oaklandca.gov

ORDER OF BUSINESS

- A. **Subject:** Police and Fire Retirement System ("PFRS") Board of Administration Meeting Minutes
From: Staff of the PFRS Board
Recommendation: **APPROVE** the February 22, 2023 PFRS Board of Administration Meeting Minutes

B. AUDIT & OPERATIONS COMMITTEE AGENDA – MARCH 29, 2023

- B1. **Subject:** Administrative Expenses Report
From: Staff of the PFRS Board
Recommendation: **ACCEPT** informational report regarding PFRS administrative expenses as of January 31, 2023
- B2. **Subject:** PFRS 2-Year Administrative Budget for Fiscal Years 2023/2024 and 2024/2025
From: Staff of the PFRS Board
Recommendation: **APPROVE** the PFRS 2-Year Administrative Budget for Fiscal Years 2023/2024 and 2024/2025
- B3. **Subject:** PFRS Annual Report for Year Ended June 30, 2022
From: Staff of the PFRS Board
Recommendation: **APPROVE** printing and publication of the Annual Report of the Oakland Police & Fire Retirement System Year Ended June 30, 2022

C. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – MARCH 29, 2023

- C1. **Subject:** Investment Manager Performance Review – Polen Capital Credit
From: Meketa Investment Group
Recommendation: **ACCEPT** Meketa Investment Group's review and evaluation of Polen Capital Credit, LLC a PFRS High Yield Fixed Income Investment Strategy Manager regarding a firm overview and managerial assessment; investment portfolio performance; peer ranking, watch status update; and recommendation to maintain/terminate the current professional services agreement. **DISCUSS** and **APPROVE** the Committees recommended course of action with regard to Polen Capital Credit, LLC

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
MARCH 29, 2023

- C2. **Subject:** Investment Market Overview as of February 28, 2023
From: Meketa Investment Group
Recommendation: **ACCEPT** informational report regarding the Global Investment Markets as of February 28, 2023
- C3. **Subject:** Preliminary Investment Fund Performance Update as of February 28, 2023
From: Meketa Investment Group
Recommendation: **ACCEPT** informational report regarding the Preliminary Investment Fund Performance Update as of February 28, 2023
- C4. **Subject:** \$14.2 Million Drawdown for Member Retirement Allowances (Fiscal Year 2022/2023; Quarter Ending June 30, 2023)
From: Meketa Investment Group
Recommendation: **ACCEPT** informational report and **APPROVE** the Meketa Investment Group recommendation for a \$14.2 million drawdown, which includes a \$8.2 Million contribution from the City of Oakland and a \$6.0 Million contribution from the PFRS Investment Fund, to be used to pay the April 1, 2023 through June 30, 2023 Member Retirement Allowances
- C5. **Subject:** 2023 10-year Capital Market Assumptions Review
From: Meketa Investment Group
Recommendation: **ACCEPT** informational report and **APPROVE** the 2023 10-year capital Market Assumptions Review

- D. PENDING ITEMS
E. NEW BUSINESS
F. OPEN FORUM
G. FUTURE SCHEDULING
H. ADJOURNMENT

A REGULAR MEETING of the Oakland Police and Fire Retirement System (“PFRS”) Board of Administration was held on Wednesday, February 22, 2023 via Zoom Webinar.

Board Members:	▪ Walter L. Johnson	President
	▪ Jaime T. Godfrey	Vice President
	▪ Martin J. Melia	Member (EXCUSED)
	▪ Robert W. Nichelini	Member
	▪ Erin Roseman	Member
	▪ John C. Speakman	Member
	▪ R. Steven Wilkinson	Member
Additional Attendees:	▪ David F. Jones	PFRS Secretary & Plan Administrator
	▪ Téir Jenkins	PFRS Investment & Operations Manager
	▪ Mitesh Bhakta	PFRS Legal Counsel
	▪ Selia Warren	PFRS Legal Counsel
	▪ Maxine Visaya	PFRS Staff Member
	▪ David Sancewich	Meketa Investment Group
	▪ Jason Leong Campbell	Meketa Investment Group
	▪ Paola Nealon	Meketa Investment Group

The meeting was called to order at 11:47 a.m. Pacific

President Johnson opened the floor for Legal Counsel Bhakta to make an introduction of Selia Warren, who will assume his responsibilities as Legal Counsel to PFRS.

- A. Report of PFRS Board Action from the January 25, 2023 Closed Session** – Legal Counsel Bhakta reported out on the actions of the PFRS Board during the Closed Session. The purpose of the closed session was to approve entering into a contract with Genevieve Ng, Partner, Sloan Sakai Yeung & Wong LLP, as outside counsel due to conflict of interest of PFRS General Counsel regarding potential claim related to the addition of the new Juneteenth Holiday. The Board voted to approved, with one absence, and adopted the authority to contract with outside counsel.

MOTION: Member Speakman made a motion to accept Legal Counsel’s report regarding PFRS Board Action from the January 25, 2023 Closed Session, second by Member Wilkinson.

[JOHNSON: Y / GODFREY: ABSTAIN / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 1 / EXCUSED: 1)

- B. PFRS Board Meeting Minutes** – Member Speakman made a motion to approve the January 25, 2023 Board of Administration Special Meeting Minutes, second by Member Wilkinson. Motion passed.

[JOHNSON: Y / GODFREY: ABSTAIN / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 1 / EXCUSED: 1)

- C. PFRS Board Meeting Minutes** – Member Speakman made a motion to approve the January 25, 2023 Board of Administration Regular Meeting Minutes, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: ABSTAIN / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 1 / EXCUSED: 1)

D. AUDIT AND OPERATIONS COMMITTEE AGENDA – FEBRUARY 22, 2023

- D1. Informational Overview Regarding Management Audits** – Investment & Operations Manager Jenkins provided a summary of the presentation by Macias Gini & O'Connell, LLP (MGO), and noted they would not recommend PFRS engage in a management audit at this time and further noted they would not be able to move forward with an assessment without further clarity regarding the scope and concerns that need to be addressed. Staff and the Board discussed the matter and found that a larger conversation is necessary in order to narrow the scope and clearly identify concerns to come to a consensus to move the work forward. Additionally, it was noted the Board's efforts need to be focused on the upcoming 2026 Actuarial Funding Date and the matter can be revisited at a later date.

MOTION: Member Nichelini made a motion to accept the informational report presented by MGO and table the matter for now, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

E. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – FEBRUARY 22, 2023

- E1. Investment Manager Performance Update – Earnest Partners, LLC** – Vice President Godfrey provided an overview of the presentation by Earnest Partners, a PFRS Domestic Equity Mid-Cap Core Investment Strategy Manager. Vice President Godfrey highlighted the firm overview; portfolio performance; investment strategy; and the firm's Diversity, Equity, & Inclusion practices.

MOTION: Vice President Godfrey made a motion to accept the informational report regarding Earnest Partners, second by Member Nichelini. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- E2. Investment Manager Performance Review – Earnest Partners, LLC** – David Sancewich of Meketa Investment Group ("Meketa") presented an overview memo regarding Earnest Partners, LLC, a PFRS Domestic Equity Mid-Cap Core Investment Strategy Manager. D. Sancewich noted Earnest has performed well relative to the benchmark and therefore Meketa has no concerns at this time.

MOTION: Vice President Godfrey made a motion to accept Meketa's performance review regarding Earnest Partners, second by Member Nichelini. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- E3. **Resolution 8074** – Resolution Authorizing a One-Year Extension of the Professional Services Agreement with Earnest Partners, LLC for the Provision of Domestic Equity Mid-Cap Core Investment Strategy Manager Services.

MOTION: Vice President Godfrey made a motion to approve Resolution 8074, second by Member Speakman. Motion passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- E4. **Investment Market Overview as of January 31, 2023** – Paola Nealon of Meketa presented an informational report regarding the Investment Market Overview as of January 31, 2023 and correlated the impacts to actual returns to the PFRS portfolio.

MOTION: Member Nichelini made a motion to accept the informational report provided by Meketa regarding the Investment Market Overview as of January 31, 2022, second by Member Speakman. Motion passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- E5. **Preliminary Investment Fund Performance Update as of January 31, 2023** – David Sancewich of Meketa presented the Investment Fund Quarterly Performance Update as of December 31, 2022 and noted performance is positive as of January 31, 2023 and fiscal year-to-date beginning July 1, 2022.

MOTION: Member Nichelini made a motion to accept the informational report provided by Meketa regarding the Preliminary Investment Fund Performance Update as of January 31, 2023, second by Member Speakman. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- E6. **Investment Fund Quarterly Performance Update as of December 31, 2022** – David Sancewich of Meketa provided a summary of the Investment Fund Quarterly Performance Update as of December 31, 2022 and highlighted Investment Performance; Peer Comparison relative to the Median Fund; Asset Allocation vs. Target; and Manager Performance.

MOTION: Member Nichelini made a motion to accept the informational report provided by Meketa regarding Investment Fund Quarterly Performance Update as of December 31, 2022, second by Vice President Godfrey. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- E7. **Asset Class Reviews (Verbal)** – David Sancewich of Meketa provided a verbal update regarding Asset Class Reviews, as previously approved by Board motion, for Credit; Fixed-Income; and Small-Cap Investment Strategies. D. Sancewich noted the matter was discussed at Investment Committee Planning Meeting and the Investment Committee Meeting today and was found performing asset class reviews would not be the most efficient use of resources when reviewing the portfolio as we near the 2026 Actuarial Funding Date. Meketa proposed to perform an in-depth manager review as part of the regular watch status updates and focus on de-risking the portfolio, rather than individual asset class reviews because the underlying concern is based on the performance of Investment Managers.

MOTION: Vice President Godfrey made a motion to accept Meketa's verbal informational report and recommendation regarding how to move forward with de-risking the portfolio as it relates to performing Asset Class Reviews and how we handle Investment Managers who are perceived as not performing within our standards, second by Member Nichelini. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- E8. **July 1, 2026 Actuarial Funding Date (Verbal)** – David Sancewich of Meketa provided a verbal report regarding the July 1, 2026 Actuarial Funding Date and highlighted what this means from an investment standpoint and noted as we move forward there will be ramped-up discussions regarding what the portfolio should look like and how we get there as we approach that date to meet the 100% funded ratio.

MOTION: Member Nichelini made a motion to accept the informational report provided by Meketa regarding the July 1, 2026 Actuarial Funding Date, second by Member Speakman. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- F. **Return to In-Person Board Meetings** – Plan Administrator Jones presented an informational report regarding the return to in-person Board Meetings and noted how we proceed operationally is still evolving. Legal Counsel Bhakta and Warren advised the Board regarding the legal parameters of in-person meetings and invoking the option of joining via teleconference as per the Brown Act and AB2449.

MOTION: Vice President Godfrey made a motion to accept the informational report regarding the return to in-person Board Meetings, second by Member Nichelini. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- G. Update Regarding PFRS Legal Counsel (Verbal)** – Introductions and updates were provided at the opening of the meeting as President Johnson opened the floor for Legal Counsel Bhakta.

MOTION: Member Nichelini made a motion to accept the verbal update regarding PFRS Legal Counsel, second by Member Speakman. Motion Passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

H. Member Resolution 8075

Resolution No. 8075 – Resolution approving death benefit payments and directing warrants thereunder in the total sum of \$1,000.00 payable to the beneficiary of the following deceased members of the Oakland Police and Fire Retirement System:

- Wilford Fugler
- Kenneth L. Lewis
- John J. Lucich Jr.

MOTION: Member Nichelini made a motion to approve Resolution No. 8075, second by Vice President Godfrey. Motion passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

- I. Pending Items** – Investment & Operations Manager Jenkins provided an update on the new Board pending item to review options regarding the frequency and manner of Committee and Board Meetings. It was noted the matter was previously discussed and President Johnson tabled the matter, and it will remain on the pending list until the Board directs staff to bring the matter forward for further discussion.
- J. New Business** – None
- K. Open Forum** – Member Speakman requested an update regarding the recent ransomware attack affecting the City. Legal Counsel Bhakta advised there are no additional updates beyond what has been reported in the press. Member Roseman advised financial systems were not impacted and retirement payroll was successfully processed and distributed.
- L. Future Scheduling** – The next Regular Board Meeting will be held in-person and is tentatively scheduled to occur March 29, 2023.

- M. Adjournment** – Vice President Godfrey made a motion to adjourn, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: Y / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 6 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 1)

The meeting adjourned at 1:04 p.m.

DAVID F. JONES
PLAN ADMINISTRATOR

DATE

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of January 31, 2023

	Approved Budget					
		January 2023	FYTD	Remaining	Percent Remaining	
Internal Administrative Costs						
PFRS Staff Salaries	\$ 1,330,000	\$ 98,915	\$ 663,138	\$ 666,862	50.1%	
Board Travel Expenditures	52,500	-	-	52,500	100.0%	
Staff Training	20,000	-	-	20,000	100.0%	
Staff Training - Tuition Reimbursement	7,500	-	-	7,500	100.0%	
Board Hospitality	3,600	-	-	3,600	100.0%	
Payroll Processing Fees	40,000	-	-	40,000	100.0%	
Miscellaneous Expenditures	45,000	2,716	26,618	18,382	40.8%	
Internal Service Fees (ISF)	88,000	-	44,073	43,927	49.9%	
Contract Services Contingency	50,000	-	1,500	48,500	97.0%	
Internal Administrative Costs Subtotal :	\$ 1,636,600	\$ 101,631	\$ 735,328	\$ 901,272	55.1%	
Actuary and Accounting Services						
Audit	\$ 50,500	\$ -	\$ 33,883	\$ 16,617	32.9%	
Actuary	47,900	10,474	23,168	24,733	51.6%	
Actuary and Accounting Subtotal:	\$ 98,400	\$ 10,474	\$ 57,051	\$ 41,350	42.0%	
Legal Services						
City Attorney Salaries	\$ 194,000	\$ -	\$ 28	\$ 193,972	100.0%	
Legal Contingency	150,000	-	-	150,000	100.0%	
Legal Services Subtotal:	\$ 344,000	\$ -	\$ 28	\$ 343,972	100.0%	
Investment Services						
Money Manager Fees	\$ 1,353,000	\$ 110,607	\$ 272,645	\$ 1,080,355	79.8%	
Custodial Fee	124,000	-	-	124,000	100.0%	
Investment Consultant	100,000	-	50,000	50,000	50.0%	
Investment Subtotal:	\$ 1,577,000	\$ 110,607	\$ 322,645	\$ 1,254,355	79.5%	
Total Operating Budget	\$ 3,656,000	\$ 222,712	\$ 1,115,052	\$ 2,540,948	69.50%	

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of January 31, 2023

	January 2023
Beginning Cash as of 1/1/2023	\$ 8,002,044
Additions:	
City Pension Contribution - January	\$ 2,726,000
Investment Draw	\$ 2,000,000
Misc. Receipts	-
Total Additions:	\$ 4,726,000
Deductions:	
Pension Payment (December Pension Paid on 1/2/2023)	(4,245,368)
Expenditures Paid	(217,967)
Total Deductions	\$ (4,463,335)
Ending Cash Balance as of 1/31/2023*	<u><u>\$ 8,264,709</u></u>

* On 2/1/2023, January pension payment of appx \$4,224,000 will be made leaving a cash balance of \$4,041,000.

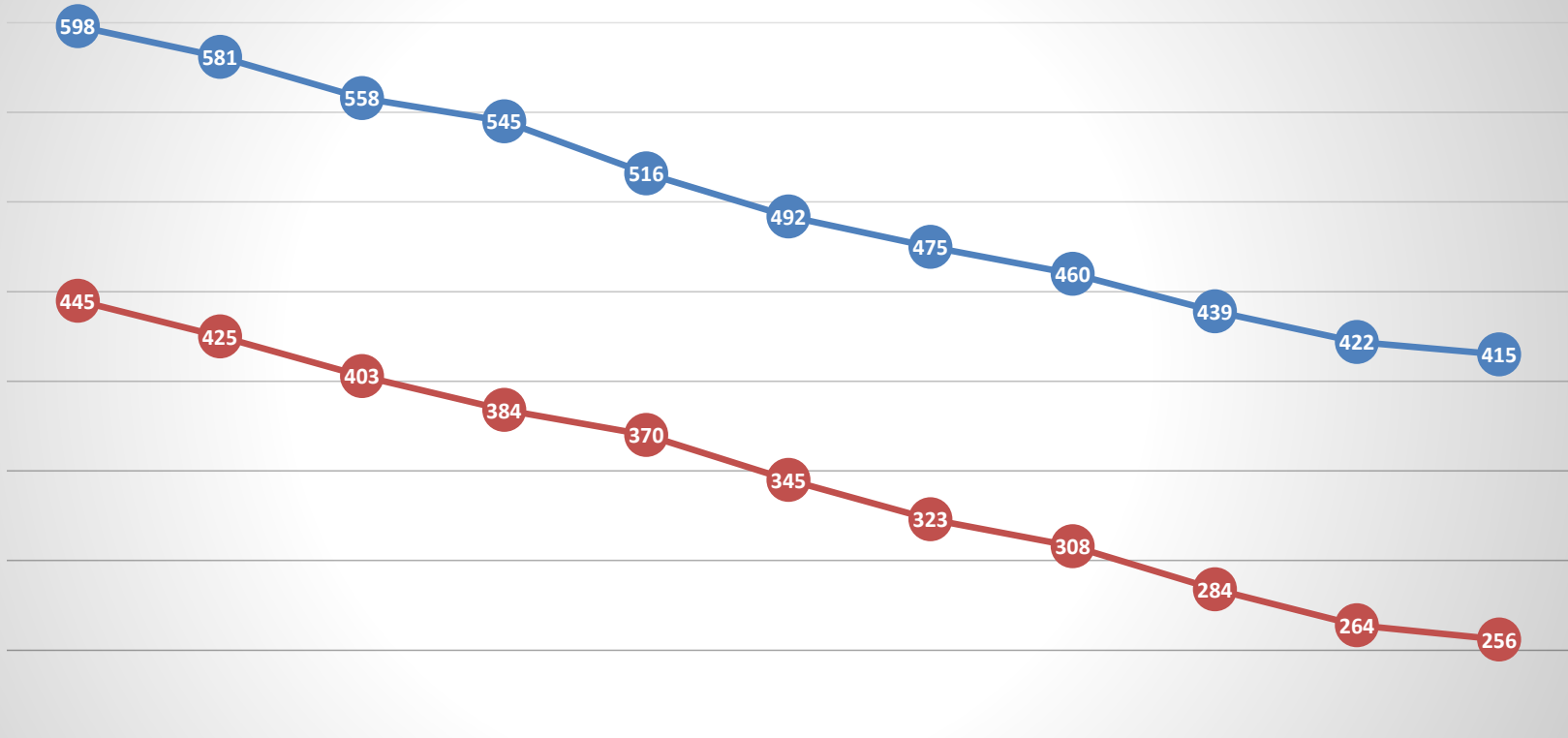
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of January 31, 2023

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	288	165	453
Beneficiary	127	91	218
<i>Total Retired Members</i>	415	256	671
<i>Total Membership:</i>	415	256	671

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	278	128	406
Disability Retirement	127	117	244
Death Allowance	10	11	21
<i>Total Retired Members:</i>	415	256	671
<i>Total Membership as of January 31, 2023:</i>	415	256	671
<i>Total Membership as of June 30, 2022:</i>	422	264	686
<i>Annual Difference:</i>	-7	-8	-15

Oakland Police and Fire Retirement System Pension Plan Membership Count As of January 31, 2023 (FY 2013 - FY 2023)



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 FYTD
Police	598	581	558	545	516	492	475	460	439	422	415
Fire	445	425	403	384	370	345	323	308	284	264	256
Total	1043	1006	961	929	886	837	798	768	723	686	671



AGENDA REPORT

TO: Oakland Police and Fire Retirement System Board **FROM:** David Jones

SUBJECT: Proposed 2-year PFRS Administrative Budget for FY 2023/2024 and FY 2024/2025 **DATE:** March 21, 2023

RECOMENDATION

Staff recommends that the Board of the Oakland Police and Fire Retirement System (“PFRS Board”) approve the new two-year PFRS administrative budget for FY 2023/2024 and FY 2024/2025 as shown in **Table 1**.

SUMMARY

In order to be consistent with the City of Oakland budget process, PFRS staff is presenting a two-year administrative budget that reflects proposed PFRS expenditures for FY 2023/2024 and FY 2024/2025. Staff will work to incorporate the PFRS Board approved budget into the City of Oakland overall budget.

The overall PFRS budget is projected to be \$3,807,400 in FY 2023/2024 and \$3,878,100 in FY 2024/2025. The proposed budget changes reflect expected costs within the specified line items. The total proposed annual budget is approximately 0.92% of the Plan's current investment portfolio. The total PFRS Operating Budget is projected to increase 4.14% in FY 2023/2024 and an additional 1.86% in FY 2024/2025.

KEY CHANGES

Internal Administrative Costs

Staff costs are projected to increase by \$129,000 in FY 2023/2024 and an additional \$59,000 in FY 2024/2025. These increases are mostly due to projected increases in the City of Oakland staff fringe benefits costs and projected staff cost of living increases, per the approved MOU between the City of Oakland and the local union.

Internal Service Fees (“ISF”) are required costs for all City of Oakland funds. These costs are associated with city-wide services such as special setup, facilities general support, city accounting services, city contract services, phone and IT support and printing. Overall, Internal Administrative costs are projected to increase \$129,000 in FY 2023/2024 and \$59,000 in FY 2024/2025.

Agenda Item B2
PFRS Board Meeting
March 29, 2023

OAKLAND POLICE & FIRE RETIREMENT SYSTEM

AGENDA REPORT – Proposed 2-year PFRS Administrative Staff Budget for FY 2023/2024 and FY 2024/2025

March 21, 2023

PAGE 2

Actuary and Accounting Services

Actuary and Auditing services are both scheduled to increase by 3% based on annual increases in their current contracts. The expenses for Audit Services are expected to increase \$2,300 in FY 2023/2024 and \$1,600 in FY 2024/2025. The expenses for Actuary Services are expected to increase \$1,500 in FY 2023/2024 and an additional \$1,500 in FY 2024/2025.

Investment Services

The Money Manager budget is based on the fees charged by each PFRS money manager and the amount of funds they manage on behalf of the PFRS's investment portfolio. The Custodial Fee budget and the Investment Consultant's fees are fixed annual amounts based on the current contracts.

Respectfully submitted,



David Jones, Plan Administrator
Oakland Police and Fire Retirement System

Attachments (1):

- **Table 1:** *Oakland Police and Fire Retirement System – Two-year Proposed Administrative Budgets*

ATTACHMENT 1

Table 1

**Oakland Police and Fire Retirement System
Two-year Proposed Administrative Budgets
FY2023/2024 & FY 2024/2025**

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Two Year Proposed Administrative Budgets
FY 2023-2024 and FY 2024-2025

	FY 2022-2023	Proposed Budget		Budget Changes	
	Approved Budget	FY 2023-2024	FY 2024-2025	FY 2023-2024	FY 2024-2025
Internal Administrative Costs					
PFRS Staff Salaries	\$ 1,330,000	\$ 1,459,000	\$ 1,518,000	\$ 129,000	\$ 59,000
Board Travel Expenditures	52,500	52,500	52,500	-	-
Staff Training	20,000	20,000	20,000	-	-
Staff Training - Tuition Reimbursement	7,500	7,500	7,500	-	-
Board Hospitality	3,600	3,600	3,600	-	-
Payroll Processing Fees	40,000	40,000	40,000	-	-
Miscellaneous Expenditures	45,000	45,000	45,000	-	-
Internal Service Fees (ISF)	88,000	88,000	88,000	-	-
Contract Services Contingency	50,000	50,000	50,000	-	-
Internal Administrative Costs Subtotal :	\$ 1,636,600	\$ 1,765,600	\$ 1,824,600	\$ 129,000	\$ 59,000
Actuary and Accounting Services					
Audit	\$ 50,500	\$ 52,800	\$ 54,400	\$ 2,300	\$ 1,600
Actuary	47,900	49,400	50,900	1,500	1,500
Actuary and Accounting Subtotal:	\$ 98,400	\$ 102,200	\$ 105,300	\$ 3,800	\$ 3,100
Legal Services					
City Attorney Salaries	\$ 194,000	\$ 212,100	\$ 220,700	\$ 18,100	\$ 8,600
Legal Contingency	150,000	150,000	150,000	-	-
Legal Services Subtotal:	\$ 344,000	\$ 362,100	\$ 370,700	\$ 18,100	\$ 8,600
Investment Services					
Money Manager Fees	\$ 1,353,000	\$ 1,353,000	\$ 1,353,000	\$ -	\$ -
Custodial Fee	124,000	124,500	124,500	500	-
Investment Consultant	100,000	100,000	100,000	-	-
Investment Subtotal:	\$ 1,577,000	\$ 1,577,500	\$ 1,577,500	\$ 500	\$ -
Total Operating Budget	\$ 3,656,000	\$ 3,807,400	\$ 3,878,100	\$ 151,400	\$ 70,700
				4.14%	1.86%



A G E N D A R E P O R T

TO: Oakland Police and Fire Retirement System Board (PFRS) **FROM:** David F. Jones
Plan Administrator & Secretary

SUBJECT: Approve Printing & Distribution of PFRS Annual Report for the Fiscal Year Ended June 30, 2022 **DATE:** March 29, 2023

RECOMMENDATION

The PFRS Annual Report for the Fiscal Year ended June 30, 2022 has been completed and is submitted here for the Board approval for Printing and Distribution.

Respectfully submitted,

David F. Jones
Plan Administrator & Secretary
Oakland Police & Fire Retirement Systems

CITY OF OAKLAND

POLICE & FIRE RETIREMENT SYSTEM



ANNUAL REPORT
Fiscal Year Ended June 30, 2022



CONTENTS

SECTION 1: INTRODUCTION

President of the Board: Letter of Transmittal to the City Council	5
Plan Administrator: Letter of Transmittal to the Board of Administration	6
Members of the Board of Administration	9
Administrative Staff	10
Professional Services	10
Board Meeting Information	10

SECTION 2: FINANCIAL

Independent Auditor's Report for the Years Ended June 30, 2022 and 2021	13
Management's Discussion and Analysis (Unaudited)	15

Financial Statements

Statements of Fiduciary Net Position – June 30, 2022 and 2021	22
Statements of Changes in Fiduciary Net Position – Years Ended June 30, 2022 and 2021	23

Notes to the Basic Financial Statements

1. Description of the Oakland Police and Fire Retirement System	24
2. Summary of Significant Accounting Policies	26
3. Contributions	27
4. Cash, Deposits and Investments	28
5. Net Pension Liability	42
6. Reserves	45
7. Administrative Expenses	45

Required Supplementary Information

Schedule of Changes in Employer's Net Pension Liability and Related Ratios (Unaudited)	46
Schedule of Employer Contributions (Unaudited)	47
Schedule of Investment Returns (Unaudited)	47

Notes to Required Supplementary Information

Methods and Assumptions Used to Determine Contribution Rates	48
--	----

SECTION 3: INVESTMENT

Investment Consultant's Report	51
List of Investment Professionals	52
Investment Manager Fees and Other Investment Expenses	52
Largest Stock Holdings, as of June 30, 2022	53
Largest Bond Holdings, as of June 30, 2022	53
Investments by Manager/Exchange-Traded Funds, as of June 30, 2022	54
Asset Allocation, as of June 30, 2022	54

CONTENTS

(Continued)

SECTION 4: ACTUARIAL

Actuary's Certification Letter	57
Summary of Actuarial Value, Assumptions and Funding Methods	60
Purpose of Actuarial Valuation	60
Valuation Summary	62
Actuarial Definitions	62
Actuarial Methods and Assumptions	63
Actuarial Methods	63
Actuarial Value of Plan Assets	63
Actuarial Assumptions	63
Rate of Return	64
Cost of Living Adjustments and Long-Term Salary Increases.....	64
Inflation	65
Rates of Termination, Disability and Retirement	65
Rates of Mortality for Healthy Lives (for service retirees and beneficiaries)	65
Rates of Mortality for Disabled Retirees	65
Mortality Improvement	65
Survivor Continuance	65
Changes in Assumptions since the Last Valuation	65
Administrative Expenses	65
Service Retired Participants	66
Disability Retired Participants	66
Beneficiaries	67
Participant Data Summary	68

IN MEMORIAM

Retiree and Beneficiary Deaths in Fiscal Year 2021-2022	71
---	----

Production Credits

-Layout: Maxine Visaya, Retirement Systems, City of Oakland
 -Print Production: City of Oakland Copy Services

SECTION 1

INTRODUCTION



Arthur Nichols Jr.
Sergeant of Police

Served with Oakland Police Department
October 1973 to August 2001

this page intentionally left blank

LETTERS OF TRANSMITTAL

CITY OF OAKLAND



150 FRANK H. OGAWA PLAZA, SUITE 3349 · OAKLAND, CALIFORNIA 94612-2021

Finance Department
Treasury Bureau
Retirement Unit

(510) 238-3307
FAX (510) 238-7129
CA RELAY 711

March 29, 2023

Oakland City Council
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Honorable Mayor Thao and Members of the City Council:

I am pleased to present the annual report of the Oakland Police and Fire Retirement System for the fiscal year ended June 30, 2022. Provided in this report are the Plan's Financial Information, Investment Performance, and Actuarial Valuations and Statistical Information for the corresponding year.

