

CITY OF GROSSE POINTE WOODS
NOTICE OF REGULAR MEETING
Pension Retirement System Board of Trustees
Thursday, February 1, 2024
6:00 PM

City Hall Conference Room at 20025 Mack Plaza, Grosse Pointe Woods, MI

AGENDA

1. Call to order
2. Roll call
3. Acceptance of the meeting agenda.
4. Meeting minutes dated November 2, 2023
5. Trial Balance through December 31, 2023
6. Retirement Application-Matthew Crook
7. Employee Contribution Refund
 - a. Patricia Czech
 - b. Amber McNeil
 - c. Albert Ohse
8. June 30, 2023 Actuarial Reports-Foster & Foster Actuaries and Consultants
 - a. Actuarial Valuation as of June 30, 2023
 - b. Actuarial Valuation as of June 30, 2023-Supplemental Annuity
 - c. Public Act 202 Valuation as of June 30, 2023
 - d. June 30, 2023 Summary Annual Report
9. Excerpt from City of Grosse Pointe Woods Annual Comprehensive Financial Report for Fiscal Year End June 30, 2023. Required Supplemental Information-Pension Plan and Supplemental Annuity
10. 4th Quarter 2023 Fund Evaluation Group Report
 - a. December 31, 2023 Performance Review
 - b. Asset Allocation Study
11. Payment of Invoices -
 - a. FEG- \$ 14,319.00
 - b. Comerica quarterly invoice \$ 1,500.00
 - c. Foster & Foster Actuaries and Consultants \$ 1,450.00
 - d. Mapers 2024 Renewal \$ 200.00
12. Annual Administrative Fee Payment
13. New Business/Public Comment
14. Adjournment

Next Regular Board Meeting – May 2, 2024

6:00 PM

Submitted by: _____, **Pension Administrator**

In accordance with Public Act 267 of 1976 (Open Meetings Act), all members of the above Commission/Committee, as well as the general public, are invited to attend this meeting.

Necessary, reasonable auxiliary aids and services to aid individuals with disabilities will be provided. All such requests must be made at least five (5) days prior to a meeting. Individuals with disabilities requiring auxiliary aids or services should contact the City of Grosse Pointe Woods by writing or call the Pension Administrator at (313) 343-2604 or Telecommunications Device for the Deaf (TDD) (313) 343-9249.

MINUTES OF A REGULAR MEETING OF THE BOARD OF TRUSTEES FOR THE RETIREMENT SYSTEM (i.e. The Board) OF THE CITY OF GROSSE POINTE WOODS, HELD ON THURSDAY, NOVEMBER 2, 2023, IN THE CONFERENCE ROOM OF THE MUNICIPAL BUILDING, 20025 MACK PLAZA, GROSSE POINTE WOODS, MICHIGAN.

The meeting was called to order at 6:02 p.m. by Chairperson Mayor Arthur Bryant.

The following members were present:

Chairperson Mayor Arthur Bryant
Council Representative Victoria Granger
General Employee Representative Crook
Citizen Representative Gary Zarb
Public Safety Representative Brian Conigliaro

Also present:

Pension Administrator, Shawn Murphy
Pension Attorney, Tom Michaud
Fund Evaluation Group (FEG), Jeffrey Davis
Recording Secretary, Tina Hoenicke

Motion by Granger, supported by Crook that all items on today's agenda be received and placed on file.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb
NO: None
ABSENT: None

Motion by Granger, supported by Crook to accept and place on file the minutes of the pension board meeting dated August 3, 2023 as presented.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb
NO: None
ABSENT: None

Motion by Crook, supported by Granger to receive and place on file the trial balance report as presented through September 30, 2023.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb
NO: None
ABSENT: None

Motion by Crook, supported by Zarb to accept and place on file the retirement applications received from Mr. Basil Zaviski (DPW), effective on August 11, 2023 and Sergeant Anthony Chalut (DPS), effective on August 14, 2023.