The members of the Board express their appreciation to the Mayor and City Council, City Administrator, City Attorney, the various City Agencies and Departments and the members of their staff for their cooperation and assistance.

Respectfully submitted,

Walter L. Johnson, Sr., President
Oakland Police and Fire Retirement System

LETTERS OF TRANSMITTAL

CITY OF OAKLAND



150 FRANK H. OGAWA PLAZA, SUITE 3349 · OAKLAND, CALIFORNIA 94612-2021

Finance Department
Treasury Bureau
Retirement Unit

(510) 238-3307
FAX (510) 238-7129
CA RELAY 711

March 17, 2023

Oakland Police and Fire Retirement Board
150 Frank H. Ogawa Plaza, Suite 3349
Oakland CA 94612

Board of Trustees:

I am pleased to present the Annual Report of the Oakland Police and Fire Retirement System for the fiscal year ending June 30, 2022.

ACCOUNTING SYSTEM

The accompanying financial statements have been prepared in compliance with the City Charter and in accordance with the accounting and reporting requirements of the Governmental Accounting Standards Board (GASB) and the reporting requirements prescribed by the Government Finance Officers' Association of the United States and Canada (GFOA).

The method for recording revenues and expenses is on an accrual basis. Revenue is taken into account when earned, regardless of the date of the collection, and expenses are recorded when the corresponding liabilities are incurred instead of when payment is made. Amortization of bond premiums and discounts are over the life of the investment security and actuarial reserves are funded via the entry age normal cost method.

ADDITIONS

Additions to the plan includes all income received into the Plan for the Fiscal Year. Pension Plan's sources of income include items such as contributions and investment income. Total additions for the fiscal year ended June 30, 2022 were -\$4,134,760.

LETTERS OF TRANSMITTAL

This amount includes a net investment loss of -\$47,954,760. Net investment loss includes appreciation or depreciation in fair value of investments, interest income and dividend income less investment expenses during the fiscal year. In addition, the City contributed \$43,820,000 during the fiscal year. As of June 30, 2022, all the System's members are retired.

DEDUCTIONS

Total deductions to the plan in the fiscal year ended June 30, 2022 were \$52,910,654. This amount includes deductions of \$51,450,001 for pension payments to members and qualified beneficiaries.

RESERVES AND FUNDING

The Police and Fire Retirement System most recent actuarial study values the Plan as of July 1, 2021. Details regarding this actuarial study can be found in Section 4 of this annual report.

As of the most recent actuarial study dated July 1, 2021, the System's Unfunded Actuarial Liability is approximately \$159.3 million, and the System had a Funded Ratio of 80.2 percent on a Market Value of Assets (MVA) basis. During fiscal year 2022, the City of Oakland contributed \$43.8 million to the System. The next required City contribution is projected to be approximately \$32.7 million in FY 2022-2023.

INVESTMENTS

The Police and Fire Retirement System Investment Policy is used as a guideline for all investment activities. The Investment Policy includes an asset allocation plan. The plan consists of six asset classes: Domestic Stocks, International Stocks, Fixed Income Instruments, Credit, Covered Calls and Crisis Risk Offset (CRO). In addition, the Policy also allocates among the different investment management styles.

The System's net investment losses for the year ended June 30, 2022 were \$48.0 million mainly due to net depreciation in fair value of the investment portfolio. The actual money-weighted annual investment return for fiscal year 2022 was -10.24%. GASB requires that investments be reported at fair value. The appreciation (depreciation) in fair value of investments held by PFRS is recorded as an increase (decrease) in investment income based on the valuation of investments at year-end.

LETTERS OF TRANSMITTAL

The historical annualized money-weighted rates of return on the portfolios are as follows:

Total Returns %			
	1 Year	3 Year	5 Year
Total Fund	-10.24%	4.58%	6.14%

ACKNOWLEDGEMENTS

The compilation of this report reflects the combined efforts of the Retirement System Administration Staff, the Board of Trustees, and various professional consultants. Its intent is to provide complete and reliable information to the beneficiaries of the Plan, to serve as a basis for making management decisions, and to ensure compliance with legal provisions affecting the administration of the Plan.

Respectfully submitted,



David F. Jones
Plan Administrator

MEMBERS OF THE BOARD OF ADMINISTRATION



Jaime T. Godfrey
Vice President
Bank Representative



Walter L. Johnson, Sr.
President
Community Representative



John C. Speakman
Fire Department Representative



R. Steven Wilkinson
Insurance Representative

Plan Administrator
David F. Jones
Treasury Administrator

Legal Advisor, City of Oakland

Mitesh Bhakta
Deputy City Attorney



Kevin R. Traylor
Alternating Fire/Police Department Representative



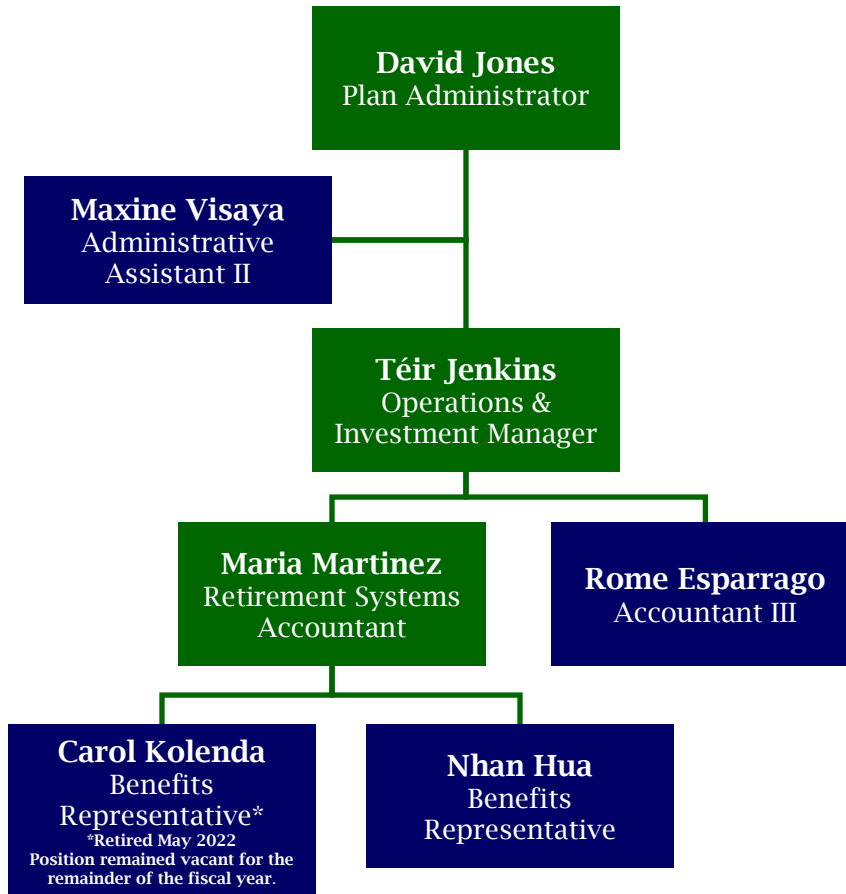
Robert W. Nichelini
Police Representative



Erin Roseman
Mayoral Designate

ADMINISTRATIVE STAFF

Retirement Unit



PROFESSIONAL SERVICES

Over the past year the Board of Administration has engaged the following consultants to

Actuary	Cheiron, Inc.
Auditors	Macias Gini & O'Connell LLP
Custodial Service	The Northern Trust Company
Investment Consultant	Meketa Investment Group

assist in making investments and in developing a sound retirement plan:

A complete list of Investment Professionals is included on page 52 of this Annual Report.

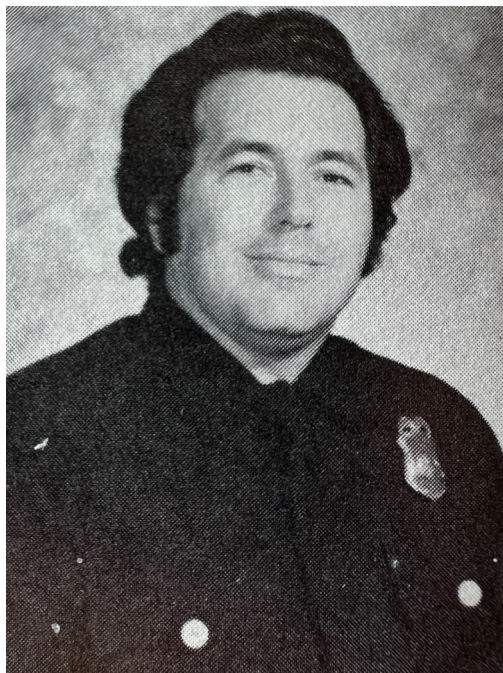
BOARD MEETING INFORMATION

On-Site Meeting Location	1 Frank H. Ogawa Plaza, Oakland, CA 94612
Virtual Meeting	Zoom Webinar
Date	Last Wednesday of each month

For more information, visit our website at www.oaklandca.gov.

SECTION 2

FINANCIAL



Peter G. Caponio
Firefighter

*Served with Oakland Fire Department
April 1968 to January 1987*

this page intentionally left blank

Independent Auditor's Report

For Years Ended June 30, 2022 and 2021



Certified
Public
Accountants

Independent Auditor's Report

Board of Administration
Oakland Police and Fire Retirement System
Oakland, California

Opinion

We have audited the accompanying financial statements of the Oakland Police and Fire Retirement System (System), a pension trust fund of the City of Oakland, California (City), as of and for the years ended June 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

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

Basis for Opinions

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

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal 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 System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS 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.

Macias Gini & O'Connell LLP
2121 N. California Boulevard, Suite 750
Walnut Creek, CA 94596

www.mgocpa.com

Independent Auditor's Report

For Years Ended June 30, 2022 and 2021

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 System'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 System'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, the schedule of changes in the employer's net pension liability and related ratios, the schedule of employer contributions, and the schedule of investment returns as listed in the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

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

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



Walnut Creek, California
December 5, 2022

Management's Discussion & Analysis

(Unaudited)

As management of the Oakland Police and Fire Retirement System (System), we offer readers of the System's financial statements this narrative overview and analysis of the financial activities of the System for the years ended June 30, 2022 and 2021. We encourage readers to consider the information presented here in conjunction with the System's financial statements that follow this section. These discussions and analyses are presented in the following sections:

- Organizational Overview and Highlights
- Financial Statement Overview
- Financial Analysis: 2022 vs. 2021
- Financial Analysis: 2021 vs. 2020
- Requests for Additional Information

ORGANIZATIONAL OVERVIEW AND HIGHLIGHTS

The City of Oakland City Charter established the System and provides for its funding. Accordingly, the System is an integral part of the City of Oakland (City) and its operations have been reported as a Pension Trust Fund in the City's basic financial statements. The System is a closed, single employer, defined benefit pension plan that provides retirement, disability and survivor benefits for eligible sworn safety employees of the City. The System serves the City's sworn employees hired prior to July 1, 1976 who have not transferred to the California Public Employees' Retirement System (CalPERS). The System is governed by a board of seven trustees: the Mayor or his/her designate, three Mayoral appointees approved by the City Council, an elected active or retired member of the Police Department, an elected active or retired member from the Fire Department, and an elected member position which alternates between the Police Department and Fire Department membership. Trustees receive no compensation.

The System has been funded by periodic employee and City contributions at actuarially determined amounts sufficient to accumulate the necessary assets to pay benefits when due as specified by the City Charter, unless the Board and the City have agreed to other funding options. In accordance with the City Charter, active members hired after July 1, 1951, and prior to July 1, 1976, contribute a percentage of their earned salaries based upon entry age as determined by consulting actuaries. During the years ended June 30, 2022 and 2021, the employee contribution rate was 0% for both years. There are no active participants in the Plan as of June 30, 2022 and 2021.

Management's Discussion & Analysis

(Unaudited)

In July 2012, the City deposited \$210 million in pension obligation bond proceeds into the System and entered into a funding agreement with the System Board, which suspended contributions until the fiscal year beginning July 1, 2017.

As of June 30, 2022, the total pension liability of \$553.3 million less the fiduciary net position of \$401.5 million results in a net pension liability of approximately \$151.8 million. The fiduciary net position as a percentage of the total pension liability is 72.6%.

As of June 30, 2021, the total pension liability of \$578.6 million less the fiduciary net position of \$458.5 million results in a net pension liability of approximately \$120.0 million. The fiduciary net position as a percentage of the total pension liability is 79.3 %.

The System membership at June 30, 2022 is 686, which includes 461 retirees and 225 beneficiaries. The System membership at June 30, 2021 is 723. The following are the significant assumptions used to compute contribution requirements in the July 1, 2021 Actuarial Valuation Report:

- Select and ultimate rates, equal to 5.19% single equivalent investment rate of return
- 2.75% inflation rate, U.S.
- 2.85% inflation rate, Bay Area
- 3.25% long-term post-retirement benefit increases

City contributions are based on spreading costs as a level percentage of the City's total uniform payroll to July 1, 2026. The System uses the entry age normal cost method for its disclosure and reporting. During fiscal years 2022 and 2021, the City contributions were \$43.8 million and \$43.6 million to the System. The next required City contribution is projected to be approximately \$32.7 million in fiscal year 2023.

FINANCIAL STATEMENT OVERVIEW

This annual financial report consists of three parts - management's discussion and analysis (this section), the basic financial statements and required supplementary information. The basic financial statements include *Statements of Fiduciary Net Position*; *Statements of Changes in Fiduciary Net Position*; and the *Notes to the Basic Financial Statements*.

Management's Discussion & Analysis

(Unaudited)

The *Statements of Fiduciary Net Position* and the *Statements of Changes in Fiduciary Net Position* report information to assist readers in determining whether the System's finances as a whole have improved or deteriorated as a result of the year's activities. These statements report the net position of the System and the activities that caused the changes in the net position during the year, respectively.

The *Statements of Fiduciary Net Position* present information on all System assets and liabilities, with the difference between the two reported as net position restricted for pensions. Over time, increases or decreases in net position restricted for pensions may serve as a useful indicator of whether the financial condition of the System is improving or deteriorating.

While the *Statements of Fiduciary Net Position* provide information about the nature and amount of resources and obligations at year-end, the *Statements of Changes in Fiduciary Net Position* present the results of the System's activities during the fiscal year and information on the change in the net position restricted for pensions during the fiscal year. The *Statements of Changes in Fiduciary Net Position* measure the results of the System's investment performance as well as its additions from contributions and investment income and deductions for payment of benefits and administrative expenses. The *Statements of Changes in Fiduciary Net Position* can be viewed as indicators of the System's progress on the set goals of fully funding all current and past service costs and possessing sufficient additional resources to pay for current refunds of contributions and administrative and investment expenses.

The *Notes to the Basic Financial Statements* and *Required Supplementary Information* provide explanations and other information that is helpful to a full understanding of the data provided in the financial statements. The *Notes to the Basic Financial Statements* and *Required Supplementary Information* are found starting on page 24 and page 46, respectively.

Management's Discussion & Analysis

(Unaudited)

FINANCIAL ANALYSIS 2022 vs. 2021

Table 1 summarizes net position restricted for pensions as of June 30, 2022 and 2021:

Table 1 Statements of Fiduciary Net Position As of June 30, 2022 and 2021				
	June 30		Change	
	2022	2021	Amount	Percentage
Assets				
Cash and Deposits	\$ 7,494,971	\$ 6,323,835	\$ 1,171,136	18.5%
Receivables	6,218,664	2,469,425	3,749,239	151.8%
Investments	<u>448,337,582</u>	<u>503,773,621</u>	<u>(55,436,039)</u>	-11.0%
Total Assets	<u>462,051,217</u>	<u>512,566,881</u>	<u>(50,515,664)</u>	-9.9%
Liabilities				
Accounts payable	3,200	1,110	2,090	188.2%
Benefits payable	4,183,604	4,294,620	(111,016)	-2.6%
Investments payable	7,700,505	422,993	7,277,512	1720.5%
Investment management fees	300,676	361,228	(60,552)	-16.8%
Securities lending liabilities	<u>48,375,771</u>	<u>48,954,055</u>	<u>(578,284)</u>	-1.2%
Total liabilities	<u>60,563,756</u>	<u>54,034,006</u>	<u>6,529,750</u>	12.1%
Net Position				
Restricted for pensions	<u>\$ 401,487,461</u>	<u>\$ 458,532,875</u>	<u>\$ (57,045,414)</u>	-12.4%

Net position restricted for pensions decreased \$57.0 million from June 30, 2021 to June 30, 2022. The main reasons of this decrease were net investment losses of \$48.0 million and benefit payments of \$51.4 million exceeded the City pension contribution of \$43.8 million. The remaining fluctuations in receivables and investments payable are primarily due to investment trading at year-end, where the outstanding balances represent investments either sold or purchased, but not yet settled.

Management's Discussion & Analysis

(Unaudited)

Table 2 summarizes changes in net position restricted for pensions for the years ended June 30, 2022 and 2021.

Table 2 Statements of Changes in Fiduciary Net Position For the Years Ended June 30, 2022 and 2021				
	June 30		Change	
	2022	2021	Amount	Percentage
Additions				
Contributions from the City	\$ 43,820,000	\$ 43,648,000	\$ 172,000	0.4%
Net investment income/(loss)	(47,954,760)	90,191,309	(138,146,069)	-153.2%
Other additions	-	908	(908)	-100.0%
Total additions	<u>(4,134,760)</u>	<u>133,840,217</u>	<u>(137,974,977)</u>	-103.1%
Deductions				
Benefits to members and beneficiaries	51,450,001	52,697,378	(1,247,377)	-2.4%
Administrative expenses	<u>1,460,653</u>	<u>1,584,654</u>	<u>(124,001)</u>	-7.8%
Total deductions	<u>52,910,654</u>	<u>54,282,032</u>	<u>(1,371,378)</u>	-2.5%
Changes in net position	(57,045,414)	79,558,185	(136,603,599)	-171.7%
Net position restricted for pensions				
Beginning of year	<u>458,532,875</u>	<u>378,974,690</u>	<u>79,558,185</u>	21.0%
End of year	<u>\$ 401,487,461</u>	<u>\$ 458,532,875</u>	<u>\$ (57,045,414)</u>	-12.4%

During fiscal year 2022, the City of Oakland contributed \$43.8 million to the System. In addition, the System's net investment losses for the year ended June 30, 2022 were \$48.0 million, mainly due to net depreciation in fair value of the investment portfolio. The time-weighted annual return for the year ended June 30, 2022 was -10.4%, compared to a benchmark return of -11.9% and an actuarial expected rate of return of 5.19 %.

Management's Discussion & Analysis

(Unaudited)

FINANCIAL ANALYSIS 2021 vs. 2020

Table 3 summarizes net position restricted for pensions as of June 30, 2021 and 2020.

Table 3 Statements of Fiduciary Net Position As of June 30, 2021 and 2020				
	June 30		Change	
	2021	2020	Amount	Percentage
Assets				
Cash and cash equivalents	\$ 6,323,835	\$ 6,345,777	\$ (21,942)	-0.3%
Receivables	2,469,425	8,099,428	(5,630,003)	-69.5%
Investments	503,773,621	404,700,887	99,072,734	24.5%
Total Assets	<u>512,566,881</u>	<u>419,146,092</u>	<u>93,420,789</u>	22.3%
Liabilities				
Accounts payable	1,110	8,161	(7,051)	-86.4%
Benefits payable	4,294,620	4,431,728	(137,108)	-3.1%
Investments payable	422,993	13,548,872	(13,125,879)	-96.9%
Investment management fees payable	361,228	278,835	82,393	29.5%
Securities lending liabilities	48,954,055	21,903,806	27,050,249	123.5%
Total liabilities	<u>54,034,006</u>	<u>40,171,402</u>	<u>13,862,604</u>	34.5%
Net Position				
Restricted for pensions	<u>\$ 458,532,875</u>	<u>\$ 378,974,690</u>	<u>\$ 79,558,185</u>	21.0%

Net position restricted for pensions increased \$79.6 million from June 30, 2021 to June 30, 2022. The main sources of this increase were City contribution of \$43.6 million and net investment income of \$90.2 million were more than offset by benefit payments of \$52.7 million. The remaining fluctuations in receivables and investments payable are primarily due to investment trading at year-end, where the outstanding balances represent investments either sold or purchased, but not yet settled.

Management's Discussion & Analysis

(Unaudited)

Table 4 summarizes changes in net position restricted for pensions for the years ended June 30, 2021 and 2020.

Table 4 Statements of Changes in Fiduciary Net Position For the Years Ended June 30, 2021 and 2020				
	June 30		Change	
	2021	2020	Amount	Percentage
Additions				
Contributions	\$ 43,648,000	\$ 43,409,000	\$ 239,000	0.6%
Net investment income	90,191,309	6,996,833	83,194,476	1189.0%
Other additions	908	132	776	587.9%
Total additions	<u>133,840,217</u>	<u>50,405,965</u>	<u>83,434,252</u>	165.5%
Deductions				
Benefits to members and beneficiaries	52,697,378	54,619,079	(1,921,701)	-3.5%
Administrative expenses	<u>1,584,654</u>	<u>1,522,910</u>	<u>61,744</u>	4.1%
Total deductions	<u>54,282,032</u>	<u>56,141,989</u>	<u>(1,859,957)</u>	-3.3%
Changes in net position	79,558,185	(5,736,024)	85,294,209	1487.0%
Net position restricted for pensions				
Beginning of year	378,974,690	384,710,714	(5,736,024)	-1.5%
End of year	<u>\$ 458,532,875</u>	<u>\$ 378,974,690</u>	<u>\$ 79,558,185</u>	21.0%

During fiscal year 2021, the City of Oakland contributed \$43.6 million to the System. In addition, the System's net investment income for the year ended June 30, 2021 was \$90.1 million, mainly due to net appreciation in fair value of the investment portfolio. The time-weighted annual return for the year ended June 30, 2021 was 24.2%, compared to a benchmark return of 22.3% and an actuarial expected rate of return of 5.29 %.

REQUESTS FOR ADDITIONAL INFORMATION

This financial report is designed to provide a general overview of the System's finances and to account for the money that the System receives. Questions concerning any of the information provided in this report or requests for additional information should be addressed to:

Retirement System
City of Oakland
150 Frank H Ogawa Plaza, Suite 3349
Oakland, CA 94612

Financial Statements

Oakland Police and Fire Retirement System Statements of Fiduciary Net Position June 30, 2022 and 2021

	2022	2021
Assets		
Cash and Cash Equivalents	\$ 7,494,971	\$ 6,323,835
Receivables:		
Interest Receivable	813,441	758,877
Dividends Receivable	279,524	271,634
Investments Receivable	4,911,786	1,228,684
Retired Members and Beneficiaries	102,906	103,688
Miscellaneous	111,007	106,542
Total Receivables	6,218,664	2,469,425
Investments, at Fair Value:		
Short-Term Investments	7,474,421	7,786,908
Bonds	130,126,766	134,380,629
Domestic Equities and Mutual Funds	158,144,787	210,506,356
International Equities and Mutual Funds	47,911,190	58,539,803
Alternative Investments	56,334,733	44,016,067
Foreign Currency Contracts, Net	-	(7,612)
Securities Lending Collateral	48,345,685	48,551,470
Total Investments	448,337,582	503,773,621
Total Assets	462,051,217	512,566,881
Liabilities		
Accounts Payable	3,200	1,110
Benefits Payable	4,183,604	4,294,620
Investments Payable	7,700,505	422,993
Investment Management Fees Payable	300,676	361,228
Securities Lending Liabilities	48,375,771	48,954,055
Total Liabilities	60,563,756	54,034,006
Net Position Restricted for Pensions	\$ 401,487,461	\$ 458,532,875

See accompanying notes to the basic financial statements.

Financial Statements

Oakland Police and Fire Retirement System **Statements of Changes in Fiduciary Net Position** **Years Ended June 30, 2022 and 2021**

	2022	2021
Additions		
Contributions from the City	\$ 43,820,000	\$ 43,648,000
Investment Income:		
Net Appreciation/(Depreciation) in Fair Value of Investments	(54,534,753)	84,719,944
Interest	4,134,111	3,965,167
Dividends	3,768,733	2,735,230
Less: Investment Expenses	(1,475,655)	(1,354,640)
Securities Lending Income:		
Securities Lending Earnings	264,447	105,651
Securities Lending Expenses, Net of Rebates	(111,643)	19,957
Net Securities Lending Income	152,804	125,608
Net Investment Income/(Loss)	\$ (47,954,670)	90,191,309
Claims and Settlements	-	26
Other Income	-	882
Total Additions	(4,134,760)	133,840,217
Deductions		
Benefits to Members and Beneficiaries:		
Retirement	31,495,125	32,157,272
Disability	18,418,545	18,803,904
Death	1,536,331	1,736,202
Total Benefits to Members and Beneficiaries	51,450,001	52,697,378
Administrative Expenses	1,460,653	1,584,654
Total Deductions	52,910,654	54,282,032
Change in Net Position	\$ (57,045,414)	79,558,185
Net Position Restricted for Pensions		
Beginning of Year	458,532,875	378,974,690
End of Year	\$ 401,487,461	\$ 458,532,875

See accompanying notes to the basic financial statements.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

1. Description of the Oakland Police and Fire Retirement System

The Oakland Police and Fire Retirement System (System) is a closed, single-employer defined benefit pension plan (Plan) established by the City of Oakland (City) Charter. The System is governed by a board of seven trustees (Board); the City Mayor or his/her designate, three Mayoral appointees approved by the City Council, an elected active or retired member of the Police Department, an elected active or retired member from the Fire Department, and an elected member position which alternates between the Police Department and Fire Department membership. Trustees receive no compensation. As a result of a City Charter amendment, known as Measure R, approved by the electorate on June 8, 1976, membership in the Plan is limited to uniformed employees hired prior to July 1, 1976.

The System is exempt from the regulations of the Employee Retirement Income Security Act of 1974. The System is also exempt from federal and California income taxes.

The System is considered to be a part of the City's financial reporting entity and is included in the City's basic financial statements as a pension trust fund. The financial statements of the System are intended to present only the plan net position and changes in plan net position of the System. They do not purport to, and do not, present fairly the financial position of the City as of June 30, 2022 and 2021, and the changes in its financial position for the years then ended in conformity with accounting principles generally accepted in the United States of America. The City's basic financial statements can be obtained from the Finance Department, Controller's Bureau, City of Oakland, 150 Frank H. Ogawa Plaza, Suite 6353; Oakland, California 94612.

a) System Membership

At June 30, 2022 and 2021, the System membership consisted of only retirees and beneficiaries. The System's membership is as follows:

Retirees and Beneficiaries Currently Receiving Benefits		
	2022	2021
Police	422	439
Fire	264	284
Total	686	723

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

b) Basic Benefit Provisions

The City Charter establishes plan membership, contribution, and benefit provisions. The System provides that any member who completes at least 25 years of service, regardless of age, or completes 20 years of service and attains age 55, or has attained age 65, is eligible for retirement benefits. The basic retirement allowance equals 50% of the compensation attached to the average rank held during the three years immediately preceding retirement, plus an additional allowance of 1 and 2/3% of such compensation for each year of service (up to ten) subsequent to (a) qualifying for retirement and (b) July 1, 1951. However, any member retiring at age 65 with less than 20 years of service shall receive a reduced retirement allowance based upon the number of years of service. A member is eligible for early retirement benefits after 20 to 24 years of service with a retirement allowance based upon 40% to 48% of the compensation attached to the average rank held during the three years preceding retirement. Additionally, a member with 10 to 19 years of service may retire and, on or after the 25th anniversary of his/her date of employment may receive a retirement allowance based upon 20% to 38% of the compensation attached to the average rank held during the three years preceding retirement.

The System also provides for various death, disability, and survivors' benefits. Death and disability benefits are paid to eligible members who became disabled or passed away prior to retirement. If the member's death or disability is duty related, then the surviving spouse or member is paid a pension equivalent to an immediate service retirement. The duty related death or disability pension is paid at a level no less than 50% of the pay attached to the rank. If a death occurs after retirement, then a one-time payment of \$1,000 is paid to the member's designated beneficiary.

After retirement, members receive benefits based on a fixed monthly dollar amount. Pension amounts change based on changes to the compensation attached to the average rank. Upon a retiree's death, benefits are continued to an eligible surviving spouse at a two-thirds level for service and non-duty disabled retirees and at a 100% level for retirements for duty disability.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

2. Summary of Significant Accounting Policies

a) Basis of Presentation

The financial statements are prepared in accordance with U.S. generally accepted accounting principles as applicable to governmental organizations. The System adheres to the reporting requirements established by the Governmental Accounting Standards Board (GASB).

b) Measurement Focus and Basis of Accounting

The financial statements are prepared on a flow of economic resources measurement focus using the accrual basis of accounting. Contributions are recognized in the period in which the contributions are due pursuant to legal requirements as well as statutory or contractual requirements, and benefits and refunds are recognized when payable under plan provisions.

c) Methods Used to Value Investments

Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Investments that do not have an established market are reported at estimated fair values based on the net asset value as determined by the fund manager based on quoted market prices of fund holdings or values provided by the custodian or the applicable money manager. Purchases and sales of investments are recorded on a trade date basis.

d) Use of Estimates

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

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

3. Contributions

In accordance with the City Charter, active members hired after July 1, 1951, and prior to July 1, 1976, contributed a percentage of their earned salaries based upon entry age as determined by consulting actuaries. Since fiscal year 2015, there were no remaining active members in the System.

In March 1997, the City issued pension obligation bonds and deposited \$417 million into the System to pay the City's contributions through June 2011. In accordance with an agreement entered into at the time the pension obligation bonds were issued in 1997, the City was not expected to contribute until July 2011. In the year ended June 30, 2005, the City transferred excess proceeds of \$17.7 million from the Oakland Joint Powers Financing Authority Refunding Revenue 2005 Series B Bond to fund a portion of the City's future obligation to the System.

Effective July 1, 2011, the City resumed contributing to the System. The City contributed \$45.5 million in the year ended June 30, 2012. Using the current actuarial cost method, these contributions are based on spreading costs as a level percentage of all uniformed employees' compensation through June 30, 2026. Budgeted administrative expenses are included in the City contribution rates. The City must contribute, at a minimum, such amounts as are necessary, on an actuarial basis, to provide assets sufficient to meet benefits to be paid to plan members.

On July 30, 2012, the City contributed \$210 million to the System. As a result of a funding agreement entered into between the System's Board and the City no additional contributions were required until July 1, 2017. The City resumed contributions to the System on July 1, 2017. The City contributed \$43.82 million and \$43.65 million in the years ended June 30, 2022 and 2021, respectively. The next required contribution for fiscal year 2023 is \$32.71 million.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

4. Cash, Deposits and Investments

a) Investment Policy

The System's investment policy authorizes investment in U.S. equities, international equities, U.S. fixed income instruments including U.S. Treasury notes and bonds, government agency mortgage backed securities, U.S. corporate notes and bonds, collateralized mortgage obligations, Yankee bonds and non-U.S.-issued fixed income securities denominated in foreign currencies. The System's investment portfolio is managed by external investment managers, except for the bond iShares which are managed internally. During the years ended June 30, 2022 and 2021, the number of external investment managers was eleven and twelve, respectively.

The System investments are also restricted by the City Charter. In November 2006, City voters passed Measure M to amend the City Charter to allow the System's Board to invest in non-dividend paying stocks and to change the asset allocation structure from 50% equities and 50% fixed income to the Prudent Person Standard as defined by the California Constitution.

The System's investment policy limits fixed income investments to a maximum average duration of 10 years and a maximum remaining term to maturity (single issue) at purchase of 30 years, with targeted portfolio duration of between 3 to 8 years and targeted portfolio maturity of 15 years. The System's investment policy allows the fixed income managers to invest in fixed income instruments and some exposure to investments below an investment grade rating, as long as the portfolio maintains an average credit quality of BBB (investment grade using Standard & Poor's, Moody's or Fitch ratings).

The System's investment policy states that investments in securities known as collateralized mortgage obligations (CMOs) shall be limited to a maximum of 20% of a broker account's fair value with no more than 5% in any one issue. CMOs are mortgage-backed securities that create separate pools of pass-through rates for different classes of bondholders with varying maturities. The fair values of CMOs are considered sensitive to interest rate changes because they have embedded options.

The investment policy allows for each fixed income asset manager to have a maximum of 10% of any single security investment in their individual portfolios with the exception of U.S. government securities, which is allowed to have a maximum of 25% in each manager's portfolio.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The following was the Board's adopted asset allocation policy as of June 30, 2022 and 2021:

Target Allocation		
Asset Class	June 30, 2022	June 30, 2021
Fixed Income	21%	21%
Credit	2	2
Covered Calls	5	5
Domestic Equity	40	40
International Equity	12	12
Crisis Risk Offset	20	20
Total	100%	100%

The Board's target allocation does not include cash and cash equivalents, which are designated for approved administrative budget purposes.

b) Concentrations

GASB Statement No. 67 require the disclosure of investments in any one organization that represent 5 percent or more of the System's fiduciary net position. As of June 30, 2022, the System had investments issued by the following organizations that exceeded 5% of its fiduciary net position: Northern Trust Company (18.4%), Vanguard Group (7.3%), and Wellington Select Quality Equity, LP (5.2%). As of June 30, 2021, the System's investment in the Northern Trust Russell 1000 Growth Index Fund represented 24.23% of its fiduciary net position.

c) Rate of Return

The money-weighted rate of return is a measure of the rate of return for an asset or portfolio of assets that incorporates the size and timing of cash flows. For the years ended June 30, 2022 and 2021, the annual money-weighted rates of return on pension plan investments, net of pension plan investment expenses, were -10.24% and 24.43%, respectively.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

d) Cash and Cash Equivalents

As of June 30, 2022 and 2021, cash and cash equivalents consisted of cash in treasury held in the City's cash and investment pool as well as cash deposits held in bank and with a custodian. Funds in the City Treasury are invested according to the investment policy adopted by the City Council. Interest earned in the City Treasury is allocated monthly to all participants based on the average daily cash balance maintained by the respective funds. Information regarding the characteristics of the entire investment pool can be found in the City's June 30, 2022 and 2021 basic financial statements. As of June 30, 2022 and 2021, the System's share of the City's investment pool totaled \$7,487,892 and \$6,318,773, respectively. The System also had cash not included in the City's investment pool. As of June 30, 2022 and 2021, the System's cash and cash deposits not held in the City's investment pool totaled \$7,079 and \$5,062, respectively.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

e) Hierarchy of Inputs

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; and Level 3 inputs are significant unobservable inputs.

The System has the following recurring fair value measurements as of June 30, 2022:

Recurring Fair Value Measurements As of June 30, 2022				
	2022			
	Level One	Level Two	Level Three	Total
Investments by fair value level:				
Short-Term Investments	\$ -	\$ 1,497,607	\$ -	\$ 1,497,607
Bonds	15,606,180	99,275,321	-	114,881,501
Domestic Equities and Mutual Funds	63,509,351	-	-	63,509,351
International Equities and Mutual Funds	47,543,916	-	367,274	47,911,190
Alternative Investments	30,599,372	-	-	30,599,372
Total investments by fair value level	<u>\$ 157,258,819</u>	<u>\$100,772,928</u>	<u>\$ 367,274</u>	<u>258,399,021</u>
Investments measured at net asset value (NAV):				
Short-Term Investment Funds				5,976,814
Fixed Income Funds				15,245,265
Domestic Equities and Mutual Funds				94,635,436
Hedge Fund				9,894,309
Venture Capital Fund				15,841,052
Securities Lending Collateral - Short-Term Investment Fund				48,345,685
Total investments measured at NAV				<u>189,938,561</u>
Total investments measured at fair value				<u>\$448,337,582</u>

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The System has the following recurring fair value measurements as of June 30, 2021:

Recurring Fair Value Measurements As of June 30, 2021			
	2021		
	Level One	Level Two	Total
Investments by fair value level:			
Bonds	\$ 12,635,465	\$ 104,543,460	\$ 117,178,925
Domestic Equities and Mutual Funds	93,555,401	707,364	94,262,765
International Equities and Mutual Funds	58,539,803	-	58,539,803
Alternative Investments	43,940,518	75,549	44,016,067
Total investments by fair value level	<u>\$ 208,671,187</u>	<u>\$ 105,326,373</u>	<u>313,997,560</u>
Investments measured at net asset value (NAV):			
Short-Term Investment Funds			7,786,908
Fixed Income Funds			17,201,704
Domestic Equities and Mutual Funds			116,243,591
Foreign Currency Contracts, Net			(7,612)
Securities Lending Collateral - Short-Term Investment Fund			48,551,470
Total investments measured at NAV			<u>189,776,061</u>
Total investments measured at fair value			<u>\$ 503,773,621</u>

Investments measured at NAV represent commingled funds where fair value is measured based on the System's pro rata share of the total NAV.

Investments Measured at Net Asset Value As of June 30, 2022			
	2021		
	June 30, 2022	Redemption Frequency	Redemption Notice Period
Investments measured at net asset value (NAV):			
Short-Term Investment Funds	\$ 5,976,814	n/a	n/a
Fixed Income Funds	6,741,756	n/a	n/a
Fixed Income Funds	8,503,509	n/a	15 days for < \$10 million; 60 days for ≥ \$10 million
Domestic Equities and Mutual Funds	20,739,219	Monthly	10 days
Domestic Equities and Mutual Funds	73,896,217	n/a	n/a
Hedge Fund	9,894,309	Monthly*	30 days
Venture Capital Fund	15,841,052	Monthly	10 days
Securities Lending Collateral - Short-Term Investment Fund	<u>48,345,685</u>	n/a	n/a
Total investments measured at NAV	<u>\$ 189,938,561</u>		
* For full redemptions, a 5% audit holdback is applied that is then paid after the audit is finalized.			

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

f) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. As described previously, the System's investment policy limits fixed income investments to a maximum average duration of 10 years and a maximum remaining term to maturity (single issue) at purchase of 30 years, with targeted portfolio duration of between 3 to 8 years and targeted portfolio maturity of 15 years. The weighted average duration for the System's fixed income investment portfolio excluding fixed income short-term investments, foreign currency contracts, and securities lending investments was 7.59 years as of June 30, 2022, and 7.37 years as of June 30, 2021.

The following summarizes the System's fixed income investments by category as of June 30, 2022 and 2021. As of June 30, 2022, the System held exchange cleared swaps of \$70,497 in a liability position that is not included in the tables below.

Short-Term Investment Duration				
Investment Type	2022		2021	
	Fair Value	Modified Duration (Years)	Fair Value	Modified Duration (Years)
Short-Term Investment Funds	\$7,474,421	n/a	\$7,786,908	n/a
Foreign Currency Exchange Contracts, Net	-	n/a	(7,612)	n/a

Long-Term Investment Duration				
Investment Type	2022		2021	
	Fair Value	Modified Duration (Years)	Fair Value	Modified Duration (Years)
Fixed Income Investments				
U.S. Government Bonds				
U.S. Treasuries	\$ 25,417,687	6.53	\$ 18,816,292	5.79
Government Agencies	29,893,654	8.41	32,516,334	8.26
Total U.S. Government Bonds	55,311,341		51,332,626	
Corporate and Other Bonds				
Corporate Bonds	74,807,108	7.63	82,957,273	7.38
Other Government Bonds	78,814	6.97	90,730	7.90
Total Corporate and Other Bonds	74,885,922		83,048,003	
Total Fixed Income Investments	\$ 130,197,263	7.59	\$134,380,629	7.37
Securities Lending Collateral	\$ 48,345,685		\$ 48,551,470	

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

g) Fair Value Highly Sensitive to Change in Interest Rates

The terms of a debt investment may cause its fair value to be highly sensitive to interest rate changes. The System has invested in CMOs, which are mortgage-backed bonds that pay pass-through rates with varying maturities. The fair values of CMOs are considered sensitive to interest rate changes because they have embedded options, which are triggers related to quantities of delinquencies or defaults in the loans backing the mortgage pool. If a balance of delinquent loans reaches a certain threshold, interest and principal that would be used to pay junior bondholders is instead directed to pay off the principal balance of senior bondholders, shortening the life of the senior bonds.

The following are the System's investments in CMOs at June 30, 2022:

Investments in CMOs at June 30, 2022				
Investment Type	Weighted Average Coupon Rate	Weighted Average Maturity (Years)	Fair Value	Percent of Total Investments Fair Value
Mortgage-backed securities	2.39%	24.36	\$20,820,467	4.64%

The following are the System's investments in CMOs at June 30, 2021:

Investments in CMOs at June 30, 2020				
Investment Type	Weighted Average Coupon Rate	Weighted Average Maturity (Years)	Fair Value	Percent of Total Investments Fair Value
Mortgage-backed securities	2.72%	23.28	\$20,789,617	4.13%

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

h) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation.

The following provides information concerning the credit risk of fixed income securities as of June 30, 2022 and 2021:

Short-Term Investment Ratings				
Investment Type	2022		2021	
	S&P / Moody's Rating	Fair Value	S&P / Moody's Rating	Fair Value
Short-Term Investment Funds	Not Rated	\$7,474,421	Not Rated	\$7,786,908
Foreign Currency Exchange Contracts, Net	Not Rated	-	Not Rated	(7,612)

Long-Term Investment Ratings				
S&P / Moody's Rating	2022		2021	
	Fair Value	Percentage of Total Fair Value	Fair Value	Percentage of Total Fair Value
AAA/Aaa	\$ 64,115,811	49.5%	\$ 53,058,908	39.4%
AA/Aa	27,835,706	21.1%	34,226,943	25.5%
A/A	12,809,876	9.8%	14,322,857	10.7%
BBB/Baa	15,713,952	12.1%	19,359,029	14.4%
BB/Ba	1,196,674	0.9%	1,831,903	1.4%
B/B	21,734	0.0%	9,550,906	7.1%
CCC/CCC	8,503,509	6.5%	-	-
Unrated	(70,497)	0.0%	2,030,083	1.5%
	<u>\$130,126,766</u>	<u>100.00%</u>	<u>\$134,380,629</u>	<u>100.00%</u>

Securities Lending Ratings		
S&P / Moody's Rating	2022 Fair Value	2021 Fair Value
Not Rated	\$ 48,345,685	\$ 48,551,470

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

i) Custodial Credit Risk

Custodial credit risk is the risk that, in the event of a failure of a depository financial institution or counterparty to a transaction, there will be an inability to recover the value of deposits, investments, or collateral securities in the possession of an outside party.

The California Government Code requires that governmental securities or first trust deed mortgage notes be used as collateral for demand deposits and certificates of deposit at 110 percent and 150 percent, respectively, of all deposits not covered by federal deposit insurance. As the City holds cash and certificates of deposit on behalf of the System, the collateral must be held by the pledging financial institution's trust department and is considered held in the City's name. For all other System deposits, the collateral must be held by the pledging financial institution's trust department and is considered held in the System's name.

The City, on behalf of the System, does not have any funds or deposits that are not covered by depository insurance, which are either uncollateralized, collateralized with securities held by the pledging financial institution, or collateralized with securities held by the pledging financial institution's trust department or agent, but not in the City's name. The System does not have any investments that are not registered in the name of the System and are either held by the counterparty or the counterparty's trust department or agent but not in the System's name.

j) Foreign Currency Risk

Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair values of an investment or deposit. Currency hedging is allowed under the System's investment policy for defensive purposes only. The investment policy limits currency hedging to a maximum of 25% of the portfolio value.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The following summarizes the System's investments denominated in foreign currencies as of June 30, 2022 and 2021:

Investments Denominated in Foreign Currencies As of June 30, 2022 and 2021		
Foreign Currency	Fair Value	
	June 30, 2022	June 30, 2021
Australian Dollar	\$ 1,993,400	\$ 1,456,518
Brazilian Real	772,622	901,768
British Pound	3,154,218	3,406,619
Canadian Dollar	3,290,894	3,395,211
Danish Krone	895,274	1,386,946
Euro	6,894,262	8,778,172
Hong Kong Dollar	3,464,161	3,664,544
Indonesian Rupiah	555,889	221,352
Japanese Yen	4,662,742	5,888,554
Malaysian Ringgit	65,343	-
Mexican Peso	375,149	108,650
New Israeli Shekel	310,309	-
Singapore Dollar	-	839,140
South African Rand	654,291	575,339
South Korean Won	-	212,370
Swedish Krona	831,667	1,488,233
Swiss Franc	1,734,147	2,344,951
Turkish Lira	133,896	524,786
Total	<u>\$ 29,788,264</u>	<u>\$ 35,193,153</u>

k) Securities Lending Transactions

The System's investment policy authorizes participation in securities lending transactions, which are short-term collateralized loans of the System's securities to broker-dealers with a simultaneous agreement allowing the System to invest and receive earnings on the collateral received. All securities loans can be terminated on demand by either the System or the borrower, although the average term of loans is one week.

The administrator of the System's securities lending activities is responsible for maintaining an adequate level of collateral in an amount equal to at least 102% of market value of loaned U.S. government securities, common stock and other equity securities, bonds, debentures, corporate debt securities, notes, and mortgages or other obligations held in U.S. Dollars. The minimum collateral level is 105% of market value of loaned securities for any securities held in currencies other than the U.S. Dollar. Collateral received may include cash, letters of credit, or securities. The term to maturity of the loaned securities is generally not matched with the term to maturity of the investment of the said collateral. If securities collateral is received, the System cannot pledge or sell the collateral securities unless the borrower defaults.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

As of June 30, 2022 and 2021, management believes the System has minimized its credit risk exposure to borrowers because the amounts held by the System as collateral exceeded the securities loaned by the System. The System's contract with the administrator requires it to indemnify the System if the borrowers fail to return the securities (and if the collateral is inadequate to replace the securities borrowed) or fails to pay the System for income distributions by the securities' issuers while the securities are on loan.

The following summarizes investments in securities lending transactions and collateral received at June 30, 2022 and 2021:

Securities Lending as of June 30, 2022			
Investment Type	Fair Value of Loaned Securities		
	For Cash Collateral	For Non-Cash Collateral	Total
Securities on Loan for Cash Collateral			
U.S. Government and Agencies	\$ 8,379,326	\$ -	\$ 8,379,326
U.S. Corporate Bonds	10,881,429	-	10,881,429
U.S. Equities	28,047,680	7,249,351	35,297,031
Non-U.S. Equities	-	252,473	252,473
Total investments in securities lending transactions	<u>\$ 47,308,435</u>	<u>\$ 7,501,824</u>	<u>\$54,810,259</u>
Collateral Received	<u>\$ 48,376,771</u>	<u>\$ 7,742,587</u>	<u>\$56,119,358</u>

Securities Lending as of June 30, 2021			
Investment Type	Fair Value of Loaned Securities		
	For Cash Collateral	For Non-Cash Collateral	Total
Securities on Loan for Cash Collateral			
U.S. Government and Agencies	\$ 9,621,902	\$ 5,095,643	\$ 14,717,545
U.S. Corporate Bonds	8,852,719	-	8,852,719
U.S. Equities	29,098,075	97,296	29,195,371
Non-U.S. Equities	182,194	514,214	696,408
Total investments in securities lending transactions	<u>\$ 47,754,890</u>	<u>\$ 5,707,153</u>	<u>\$ 53,462,043</u>
Collateral Received	<u>\$ 48,954,055</u>	<u>\$ 5,840,751</u>	<u>\$ 54,794,806</u>

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

l) Derivative Instruments

The Retirement System reports its derivative instruments under the provisions of GASB Statement No. 53, *Accounting and Financial Reporting for Derivatives Instruments*. Pursuant to the requirements of this statement, the Retirement System has provided a summary of derivative instrument activities during the reporting periods presented and the related risks.

As of June 30, 2022 and 2021, the derivative instruments held by the Retirement System are considered investments and not hedges for accounting purposes. All investment derivatives are reported as investments at fair value in the statements of fiduciary net position. The gains and losses arising from this activity are recognized as incurred in the statement of changes in fiduciary net position. All investment derivatives discussed below are included within the investment risk schedules, which precede this subsection. Investment derivative instruments are disclosed separately to provide a comprehensive and distinct view of this activity and its impact on the overall investment portfolio valuation methods used by the System are described in more detail in Note 2.c). The fair value of the exchange traded derivative instruments, such as futures, options, rights, and warrants are based on quoted market prices. The fair values of forward foreign currency contracts are determined using a pricing service, which uses published foreign exchange rates as the primary source. The fair values of swaps are determined by the System's investment managers based on quoted market prices of the underlying investment instruments.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

The tables below present the notional amounts, the fair values, and the related net appreciation (depreciation) in the fair value of derivative instruments that were outstanding at June 30, 2022 and 2021:

As of and for the Year Ended June 30, 2022			
Derivative Type / Contract	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Options			
Equity Contracts	\$ 59	(243,640)	(244,104)
Swaps			
Credit Contracts	2,554,200	(70,497)	(147,933)
Total	<u>\$ 2,554,259</u>	<u>\$ (314,137)</u>	<u>\$ (96,171)</u>

As of and for the Year Ended June 30, 2021			
Derivative Type / Contract	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Forwards			
Foreign Currency Exchange Contracts	\$ -	\$ (7,612)	\$ -
Options			
Equity Contracts	72	(351,506)	(58,431)
Swaps			
Credit Contracts	1,990,000	50,816	7,768
Total	<u>\$ 1,990,072</u>	<u>\$ (308,302)</u>	<u>\$ (50,663)</u>

Counterparty Credit Risk

The System is not exposed to credit risk on non-exchange traded derivative instruments that are in liability positions. As of June 30, 2022 and 2021, the System held forward currency contracts in liability positions of \$0 and \$7,612, respectively. The System's counterparties to these contract held credit ratings of A or better, as assigned by one or more of the major credit rating organizations (S&P, Moody's and/or Fitch).

Custodial Credit Risk

The custodial credit risk disclosure for exchange traded derivative instruments is made in accordance with the custodial credit risk disclosure requirements of GASB Statement No. 40. At June 30, 2022 and 2021, all of the System's investments in derivative instruments are held in the System's name and are not exposed to custodial credit risk.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

Interest Rate Risk

The tables below describe the maturity periods of the derivative instruments exposed to interest rate risk at June 30, 2022 and 2021.

Derivative Interest Rate Risk as of June 30, 2022			
Derivative Type / Contract	Fair Value	Maturities	
		Less than 1 Year	1-5 years
Options			
Equity Contracts	\$ (243,640)	\$ (243,640)	\$ -
Swaps			
Credit Contracts	(70,497)	-	(70,497)
Total	<u>\$ (314,137)</u>	<u>\$ (243,640)</u>	<u>\$ (70,497)</u>

Derivative Interest Rate Risk as of June 30, 2021			
Derivative Type / Contract	Fair Value	Maturities	
		Less than 1 Year	1-5 years
Forwards			
Forward Foreign Currency Exchange Contracts	\$ (7,612)	\$ (7,612)	\$ -
Options			
Equity Contracts	(351,506)	(351,506)	-
Swaps			
Credit Contracts	50,816	-	50,816
Total	<u>\$ (308,302)</u>	<u>\$ (359,118)</u>	<u>\$ 50,816</u>

Foreign Currency Risk

At June 30, 2022, the System had no foreign currency risk. At June 30, 2021 the System was exposed to foreign currency risk on \$7,612 of its investments in forwards denominated in the Mexican peso.

Contingent Features

At June 30, 2022 and 2021, the System held no positions in derivatives containing contingent features.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

5. Net Pension Liability

The components of the net pension liability of the City at June 30, 2022 and 2021, are as follows:

Net Pension Liability of the City At June 30, 2022 and 2021		
	June 30, 2022	June 30, 2021
Total pension liability	\$ 553,287,414	\$ 578,579,190
Less: Plan fiduciary net position	(401,487,461)	(458,532,875)
City's net pension liability	<u>\$ 151,799,953</u>	<u>\$ 120,046,315</u>
Plan fiduciary net position as a percentage of the total pension liability	72.6%	79.3%

a) Actuarial Method and Assumptions

The total pension liability as of June 30, 2022 was determined based on an actuarial valuation as of June 30, 2021, using the entry age normal actuarial cost method and the following actuarial assumptions, applied to all periods included in the measurement.

Actuarial Assumptions	
Investment Rate of Return	5.19%
Inflation Rate, U.S.	2.75%
Inflation Rate, Bay Area	2.85%
Long-term Post-Retirement Benefit Increases	3.25%

Measurements as of the June 30, 2022 are based on the fair value of assets as of June 30, 2022 and the total pension liability as of the valuation date, June 30, 2021, updated to June 30, 2022. There were no significant events between the valuation date and the measurement date. The update only included the addition of interest cost, offset by actual benefit payments. There are no active members of the plan, and thus no service cost.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

Mortality rates for healthy lives were based on the CalPERS Healthy Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016. Mortality rates for disabled lives were based on the CalPERS Industrial Disability Mortality Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016. The mortality tables are projected to improve with MP-2017 generational mortality improvement tables, with improvements projected from a base year of 2014 (the mid-point of the CalPERS base tables).

The total pension liability as of June 30, 2021 was determined based on an actuarial valuation as of June 30, 2020, updated to June 30, 2021, using the entry age normal actuarial cost method and the actuarial assumptions as described above for the June 30, 2021 valuation, except for the assumed investment rate of return was 5.29%. Measurements as of June 30, 2021 are based on the fair value of assets as of June 30, 2021 and the total pension liability as of the valuation date, June 30, 2020, updated to June 30, 2021.

The actuarial assumptions used in the June 30, 2021 and 2020 valuations were based on the results of actuarial experience studies for the period of July 1, 2014 through June 30, 2017.

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

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

Best estimates of geometric real rates of return for each major class included in the pension plan's target asset allocation as of June 30, 2022 and 2021 are summarized in the following table:

Long-Term Expected Real Rate of Return		
Asset Class	June 30, 2021	June 30, 2020
Fixed Income	0.20%	(0.30)%
Domestic Equity	4.60	4.70
International Equity	5.50	5.00
Covered Calls	3.58	2.60
Crisis Risk Offset	1.83	1.95
Credit	2.30	2.10
Cash	(0.50)	(1.00)

b) Discount Rate

The discount rates used to measure the total pension liability were 5.19% and 5.29% as of June 30, 2022 and 2021, respectively. The projection of cash flows used to determine the discount rate assumed that the City would contribute to the Plan based on its July 1, 2012 funding agreement with the System. This agreement suspended City contributions until the fiscal year beginning July 1, 2017, after which they would resume, based upon the recommendation of the actuary, with a City Charter requirement that the Plan's liabilities be fully funded by July 1, 2026. A cash flow projection showed that the projected fiduciary net position would be greater than or equal to the benefit payments projected for each future period. Therefore, the long-term expected rate of return on Plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Notes to the Basic Financial Statements

For Years Ended June 30, 2022 and 2021

c) Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the City, calculated using the discount rate, as well as what the Plan's net pension liability would be if it were calculated using a discount rate of 1-percentage-point lower or 1-percentage-point higher than the discount rate.

City's Net Pension Liability June 30, 2022			
	1% Decrease (4.19%)	Current Discount Rate (5.19%)	1% increase (6.19%)
City's net pension liability	\$199,655,233	\$151,799,953	\$110,388,515

City's Net Pension Liability June 30, 2021			
	1% Decrease (4.29%)	Current Discount Rate (5.29%)	1% increase (6.29%)
City's net pension liability	\$171,086,474	\$120,046,315	\$76,004,962

6. Reserves

Retired Member Contribution Reserve represents the total accumulated transfers from active member contributions and investments, less payments to retired members and beneficiaries.

Employer Reserve represents the total accumulated employer contributions for retirement payments. Additions include contributions from the employer, investment earnings and other income; deductions include payments to retired members and beneficiaries and administrative expenses.

The aggregate total of the System's major reserves as of June 30, 2022 and 2021 equals net position restricted for pensions and comprises the following:

Aggregate Total of the System's Major Reserves		
	2021	2021
Retired member contribution reserve	\$ 24,543,634	\$ 26,828,201
Employer reserve	376,943,827	431,704,674
Total	<u>\$ 401,487,461</u>	<u>\$ 458,532,875</u>

7. Administrative Expenses

The City provides the System with accounting and other administrative services. Staff salaries included in administrative expenses for the years ended June 30, 2022 and 2021 were \$1,250,884 and \$1,388,825, respectively.