The Pension Administrator confirmed that both have met the retirement provisions as prescribed in the pension ordinance.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb
NO: None
ABSENT: None

Motion by Crook, supported by Zarb to refund unvested pension contributions, with interest, to Mr. Keegan Sherwood (DPW) in the amount of \$3,611.43.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb
NO: None
ABSENT: None

Motion by Granger, supported by Crook to receive and place on file the 3rd Quarter Investment Report from FEG ending September 30, 2023.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb
NO: None
ABSENT: None

Jeffrey Davis provided a presentation of the 3rd Quarter Investment Report from FEG ending September 30, 2023; including a portfolio rebalancing recommendation, Memo: Franklin Templeton International Small Cap Termination, Dodge and Cox International Equity Executive Research Report & the 2023-Q3 Rising Through the Ranks-The Impact of a Higher Interest Rate Regime Report.

Motion by Granger, supported by Zarb to rebalance the portfolio by bringing the fixed income allocation to its long term strategic target of 20% as reflected in the City of Grosse Pointe Woods Employees Retirement System's Investment Policy Statement by selling the following stocks: iShares S&P 500 Index (\$820,000), EuroPacific Growth Fund (\$1,400,000) and Templeton Inst'l Foreign Small Co. (\$1,016,756) and buy Dodge & Cox Income (\$287,000), Vanguard Total Bond Fund (\$246,000.00), DoubleLine Total Return Bond Fund (\$287,000) and Dodge & Cox International (\$2,416,756).

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Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb

NO: None

ABSENT: None

Motion by Granger, supported by Zarb to terminate the Franklin Templeton International Small Cap strategy and hire the Dodge & Cox International Stock Fund.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb

NO: None

ABSENT: None

Motion by Granger, supported by Zarb to approve payment for invoices 9.a. through 9.e.; FEG in the amount of \$14,326.00, and Foster & Foster Actuaries and Consultants in the amount of \$16,250.00, VanOverbeke, Michaud & Timmony, P.C. in the following amounts: \$7,941.90 & \$3,236.10 and Comerica in the amount of \$1500.00.

Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb

NO: None

ABSENT: None

New Business/Public Comment:

Pension Attorney, Tom Michaud notified the board that there has been a bill introduced in the house, House Bill 4346, to amend the Open Meetings Act and allow attendance via telephone or video conferencing (2-way communication). This amendment has not been approved yet.

Pension Attorney Tom Michaud also counseled extra awareness regarding potential fraudulent activity via electronic payments. There has not been fraudulent activity regarding Pension and RHC payments in Grosse Pointe Woods.

Matt Crook was notified that he won re-election as the General Representative for the next 3 years, term ending 11/1/2026.

Motion by Granger, supported by Zarb to adjourn at 6:42 pm.

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Motion CARRIED by the following vote:

YES: Bryant, Granger, Conigliaro, Crook, Zarb

NO: None

ABSENT: None

Minutes recorded by: Tina Hoenicke

Approved by the Pension Board:

Shawn Murphy, Pension Administrator

Fund 731 PENSION FUND

GL Number	Description	Balance
*** Assets ***		
731-000-001.000	CASH	0.00
731-000-004.100	PENSION PETTY CASH	0.00
731-000-005.000	CASH	217,281.41
731-000-005.001	SCHWAB CASH	263,210.49
731-000-017.000	CASH -MERRILL LYNCH	0.00
731-000-040.000	ACCOUNT RECEIVABLE	0.00
731-000-050.000	CONTRIBUTIONS RECEIVABLE-ER	0.00
731-000-050.100	CONTRIBUTION RECEIVABLE-EE	0.00
731-000-050.200	MEDICARE CONTRIB RECEIVABLE	0.00
731-000-056.000	INTEREST REC	917.12
731-000-084.101	DUE F/GENERAL FUND	0.00
731-000-119.000	PREMIUM ON PURCHASE	0.00
731-000-120.000	US GOVT SECURTIES	0.00
731-000-121.000	BONDS	0.00
731-000-122.000	MUTUAL FUNDS	23,828,906.00
731-000-123.000	PREPAID EXPENSE	0.00
731-000-124.000	INDEXES	17,535,380.83
731-000-125.000	REAL ESTATE INV.	0.00
Total Assets		41,845,695.85
*** Liabilities ***		
731-000-202.000	ACCOUNTS PAYABLE	0.00
731-000-202.100	WEEKLY A/P	0.00
Total Liabilities		0.00
*** Fund Balance ***		
731-000-378.299	EMPLOYER RES-PS	0.00
731-000-390.000	CURRENT FUND BALANCE	0.00
731-000-390.100	PRIOR FUND BALANCE	7,233,949.30
731-000-390.200	RETIREE BENEFITS RES	33,151,402.56
Total Fund Balance		40,385,351.86
Beginning Fund Balance		40,385,351.86
Net of Revenues VS Expenditures		1,460,343.99
Ending Fund Balance		41,845,695.85
Total Liabilities And Fund Balance		41,845,695.85

Fund 734 SUPPLEMENTAL ANNUITY FUND

GL Number	Description	Balance
*** Assets ***		
734-000-001.000	CASH	0.00
734-000-005.000	CASH	12,511.55
734-000-005.001	SCHWAB CASH	377,147.73
734-000-006.000	CASH-TRUST	0.00
734-000-016.000	CASH	0.00
734-000-017.000	CASH -MERRILL LYNCH	0.00
734-000-056.000	INTEREST RECEIVABLE	51.11
734-000-058.000	CONTRIBUTIONS RECEIVABLE	0.00
734-000-084.101	DUE F/GENERAL FD	0.00
734-000-120.000	US GOVT SEC	0.00
734-000-121.100	BONDS	0.00
734-000-122.000	MUTUAL FUNDS	1,428,483.09
734-000-123.000	PREPAID EXPENSE	0.00
734-000-124.000	INDEXES	1,118,865.81
Total Assets		2,937,059.29
*** Liabilities ***		
734-000-202.000	ACCOUNTS PAYABLE	0.00
734-000-202.100	WEEKLY A/P	0.00
Total Liabilities		0.00
*** Fund Balance ***		
734-000-390.000	CURRENT FUND BALANCE	1,737,049.29
734-000-390.100	PRIOR FUND BALANCE	65,928.00
734-000-390.300	SUPPLEMENTAL ANNUITY RESERVE	788,255.00
Total Fund Balance		2,591,232.29
Beginning Fund Balance		2,591,232.29
Net of Revenues VS Expenditures		345,827.00
Ending Fund Balance		2,937,059.29
Total Liabilities And Fund Balance		2,937,059.29

**EMPLOYEES RETIREMENT SYSTEM
APPLICATION FOR SERVICE RETIREMENT**

Pension Membership No. 503

To the Board of Trustees, City of Grosse Pointe Woods Employees Retirement System:

I, Matthew M. Crook a member of the Retirement System, hereby apply (select one).

1. Service & Age Retirement xx
2. Disability Retirement

Date of birth: November 25, 1973

I request my retirement be effective: January 26, 2024

My title on the payroll is: Assistant Director Dept. Public Service Department: Public Service

Dated at Grosse Pointe Woods, MI this January 18th day of 2024.

Shawn Murphy
Signature of Witness

Matthew Crook
Signature of Member

I elect to receive my retirement allowance in the following manner. (Place an X next to the option requested.) **PLEASE NOTE:** This is an irrevocable selection.

- Regular service retirement
 Option I cash refund annuity
X Option II joint and last survivorship annuity
 Option III modified joint & last survivorship annuity

Write plan of retirement elected Option II

- I wish to withdraw my accumulative contribution in the amount of \$
X I do not wish to withdraw my accumulated contribution
 I certify that my (wife) (husband) at this date of retirement is: Vanessa Crook

Supplemental annuity payment (if applicable) per month will be: \$ 400.00

Shawn Murphy
Signature of Witness & Date

Matthew Crook 1-18-24
Signature of Member & Date

NOMINATION OF BENEFICIARY

I nominate as my beneficiary:

Vanessa Crook

Beneficiary's address:

Beneficiary's date of birth:

Beneficiary's relationship to me: wife

Sex: F

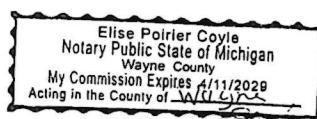
Beneficiary's place of birth: Mt. Clemens

Dated at Grosse Pointe Woods, MI this 18th day of Jan., 2024.