Required Supplementary Information

For Years Ended June 30, 2022 and 2021

Schedule of Changes in the Employer's Net Pension Liability and Related Ratios (Unaudited)									
	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability									
Interest (includes interest on service cost)	\$ 33,193,734	\$ 34,680,418	\$ 36,078,037	\$ 37,621,301	\$ 44,320,094	\$ 44,931,829	\$ 42,480,394	\$ 41,262,826	\$ 42,333,496
Differences between expected and actual experience	(7,035,509)	(7,375,711)	(5,699,459)	(7,915,210)	(10,656,139)	3,027,944	6,977,470	(21,208,627)	-
Changes of assumptions	-	-	-	(1,475,030)	17,858,013	-	43,480,232	34,219,433	-
Benefit payments, including refunds of member contributions	(51,450,001)	(51,697,378)	(54,619,079)	(56,212,013)	(55,998,595)	(57,375,815)	(58,441,353)	(59,007,536)	(57,409,113)
Net change in total pension liability	(25,291,776)	(24,392,671)	(24,240,501)	(27,980,952)	(4,476,627)	(9,416,042)	34,496,743	(4,733,904)	(15,075,617)
Total pension liability – beginning	578,579,190	603,971,861	628,212,362	656,193,314	660,669,941	670,085,983	635,589,240	640,323,144	655,398,761
Total pension liability – ending (a)	<u>\$553,287,414</u>	<u>\$579,579,190</u>	<u>\$603,971,861</u>	<u>\$628,212,362</u>	<u>\$656,193,314</u>	<u>\$660,669,941</u>	<u>\$670,085,983</u>	<u>\$635,589,240</u>	<u>\$640,323,144</u>
Plan Fiduciary Net Position									
Contributions - employer	\$ 43,820,000	\$ 43,448,000	\$ 43,409,000	\$ 44,821,000	\$ 44,860,000	\$ -	\$ -	\$ -	\$ 4,441
Net investment income	(47,954,760)	90,191,309	6,996,833	21,557,961	35,446,275	50,158,795	(1,418,645)	5,438,586	66,392,409
Benefit payments, including refunds of member contributions	(51,450,001)	(52,697,378)	(54,619,079)	(56,212,013)	(55,998,595)	(57,375,815)	(58,441,353)	(59,007,536)	(57,409,113)
Administrative expense	(1,460,653)	(1,584,654)	(1,522,910)	(1,446,361)	(1,543,412)	(1,261,641)	(1,375,749)	(985,227)	(776,112)
Claims and settlements	-	908	132	13,856	9,145	70,282	3,593,096	-	-
Net change in plan fiduciary net position	(57,045,414)	79,358,185	(5,736,024)	8,734,443	22,773,413	(8,408,379)	(57,642,651)	(44,554,177)	8,211,625
Plan fiduciary net position – beginning	458,532,875	378,974,690	384,710,714	375,976,271	353,202,858	361,611,237	419,253,888	463,808,065	455,596,440
Plan fiduciary net position – ending (b)	<u>\$401,487,461</u>	<u>\$458,332,875</u>	<u>\$378,974,690</u>	<u>\$384,710,714</u>	<u>\$375,976,271</u>	<u>\$353,202,858</u>	<u>\$361,611,237</u>	<u>\$419,253,888</u>	<u>\$463,808,065</u>
City's net pension liability – ending (a) – (b)	<u>\$151,799,953</u>	<u>\$120,046,315</u>	<u>\$224,997,171</u>	<u>\$243,501,648</u>	<u>\$280,217,043</u>	<u>\$307,467,083</u>	<u>\$308,474,746</u>	<u>\$216,335,352</u>	<u>\$176,515,079</u>
Plan fiduciary net position as a percentage of the total pension liability	73%	79%	63%	61%	57%	53%	54%	66%	72%
Covered payroll	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net pension liability as a percentage of covered payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: This is a 10-year schedule. Information for additional years will be presented when available.

Required Supplementary Information

For Years Ended June 30, 2022 and 2021

Schedule of Employer Contributions (Unaudited) (dollars in millions)

	2022	2021	2020	2019	2018	2017*	2016*	2015*	2014*	2013**
Actuarially determined contribution	\$ 43.8	\$ 43.6	\$ 43.4	\$ 44.8	\$ 44.9	N/A	N/A	N/A	\$ 20.3	\$ 34.2
Contributions in relation to the actuarially determined contribution	\$ 43.8	\$ 43.6	\$ 43.4	\$ 44.8	\$ 44.9	\$ -	\$ -	\$ -	\$ -	\$ 210.0
Contribution deficiency/(excess)	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A	N/A	\$ 20.3	\$(175.8)
Covered payroll	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.1
Contributions as a percentage of covered payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	210000%

* Actuarially determined contributions are calculated based on the actuarial valuation one year prior to the beginning of the fiscal year. Although actuarial valuations were performed as of June 30, 2014, June 30, 2015, and June 30, 2016, the System did not determine an actuarially determined contribution for FY 2015-2017, based on the City's funding policy.

** In July 2012, the City of Oakland contributed \$210 million in Pension Obligation Bond (POB) proceeds to the Plan.

Schedule of Investment Returns (Unaudited)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Annual money-weighted rate of return net of investment expense	-10.24%	24.43%	2.04%	6.10%	10.57%	15.57%	-0.75%	3.90%	16.40%	9.70%

Note to Required Supplementary Information

For Years Ended June 30, 2022 and 2021

Note to Schedule of Employer Contributions

Actuarially determined contribution rates are calculated based on the actuarial valuation one year prior to the beginning of the fiscal year in which contributions are reported. Methods and assumptions used to determine contribution rates are:

Methods and Assumptions Used to Determine Contribution Rates					
Fiscal Year	Valuation Date	Discount Rate	Cost-of-Living Adjustments	Mortality	Other Significant Assumption Changes from Prior Year
2022	6/30/2020	5.19%	3.25%	CalPERS Mortality Table from the 2012-2015 experience study, excluding the 15-year projection using 90% of Scale MP-2016	None
2021	6/30/2019	5.50%	3.25%		None
2020	6/30/2018	5.50%	3.25%		Longevity Pay assumption for Fire Members was added
2019	6/30/2017	5.50%	3.25%		None
2018	6/30/2016	6.44%	3.25%		None
2017	6/30/2015	6.50%	3.25%	CalPERS Mortality Table from the 2006-2011 experience study, excluding the 20-year projection using Scale BB	None
2016	6/30/2014	6.54%	3.25%		None
2015	6/30/2013	6.75%	3.975%	RP-2000 Mortality Table from the 1997-2007 experience study, projected with Scale AA	None
2014	6/30/2012	6.75%	3.975%		None
2013	6/30/2011	6.75%	3.975%		None
2012	6/30/2010	7.00%	4.50%	RP-2000 Mortality Table from the 1997-2007 experience study	None

A complete description of the methods and assumptions used to determine contribution rates can be found in the corresponding actuarial valuation reports.

SECTION 3

INVESTMENT



Frank O. Morris
Lieutenant

Served with Oakland Police Department
April 1962 to October 1983

this page intentionally left blank

Investment Consultant's Report



2175 NW Raleigh Street
Suite 300A
Portland, OR 97210

503.226.1050
Meketa.com

December 31, 2022

Retirement Board
City of Oakland Police and Fire Retirement System
150 Frank Ogawa Plaza, Suite: 3332
Oakland, CA 94612

Dear Board Members:

This letter reviews the investment performance of the City of Oakland Police and Fire Retirement System ("the System" or "OPFRS") for the fiscal year ended June 30, 2022. During this 12-month period, the OPFRS total investment portfolio decreased -10.0% on a money-weighted, net of fees basis, while outperforming the Policy Benchmark's time-weighted return of -11.9%. The System has been effective in using its resources in a cost-effective manner to ensure that benefits continue to flow to plan participants.

Meketa serves as OPFRS' independent investment consultant. Performance data is provided by the System's custodian, Northern Trust, and is independently calculated by Meketa's performance measurement team.

A major factor influencing overall investment performance is the allocation of the OPFRS portfolio across major asset classes. As of June 30, 2022, the Covered Calls and Cash were overweight, while Fixed Income was moderately underweight relative to policy.

Over the latest 3-year period, the OPFRS portfolio produced an annualized money-weighted, net of fee return of 4.5%, outperforming its benchmark's time-weighted return of 4.1% by 40 basis points. Over the latest 5-year period, OPFRS' average annual money-weighted net return of 5.7% outperformed the Policy Benchmark by 30 basis points.

OPFRS Annualized Money-Weighted Returns As of 06/30/2022

	1 Year	3 Year	5 Year
Total Portfolio ¹	-10.0	4.5	5.7
Policy Benchmark ²	-11.9	4.1	5.4
Excess Return	1.9	0.4	0.3

Sincerely,

David Sancewich, Managing Principal, Meketa Investment Group

¹ Money-weighted & net of fees. Performance since 2005 includes securities lending.

² Evolving Policy Benchmark is time-weighted and consists of 48% Russell 3000, 12% MSCI ACWI ex USA, 20% Bbg US Universal, 20% CBOE BXM through 12/2018; 40% Russell 3000, 12% MSCI ACWI ex USA, 33% Bbg US Universal, 5% CBOE BXM, 6.7% SG Multi Alt Risk Premia, 3.3% Bbg US Treasury Long from 01/2019 through 05/2022; and 40% Russell 3000, 12% MSCI ACWI ex USA, 31% Bbg US Universal, 5% CBOE BXM, 10% SG Multi Alt Risk Premia, 2% Bbg US High Yield thereafter.

List of Investment Professionals

Domestic Equity Managers

Brown Advisory
Earnest Partners
Northern Trust Investments
Rice Hall James and Associates
Wellington Management

Fixed Income Managers

Polen Capital Credit
Ramirez Asset Management
Reams Asset Management
Wellington Management

International Equity Managers

Strategic Global Advisors

Investment Consultant

Meketa Investment Group

Covered Calls

Parametric Portfolio Associates

Custodian

Northern Trust

Crisis Risk Offset

Kepos Capital
Versor Investments

Security Lending

Northern Trust

Investment Manager Fees and Other Investment Expenses

Years Ended June 30, 2022 and June 30, 2021

	2022	2021
Investment Manager Fees		
Domestic Equity Managers	\$ 595,488	\$ 508,064
International Equity Managers	261,104	251,072
Domestic Fixed Income Managers	276,287	259,176
Covered Calls	126,276	119,828
Total Investment Manager Fees	\$ 1,259,155	\$ 1,138,140
Other Investment Fees		
Investment Consulting	\$ 100,000	\$ 100,000
Custodian Fees	116,500	116,500
Total Other Investment Fees	\$ 216,500	\$ 216,500
Total Investment Fees	\$ 1,475,655	\$ 1,354,640

Largest Stock Holdings (by Fair Value)
As of June 30, 2022

Stock	Fair Value
1. Apple	\$ 2,033,847
2. Microsoft	1,858,422
3. Republic Services	1,347,176
4. Coterra Energy	1,287,102
5. Progressive	1,139,562
6. Keysight Technologies	1,066,270
7. CBRE	1,039,741
8. Albemarle	992,028
9. D.R. Horton	976,898
10. Masco	967,877

Note: The above schedules do not reflect holdings in index funds. A complete list is available upon request.

Largest Bond Holdings (by Fair Value)
As of June 30, 2022

Description	Interest Rate	Maturity Date	Fair Value
1. U.S. Treasury	2.88%	08/15/2028	\$ 5,097,112.50
2. U.S. Treasury	2.75%	05/15/2025	4,366,312.50
3. U.S. Treasury	0.88%	09/30/2026	2,803,773.44
4. U.S. Treasury	1.63%	04/30/2023	2,440,061.13
5. U.S. Treasury	2.38%	05/15/2051	2,110,449.23
6. U.S. Treasury	1.75%	01/31/2029	1,567,386.72
7. Federal National Mortgage Association	2.50%	07/25/2052	1,389,172.27
8. U.S. Treasury	2.38%	05/15/2027	1,219,739.07
9. U.S. Treasury	2.00%	08/15/2051	1,167,005.86
10. North Shore Long Island Jewish Health Care	6.15%	11/01/2043	1,165,588.86

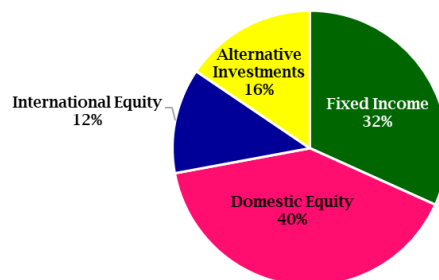
Note: The above schedules do not reflect holdings in index funds. A complete list is available upon request.

Investments by Manager/Exchange-Traded Funds (ETF)

Investment Firm	Portfolio Type	Amount
<u>Fixed Income Managers</u>		
Reams Asset Management	Core Plus	\$ 30,371,284
Ramirez Asset Management	Core	70,378,598
Vanguard Long-Term Treasury Index Fund ETF	Long Duration	10,950,584
Wellington Management	Core	6,741,756
DDJ Capital Management	High Yield/ Bank Loans	8,503,602
Total Fixed Income		\$ 126,945,824
<u>Domestic Equity Managers</u>		
Northern Trust Investments	Large Cap Core	\$ 73,995,521
Earnest Partners	Mid Cap Core	42,840,233
Rice Hall James and Associates	Small Cap Growth	13,425,905
Brown Advisory	Small Cap Value	9,922,899
Wellington Management	Defensive Equity	20,739,219
Transition Account	Short-Term	473,371
Total Domestic Equity		\$ 161,397,148
<u>International Equity Managers</u>		
Strategic Global Advisors	International	\$ 34,539,908
Vanguard Developed Markets Index Fund ETF	International	14,974,751
Total International Equity		\$ 49,514,659
<u>Alternative Managers</u>		
Parametric Portfolio Associates	Covered Calls	\$ 36,405,984
Kepos Capital	Crisis Risk Offset	9,894,309
Versor Investments	Crisis Risk Offset	\$ 15,841,052
Total Alternative Investments		62,141,345
Total Investments		<u>\$ 399,998,976</u>

The amounts presented above may vary from the amounts presented in the financial statements due to the investments by manager summary including cash and cash equivalents and presenting amounts at the manager level and the financial statements presenting amounts at the security level.

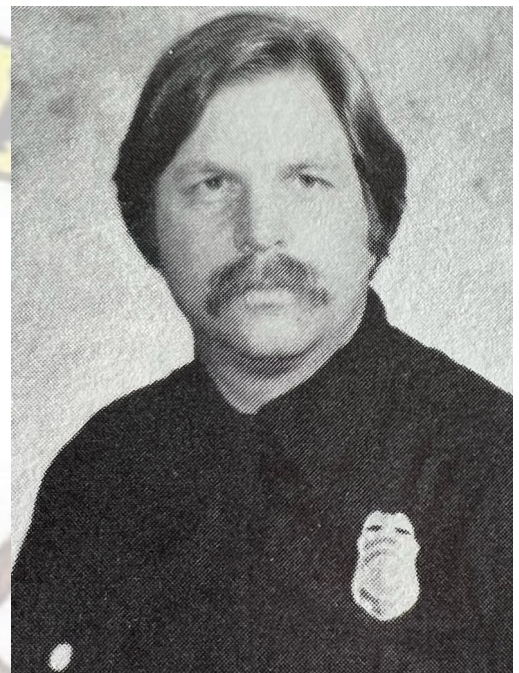
Asset Allocation As of June 30, 2022



■ Fixed Income
 ■ Domestic Equity
 ■ International Equity
 ■ Alternative Investments

SECTION 4

ACTUARIAL



Lloyd E. Salsbery

Engineer

Served with Oakland Fire Department

December 1972 to June 2000

this page intentionally left blank

Actuary's Certification Letter



Classic Values, Innovative Advice

Via Electronic Mail

February 17, 2023

Actuarial Certification

This is the Actuary's Certification Letter for the Actuarial Section of the Annual Report for the Oakland Police and Fire Retirement System (PFRS, the Plan) as of June 30, 2022. This letter includes references to two documents produced by Cheiron for the Plan: the Actuarial Valuation report as of June 30, 2021 (transmitted January 13, 2022) and the GASB 67/68 report as of June 30, 2022 (transmitted November 3, 2022).

Actuarial Valuation Report as of June 30, 2021

The purpose of the annual actuarial valuation report as of June 30, 2021 is to determine the actuarial funding status of the Plan on that date and to calculate an actuarially determined contribution amount in accordance with the Plan's funding agreement with the City of Oakland. The prior review was conducted by Cheiron as of June 30, 2020.

Actuarial funding is based on the Entry Age Normal Cost Method. Under this method, the employer contribution amount provides for current cost (normal cost and expected administrative expenses) plus an amount to amortize the Unfunded Actuarial Liability (UAL). All members of the Plan have retired; therefore, no normal cost has been computed, and the actuarially determined contributions are equal to the unfunded liability amortization payment plus administrative expenses.

As part of the funding agreement with the City, the UAL is expected to be amortized as level percentage of overall City Safety payroll, with payments commencing in the fiscal year beginning July 1, 2017, and completed in the year ending June 30, 2026.

For actuarial valuation purposes, Plan assets are valued at actuarial value. Under this method, the Actuarial Value of Assets recognizes one-fifth of the difference between the expected asset value (based on the 6.00% return assumption for the current Plan year) and the actual market value each year. The actuarial value is restricted to fall between 90% and 110% of the market value.

The Retirement System Board is responsible for establishing and maintaining the funding policy of the Plan.

We prepared the following schedules, which we understand will be used in the Actuarial Section of the 2022 PFRS Annual Report, based on the June 30, 2021 actuarial valuation. All historical information prior to the June 30, 2013 actuarial valuation shown in these schedules is based on information reported by Bartel Associates, who served as the actuary prior to 2013.

www.cheiron.us 1.877.CHEIRON (243.4766)

Actuary's Certification Letter

Actuarial Certification
February 17, 2023
Page 2

- Statement of Actuarial Assumptions and Methods
- Summary of Participant Data
- Development of Actuarial Gain/Loss (Analysis of Financial Experience)
- Schedule of Funding Status
- Summary of Plan Provisions

The assumptions used in this report reflect the results of an experience study performed by Cheiron covering the period from July 1, 2014 through June 30, 2017 and adopted by the Board. The assumptions used are intended to produce results that, in aggregate, reasonably approximate the anticipated future experience of the Plan.

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for funding purposes meet the requirements of the Actuarial Standards of Practice, in particular Standards No. 4, 27, 35, and 44.

GASB 67/68 Report as of June 30, 2022

The purpose of the GASB 67/68 report as of June 30, 2022 is to provide accounting and financial reporting information under GASB 67 for the Plan and under GASB 68 for the City of Oakland. This report is not appropriate for other purposes, including the measurement of funding requirements for the Plan.

For financial reporting purposes, the Total Pension Liability (TPL) is based on the June 30, 2021 actuarial valuation updated to the measurement date of June 30, 2022. The update included the addition of interest cost offset by actual benefit payments.

Beginning of year measurements are based on the actuarial valuation as of June 30, 2020, updated to the measurement date of June 30, 2021. The June 30, 2022 Total Pension Liability (TPL) presented in the GASB 67/68 report was based upon the same data, plan provisions, actuarial methods, and assumptions as were used in the actuarial valuation report as of June 30, 2021.

Please refer to our GASB 67 report as of June 30, 2022 for additional information related to the financial reporting of the System. We prepared the following schedules for inclusion in the Financial Section of the 2022 PFRS Annual Report based on the June 30, 2022 GASB 67/68 report:

- Change in Net Pension Liability
- Sensitivity of Net Pension Liability to Changes in Discount Rate
- Schedule of Changes in Net Pension Liability and Related Ratios
- Schedule of Employer Contributions
- Notes to the Schedule of Employer Contributions



Actuary's Certification Letter

Actuarial Certification
February 17, 2023
Page 3

We certify that the letter was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for disclosure purposes have been prepared in accordance with our understanding of generally accepted accounting principles as promulgated by the GASB.

Disclaimers

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

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

Cheiron utilizes ProVal, an actuarial valuation application leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect our reports.

These reports are for the use of the Plan, the participating employer, and their auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of these reports is not an intended user and is considered a third party.

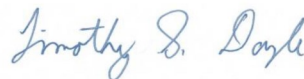
Cheiron's reports were prepared solely for the Plan for the purposes described herein, except that the Plan and its auditors may rely on these reports solely for the purpose of completing an audit related to the matters herein. Other users of these reports are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. These reports do not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

Respectfully Submitted,
Cheiron



Graham A. Schmidt, ASA, EA, FCA, MAAA
Consulting Actuary
703-893-1456, x1137
gschmidt@cheiron.us



Timothy S. Doyle, ASA, EA, MAAA
Consulting Actuary
703-893-1456, x1140
tdoyle@cheiron.us



Summary of Actuarial Value, Assumptions and Funding Methods

PURPOSE OF ACTUARIAL VALUATION

The Oakland Police and Fire Retirement System (PFRS) is a closed defined benefit pension plan. It was closed to new members on June 30, 1976. As of June 30, 2022, there are no active members. All members are retirees and beneficiaries.

The actual costs of a defined benefit plan are determined entirely by the amount of the benefit promise, the actual salaries and service of the plan participants, and how long they and their beneficiaries live to receive payments. In addition, the actuarial methodology provides a reasonable plan, or method, towards funding the expected costs of the plan. This information assists the plan trustees so they can make informed decisions regarding plan investments and how much in contributions will be required from the employer to eventually fully pay for the plan's costs.

The most recent actuarial valuation was as of June 30, 2021. The key results of the actuarial valuation are as follows:

- The actuarially determined employer contribution amount for Fiscal Year 2022-2023 is \$32.7 million, based on projecting the Actuarial Liabilities and the Actuarial Value of Assets to the end of the 2021-2022 Fiscal Year. This represents a decrease of \$12.1 million from the estimated amount in the prior valuation for the same Fiscal Year. The contribution is assumed to be paid in equal installments throughout the year, or on average at approximately January 1, 2023.
- During the year ended June 30, 2021, the return on Plan assets was 24.14% on a market value basis net of investment expenses, as compared to the 6.00% assumption for the 2020-2021 Plan year. This resulted in a market value gain on investments of \$67.8 million. The Actuarial Value of Assets (AVA) is calculated as the expected AVA plus 20% of the difference between the market value and the expected AVA, which is restricted to be between 90% and 110% of the MVA. This smoothed value of assets returned 14.16%, for an actuarial asset gain of \$29.9 million. Without the 10% corridor, the actuarial asset gain would have been \$15.1 million.
- The Plan experienced a gain on the Actuarial Liability of \$6.6 million, the net result of changes in the population and changes in benefits. The primary factor was an excess of deaths above the number expected. Combining the liability and asset gains, the Plan experienced a total gain of \$36.5 million.

- The Plan's smoothed funded ratio, the ratio of Actuarial Value of Assets over Actuarial Liability, increased from 62.2% last year to 72.2% as of June 30, 2021.
- The Plan's funded ratio increased from 63.5% to 80.2% on a Market Value of Assets (MVA) basis.
- The Unfunded Actuarial Liability (UAL) is the excess of the Plan's Actuarial Liability over the Actuarial Value of Assets. The Plan experienced a decrease in the UAL from \$225.5 million to \$159.3 million as of July 1, 2021.
- Overall participant membership decreased compared to last year. 29 members died, 12 of whom had their benefits continue to a surviving spouse. In addition, 28 surviving beneficiaries died. There are no active members of the Plan.
- If the contribution were determined using a projected asset value based on the current market (i.e., non-smoothed) value of assets, the contribution for FY 2022-2023 would be \$22.3 million. The contribution is smaller than that determined using the projected AVA, because the current market value reflects the full amount of prior investment gains, while under the AVA projection a portion of those gains are deferred until years after FY 2022-2023 .

VALUATION SUMMARY

Table I-1 summarizes all the key results of the valuation with respect to membership, assets and liabilities, and contributions. The results are presented and compared for both the current and prior plan year.

Table I-1 Summary of Principal Plan Results (\$ in Thousands)			
	July 1, 2020	July 1, 2021	% Change
Participant Counts			
Active Participants	0	0	
Participants Receiving a Benefit	768	723	-5.9%
Total	768	723	-5.9%
Annual Pay of Active Members	\$ 0	\$ 0	
Assets and Liabilities			
Actuarial Liability (AL)	\$ 597,014	\$ 571,942	-4.2%
Actuarial Value of Assets (AVA)	\$ 371,467	\$ 412,680	11.1%
Unfunded Actuarial Liability (UAL)	\$ 225,547	\$ 159,262	-29.4%
Funded Ratio (AVA)	62.2 %	72.2 %	9.9%
Funded Ratio (MVA)	63.5%	80.2%	16.7%
Contributions			
Employer Contribution (FY2021-22)	\$ 43,820	N/A	
Employer Contribution (FY2022-23)	\$ 44,828	\$ 32,712	-27.0%

ACTUARIAL DEFINITIONS

The **Present Value of Future Benefits** (PVFB) is used for measuring all future Plan obligations, the obligations of the Plan earned as of the valuation date and those to be earned in the future by current plan participants under the current Plan provisions, if all assumptions are met.

The **Actuarial Liability** (AL) is used for funding calculations, this liability is calculated taking the Present Value of Future Benefits and subtracting the Present Value of Future Normal Costs under an acceptable actuarial funding method. Because the Plan has no active members, the Actuarial Liability is equal to the Present Value of Future Benefits (i.e., all benefits are fully accrued).

The **Unfunded Actuarial Liability** (UAL) is the excess of the Actuarial Liability over the Actuarial Value of Assets.

The **Actuarial Value of Assets** (AVA) is the value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values.

ACTUARIAL METHODS AND ASSUMPTIONS

ACTUARIAL METHODS

The actuarial funding method used to determine the normal cost and the Unfunded Actuarial Liability is the Entry Age Normal Cost Method.

The normal cost rate is determined with the normal cost percentage equal to the total Projected Value of Benefits at Entry Age, divided by Present Value of Future Salary at Entry Age. Since there are no longer any active employees, the normal cost for this plan is \$0.

The excess of the Plan's Actuarial Liability (AL) over the Actuarial Value of Assets (AVA) is the Unfunded Actuarial Liability (UAL). In accordance with the Plan's funding agreement with the City of Oakland, the UAL must be amortized by July 1, 2026, with contributions resuming in the 2017-2018 fiscal year. The projected fiscal year 2021-2022 contribution has been calculated using level percent of pay amortization, based on total projected City payroll for all Safety employees.

ACTUARIAL VALUE OF PLAN ASSETS

In determining the recommended employer contribution to the PFRS, we use a smoothed Actuarial Value of Assets. The asset smoothing method dampens the volatility in asset values that could occur because of the fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process. Assets are assumed to be used exclusively for the provision of retirement benefits and expenses.

ACTUARIAL ASSUMPTIONS

The assumptions used in this report reflect the results of an Experience Study performed by Cheiron covering the period from July 1, 2014 through June 30, 2017 and adopted by the Board. More details on the rationale for the demographic and economic assumptions can be found in the Experience Analysis presented to the Board on February 28, 2018.

Rate of Return

The expected annual rates of return, net of investment expenses, on all Plan assets are shown in the table below. The equivalent single discount rate for these returns using the Plan's expected projected benefit payments is 5.28%.

Benefit Payment Year	Expected Return
2021 - 2026	6.000 %
2027	5.725 %
2028	5.450 %
2029	5.175 %
2030	4.900 %
2031	4.625 %
2032	4.350 %
2033	4.075 %
2034	3.800 %
2035	3.525 %
2036+	3.250 %

Cost of Living Adjustments and Long-Term Salary Increases

Cost-of-living adjustments are based on salary increases for a retiree's rank at retirement. The long-term rate of salary increase is assumed to be 3.25% (2.85% inflation plus 0.4% productivity). The following schedule shows salary increases based on the current Police contract which expires on June 30, 2023, and the Fire contract which expires on December 31, 2023. All increases shown after those dates are assumptions.

Post-Retirement Benefit Increases (Based on Salary Increases for Rank at Retirement)		
Date of Increase	Police	Fire
July 1, 2021	3.00%	1.50%
January 1, 2022	N/A	2.00%
July 1, 2022	3.50%	1.00%
July 1, 2023	3.50%	0.00%
December 1, 2023	N/A	2.00%
Annual Increases Starting July 1, 2024	3.25%	3.25%

Inflation

The assumed rate of general inflation is 2.75% (entire US) and local inflation is 2.85% (Bay Area). The general inflation rate is used in the determination of the investment return assumptions. The local inflation rate is used in the determination of the growth in expenses and salaries (which determine the COLA increases).

Rates of Termination, Disability and Retirement

None

Rates of Mortality for Healthy Lives **(for service retirees and beneficiaries)**

CalPERS Healthy Annuitant Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016.

Rates of Mortality for Disabled Retirees

CalPERS Industrial Disability Mortality Table from the 2012-2015 Experience Study, excluding the 15-year projection using 90% of Scale MP-2016.

Mortality Improvement

The mortality tables are projected to improve with the MP-2017 generational mortality improvement tables, with improvements projected from a base year of 2014 (the mid-point of the CalPERS base tables).

Survivor Continuance

30% of disabled retirees' deaths are assumed to be related to injuries arising out of the performance of duty, entitling the surviving spouse to a 100% continuance.

Changes in Assumptions since the Last Valuation

No changes were made to the actuarial assumptions.

Administrative Expenses

Administrative expenses for the Fiscal Year Ended June 30, 2022 are assumed to be \$1,692,500 , growing at 2.85% per year.

Membership Information

Service Retired Participants

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	0	\$0	0	\$0	0	\$0
60-64	0	\$0	0	\$0	0	\$0
65-69	14	\$1,079,118	0	\$0	14	\$1,079,118
70-74	61	\$5,242,761	17	\$1,238,231	78	\$6,480,992
75-79	91	\$6,963,191	32	\$2,724,679	123	\$9,687,870
80-84	34	\$2,688,651	12	\$1,057,125	46	\$3,745,776
85-89	9	\$955,482	13	\$1,153,800	22	\$2,109,282
90-94	8	\$665,829	11	\$990,570	19	\$1,656,399
95-99	2	\$213,433	5	\$434,021	7	\$647,454
100+	1	\$99,129	0	\$0	1	\$99,129
Total	220	\$17,907,594	90	\$7,598,426	310	\$25,506,020

Disability Retired Participants

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	0	\$0	0	\$0	0	\$0
60-64	0	\$0	0	\$0	0	\$0
65-69	0	\$0	3	\$245,477	3	\$245,477
70-74	43	\$3,358,268	26	\$1,843,805	69	\$5,202,073
75-79	27	\$1,971,071	34	\$2,697,441	61	\$4,668,512
80-84	11	\$876,714	18	\$1,523,229	29	\$2,399,943
85-89	5	\$393,996	7	\$585,972	12	\$979,967
90-94	2	\$192,181	3	\$271,703	5	\$463,884
95-99	0	\$0	1	\$67,653	1	\$67,653
100+	0	\$0	0	\$0	0	\$0
Total	88	\$6,792,229	92	\$7,235,279	180	\$14,027,508

Membership Information

Beneficiaries

Age	Police		Fire		Total	
	Number	Total Annual Benefit	Number	Total Annual Benefit	Number	Total Annual Benefit
< 50	0	\$0	0	\$0	0	\$0
50-54	0	\$0	0	\$0	0	\$0
55-59	1	\$52,095	0	\$0	1	\$52,095
60-64	3	\$175,604	2	\$148,362	5	\$323,966
65-69	9	\$576,640	7	\$446,609	16	\$1,023,248
70-74	30	\$1,542,683	14	\$852,980	44	\$2,395,663
75-79	32	\$1,701,659	18	\$1,073,595	50	\$2,775,254
80-84	15	\$797,091	16	\$917,976	31	\$1,715,067
85-89	16	\$1,026,060	21	\$1,216,295	37	\$2,242,356
90-94	17	\$1,022,988	18	\$967,371	35	\$1,990,359
95-99	7	\$359,375	6	\$366,607	13	\$725,981
100+	1	\$80,379	0	0	1	\$80,379
Total	131	\$7,334,574	102	\$5,989,793	233	\$13,324,367

Membership Information

Participant Data Summary

	July 1, 2020			July 1, 2021		
	Police	Fire	Total	Police	Fire	Total
Active Participants						
Number	0	0	0	0	0	0
Number Vested	0	0	0	0	0	0
Average Age	00.0	00.0	00.0	00.0	00.0	00.0
Average Service	00.0	00.0	00.0	00.0	00.0	00.0
Average Pay	\$0	\$0	\$0	\$0	\$0	\$0
Service Retirees						
Number	229	95	324	220	90	310
Average Age	76.6	81.5	78.1	77.5	81.8	78.7
Average Annual Benefit	\$78,850	\$81,876	\$79,737	\$81,398	\$84,427	\$82,277
Disabled Retirees						
Number	99	96	195	88	92	180
Average Age	75.9	77.1	76.5	76.7	78.0	77.4
Average Annual Benefit	\$74,864	\$75,923	\$75,385	\$77,184	\$78,644	\$77,931
Beneficiaries						
Number	132	117	249	131	102	233
Average Age	80.5	83.1	81.7	80.2	82.7	81.3
Average Annual Benefit	\$55,725	\$56,194	\$55,946	\$55,989	\$58,723	\$57,186
All Inactive						
Number	460	308	768	439	284	723
Average Age	77.6	80.8	78.8	78.1	80.9	79.2
Average Annual Benefit	\$71,356	\$70,265	\$70,919	\$72,971	\$73,322	\$73,109

Data pertaining to active and inactive Members and their beneficiaries as of the valuation date was supplied by the Plan Administrator.

In Memoriam



this page intentionally left blank

***Oakland Police and Fire Department
Retiree & Beneficiary Deaths
Fiscal Year
2021—2022***

Fire Members

Geraldine Brazil	Beneficiary
Shirley Brown	Beneficiary
Evelyn Byrne	Beneficiary
Jean Christian	Beneficiary
Gertrude Davis	Beneficiary
Jeffrey Davis	Retiree
John Fahey	Retiree
Ronald Graham	Retiree
Mary Healey	Beneficiary
James Hayworth	Retiree
Jayne M. Kersch	Beneficiary
Norman Kotler	Retiree
David Lindsay	Retiree
Barbara Marchant	Beneficiary
William Moore	Retiree
Roy Nason	Retiree
Walter Pierson	Retiree
Beverly Risch	Beneficiary
Willard Rodman	Retiree
Richard Schuller	Retiree
Herbert Soares	Retiree
Paul Taylor	Retiree
James Wiley	Retiree
Don Williams	Retiree

Police Members

June T. Aboussleman	Beneficiary
William Boyd	Retiree
Barbara Davis	Beneficiary
William Foskett	Retiree
Hazel Gaudinier	Beneficiary
Bernard Gerhard	Retiree
Ronald Gunar	Retiree
Jerry Jahn	Retiree
James Mahanay	Retiree
Edward Marquez	Retiree
Larry Newman	Retiree
Renate C. Owen	Beneficiary
Bette Peters	Beneficiary
Waller Prentice	Retiree
Sarah Robinson	Beneficiary
George Rothacher	Retiree
Virginia Schwab	Beneficiary
Judith Terracina	Beneficiary
Hadwick Thompson	Retiree
Robert Thorp	Retiree
David Whiteman	Retiree
Louise Williams	Beneficiary
Marvin Young	Retiree

this page intentionally left blank

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: March 29, 2023
RE: Polen US High Yield—Manager Update

Manager: Polen Capital Management (“Polen”)

Inception Date:	February 2015	OPFRS AUM (2/28/2023)	\$8.9 million
Strategy:	Credit	Firm-wide AUM (12/31/2022)	\$54.8 billion
Benchmark:	ICE BofA High Yield	Strategy AUM (12/31/2022)	\$4.4 billion

Summary & Recommendation

Polen (formerly DDJ) has managed OPFRS’s Credit portfolio as the sole manager since February 2015. As of 2/28/2023, the portfolio is approximately \$8.9 million or about 2% of OPFRS’s total plan.

The strategy was put on the Watch status since May 2019 initially for performance concerns; as of the last two reviews in January and September 2022, the performance concerns were alleviated but it continued to be on the Watch status due to the merger between Polen and DDJ at the beginning of 2022.

Since the last review, the strategy has performed within expectations and guidelines for the portfolio and no major organizational changes or personnel turnover in the portfolio management team have been observed. *Therefore, Meketa does not have any major concerns with Polen from investment management and performance perspective, and recommend that it be removed from the Watch status.*

Investment Performance Review Summary¹

As of 2/28/2023, Polen High Yield strategy has outperformed benchmark on net-of-fees basis over 1- and 3-year trailing periods as well as since inception in February 2015. Over the most recent quarter, it has lagged the benchmark. Relative to other US high yield fixed income managers, Polen ranks above average for the most recent quarter, as well as the 1- and 3-year trailing periods, while ranking barely below average at the 51st percentile over the 5-year trailing period.

As of 2/28/2023	Market Value (\$000)	2022-Q4	1 YR	3 YR	5 YR	Since Inception	Inception Date
Polen (Gross)	8,933.5	2.0	-2.9	4.5	3.3	5.1	02/2015
<i>ICE BofA High Yield</i>	---	4.0	-5.5	1.2	2.7	3.9	---
Excess Return (Gross)	---	-2.0	2.6	3.4	0.6	1.2	---
Polen (Net)	---	1.8	-3.4	3.8	2.7	4.4	---
Excess Return (Net)	---	-2.2	2.1	2.6	0.0	0.5	---
Peer Group Ranking (Net)²	---	36	27	5	51	---	---
Reference: Median Return (Net)	---	1.6	-4.7	1.5	2.7	---	---
Number of Peers in Peer Group	---	121	121	120	116	---	---

Product and Organization Review Summary

A review of Polen Capital Management and the US High Yield strategy revealed no concerning organizational issues or changes since last review in September 2022.

Polen Capital Management		Areas of Potential Impact			
	Level of Concern	Investment Process	Investment Team	Performance Track Record	Team/Firm Culture
Product					
Key people changes	None				
Changes to team structure/individuals' roles	None				
Product client gain/losses	None				
Investment process changes	None				
Personnel turnover	None				
Organization					
Ownership changes	None				
Key people changes	None				
Firm wide client gain/losses	None				
Recommended Action	None - X	Watch Status		Termination	

¹ Performance is annualized for periods longer than one year.

² Peer group is eVestment US High Yield Fixed Income Managers Net.

Investment Philosophy & Process, per Manager

The US High Yield strategy is based upon the belief that by actively managing a relatively concentrated portfolio of high-yield bonds and leveraged loans, the manager can generate superior returns at a lower risk profile than a BB/B high-yield benchmark. The manager's philosophy involves deriving an accurate real-time valuation of a company's enterprise value and targeting only investments in that company's capital structure which offer a significant margin of safety and strong return potential.

The segments targeted by the strategy include lower rated securities (B and below), middle-market issuers, split-rated or recently downgraded securities, shorter duration debt, near maturity subordinated debt, secured bonds, and bank debt. The manager seeks to exploit inefficiencies by adhering to a fundamental-oriented investment process and applying value investing principles to the credit markets through financial, structural, and legal analysis. The strategy targets liquid issues rated B and above, while tactically allocating to CC bonds and loans that it believes has a low risk of default and offer attractive risk-adjusted returns. The strategy may invest in derivatives to hedge currency exposure in certain portfolios, although this is not a focus of the strategy.

DS/PN/JLC/mn



Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Economic and Market Update

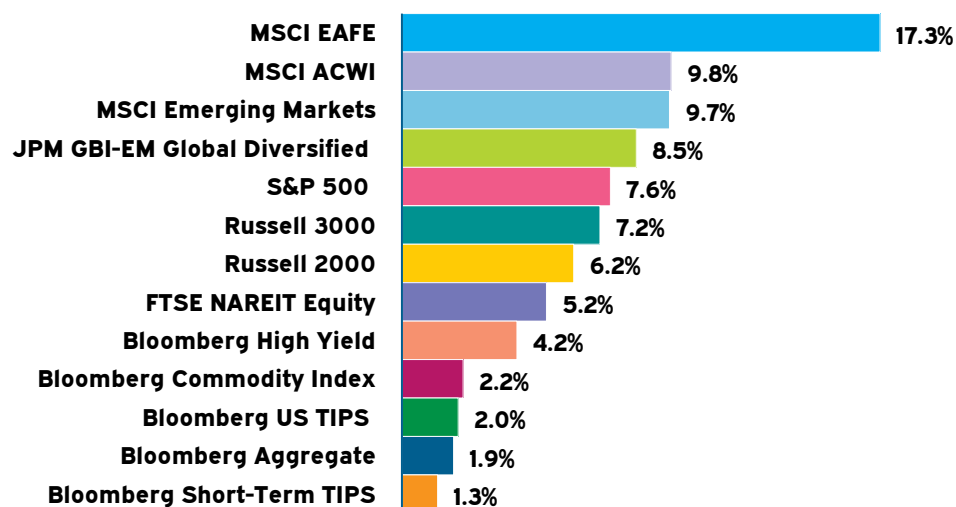
February 2023 Report

Commentary

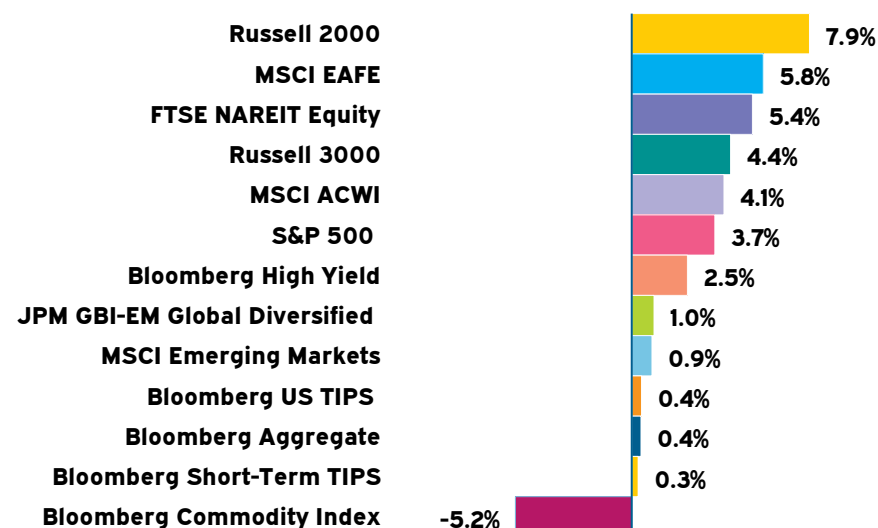
- After a strong start to the year, markets sold-off as better-than-expected economic data pushed investors to raise their inflation and interest rate expectations. Despite the sell-off most asset classes remain positive year-to-date.
- Chair Powell's February press conference where he reiterated previous messaging on high and persistent inflation and the need for an extended period of high interest rates weighed on both stocks and bonds.
 - US equity markets declined in February with the Russell 3000 falling 2.3% and growth continuing to outperform value.
 - Developed equity markets outside the US were up slightly in local terms for the month but a strengthening dollar brought returns negative for US investors. The MSCI EAFE fell 2.1% for the month.
 - Emerging market equities had the weakest returns in February (-6.5%) driven by renewed tensions between the US and China, as well as the strengthening dollar.
 - On expectations for higher rates for longer, bonds gave back most of their January gains with the broad US bond market (Bloomberg Aggregate) declining 2.6%.
 - After month-end, concerns in the banking sector created considerable market volatility with dramatic declines in interest rates and significant pressure in the financial sector. Support from the Fed and others in the US related to Silicon Valley and Signature Banks helped somewhat to ease concerns but risks remain.
- This year, the path of inflation and monetary policy, slowing global growth, China reopening its economy, and the war in Ukraine, as well as recent pressures in the banking sector, will all be key.

Index Returns¹

Fourth Quarter 2022



YTD 2023



→ After a strong fourth quarter and start to 2023, markets sold off in February as investors revised higher their interest rate assumptions for the year.

¹ Source: Bloomberg and FactSet. Data is as of February 28, 2023.

Domestic Equity Returns¹

Domestic Equity	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-2.4	7.6	3.7	-7.7	12.1	9.8	12.2
Russell 3000	-2.3	7.2	4.4	-8.1	11.8	9.4	11.9
Russell 1000	-2.4	7.2	4.2	-8.2	11.9	9.7	12.1
Russell 1000 Growth	-1.2	2.2	7.0	-13.3	12.0	11.5	14.2
Russell 1000 Value	-3.5	12.4	1.5	-2.8	10.9	7.2	9.6
Russell MidCap	-2.4	9.2	5.7	-5.0	11.4	8.4	10.7
Russell MidCap Growth	-1.0	6.9	7.7	-8.3	8.7	8.7	11.4
Russell MidCap Value	-3.2	10.5	4.6	-3.4	11.9	7.3	9.6
Russell 2000	-1.7	6.2	7.9	-6.0	10.1	6.0	9.1
Russell 2000 Growth	-1.1	4.1	8.8	-7.9	6.5	5.1	9.3
Russell 2000 Value	-2.3	8.4	7.0	-4.4	12.9	6.4	8.5

US Equities: Russell 3000 Index fell 2.3% in February after rising sharply in January.

- US stocks fell in February as persistently strong labor and inflation data prompted investors to expect further interest rate increases by the Federal Reserve.
- Growth stocks again outperformed value stocks across the market capitalization spectrum. Technology stocks continue to fare better this year after steep declines in 2022. This contributed to the divergence between the growth and value indices year-to-date.
- Energy was the worst performing sector in the S&P 500 index. Investors lowered their expectations for global growth as central banks continue to fight inflation.

¹ Source: Bloomberg. Data is as of February 28, 2023.

Foreign Equity Returns¹

Foreign Equity	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-3.5	14.3	4.3	-7.2	5.3	1.6	3.9
MSCI EAFE	-2.1	17.3	5.8	-3.1	6.8	2.6	4.8
MSCI EAFE (Local Currency)	0.6	8.7	7.0	5.5	9.4	5.7	7.5
MSCI EAFE Small Cap	-2.2	15.8	5.1	-9.7	5.3	0.7	6.1
MSCI Emerging Markets	-6.5	9.7	0.9	-15.3	1.0	-1.9	1.5
MSCI Emerging Markets (Local Currency)	-4.7	6.6	1.6	-10.5	3.1	1.1	4.7
MSCI China	-10.4	13.5	0.2	-16.1	-6.2	-5.5	2.4

Foreign Equity: Developed international equities (MSCI EAFE) fell 2.1% in February and emerging markets (MSCI EM) declined 6.5%.

- Non-US equities also reversed course in February after a strong start to the year.
- Developed market equities were up for the month in local terms but the strengthening US dollar made them negative for US investors. An improved economic outlook for Europe and a rebound in tourism for Japan both contributed to results.
- Emerging market equities were the worst performer for the month, driven by returns from China. The MSCI China index was down sharply in February due to heightened tensions with the US. The strong US dollar also proved an additional headwind for emerging market equities.

¹ Source: Bloomberg. Data is as of February 28, 2023.

Fixed Income Returns¹

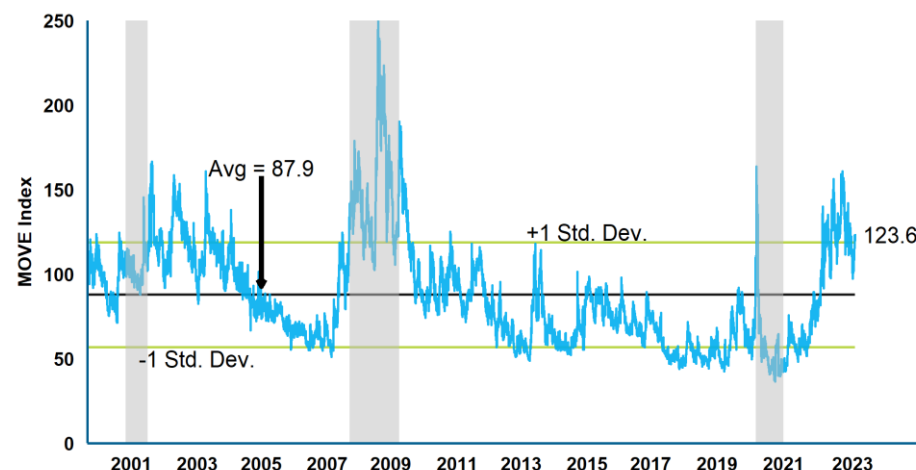
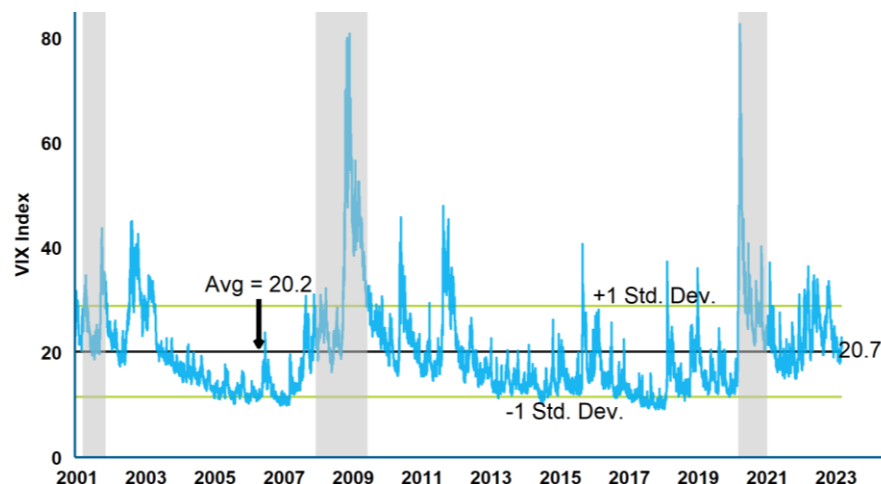
Fixed Income	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Barclays Universal	-2.5	2.2	0.6	-9.3	-3.4	0.7	1.4	5.2	6.2
Bloomberg Barclays Aggregate	-2.6	1.9	0.4	-9.7	-3.8	0.5	1.1	4.8	6.5
Bloomberg Barclays US TIPS	-1.4	2.0	0.4	-10.4	0.2	2.6	1.2	4.6	7.0
Bloomberg Short-term TIPS	-0.4	1.3	0.3	-2.9	2.3	2.7	1.4	5.1	2.5
Bloomberg Barclays High Yield	-1.3	1.3	2.5	-5.5	1.3	2.9	4.1	8.6	4.3
JPM GBI-EM Global Diversified (USD)	-3.2	8.5	1.0	-6.1	-4.3	-3.0	-2.0	7.1	5.0

Fixed Income: The Bloomberg Universal fell 2.5% in February as global sovereign debt yields rose on monetary policy expectations.

- Global inflation risks have been improving, but the pace of price declines slowed over the month, prompting central bank officials to recast expectations for higher policy rates in the coming year.
- TIPS outperformed the broad US bond market (Bloomberg Aggregate) on a modest increase in longer-dated inflation expectations.
- High yield debt declined less than the broad US bond market while emerging market debt was the worst performer for the month.

¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of February 28, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

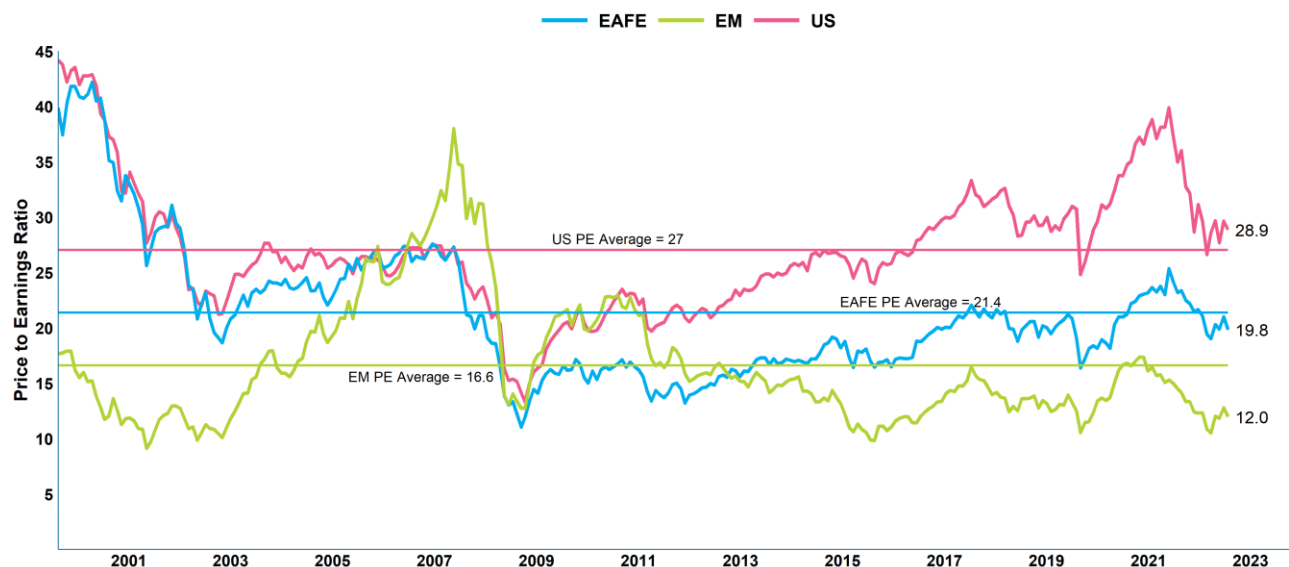
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) remained subdued through the end of February as investors continue to anticipate the end of the Fed's policy tightening.
- The Fed's continued hawkish stance on inflation has led to the more policy sensitive MOVE (fixed income volatility) to remain well above its long-run average though.

¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of February 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and February 2023.

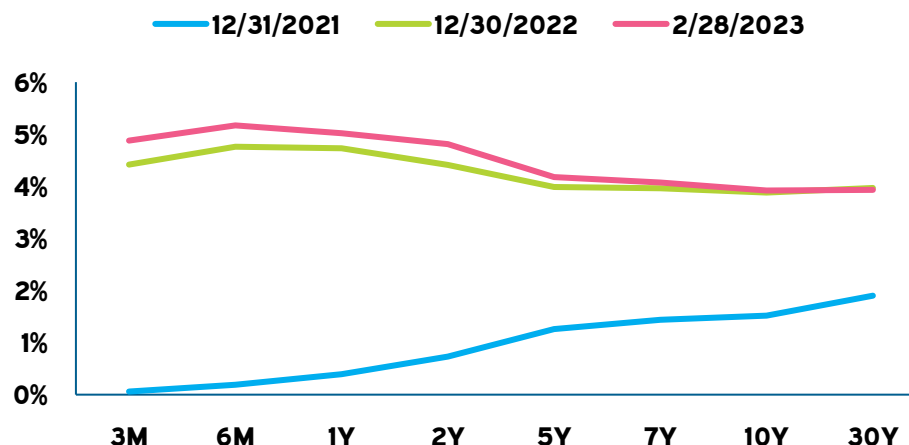
Equity Cyclically Adjusted P/E Ratios¹



- The US equity price-to-earnings ratio remains slightly above its long-run (21st century) average.
- International developed market valuations are slightly below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of February 2023. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

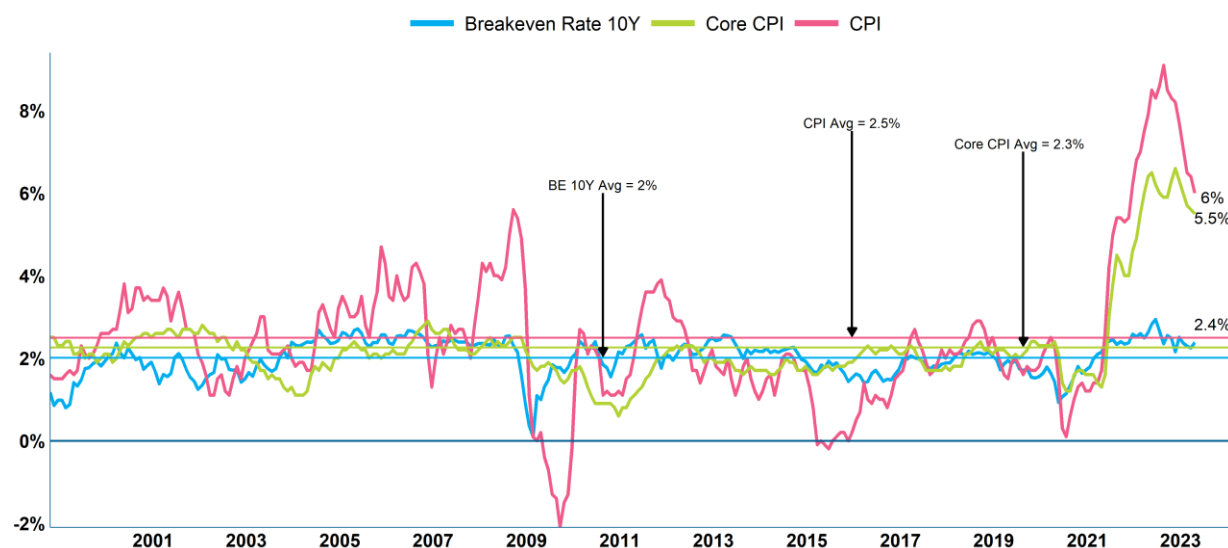
US Yield Curve¹



- In February, policy-sensitive interest rates at the front-end of the curve rose, with the two-year Treasury yield increasing from 4.2% to 4.8%. Longer dated ten-year Treasury yields rose (3.5% to 3.9%) to a level close to where they started the year.
- The yield spread between two-year and ten-year Treasuries widened to -0.90% in February a level not seen since the early 1980s. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Inversions in the yield curve have often preceded recessions.
- The Fed remained committed to fighting inflation, as it increased rates another 25 basis points to a range of 4.5% to 4.75% at its February meeting. Questions remain about the pace of future rate hikes and the ultimate terminal rate as the Fed tries to balance fighting inflation and maintaining stability in markets.