Signed: Matthew Crook

Subscribed and sworn to before me this 18th day of January 2024.
My commission expires on: 04-11-29

Notary Public Elise Poirier Coyle





CITY OF GROSSE POINTE WOODS

MEMORANDUM

Date: January 16, 2024

To: Pension Board Trustees

From: Shawn Murphy, Pension Administrator

Re: Refund Employee Contributions-Czech

On November 27, 2023, Communications Dispatcher, Patricia Czech's employment was terminated with the City. Ms. Czech made contributions to the pension system, but she was not vested in the City's pension plan.

I respectfully request authorization from the Pension Board to refund Patricia Czech's employee contributions of \$12,917.34 and interest of \$1,059.94, totaling \$13,977.28.

Thank you.



CITY OF GROSSE POINTE WOODS

MEMORANDUM

Date: January 16, 2024
To: Pension Board Trustees
From: Shawn Murphy, Pension Administrator
Re: Refund Employee Contributions-McNeil

On December 22, 2023, Amber McNeil resigned from her position as Communications Dispatcher. Ms. McNeil made contributions to the pension system, but she was not vested in the City's pension plan.

I respectfully request authorization from the Pension Board to refund Amber McNeil's employee contributions of \$5,861.05 and interest of \$104.92, totaling \$5,965.97.

Thank you.



CITY OF GROSSE POINTE WOODS

MEMORANDUM

Date: January 16, 2024
To: Pension Board Trustees
From: Shawn Murphy, Pension Administrator
Re: Refund Employee Contributions-Ohse

On November 16, 2023, Albert Ohse resigned from his position as Operator II. Mr. Ohse made contributions to the pension system, but he was not vested in the City's pension plan.

I respectfully request authorization from the Pension Board to refund Albert Ohse's employee contributions of \$3,741.05 and interest of \$62.16, totaling \$3,803.21.

Thank you.

CITY OF GROSSE POINTE WOODS EMPLOYEES RETIREMENT SYSTEM

GASB 67/68 DISCLOSURE INFORMATION
MEASUREMENT DATE: JUNE 30, 2023

GASB 68 REPORTING
AS OF JUNE 30, 2023



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS



August 28, 2023

Board of Trustees
City of Grosse Pointe Woods Employees Retirement System

RE: GASB Statements No. 67 and No. 68 – City of Grosse Pointe Woods Employees Retirement System

Dear Board:

We are pleased to present this report of the GASB Statements No. 67 and No. 68 measured as of June 30, 2023 for the City of Grosse Pointe Woods Employees Retirement System.

The calculation of the liability associated with the benefits referenced in this report was performed to satisfy the requirements of GASB No. 67 and No. 68 and is not applicable for other purposes, such as determining the plan's funding requirements. Use of the results for other purposes may not be applicable and may produce significantly different results.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of June 30, 2023. It is our opinion that the assumptions used for this purpose are internally consistent, reasonable, and comply with the requirements under GASB No. 67 and No. 68.


In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by the Board, financial reports prepared by the custodian bank and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

To the best of our knowledge, these statements are complete and accurate and are in accordance with generally recognized actuarial practices and methods. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at (630) 620-2000.

Respectfully submitted,
Foster & Foster, Inc.



Jason Franken, FSA, EA, MAAA

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I. SUMMARY

Valuation Date	June 30, 2023	June 30, 2022
GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Date	June 30, 2023	June 30, 2022
Plan Membership:		
Inactives Currently Receiving Benefits ¹	108	103
Inactives Not Yet Receiving Benefits	12	16
Active Plan Members	<u>76</u>	<u>79</u>
Total	196	198
Covered Payroll	\$ 5,408,364	\$ 5,425,650
Net Pension Liability		
Total Pension Liability	\$ 64,708,733	\$ 69,496,136
Plan Fiduciary Net Position	<u>40,385,352</u>	<u>38,115,937</u>
Net Pension Liability	\$ 24,323,381	\$ 31,380,199
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	62.41%	54.85%
Net Pension Liability		
As a Percentage of Covered Payroll	449.74%	578.37%
Total Pension Expense	\$ (4,277,189)	\$ (1,808,928)
Development of Single Discount Rate		
Single Discount Rate	7.35%	6.79%
Long-Term Expected Rate of Return	7.40%	7.50%
High-quality Municipal Bond Rate	4.13%	4.09%
Number of Years Future Benefit Payments		
Are Expected to be Paid	63	41

¹ The inactive counts Include EDROs (3 for the June 30, 2023 measurement date and 3 for the prior measurement date).