¹ Source: Bloomberg. Data is as of February 28, 2023.

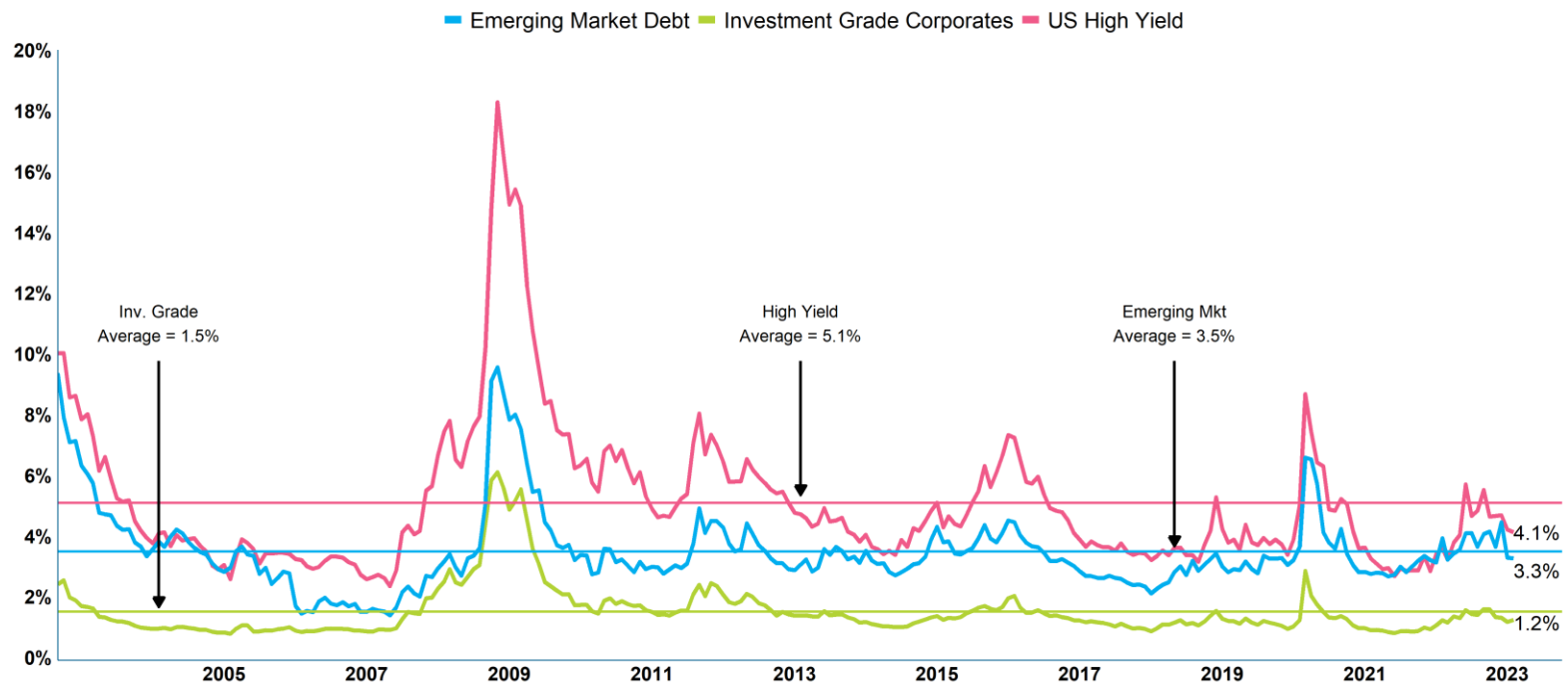
Ten-Year Breakeven Inflation and CPI¹



- Inflation continued to decline in February with the year-over-year reading falling from 6.4% to 6.0% matching expectations. Prices rose 0.4% month-over-month with food prices increasing (0.4%) and energy prices falling (-0.6%).
- Core inflation – excluding food and energy – also continued to decline year-over-year (5.5% versus 5.6%) but increased month-over-month (0.5% versus 0.4%) driven by housing.
- Inflation expectations (breakevens) rose over the month but remain well below current inflation levels as investors anticipate a significant moderation in inflation.

¹ Source: Bloomberg. Data is as of February 2023. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

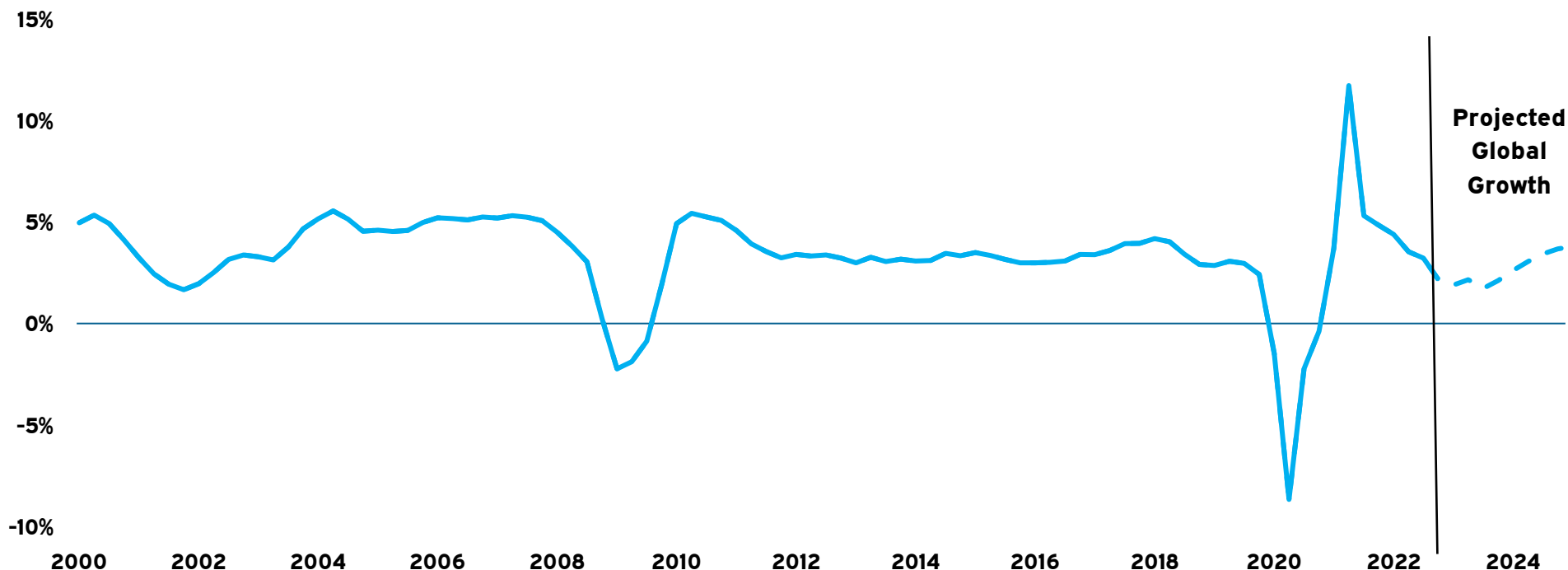
Credit Spreads vs. US Treasury Bonds¹



- Spreads (the added yield above a comparable maturity Treasury) largely remained the same in February as both credit markets and government bonds declined on the anticipation that rates would stay higher for longer.
- High yield spreads fell from 4.2% to 4.1% in February while investment grade spreads remained steady at 1.2%. Emerging market spreads were also stable at 3.3%.

¹ Sources: Bloomberg. Data is as of February 28, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

Global Real Gross Domestic Product (GDP) Growth¹

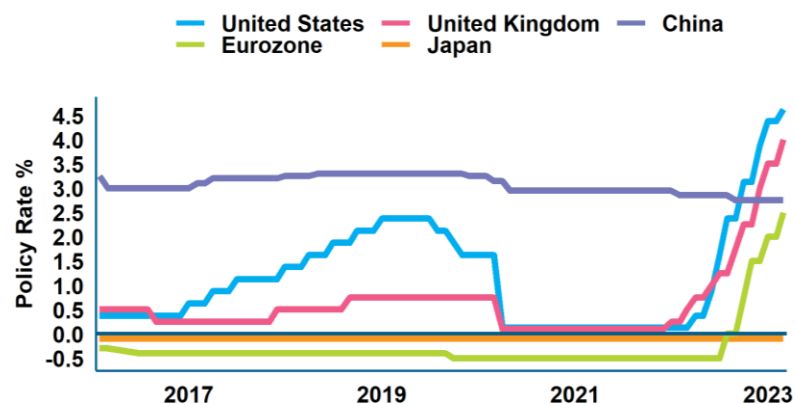


- Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

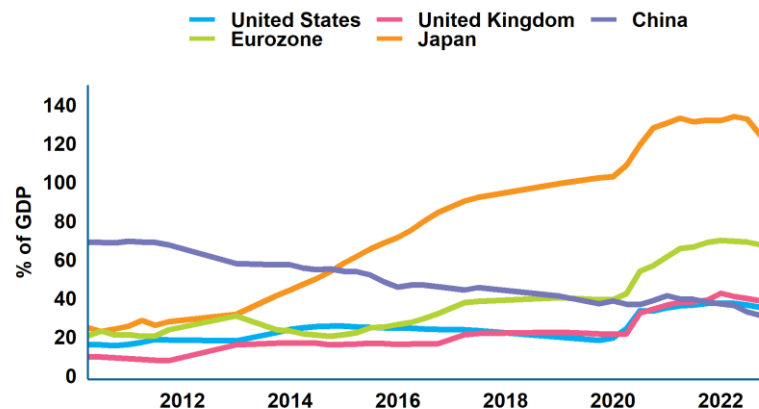
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated February 2023.

Central Bank Response¹

Policy Rates



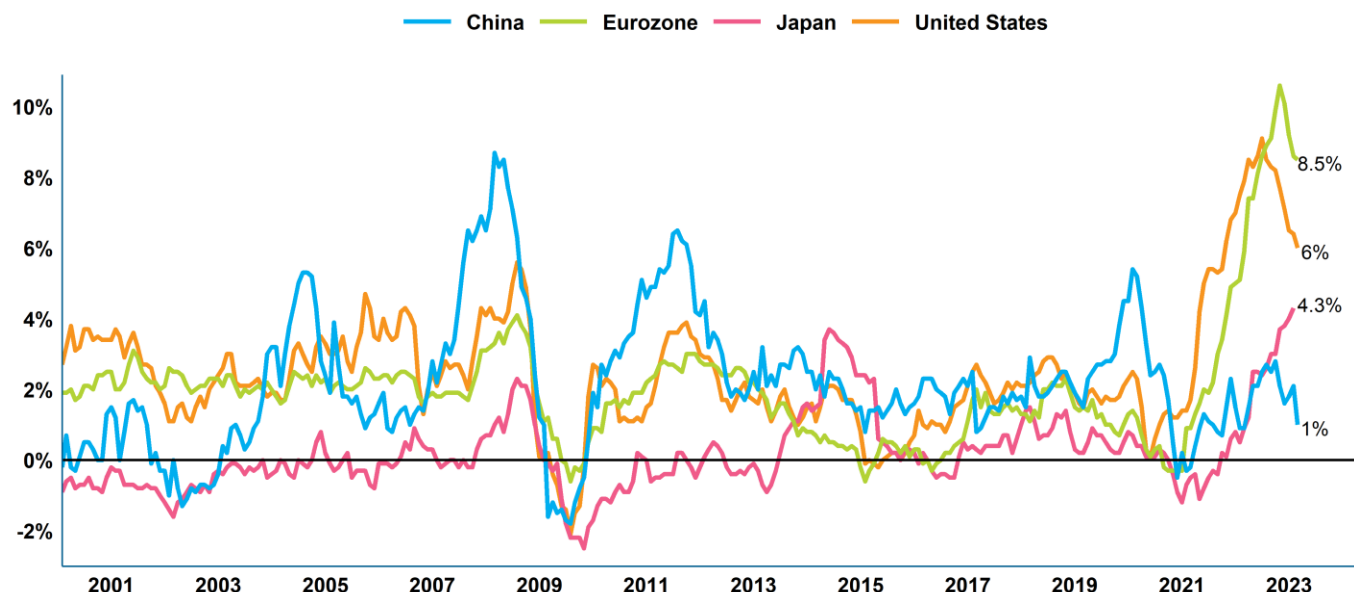
Balance Sheet as % of GDP



- In 2022 many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking the most aggressive approach. However, global inflation has begun to moderate, and markets anticipate a slowing in the rate of policy tightening in the future.
- In December, the Bank of Japan relaxed its target yield for the 10-year bond which may mark an incremental step toward policy normalization after eight years of quantitative easing.
- China's central bank is expected to maintain its accommodative monetary stance to support consumer demand and investment as well as offer liquidity to the troubled real estate sector.
- The risk remains for a policy error, particularly overtightening, as record inflation and aggressive tightening to date could heavily weigh on global growth. The Federal Reserve's policy rate path could diverge from others this year given their strong early start to tightening.

¹ Source: Bloomberg. Policy rate data is as of February 28, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of December 31, 2022.

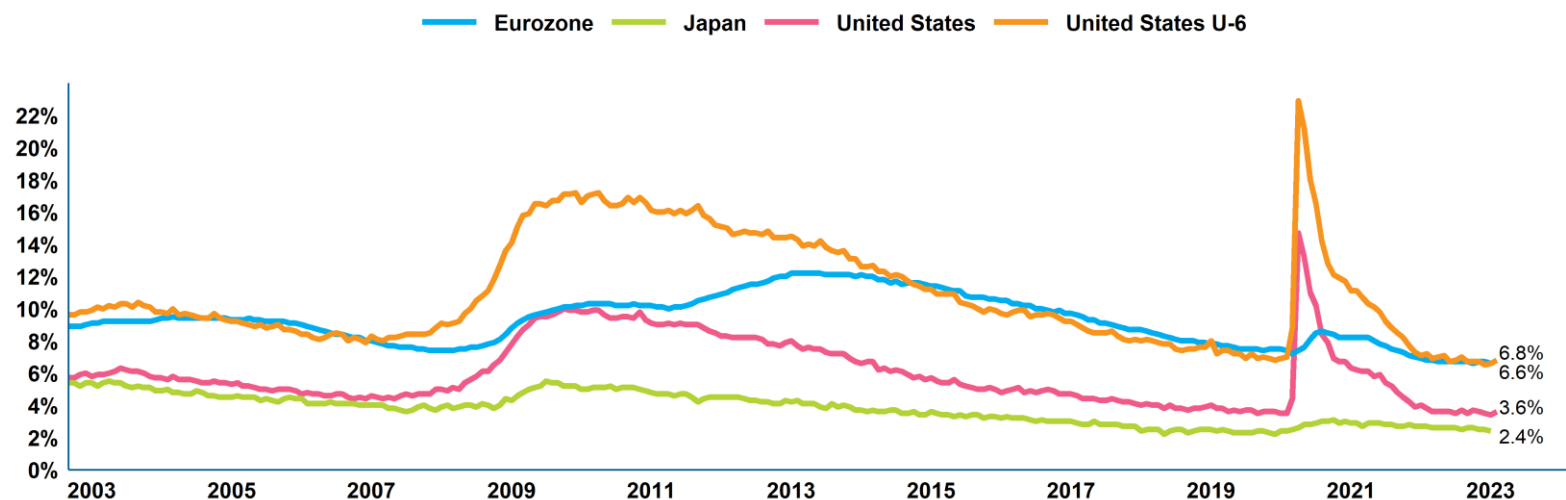
Inflation (CPI Trailing Twelve Months)¹



- Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- Inflation pressures are slowly declining in the US as supply issues ease, but they remain elevated, while in Europe they have also started to fall as energy prices have eased.
- Lingering supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher commodity prices driven by the war in Ukraine have been key global drivers of inflation.

¹ Source: Bloomberg. Data is as of February 2023. The most recent Japanese inflation data is as of January 2023.

Unemployment¹



- Labor markets have significantly improved from the pandemic as economies have largely reopened.
- Despite slowing growth and high inflation, the US labor market remains a particular bright spot. Unemployment in the US, which experienced the steepest rise, recently has returned to pre-pandemic levels. Broader measures of unemployment (U-6) remain higher at 6.8% but have also declined dramatically from their peak.
- The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to higher unemployment.

¹ Source: Bloomberg. Data is as February 28, 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of January 31, 2023.

US Dollar versus Broad Currencies¹



- The dollar finished 2022 much higher than it started, due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows. Late last year and into early this year, the dollar experienced some weakness though as investors anticipated the end of Fed tightening.
- Overall, the US dollar appreciated in February as better-than-forecasted economic data drove expectations for higher interest rates in the US.
- This year, the track of inflation across economies and the corresponding monetary policies will likely be key drivers of currency moves.

¹ Source: Bloomberg. Data as of February 28, 2023.

Summary

Key Trends:

- The impacts of record high inflation will remain key, with market volatility likely to stay high.
- Recent issues related to the banking sector have created a delicate balance for central banks to continue to fight inflation but also try to maintain financial stability.
- Global monetary policies could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors remains elevated given persistent inflation pressures and a strong US labor market.
- Growth is expected to slow globally this year, with many economies likely falling into recessions. Inflation, monetary policy, and the war will all be key.
- In the US, the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices could weigh on consumer spending.
- Valuations have significantly declined in the US to around long-term averages, largely driven by price declines. The key going forward will be whether earnings can remain resilient if growth continues to slow.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

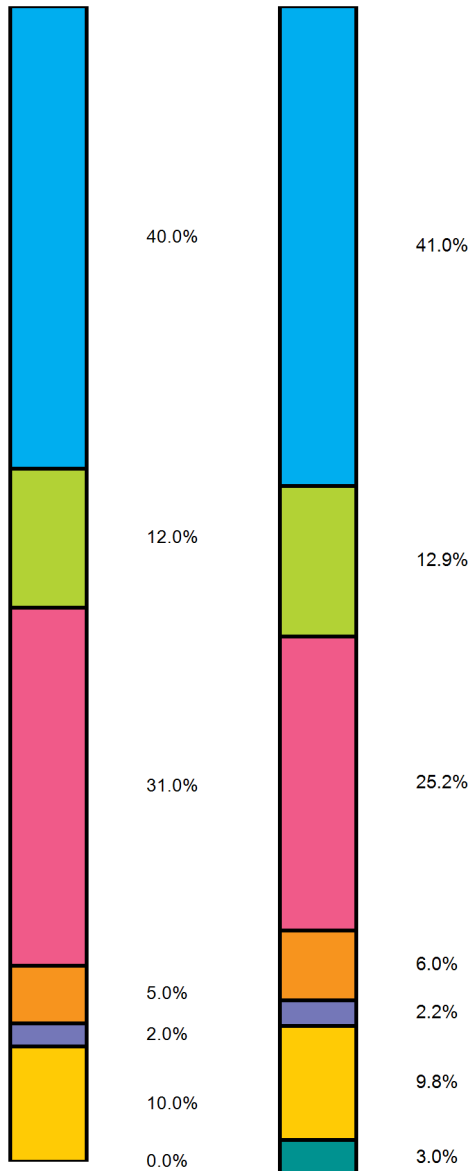
PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Oakland Police and Fire Retirement System

March 29, 2023

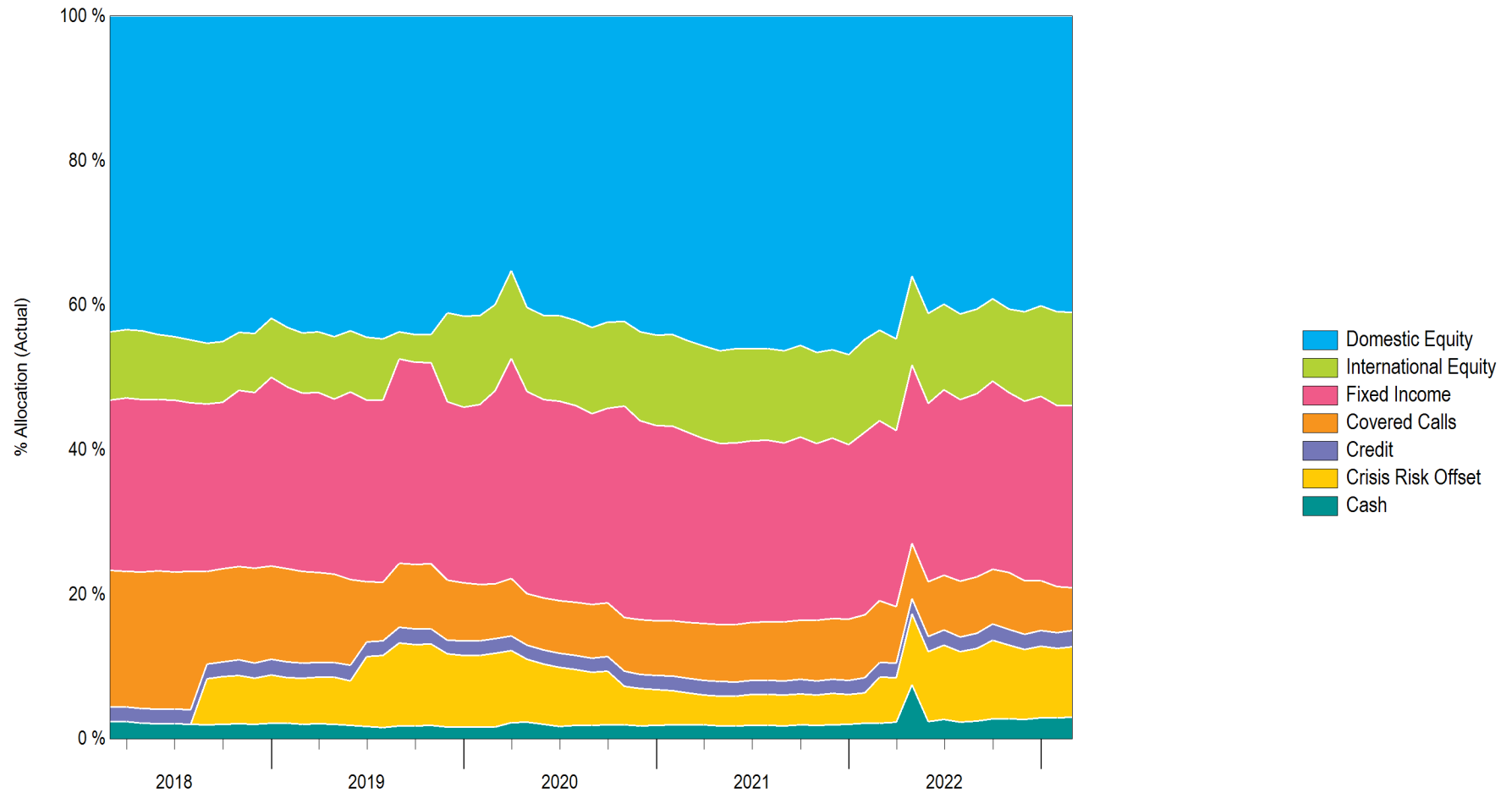
February Flash Report

As of February 28, 2023



Allocation vs. Targets and Policy							
		Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
	Domestic Equity	\$167,350,976	41.0%	40.0%	1.0%	30.0% - 50.0%	Yes
	International Equity	\$52,524,030	12.9%	12.0%	0.9%	8.0% - 14.0%	Yes
	Fixed Income	\$102,708,922	25.2%	31.0%	-5.8%	25.0% - 40.0%	Yes
	Covered Calls	\$24,354,365	6.0%	5.0%	1.0%	5.0% - 10.0%	Yes
	Credit	\$8,933,462	2.2%	2.0%	0.2%	0.0% - 100.0%	Yes
	Crisis Risk Offset	\$39,910,349	9.8%	10.0%	-0.2%	5.0% - 15.0%	Yes
	Cash	\$12,240,413	3.0%	0.0%	3.0%	0.0% - 5.0%	Yes
	Total	\$408,022,517	100.0%	100.0%			

Asset Allocation History 5 Years Ending February 28, 2023



As of February 28, 2023

Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	408,022,517	100.0	-2.1	3.3	4.0	-6.2	5.1	4.9	7.0	6.5	Dec-88
<i>OPFRS Policy Benchmark</i>			<u>-2.0</u>	<u>2.9</u>	<u>4.1</u>	<u>-6.9</u>	<u>4.6</u>	<u>4.5</u>	<u>6.7</u>	<u>7.8</u>	<u>Dec-88</u>
Excess Return			-0.1	0.4	-0.1	0.7	0.5	0.4	0.3	-1.3	
Domestic Equity	167,350,976	41.0	-2.3	4.7	7.9	-5.3	12.1	9.1	11.9	8.7	Jun-97
<i>Russell 3000 (Blend)</i>			<u>-2.3</u>	<u>4.4</u>	<u>6.9</u>	<u>-8.1</u>	<u>11.8</u>	<u>9.4</u>	<u>11.9</u>	<u>8.8</u>	<u>Jun-97</u>
Excess Return			0.0	0.3	1.0	2.8	0.3	-0.3	0.0	-0.1	
International Equity	52,524,030	12.9	-3.3	5.4	9.7	-5.9	5.7	2.6	5.4	5.2	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<u>-3.5</u>	<u>4.3</u>	<u>7.4</u>	<u>-7.2</u>	<u>5.3</u>	<u>1.6</u>	<u>3.9</u>	<u>4.9</u>	<u>Jan-98</u>
Excess Return			0.2	1.1	2.3	1.3	0.4	1.0	1.5	0.3	
Fixed Income	102,708,922	25.2	-2.2	1.1	-1.5	-9.2	-3.0	1.1	1.7	4.7	Dec-93
<i>Bloomberg Universal (Blend)</i>			<u>-2.5</u>	<u>0.6</u>	<u>-1.8</u>	<u>-9.3</u>	<u>-3.4</u>	<u>0.7</u>	<u>1.4</u>	<u>4.5</u>	<u>Dec-93</u>
Excess Return			0.3	0.5	0.3	0.1	0.4	0.4	0.3	0.2	
Credit	8,933,462	2.2	0.3	3.9	5.5	-2.9	4.5	3.3	--	5.1	Feb-15
<i>Bloomberg US High Yield TR</i>			<u>-1.3</u>	<u>2.5</u>	<u>6.1</u>	<u>-5.5</u>	<u>1.3</u>	<u>2.9</u>	<u>4.1</u>	<u>4.0</u>	<u>Feb-15</u>
Excess Return			1.6	1.4	-0.6	2.6	3.2	0.4		1.1	
Covered Calls	24,354,365	6.0	-1.4	3.2	5.5	-4.3	10.9	8.1	--	8.4	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<u>-0.2</u>	<u>4.0</u>	<u>2.7</u>	<u>-4.8</u>	<u>5.7</u>	<u>3.8</u>	<u>5.9</u>	<u>5.2</u>	<u>Apr-14</u>
Excess Return			-1.2	-0.8	2.8	0.5	5.2	4.3		3.2	
Crisis Risk Offset	39,910,349	9.8	-1.2	1.1	-3.7	-8.9	-13.4	-8.0	--	-8.7	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>			<u>1.7</u>	<u>2.2</u>	<u>4.7</u>	<u>7.1</u>	<u>0.6</u>	<u>--</u>	<u>--</u>	<u>0.0</u>	<u>Aug-18</u>
Excess Return			-2.9	-1.1	-8.4	-16.0	-14.0			-8.7	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding. Fiscal year begins on July 1.