II. GASB EXHIBITS

SCHEDULE OF CHANGES IN NET PENSION LIABILITY

GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Period Ending	June 30, 2023	June 30, 2022
Total Pension Liability		
Service Cost	1,029,503	1,080,805
Interest	4,655,548	4,517,849
Changes in Benefit Terms	(2,108,032)	196,683
Experience Gains/Losses	716,258	(630,363)
Changes of Assumptions	(5,158,946)	(2,730,443)
Benefit Payments	<u>(3,921,734)</u>	<u>(3,586,669)</u>
Net Change in Total Pension Liability	(4,787,403)	(1,152,138)
Total Pension Liability – Beginning	<u>69,496,136</u>	<u>70,648,274</u>
Total Pension Liability – Ending (a)	\$ 64,708,733	\$ 69,496,136
Plan Fiduciary Net Position		
Contributions – Employer	2,042,555	2,044,344
Contributions – Employee	297,963	290,887
Net Investment Income	3,922,857	(6,523,478)
Benefit Payments	(3,921,734)	(3,586,669)
Administrative Expense	(72,226)	(52,775)
Other	<u>0</u>	<u>0</u>
Net Change in Plan Fiduciary Net Position	2,269,415	(7,827,691)
Plan Fiduciary Net Position – Beginning	38,115,937	45,943,628
Adjustment to beginning of year	<u>0</u>	<u>0</u>
Plan Fiduciary Net Position – Ending (b)	\$ 40,385,352	\$ 38,115,937
Net Pension Liability – Ending (a) – (b)	\$ 24,323,381	\$ 31,380,199
Plan Fiduciary Net Position		
As % of Total Pension Liability	62.41%	54.85%
Covered Payroll	\$ 5,408,364	\$ 5,425,650
Net Pension Liability		
As % of Covered Payroll	449.74%	578.37%

SENSITIVITY TO CHANGES IN DISCOUNT RATE

GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Date	June 30, 2023	June 30, 2022
Discount Rate	7.35%	6.79%
+ 1% Discount Rate	8.35%	7.79%
- 1% Discount Rate	6.35%	5.79%
Sponsor's Net Pension Liability		
Current Discount Rate	\$ 24,323,381	\$ 31,380,199
1% Increase in Discount Rate	17,685,706	24,073,474
1% Decrease in Discount Rate	32,318,597	40,229,343

PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF
RESOURCES RELATED TO PENSIONS
YEAR-END JUNE 30, 2023

For the year ended June 30, 2023, the Sponsor will recognize a Pension expense of (\$4,277,189).

On June 30, 2023, the Sponsor reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between actual and expected experience	537,195	370,173
Changes of assumptions	0	8,611,886
Net difference between projected and actual earnings on pension plan investments	1,813,889	0
Total	\$ 2,351,084	\$ 8,982,059

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year-ended June 30:

2024	\$ (4,977,625)
2025	\$ (2,076,275)
2026	\$ 648,158
2027	\$ (225,233)
2028	\$ 0
Thereafter	\$ 0