As of February 28, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Cash	12,240,413	3.0	-0.3	-0.3	-0.3	-0.3	0.1	1.0	0.7	0.6	Mar-11
<i>FTSE T-Bill 3 Months TR</i>			<u>0.3</u>	<u>0.7</u>	<u>2.1</u>	<u>2.2</u>	<u>0.9</u>	<u>1.3</u>	<u>0.8</u>	<u>0.7</u>	<u>Mar-11</u>
Excess Return			-0.6	-1.0	-2.4	-2.5	-0.8	-0.3	-0.1	-0.1	

As of February 28, 2023

Performance Summary												
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	408,022,517	100.0	--	-2.1	3.3	4.0	-6.2	5.1	4.9	7.0	6.5	Dec-88
OPFRS Policy Benchmark				-2.0	2.9	4.1	-6.9	4.6	4.5	6.7	7.8	Dec-88
Excess Return				-0.1	0.4	-0.1	0.7	0.5	0.4	0.3	-1.3	
Domestic Equity	167,350,976	41.0	41.0	-2.3	4.7	7.9	-5.3	12.1	9.1	11.9	8.7	Jun-97
Russell 3000 (Blend)				-2.3	4.4	6.9	-8.1	11.8	9.4	11.9	8.8	Jun-97
Excess Return				0.0	0.3	1.0	2.8	0.3	-0.3	0.0	-0.1	
Northern Trust Russell 1000	72,647,457	17.8	43.4	-2.4	4.2	6.6	-8.3	11.8	9.6	12.0	12.7	Jun-10
Russell 1000				-2.4	4.2	6.6	-8.2	11.9	9.7	12.1	12.8	Jun-10
Excess Return				0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	
EARNEST Partners	46,733,889	11.5	27.9	-1.9	7.2	9.0	-3.2	14.5	11.4	13.2	10.3	Apr-06
Russell MidCap				-2.4	5.7	11.4	-5.0	11.5	8.4	10.7	8.6	Apr-06
Excess Return				0.5	1.5	-2.4	1.8	3.0	3.0	2.5	1.7	
Wellington Select Quality Equity	21,765,770	5.3	13.0	-2.7	-2.0	4.9	--	--	--	--	-1.1	May-22
Russell 1000				-2.4	4.2	6.6	-8.2	11.9	9.7	12.1	-2.5	May-22
Excess Return				-0.3	-6.2	-1.7					1.4	
Brown Fundamental Small Cap Value	11,668,792	2.9	7.0	-1.1	7.0	18.4	4.9	--	--	--	5.3	Apr-21
Russell 2000 Value				-2.3	7.0	10.7	-4.4	12.9	6.4	8.5	-1.6	Apr-21
Excess Return				1.2	0.0	7.7	9.3				6.9	
Rice Hall James	14,535,068	3.6	8.7	-4.1	9.3	8.1	-7.5	9.9	5.2	--	7.6	Jul-17
Russell 2000 Growth				-1.1	8.8	13.5	-7.9	6.5	5.1	9.3	6.6	Jul-17
Excess Return				-3.0	0.5	-5.4	0.4	3.4	0.1		1.0	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

As of February 28, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
International Equity	52,524,030	12.9	12.9	-3.3	5.4	9.7	-5.9	5.7	2.6	5.4	5.2	Jan-98
<i>MSCI ACWI ex US (Blend)</i>				<i>-3.5</i>	<i>4.3</i>	<i>7.4</i>	<i>-7.2</i>	<i>5.3</i>	<i>1.6</i>	<i>3.9</i>	<i>4.9</i>	<i>Jan-98</i>
Excess Return				0.2	1.1	2.3	1.3	0.4	1.0	1.5	0.3	
Vanguard Developed Markets ETF	14,790,987	3.6	28.2	-3.5	5.2	9.9	-4.8	6.8	--	--	5.9	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>				<i>-2.5</i>	<i>5.5</i>	<i>11.0</i>	<i>-4.7</i>	<i>7.4</i>	<i>3.0</i>	<i>5.2</i>	<i>6.2</i>	<i>Sep-19</i>
Excess Return				-1.0	-0.3	-1.1	-0.1	-0.6			-0.3	
SGA ACWI ex-U.S. Equity	37,733,043	9.2	71.8	-3.2	5.4	9.6	-6.8	5.4	--	--	2.0	Dec-19
<i>MSCI ACWI ex USA</i>				<i>-3.5</i>	<i>4.3</i>	<i>7.4</i>	<i>-7.2</i>	<i>5.3</i>	<i>1.6</i>	<i>3.9</i>	<i>2.7</i>	<i>Dec-19</i>
Excess Return				0.3	1.1	2.2	0.4	0.1			-0.7	
Fixed Income	102,708,922	25.2	25.2	-2.2	1.1	-1.5	-9.2	-3.0	1.1	1.7	4.7	Dec-93
<i>Bloomberg Universal (Blend)</i>				<i>-2.5</i>	<i>0.6</i>	<i>-1.8</i>	<i>-9.3</i>	<i>-3.4</i>	<i>0.7</i>	<i>1.4</i>	<i>4.5</i>	<i>Dec-93</i>
Excess Return				0.3	0.5	0.3	0.1	0.4	0.4	0.3	0.2	
Ramirez	69,805,247	17.1	68.0	-2.1	1.1	-1.7	-9.3	-3.4	1.0	--	1.3	Jan-17
<i>Bloomberg US Aggregate TR</i>				<i>-2.6</i>	<i>0.4</i>	<i>-2.6</i>	<i>-9.7</i>	<i>-3.8</i>	<i>0.5</i>	<i>1.1</i>	<i>0.7</i>	<i>Jan-17</i>
Excess Return				0.5	0.7	0.9	0.4	0.4	0.5		0.6	
Wellington Core Bond	6,607,123	1.6	6.4	-2.5	1.2	-1.9	-10.2	--	--	--	-6.3	Apr-21
<i>Bloomberg US Aggregate TR</i>				<i>-2.6</i>	<i>0.4</i>	<i>-2.6</i>	<i>-9.7</i>	<i>-3.8</i>	<i>0.5</i>	<i>1.1</i>	<i>-5.9</i>	<i>Apr-21</i>
Excess Return				0.1	0.8	0.7	-0.5				-0.4	
Reams	26,296,553	6.4	25.6	-2.4	1.1	-0.8	-8.5	0.6	3.4	2.6	5.1	Feb-98
<i>Bloomberg Universal (Blend)</i>				<i>-2.5</i>	<i>0.6</i>	<i>-1.8</i>	<i>-9.3</i>	<i>-3.4</i>	<i>0.7</i>	<i>1.4</i>	<i>4.1</i>	<i>Feb-98</i>
Excess Return				0.1	0.5	1.0	0.8	4.0	2.7	1.2	1.0	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

Though Vanguard Developed Markets ETF is a passive strategy, short-term performance may appear to diverge from the index it tracks more than what would be expected. This is due to Fair Value Pricing (FVP) adjustments that address the pricing discrepancies that may arise from time-zone differences among global securities markets. The resulting temporary divergence is expected to correct itself when the foreign markets reopen."

As of February 28, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Credit	8,933,462	2.2	2.2	0.3	3.9	5.5	-2.9	4.5	3.3	--	5.1	Feb-15
<i>Bloomberg US High Yield TR</i>				<i>-1.3</i>	<i>2.5</i>	<i>6.1</i>	<i>-5.5</i>	<i>1.3</i>	<i>2.9</i>	<i>4.1</i>	<i>4.0</i>	<i>Feb-15</i>
Excess Return				1.6	1.4	-0.6	2.6	3.2	0.4		1.1	
Polen Capital	8,933,462	2.2	100.0	0.3	3.9	5.5	-2.9	4.5	3.3	--	5.1	Feb-15
<i>ICE BofA High Yield Master TR</i>				<i>-1.3</i>	<i>2.6</i>	<i>5.9</i>	<i>-5.5</i>	<i>1.2</i>	<i>2.7</i>	<i>4.0</i>	<i>3.9</i>	<i>Feb-15</i>
Excess Return				1.6	1.3	-0.4	2.6	3.3	0.6		1.2	
Covered Calls	24,354,365	6.0	6.0	-1.4	3.2	5.5	-4.3	10.9	8.1	--	8.4	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>-0.2</i>	<i>4.0</i>	<i>2.7</i>	<i>-4.8</i>	<i>5.7</i>	<i>3.8</i>	<i>5.9</i>	<i>5.2</i>	<i>Apr-14</i>
Excess Return				-1.2	-0.8	2.8	0.5	5.2	4.3		3.2	
Parametric BXM	12,284,176	3.0	50.4	-0.7	2.6	3.8	-3.8	8.4	5.9	--	6.6	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>-0.2</i>	<i>4.0</i>	<i>2.7</i>	<i>-4.8</i>	<i>5.7</i>	<i>3.8</i>	<i>5.9</i>	<i>5.2</i>	<i>Apr-14</i>
Excess Return				-0.5	-1.4	1.1	1.0	2.7	2.1		1.4	
Parametric DeltaShift	12,070,189	3.0	49.6	-2.0	3.9	7.3	-5.0	13.1	9.9	--	10.3	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>-0.2</i>	<i>4.0</i>	<i>2.7</i>	<i>-4.8</i>	<i>5.7</i>	<i>3.8</i>	<i>5.9</i>	<i>5.2</i>	<i>Apr-14</i>
Excess Return				-1.8	-0.1	4.6	-0.2	7.4	6.1		5.1	

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

As of February 28, 2023

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Crisis Risk Offset	39,910,349	9.8	9.8	-1.2	1.1	-3.7	-8.9	-13.4	-8.0	--	-8.7	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				<i>1.7</i>	<i>2.2</i>	<i>4.7</i>	<i>7.1</i>	<i>0.6</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>Aug-18</i>
Excess Return				-2.9	-1.1	-8.4	-16.0	-14.0			-8.7	
Kepos Alternative Risk Premia	10,221,366	2.5	25.6	1.6	4.0	7.6	3.7	--	--	--	2.8	Feb-22
<i>SG Multi Alternative Risk Premia Index</i>				<i>1.7</i>	<i>2.2</i>	<i>4.7</i>	<i>7.1</i>	<i>0.6</i>	<i>--</i>	<i>--</i>	<i>5.7</i>	<i>Feb-22</i>
Excess Return				-0.1	1.8	2.9	-3.4				-2.9	
Versor Trend Following	15,733,286	3.9	39.4	0.4	-1.5	-5.3	--	--	--	--	4.9	Apr-22
<i>SG Trend Index</i>				<i>1.9</i>	<i>0.5</i>	<i>-0.7</i>	<i>27.4</i>	<i>16.4</i>	<i>10.5</i>	<i>6.3</i>	<i>16.2</i>	<i>Apr-22</i>
Excess Return				-1.5	-2.0	-4.6					-11.3	
Vanguard Long-Term Treasury ETF	13,955,697	3.4	35.0	-4.7	2.1	-8.9	-23.8	-11.0	--	--	-4.9	Jul-19
<i>Bloomberg US Govt Long TR</i>				<i>-4.7</i>	<i>1.4</i>	<i>-8.9</i>	<i>-24.0</i>	<i>-10.9</i>	<i>-0.7</i>	<i>1.0</i>	<i>-4.9</i>	<i>Jul-19</i>
Excess Return				0.0	0.7	0.0	0.2	-0.1			0.0	
Cash	12,240,413	3.0	3.0	-0.3	-0.3	-0.3	-0.3	0.1	1.0	0.7	0.6	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.3</i>	<i>0.7</i>	<i>2.1</i>	<i>2.2</i>	<i>0.9</i>	<i>1.3</i>	<i>0.8</i>	<i>0.7</i>	<i>Mar-11</i>
Excess Return				-0.6	-1.0	-2.4	-2.5	-0.8	-0.3	-0.1	-0.1	
Cash - Money Market	3,848,413	0.9	31.4	-1.0	-1.0	-1.0	-1.0	0.1	1.0	0.6	0.5	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.3</i>	<i>0.7</i>	<i>2.1</i>	<i>2.2</i>	<i>0.9</i>	<i>1.3</i>	<i>0.8</i>	<i>0.7</i>	<i>Mar-11</i>
Excess Return				-1.3	-1.7	-3.1	-3.2	-0.8	-0.3	-0.2	-0.2	
Cash - Treasury	8,392,000	2.1	68.6									

Performance shown is gross-of-fees. Since inception date and performance begins in the month following an investments initial funding.

As of February 28, 2023

Cash Flow Summary				
Month to Date				
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Brown Fundamental Small Cap Value	\$11,802,575	\$0	-\$133,783	\$11,668,792
Cash - Money Market	\$3,888,432	\$0	-\$40,019	\$3,848,413
Cash - Treasury	\$8,238,000	\$154,000	\$0	\$8,392,000
EARNEST Partners	\$47,621,448	\$0	-\$887,559	\$46,733,889
Kepos Alternative Risk Premia	\$10,068,926	\$0	\$152,440	\$10,221,366
Northern Trust Russell 1000	\$74,412,427	\$0	-\$1,764,971	\$72,647,457
Parametric BXM	\$13,373,131	-\$1,000,000	-\$88,955	\$12,284,176
Parametric DeltaShift	\$13,316,051	-\$1,000,000	-\$245,862	\$12,070,189
Polen Capital	\$8,909,576	\$0	\$23,886	\$8,933,462
Ramirez	\$71,321,528	\$0	-\$1,516,281	\$69,805,247
Reams	\$26,932,045	\$0	-\$635,492	\$26,296,553
Rice Hall James	\$15,155,688	\$0	-\$620,620	\$14,535,068
Securities Lending Northern Trust	\$0	-\$8,409	\$8,409	\$0
SGA ACWI ex-U.S. Equity	\$38,983,207	\$0	-\$1,250,164	\$37,733,043
Vanguard Developed Markets ETF	\$15,323,422	\$0	-\$532,435	\$14,790,987
Vanguard Long-Term Treasury ETF	\$14,685,291	\$0	-\$729,593	\$13,955,697
Versor Trend Following	\$15,669,452	\$0	\$63,834	\$15,733,286
Wellington Core Bond	\$6,778,017	\$0	-\$170,895	\$6,607,123
Wellington Select Quality Equity	\$22,376,261	\$0	-\$610,491	\$21,765,770
Total	\$418,855,478	-\$1,854,409	-\$8,978,552	\$408,022,517

As of February 28, 2023

Benchmark History

As of February 28, 2023

OPFRS Total Plan

6/1/2022	Present	40% Russell 3000 / 12% MSCI ACWI ex USA / 31% Bloomberg US Universal TR / 5% CBOE BXM / 10% SG Multi Alternative Risk Premia Index / 2% Bloomberg US High Yield TR
1/1/2019	5/31/2022	40% Russell 3000 / 12% MSCI ACWI ex USA Gross / 33% Bloomberg US Universal TR / 5% CBOE BXM / 6.7% SG Multi Alternative Risk Premia Index / 3.3% Bloomberg US Treasury Long TR
5/1/2016	12/31/2018	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% Bloomberg US Universal TR / 20% CBOE BXM
10/1/2015	4/30/2016	43% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% Bloomberg US Universal TR / 15% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
1/1/2014	9/30/2015	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% Bloomberg US Universal TR / 10% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
3/1/2013	12/31/2013	40% Russell 3000 / 10% MSCI ACWI ex USA Gross / 17% Bloomberg US Universal TR / 33% ICE BofA 3M US Treasury TR USD
8/1/2012	2/28/2013	20% Russell 3000 / 7% MSCI ACWI ex USA Gross / 18% Bloomberg US Universal TR / 55% ICE BofA 3M US Treasury TR USD
10/1/2007	7/31/2012	53% Russell 3000 / 17% MSCI ACWI ex USA Gross / 30% Bloomberg US Universal TR
4/1/2006	9/30/2007	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% Bloomberg US Universal TR
1/1/2005	3/31/2006	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% Bloomberg US Aggregate TR
4/1/1998	12/31/2004	50% Bloomberg US Aggregate TR / 10% Russell 1000 / 20% Russell 1000 Value / 5% Russell MidCap / 15% MSCI EAFE
12/1/1988	3/31/1998	40% S&P 500 / 55% Bloomberg US Aggregate TR / 5% FTSE T-Bill 3 Months TR

As of February 28, 2023

Benchmark History

As of February 28, 2023

Domestic Equity

1/1/2005	Present	Russell 3000
4/1/1998	12/31/2004	28.57% Russell 1000 / 57.14% Russell 1000 Value / 14.29% Russell MidCap
6/1/1997	3/31/1998	S&P 500

International Equity

1/1/2005	Present	MSCI ACWI ex USA
1/1/1998	12/31/2004	MSCI EAFE Gross

Fixed Income

4/1/2006	Present	Bloomberg US Universal TR
12/31/1993	3/31/2006	Bloomberg US Aggregate TR

Covered Calls

4/1/2014	Present	CBOE S&P 500 BuyWrite USD
----------	---------	---------------------------

Crisis Risk Offset

8/1/2018	Present	SG Multi Alternative Risk Premia Index
----------	---------	--

Cash

3/1/2011	Present	FTSE T-Bill 3 Months TR
----------	---------	-------------------------

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Oakland Police and Fire Retirement System

March 29, 2023

Recommendation for
Apr to Jun 2023 Cash Flows

Asset Class / Manager Liquidity

Asset Class	Fund	Liquidity Tier
Domestic Equity	Northern Trust Russell 1000	1
Domestic Equity	EARNEST Partners	3
Domestic Equity	Wellington Select Quality Equity	3
Domestic Equity	Rice Hall James	3
Domestic Equity	Brown Small Cap Value	3
International Equity	SGA MSCI ACWI ex-US	3
International Equity	Vanguard Developed ETF	1
Domestic Fixed Income	Ramirez	2
Domestic Fixed Income	Reams	2
Domestic Fixed Income	Wellington Core Bond	3
Credit	Polen Capital High Yield	2
Covered Calls	Parametric	2
Crisis Risk Offset	Vanguard Long Duration ETF	1
Crisis Risk Offset	Versor Trend Following	3
Crisis Risk Offset	Kepos Alternative Risk Premia	3
Cash	Cash	1

Description of Liquidity Tiers

Tier	Description	Market Value (\$M)	In Months ¹
1	Public, Scheduled Withdrawal Allowances	113.6	18.9
2	Public, Accommodating of Withdrawals	129.4	21.6
3	Public, Must Plan Withdrawals	165.0	27.5
4	Closely Held	0.0	-
Total		408.0	

¹ Illustrates Liquidity in Months assuming a net outflow of \$6 million per month; that is, the illustrated figure demonstrates the number of months it would take to withdraw \$6 million per month from each liquidity tier.

Oakland PFRS Asset Allocation as of February 28, 2023¹

	Market Value		Target	Variance		Actual Cash Flows for Jan – Mar Benefits ¹		Suggested Cash Flows for Apr – Jun Benefits ¹	
	(\$M)	(%)	(%)	(\$M)	(%)	Inflow (\$M)	Outflow (\$M)	Inflow (\$M)	Outflow (\$M)
Northern Trust Russell 1000	72.6	17.8%	20.0	(9.0)	(2.2%)	--	--	--	--
EARNEST Partners	46.7	11.5%	8.0	14.1	3.5%	--	--	--	(6.0)
Wellington Select Quality Equity	21.8	5.3%	6.0	(2.7)	(0.7%)	--	--	--	--
Rice Hall James	14.5	3.6%	3.0	2.3	0.6%	--	--	--	--
Brown Small Cap Value	11.7	2.9%	3.0	(0.6)	(0.1%)	--	--	--	--
Total Domestic Equity	167.4	41.0%	40.0	4.1	1.0%	--	--	--	(6.0)
SGA MSCI ACWI ex-US	37.7	9.2%	8.4	3.5	0.8%	--	--	--	--
Vanguard Developed ETF (BlackRock) ²	14.8	3.6%	3.6	0.1	0.0%	--	--	--	--
Total International Equity	52.5	12.9%	12.0	3.6	0.9%	--	--	--	--
Total Public Equity³	219.9	53.9%	52.0	7.7	1.9%	--	--	--	(6.0)
Parametric	24.4	6.0%	5.0	4.0	1.0%	--	(6.0)	--	--
Total Covered Calls	24.4	6.0%	5.0	4.0	1.0%	--	(6.0)	--	--
Long Duration ETF (BlackRock) ²	14.0	3.4%	3.3	0.4	0.1%	--	--	--	--
Versor Trend Following	15.7	3.9%	3.3	2.3	0.6%	--	--	--	--
Kepos Alternative Risk Premia	10.2	2.5%	3.3	(3.2)	(0.8%)	--	--	--	--
Total Crisis Risk Offset	39.9	9.8%	10.0	(0.9)	(0.2%)	--	--	--	--
Ramirez	69.8	17.1%	17.0	0.4	0.1%	--	--	--	--
Reams	26.3	6.4%	12.0	(22.7)	(5.6%)	--	--	--	--
Wellington Core Bond	6.6	1.6%	2.0	(1.6)	(0.4%)	--	--	--	--
Polen Capital High Yield	8.9	2.2%	2.0	0.8	0.2%	--	--	--	--
Total Public Fixed Income	111.6	27.4%	33.0	(23.0)	(5.6%)	--	--	--	--
Cash	12.2	3.0%	0.0	12.2	3.0%	8.2	(8.2)	8.2	(8.2)
Total Stable³	123.9	30.4%	33.0	(10.8)	(2.6%)	8.2	(8.2)	8.2	(8.2)
Total Portfolio	408.0	100.0%	100			8.2	(14.2)	8.2	(14.2)

¹ Benefit payments estimated at \$14.2 million on a quarterly basis per OPFRS. Report reflects quarterly City contributions of \$8.2 million. The City's current quarterly contribution amount is based on FY 2022/2023 actuarial annual required contribution of \$32.8 million. Benefits are payable on first of each month.

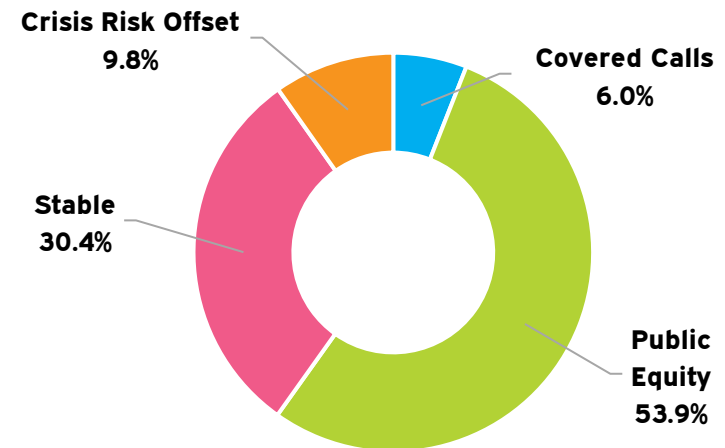
² Manager names in parentheses indicates selected, yet unfunded managers for replacement.

³ Public Equity is the sum of Domestic Equity and International Equity; Stable is the sum of Public Fixed Income and Cash.

Market Value by Portfolio Segment Before Cash Flows

Portfolio Segment	Market Value (\$M)
Domestic Equity	167.4
International Equity	52.5
Public Equity ¹	219.9
Covered Calls	24.4
Crisis Risk Offset	39.9
Public Fixed Income	111.6
Stable ¹	123.9
Total Portfolio	408.0

Projected Equity to Fixed Income Allocation After Cash Flows



Suggested Cash Withdrawals

Portfolio Segment	Market Value (\$M)
Cash in Treasury	8.2
EARNEST Partners	6.0
Total Withdrawal	14.2

→ Market value difference in Public Equity from 52% allocation: \$7.7 million

¹ Public Equity is the sum of Domestic Equity and International Equity; Stable is the sum of Public Fixed Income and Cash (not shown on this page).

Projected OPFRS Asset Allocation as of June 30, 2023¹

	Estimated Market Value		Target	Projected Variance from Target	
	(\$M)	(%)	(%)	(\$M)	(%)
Northern Trust Russell 1000	72.6	18.3%	20.0%	(6.6)	(1.7%)
EARNEST Partners	40.7	10.3%	6.0%	17.0	4.3%
Wellington Select Quality Equity	21.8	5.5%	8.0%	(9.9)	(2.5%)
Rice Hall James	14.5	3.7%	3.0%	2.7	0.7%
Brown Small Cap Value	11.7	2.9%	3.0%	(0.2)	(0.1%)
Total Domestic Equity	161.4	40.7%	40.0%	2.9	0.7%
SGA MSCI ACWI ex-US	37.7	9.5%	3.6%	23.5	5.9%
Vanguard Developed Markets ETF	14.8	3.7%	8.4%	(18.5)	(4.7%)
Total International Equity	52.5	13.3%	12.0%	5.0	1.3%
Total Public Equity	213.9	54.0%	52.0%	7.9	2.0%
Parametric	18.4	4.6%	5.0%	(1.4)	(0.4%)
Total Covered Calls	18.4	4.6%	5.0%	(1.4)	(0.4%)
Vanguard Long Duration ETF	14.0	3.5%	3.3%	0.8	0.2%
Versor Trend Following	15.7	4.0%	3.3%	2.5	0.6%
Kepos Alternative Risk Premia	10.2	2.6%	3.3%	(3.0)	(0.7%)
Total Crisis Risk Offset	39.9	10.1%	10.0%	0.3	0.1%
Ramirez	69.8	17.6%	12.0%	22.3	5.6%
Reams	26.3	6.6%	2.0%	18.4	4.6%
Wellington Core Bond	6.6	1.7%	19.0%	(68.6)	(17.3%)
Polen Capital High Yield	8.9	2.3%	2.0%	1.0	0.3%
Total Public Fixed Income	111.6	28.2%	33.0%	(19.0)	(4.8%)
Cash	12.2	3.1%	0.0%	12.2	3.1%
Total Stable	123.9	31.3%	33.0%	(6.8)	(1.7%)
Total Portfolio	396.0	100%	100%		

¹ Benefit payments estimated at \$14.2M on a quarterly basis per OPFRS. Report reflects quarterly City contributions of \$8.2M. The City's current quarterly contribution amount is based on FY 2022/2023 actuarial annual required contribution of \$32.8M.

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: March 29, 2023
RE: 2023 Long-term Investment Return Expectations

The general theme of the 2023 Meketa Capital Market Assumptions are higher future expected returns across all asset classes. This is a theme which is consistent across the board in the industry and largely driven by the environment with rising interest rates, widening spreads, and the lower valuation of risk assets.

Higher expected interest rates result in higher expected returns for most yield oriented asset classes as starting yield is often a fairly reasonable predictor of future returns for many fixed income related classes. At the same time, despite lower growth projections globally, the price decline experienced by equities and many other risk assets has improved their forward-looking returns.

It's important to remember that our capital market assumptions and those of other practitioners and peers have a significant range of error in terms of potential future outcomes. For example, the higher the expected standard deviation, the higher the range of possible outcomes is expected to be for any asset class or portfolio. It should also be noted that the long-term expected portfolio compound return assumes net-of-fee returns, with no attempt to seek added value via active management.

Additionally, our capital market assumptions are over a 20-year time horizon which is different from the time horizon used by OPFRS's actuary, Cheiron, which projects out over 30-years. Further summary comments of our 2023 capital market assumptions and the detailed projections by asset class are shown on the following page.

Summary Comments on 2023 Capital Market Expectations

- In 2023, our cash return expectations increased from 2022 from 1.7% to 2.9% (change of +1.2%).
- Fixed income yields across the maturity and quality spectrum increased during 2022 increasing return expectations for Fixed Income, High Yield, and Long Duration (a part of Crisis Risk Offset) asset classes.
 - While expected risk, as measured by standard deviation, has remained constant for Fixed Income and High Yield classes, it has significantly increased for Long Duration signifying a higher range of possible outcomes for this asset class.
- US and International Equities, Credit, and Covered Calls are projected to achieve a compound return above 6.5% over the next 20 years.
- Fixed Income and Crisis Risk Offset (composed of Alternative Risk Premia, Systematic Trend Following, and Long Duration) are expected to get a compound return 4.7% and 5.1% respectively.
- Over the next 20 years, the OPFRS long-term policy portfolio is projected to produce a compound return of 7.6%.

Long-Term Policy Portfolio Risk-Return Expectations (Based on Meketa's 2023 20-Year Capital Market Expectations)

Investment Class	Target Allocation (%)	Expected Return (%)	Expected Risk ¹ (%)
US Equity	40	8.7	18.0
International Equity	12	9.8	19.0
Fixed Income	21	4.7	4.0
Credit	2	7.3	11.0
Covered Calls	5	7.2	13.0
Crisis Risk Offset ²	20	5.1	11.7
Cash	---	2.9	1.0
Total	100	7.6	10.3

¹ Measured as standard deviation.

² Crisis Risk Offset is composed of three components: Alternative Risk Premia, Systematic Trend Following, and Long Duration.



Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Meketa Investment Group

March 29, 2023

Capital Markets Expectations

Setting Capital Market Expectations

- Capital markets expectations (CMEs) are the inputs needed to determine the long-term risk and returns expectations for a portfolio.
 - They serve as the starting point for determining asset allocation.
- Consultants (including Meketa) generally set them once a year.
 - Our results are published in January and based on data as of December 31 for public markets and September 30 for private markets.
 - Changes are driven by many factors, including interest rates, credit spreads, cap rates, and equity prices.
- Setting CMEs involves crafting long-term forecasts for:
 - Returns
 - Standard Deviation
 - Correlations (i.e., covariance)
- We created inputs for 104 “asset classes” for our 2023 Capital Markets Expectations.
- Our process relies on both quantitative and qualitative methodologies.