III. SUPPLEMENTARY GASB 68 EXPENSE DETAIL

COMPONENTS OF PENSION EXPENSE
YEAR-END JUNE 30, 2023

	Net Pension Liability	Deferred Outflows	Deferred Inflows	Pension Expense
Beginning Balance	\$ 31,380,199	\$ 9,706,847	\$ 15,600,748	
Total Pension Liability Factors:				
Service Cost	1,029,503	0	0	1,029,503
Interest	4,655,548	0	0	4,655,548
Changes in Benefit Terms	(2,108,032)	0	0	(2,108,032)
Experience Gains/Losses	716,258	716,258	0	0
Current Year Amortization	0	(179,063)	(723,080)	(544,017)
Changes of Assumptions	(5,158,946)	0	5,158,946	0
Current Year Amortization	0	(343,225)	(5,349,800)	(5,006,575)
Benefit Payments	(3,921,734)	0	0	0
Net Change	(4,787,403)	193,970	(913,934)	(1,973,573)
PlanFiduciaryNetPosition:				
Contributions - Employer	2,042,555	0	0	0
Contributions – Employee	297,963	0	0	(297,963)
Projected Net Investment Income	2,796,691	0	0	(2,796,691)
Difference in Projected and Actual Earnings	1,126,166	0	1,126,166	0
Current Year Amortization	0	(2,845,631)	(2,126,819)	718,812
Benefit Payments	(3,921,734)	0	0	0
Administrative Expenses	(72,226)	0	0	72,226
Other	0	0	0	0
Net Change	2,269,415	(2,845,631)	(1,000,653)	(2,303,616)
Adjustment to beginning of year	0	0	0	0
Ending Balance	\$ 24,323,381	\$ 7,055,186	\$ 13,686,161	\$ (4,277,189)

AMORTIZATION SCHEDULE – EXPERIENCE

Year First Reported	Initial Base	Recognition Period	2023	2024	2025	2026	2027	Thereafter
2023	\$ 716,258	4	\$ 179,063	\$ 179,065	\$ 179,065	\$ 179,065	\$ 0	\$ 0
2022	(630,363)	4	(157,590)	(157,591)	(157,590)	0	0	0
2021	(219,966)	4	(54,992)	(54,992)	0	0	0	0
2020	(2,041,992)	4	(510,498)	0	0	0	0	0
Net Increase (Decrease) in Pension Expense			\$ (544,017)	\$ (33,518)	\$ 21,475	\$ 179,065	\$ 0	\$ 0

AMORTIZATION SCHEDULE – CHANGES OF ASSUMPTIONS

Year First Reported	Initial Base	Recognition Period	2023	2024	2025	2026	2027	Thereafter
2023	\$ (5,158,946)	4	\$ (1,289,735)	\$ (1,289,737)	\$ (1,289,737)	\$ (1,289,737)	0	0
2022	(2,730,443)	4	(682,610)	(682,610)	(682,610)	0	0	0
2021	(13,509,818)	4	(3,377,455)	(3,377,455)	0	0	0	0
2020	1,372,928	4	343,225	0	0	0	0	0
Net Increase (Decrease) in Pension Expense			\$ (5,006,575)	\$ (5,349,802)	\$ (1,972,347)	\$ (1,289,737)	0	0

AMORTIZATION SCHEDULE – INVESTMENTS

Year First Reported	Initial Base	Recognition Period	2023	2024	2025	2026	2027	Thereafter
2023	\$ (1,126,166)	5	\$ (225,234)	\$ (225,233)	\$ (225,233)	\$ (225,233)	\$ (225,233)	0
2022	9,920,315	5	2,001,415	2,001,415	2,001,415	1,984,063	0	0
2021	(9,507,925)	5	(1,901,585)	(1,901,585)	(1,901,585)	0	0	0
2020	2,655,490	5	531,098	531,098	0	0	0	0
2019	1,565,588	5	313,118	0	0	0	0	0
Net Increase (Decrease) in Pension Expense			\$ 718,812	\$ 405,695	\$ (125,403)	\$ 1,758,830	\$ (225,233)	0

IV. ADDITIONAL INFORMATION

SCHEDULE OF CONTRIBUTIONS

Plan Year Ended	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contrib. as % of Covered Payroll
06/30/2023	\$ 1,993,291	\$ 2,042,555	\$ (49,264)	\$ 5,408,364	37.77%
06/30/2022	\$ 1,833,259	\$ 2,044,344	\$ (211,085)	\$ 5,425,650	37.68%

The following assumptions were used to determine the Actuarially Determined Contribution for the plan year ending June 30, 2023:

Calculation Timing	The Actuarially Determined Contribution is calculated using a June 30, 2021 valuation date.
Interest Rate	7.50%
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the June 30, 2021 Actuarial Valuation Report for the City of Grosse Pointe Woods Employees Retirement System prepared by Foster & Foster Actuaries and Consultants.