Building 10-year Forecasts

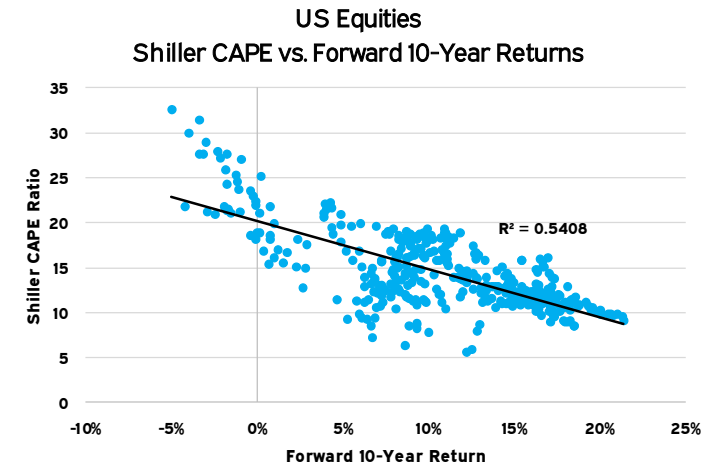
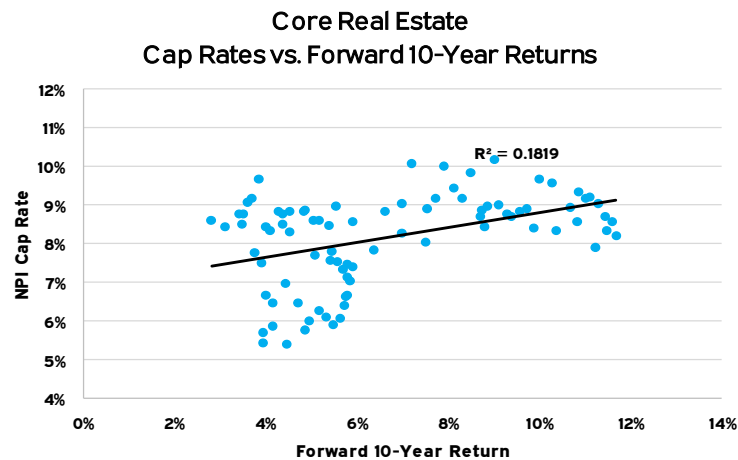
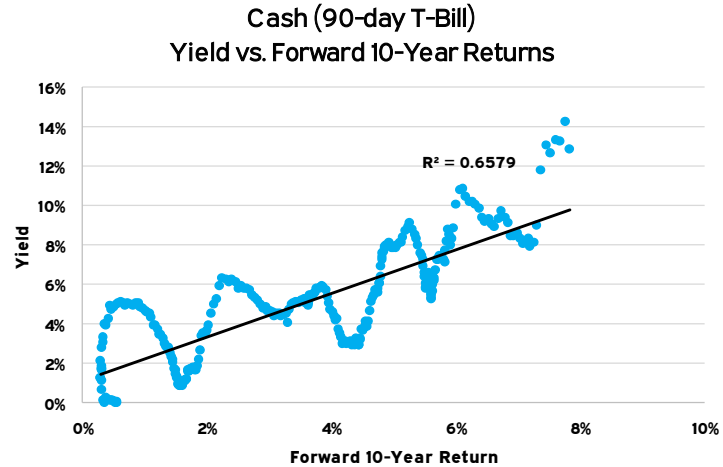
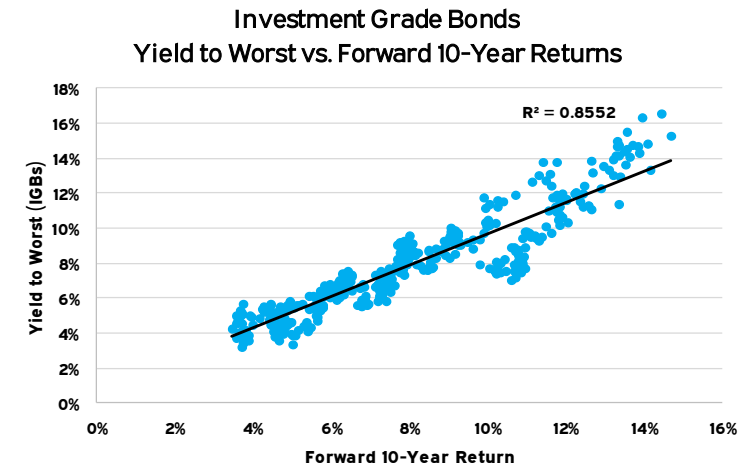
→ Our first step is to develop 10-year forecasts based on fundamental models.

- Each model is based on the most important factors that drive returns for that asset class:

Asset Class Category	Major Factors
Equities	Dividend Yield, GDP Growth, Valuation
Bonds	Yield to Worst, Default Rate, Recovery Rate
Commodities	Collateral Yield, Roll Yield, Inflation
Infrastructure	Public IS Valuation, Income, Growth
Natural Resources	Price per Acre, Income, Public Market Valuation
Real Estate	Cap Rate, Yield, Growth
Private Equity	EBITDA Multiple, Debt Multiple, Public VC Valuation
Hedge Funds and Other	Leverage, Alternative Betas

- The common components are income, growth, and valuation.

Some factors are naturally more predictive than others



Sources: Bloomberg, FRED, NCREIF, S&P, Robert Shiller (Yale University), and Meketa Investment Group.

10-year Model Example: Bonds

→ The short version for investment grade bond models is:

$$E(R) = \text{Current YTW (yield to worst)}$$

→ Our models assume that there is a reversion to the mean for spreads (though not yields).

→ For TIPS, we add the real yield of the TIPS index to the breakeven inflation rate.

→ As with equities, we make currency adjustments when necessary for foreign bonds.

→ For bonds with credit risk, Meketa Investment Group estimates default rates and loss rates in order to project an expected return:

$$E(R) = \text{YTW} - (\text{Annual Default Rate} \times \text{Loss Rate})$$

10-year Model Example: Equities

→ We use a fundamental model for equities that combines income and capital appreciation.

$$E(R) = \text{Dividend Yield} + \text{Expected Earnings Growth} + \text{Multiple Effect} + \text{Currency Effect}$$

→ Meketa evaluates historical data to develop expectations for dividend yield, earnings growth, the multiple effect, and currency effect.

- Earnings growth is a function of Real GDP growth, inflation, and exposure to foreign revenue sources.
- We assume that long-term earnings growth is linked to regional economic growth.
- However, many factors can cause differences between economic growth and EPS growth.

→ Our models assume that there is a reversion toward mean pricing over this time frame.

Moving from 10-Year to 20-Year Forecasts

- Our next step is to combine our 10-year forecasts with projections for years 11-20 for each asset class.
- We use a risk premia approach to forecast 10-year returns in ten years (i.e., years 11-20).
 - We start with an assumption (market informed, such as the 10-year forward rate) for what the risk-free rate will be in ten years,
 - We then add a risk premia for each asset class.
 - We use historical risk premia as a guide, but many asset classes will differ from this, especially if they have a shorter history.
 - We seek consistency with finance theory (i.e., riskier assets will have a higher risk premia assumption).
- Essentially, we assume mean-reversion over the first ten years (where appropriate), and consistency with CAPM thereafter.
- The final step is to make any qualitative adjustments.
 - The Investment Policy Committee reviews the output and may make adjustments.

The Other Inputs: Standard Deviation and Correlation

→ Standard deviation:

- We review the trailing fifteen-year standard deviation, as well as skewness.
- Historical standard deviation serves as the base for our assumptions.
- If there is a negative skew, we increased the volatility assumption based on the size of the historical skewness.

Asset Class	Historical Standard Deviation (%)	Skewness	Assumption (%)
Bank Loans	7.4	-2.6	10.0
FI/L-S Credit	6.5	-2.5	9.0

- We also adjust for private market asset classes with “smoothed” return streams.

→ Correlation:

- We use trailing fifteen-year correlations as our guide.
- Again, we make adjustments for “smoothed” return streams.

→ Most of our adjustments are conservative in nature (i.e., they increase the standard deviation and correlation).

Summary of Changes

- 2022 was a difficult year, with losses experienced for most asset classes, as interest rates increased, spreads widened, and most risk assets declined in value.
 - However, there is a notable silver lining to this story – increased return assumptions.
- The changes relative to last year are being driven by what happened in the market.
 - Bond yields increased by the largest amount since the 1990s, driving up future returns for fixed income assets.
 - Despite lower growth projections globally, the price decline experienced by equities and many other risk assets has improved their forward-looking returns.
- Higher expected interest rates also provide a tailwind, as the bridge from 10 to 20 years is made via a risk premia being added to a (higher) future risk-free rate.
 - The risk-free rate jumped from 2.78% to 4.17%
- The net result is the largest increase in return assumptions in our 20+ year history of creating capital market expectations (CMEs).

Rising Rates = Higher Yields

→ Rising interest rates and wider credit spreads resulted in higher yields across every major sector of the global bond market.

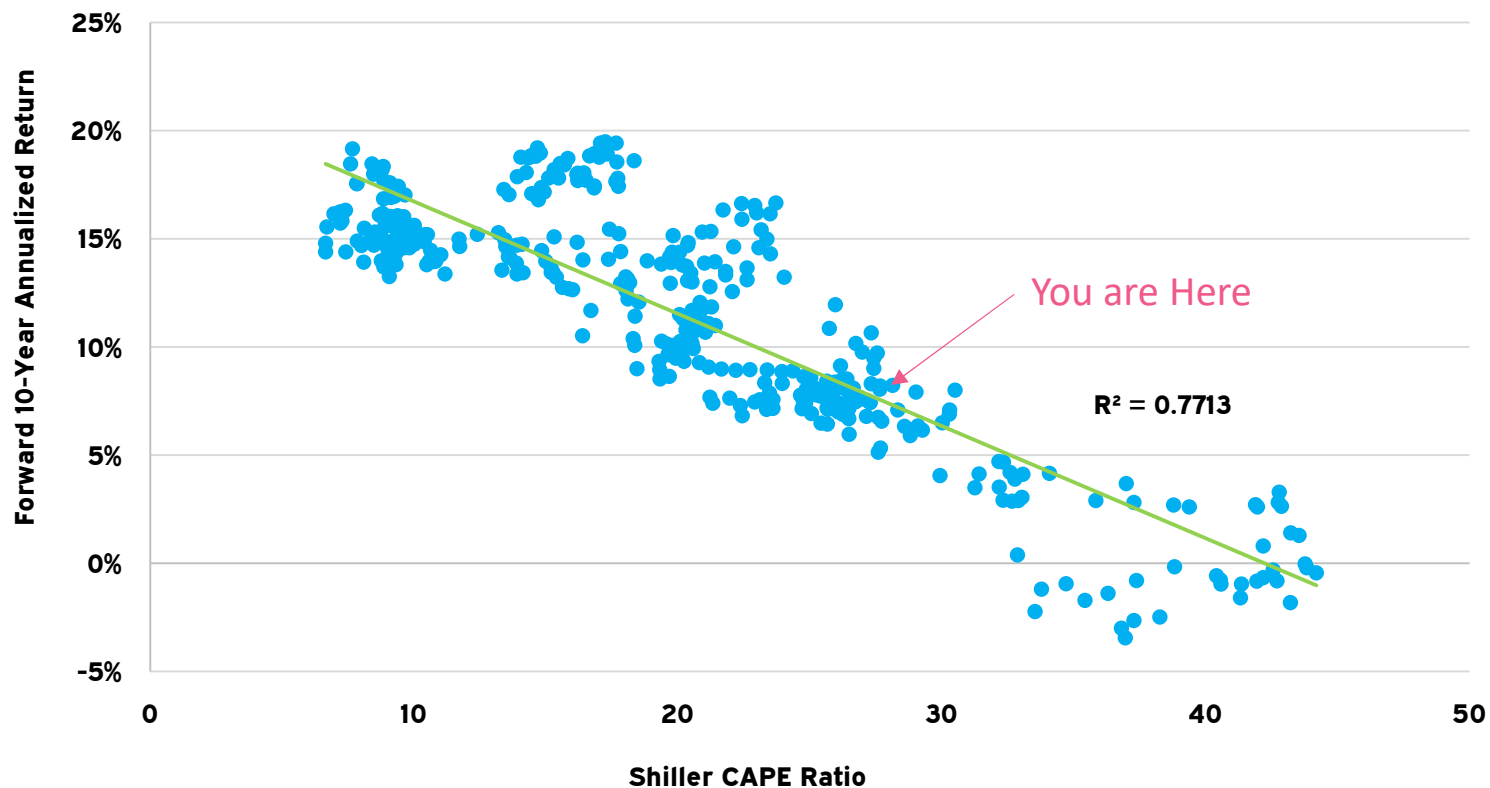
Index	Yield to Worst 12/31/22 (%)	Yield to Worst 12/31/21 (%)
Fed Funds Rate	4.25-4.50	0-0.25
10-year Treasury	3.88	1.51
Bloomberg Aggregate	4.68	1.75
Bloomberg Corporate	5.42	2.33
Bloomberg Securitized	4.75	1.98
Bloomberg Global Aggregate	3.73	1.31
Bloomberg EM Local Currency Government	4.42	3.83
Bloomberg EM Hard Currency Aggregate	7.26	3.96
Bloomberg US Corporate High Yield	8.96	4.21

Source: Bloomberg. Data is as of December 31, 2022 and 2021.

Impact of Equity Prices on Returns

- Relative prices have been indicative of future equity returns.
- Higher prices have led to lower future returns, and vice versa.

US Equities: Shiller CAPE vs. Forward 10-Year Returns



Source: Robert Shiller, Yale University, and Meketa Investment Group. Data is based on monthly returns and Cyclically Adjusted P/E ratio on S&P 500 Index for the period from January 1980 through December 2022.

20-year Geometric Expected Returns Rate Sensitive

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Cash Equivalents	2.9	1.7	1.2	Higher yields
Short-term Investment Grade Bonds	3.5	1.9	1.6	Higher yields
Investment Grade Bonds	4.7	2.4	2.3	Higher yields
Intermediate Government Bonds	3.7	1.9	1.8	Higher yields
Long-term Government Bonds	5.0	2.8	2.2	Higher yields
Mortgage Backed Securities	4.6	2.5	2.1	Higher yields
Investment Grade Corporate Bonds	5.4	3.0	2.4	Higher yields
Long-term Corporate Bonds	5.7	3.7	2.0	Higher yields
Short-term TIPS	3.6	1.9	1.7	Higher yields
TIPS	4.5	2.4	2.1	Higher yields
Long-term TIPS	5.2	3.2	2.0	Higher yields
Global ILBs	4.7	2.3	2.4	Higher yields
Foreign Bonds	4.0	2.3	1.7	Higher yields
US Inflation	2.6	2.2	0.4	Higher long-term economist and market projections

20-year Geometric Expected Returns Credit

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
High Yield Bonds	7.3	4.4	2.9	Higher yields
Higher Quality High Yield	6.7	4.2	2.5	Higher yields
Bank Loans	7.0	4.0	3.0	Higher yields
Collateralized Loan Obligations (CLOs)	7.2	4.2	3.0	Higher yields
Convertible Bonds	6.4	3.9	2.5	Higher yields
Emerging Market Bonds (major)	6.4	4.2	2.2	Higher yields
Emerging Market Bonds (local)	6.0	4.6	1.4	Higher yields
Private Debt	9.0	7.3	1.7	Higher yields
Direct Lending	8.3	7.1	1.2	Higher yields
Asset Based Lending	9.0	7.3	1.7	Higher yields
Special Situations Lending	10.2	NA		New

20-year Geometric Expected Returns Equities

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
US Equity	8.7	6.8	1.9	Lower valuations and higher risk-free rate
US Small Cap	9.3	7.4	1.9	Lower valuations and higher risk-free rate
Developed Non-US Equity	9.8	7.5	2.3	Lower valuations and higher risk-free rate
Dev. Non-US Small Cap	10.1	7.4	2.7	Lower valuations and higher risk-free rate
Emerging Market Equity	10.0	8.4	1.6	Lower valuations and higher risk-free rate
Emerging Market Small Cap	10.0	8.2	1.8	Lower valuations and higher risk-free rate
Emerging Market ex-China	10.3	NA		<i>New</i>
China Equity	9.3	NA		<i>New</i>
Frontier Market Equity	10.7	8.7	2.0	Lower valuations and higher risk-free rate
Global Equity	9.2	7.2	2.0	Lower valuations and higher risk-free rate
Low Volatility Equity	8.3	6.5	1.8	Lower valuations and higher risk-free rate
Private Equity	11.0	10.0	1.0	Lower valuations and higher risk-free rate
Buyouts	10.7	9.8	0.9	Lower valuations and higher risk-free rate
Growth Equity	11.2	10.1	1.1	Lower valuations and higher risk-free rate
Venture Capital	11.6	10.3	1.3	Lower valuations and higher risk-free rate

20-year Geometric Expected Returns Real Estate & Infrastructure

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Real Estate	7.8	7.4	0.4	Higher REIT yields, risk-free rate, and borrowing costs
US REITs	8.0	7.1	0.9	Higher REIT yields and risk-free rate
Core Private Real Estate	6.5	6.1	0.4	Higher borrowing costs and risk-free rate
Value-Added Real Estate	8.3	8.1	0.2	Higher borrowing costs and risk-free rate
Opportunistic Real Estate	9.6	9.6	0.0	Higher borrowing costs and risk-free rate
Infrastructure	8.3	7.7	0.6	Higher borrowing costs offset by higher risk-free rate
Infrastructure (Public)	8.8	7.4	1.4	Lower valuations and higher risk-free rate
Infrastructure (Core Private)	7.8	7.3	0.5	Higher borrowing costs and risk-free rate
Infrastructure (Non-Core Private)	9.5	9.3	0.2	Higher borrowing costs and risk-free rate

20-year Geometric Expected Returns Natural Resources & Commodities

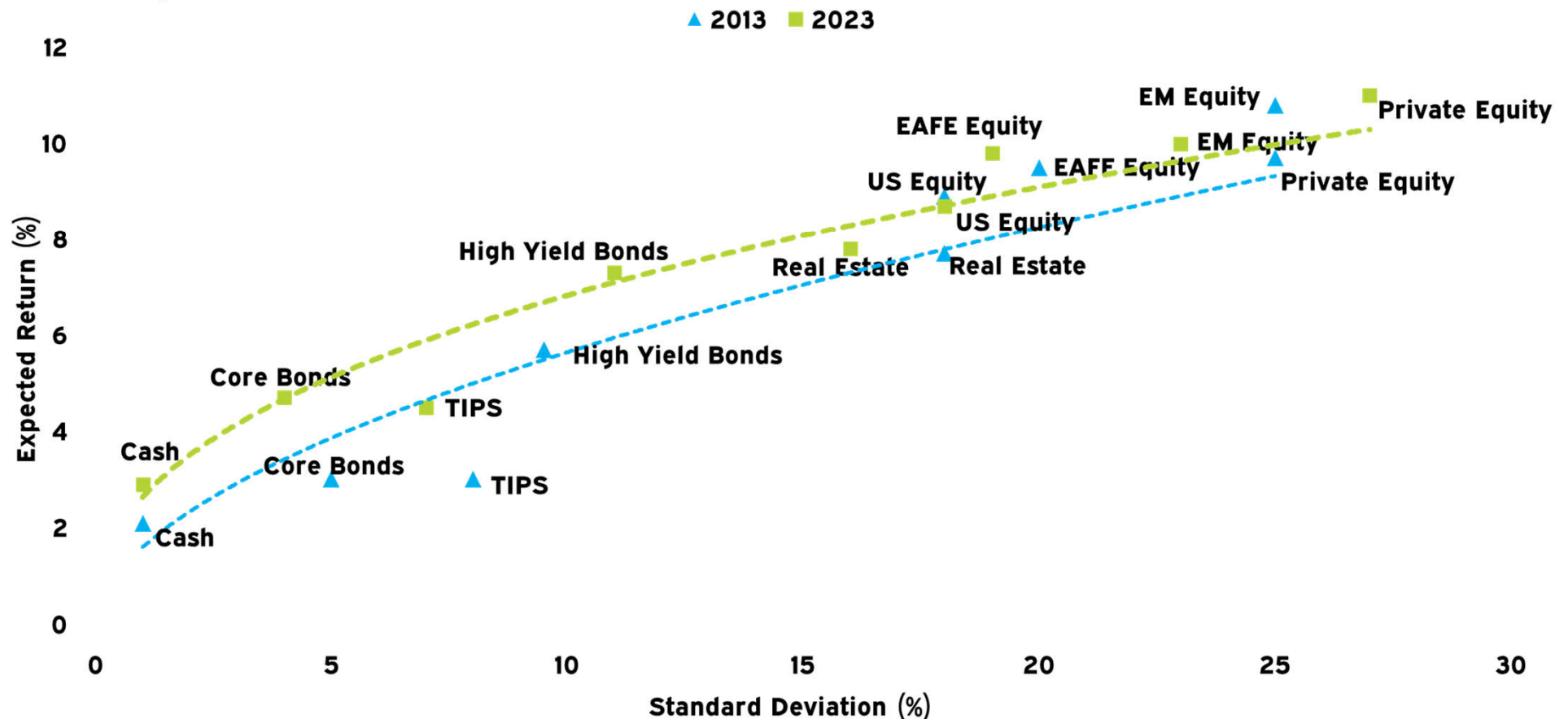
	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Natural Resources (Public)	8.7	7.7	1.0	Higher earnings and risk-free rate
Natural Resources (Private)	9.8	8.5	1.3	Higher earnings in some sectors and higher risk-free rate partly offset by higher valuation and borrowing costs
Energy	10.4	8.9	1.5	Higher earnings and risk-free rate
Mining	10.2	8.5	1.7	Lower valuations and higher risk-free rate
Timberland	7.4	6.8	0.6	Higher risk-free rate
Farmland	6.5	7.2	-0.7	Higher valuations and borrowing costs
Sustainability	10.3	9.3	1.0	Higher earnings and risk-free rate
MLPs	7.4	7.2	0.2	Higher valuations offset by higher risk-free rate
Gold Mining	9.7	8.2	1.5	Lower valuations and higher risk-free rate
Gold (Metal)	3.3	2.8	0.5	Higher long-term inflation expectations
Commodities	5.7	4.6	1.1	Higher cash yield and risk-free rate

20-year Geometric Expected Returns Alternative Strategies (Other)

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Hedge Funds	6.1	4.4	1.7	Higher yields and risk-free rate
Long-Short	5.6	4.1	1.5	Lower equity prices & higher cash yield
Event Driven	7.7	5.2	2.5	Higher yields and risk-free rate
Global Macro	5.7	5.0	0.7	Higher cash yield and risk-free rate
CTA – Trend Following	4.8	4.8	0.0	Lower beta assumption
Fixed Income/L-S Credit	6.5	3.8	2.7	Higher yields and risk-free rate
Relative Value/Arbitrage	6.7	5.1	1.6	Higher cash yield and risk-free rate
Long Vol	1.1	NA		<i>New</i>
Insurance Linked Strategies	6.2	5.0	1.2	Lower expected default rates
Alternative Risk Premia	5.6	4.6	1.0	Higher cash yield and risk-free rate
Risk Parity (10% vol)	7.7	5.2	2.5	Higher yields and risk-free rate
TAA	5.7	4.5	1.2	Higher yields and risk-free rate
Digital Currencies	3.3	NA		<i>New</i>

The Big Picture: Higher Return for the ~Same Risk¹

- The relationship between long-term return expectations and the level of risk accepted is not static.
- We anticipate many investors can take on less risk than they have over the past decade if they want to achieve their target returns.



¹ Expected return and standard deviation are based upon Meketa Investment Group's 2013 and 2023 20-year capital market expectations.

Return and Risk Data

Asset Class	10-year Expected Return (%)	20-year Expected Return (%)	Standard Deviation (%)	11-20 year Risk Premia ¹ (%)
Cash Equivalents	3.1	2.9	1.0	-1.5
Investment Grade Bonds	4.8	4.7	4.0	0.4
Long-term Government Bonds	4.3	5.0	12.0	1.5
TIPS	4.3	4.5	7.0	0.5
High Yield Bonds	8.0	7.3	11.0	2.5
Bank Loans	7.6	7.0	10.0	2.2
Emerging Market Debt (local)	6.4	6.0	12.0	1.5
Private Debt	9.4	9.0	15.0	4.6
US Equity	7.8	8.7	18.0	5.5
Developed Non-US Equity	10.1	9.8	19.0	5.4
Emerging Non-US Equity	10.3	10.0	23.0	5.6
Global Equity	8.8	9.2	18.0	5.5
Private Equity	9.7	11.0	27.0	8.0
Real Estate	5.9	7.8	16.0	5.5
Infrastructure	6.9	8.3	15.0	5.6
Commodities	6.3	5.7	17.0	1.0
Hedge Funds	5.4	6.1	7.0	2.6
Inflation	2.5	2.6	3.0	-1.5

¹ Risk Premia are calculated relative to the market's projection for the yield on the 10-year Treasury in ten years..

Correlation Data

	Inv. Grade Bonds	Long- term Gov't Bonds	TIPS	High Yield Bonds	US Equity	Dev. Non-US Equity	Em. Market Equity	Private Equity	Real Estate	Commod.	Infra.	Hedge Funds
Investment Grade Bonds	1.00											
Long-term Government Bonds	0.83	1.00										
TIPS	0.76	0.54	1.00									
High Yield Bonds	0.28	-0.17	0.46	1.00								
US Equity	0.10	-0.24	0.27	0.75	1.00							
Developed Non-US Equity	0.16	-0.22	0.30	0.77	0.89	1.00						
Emerging Market Equity	0.20	-0.18	0.36	0.76	0.77	0.87	1.00					
Private Equity	0.00	-0.10	0.05	0.70	0.85	0.80	0.75	1.00				
Real Estate	0.20	0.05	0.10	0.50	0.50	0.45	0.40	0.45	1.00			
Commodities	0.00	-0.28	0.31	0.54	0.52	0.59	0.63	0.30	0.15	1.00		
Infrastructure	0.29	0.09	0.31	0.64	0.63	0.65	0.58	0.50	0.57	0.41	1.00	
Hedge Funds	0.08	-0.30	0.30	0.78	0.86	0.87	0.84	0.60	0.45	0.67	0.65	1.00

2022 Peer Survey

- Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.¹
- The Horizon survey is a useful tool to determine whether a consultant's expectations for returns (and risk) are reasonable.

Asset Class	Horizon 10-Year Average (%)	Meketa 10-Year (%)	Horizon 20-Year Average (%)	Meketa 20-Year (%)
Cash Equivalents	1.5	1.1	2.0	1.7
TIPS	2.0	1.6	2.6	2.4
US Core Bonds	2.6	1.7	3.5	2.4
US High Yield Bonds	4.0	3.3	5.0	4.4
Emerging Market Debt	4.6	4.3	5.3	4.4
Private Debt	6.9	6.7	7.1	7.3
US Equity (large cap)	5.9	5.4	6.5	6.8
Developed Non-US Equity	6.5	6.7	7.1	7.5
Emerging Non-US Equity	7.3	8.1	7.9	8.4
Private Equity	9.2	8.9	9.8	10.0
Real Estate	5.4	6.4	6.0	7.4
Infrastructure	6.4	7.1	6.9	7.7
Commodities	3.7	4.3	4.2	4.6
Hedge Funds	4.8	3.4	5.5	4.4
Inflation	2.5	2.6	2.4	2.2

¹ The 10-year horizon included all 40 respondents, and the 20-year horizon included 24 respondents. Figures are based on Meketa's 2022 CMEs.

These materials are intended solely for the recipient and may contain information that is not suitable for all investors. This presentation is provided by Meketa Investment Group ("Meketa") for informational purposes only and no statement is to be construed as a solicitation or offer to buy or sell a security, or the rendering of personalized investment advice. The views expressed within this document are subject to change without notice. These materials include general market views and each client may have unique circumstances and investment goals that require tactical investments that may differ from the views expressed within this document. There is no agreement or understanding that Meketa will provide individual advice to any advisory client in receipt of this document. There can be no assurance the views and opinions expressed herein will come to pass. Any data and/or graphics presented herein is obtained from what are considered reliable sources; however, its delivery does not warrant that the information contained is correct. Any reference to a market index is included for illustrative purposes only, as an index is not a security in which an investment can be made and are provided for informational purposes only. For additional information about Meketa, please consult the Firm's Form ADV disclosure documents, the most recent versions of which are available on the SEC's Investment Adviser Public Disclosure website (www.adviserinfo.sec.gov) and may otherwise be made available upon written request.



A G E N D A R E P O R T

TO: Oakland Police and Fire
Retirement System Board (PFRS)

FROM: David F. Jones
Plan Administrator & Secretary

SUBJECT: PFRS Board of Administration
Agenda Pending List

DATE: March 29, 2023

	SUBJECT	TENTATIVE SCHEDULED MTG DATE	STATUS
1	Review Options Regarding Frequency & Manner of Committee & Board Meetings	TBD	Pending

Respectfully submitted,

David F. Jones
Plan Administrator & Secretary
Oakland Police & Fire Retirement Systems