ASSUMPTIONS

Valuation Date	June 30, 2023	June 30, 2022
GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Date	June 30, 2023	June 30, 2022
Discount Rate	7.35%	6.79%
Long-Term Rate of Return	7.40%	7.50%
Mortality		
Base Tables	PubS-2010 and PubG-2010	PubS-2010 and PubG-2010
Mortality Improvement Type	Generational.	Generational.
Mortality Improvement Scale	MP-2018	MP-2018
Adjustments – Actives	None.	None.
Adjustments – Retirees	None.	None.
Adjustments – Disableds	None.	None.
Adjustments – Survivors	None.	None.
Salary Scale	Age-based table.	Age-based rates
Inflation	2.50%	2.50%
Latest Experience Study Date	April 24, 2023	

A summary of other assumptions reflected in the valuation can be found in the June 30, 2023 actuarial valuation report.

Changes in Assumptions

Total Pension Liability and GASB 68 Pension Expense measured as of June 30, 2023 reflect the following assumption changes:

- The discount rate was updated from 6.79% to 7.35%.
- Long-term rate of return was decreased from 7.50% to 7.40%.
- Updated retirement, termination, and disability rate tables.

Development of the Discount Rate

The projection of cash flows used to determine the Discount Rate assumed that current Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate.

Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to provide future benefit payments for 63 years. Therefore benefit payments for 63 years were discounted using a Discount Rate equal to the Long-Term Expected Rate of Return of 7.40 percent.

Future benefit payments beyond 63 years were discounted using a high-quality municipal bond rate of 4.13 percent. The high-quality municipal bond rate was based on the daily rate closest to, but not later than the measurement date of the S&P Municipal Bond 20 Year High Grade Rate Index.

The single equivalent Discount Rate was 7.35 percent.

SUMMARY OF CURRENT PLAN

Plan Description

The plan is a single-employer defined benefit pension plan administered by a Board of Trustees comprised of five members: a) the Mayor; b) a member of the City Council; c) a resident appointed by the Mayor; and d) two employees (one general and one public safety).

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

A summary of the benefit provisions can be found in the Actuarial Valuation as of June 30, 2023 for the City of Grosse Pointe Woods Employees Retirement System prepared by Foster & Foster Actuaries and Consultants.

Benefit Changes

Effective September 12, 2022, the plan added the Employee Retention Option Plan (EROP).

Employee Retention Option Program

Eligibility:

Command and Public Safety Officers: Age 50 with 25 years of service, or Age 55 with 20 years of service.

Participation:

5-year maximum.

Rate of return:

3.00% interest.

DROP balance:

The EROP balance as of June 30, 2023 is \$0.

CITY OF GROSSE POINTE WOODS EMPLOYEES RETIREMENT SYSTEM -
SUPPLEMENTAL ANNUITY VALUATION

GASB 67/68 DISCLOSURE INFORMATION
MEASUREMENT DATE: JUNE 30, 2023

GASB 68 REPORTING
AS OF JUNE 30, 2023



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS



August 28, 2023

Board of Trustees

City of Grosse Pointe Woods Employees Retirement System - Supplemental Annuity Valuation

RE: GASB Statements No. 67 and No. 68 – City of Grosse Pointe Woods Employees Retirement System - Supplemental Annuity Valuation

Dear Board:

We are pleased to present this report of the GASB Statements No. 67 and No. 68 measured as of June 30, 2023 for the City of Grosse Pointe Woods Employees Retirement System - Supplemental Annuity Valuation.

The calculation of the liability associated with the benefits referenced in this report was performed to satisfy the requirements of GASB No. 67 and No. 68 and is not applicable for other purposes, such as determining the plan's funding requirements. Use of the results for other purposes may not be applicable and may produce significantly different results.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of June 30, 2023. It is our opinion that the assumptions used for this purpose are internally consistent, reasonable, and comply with the requirements under GASB No. 67 and No. 68.


In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by the Board, financial reports prepared by the custodian bank and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

To the best of our knowledge, these statements are complete and accurate and are in accordance with generally recognized actuarial practices and methods. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at (630) 620-2000.

Respectfully submitted,
Foster & Foster, Inc.



Jason Franken, FSA, EA, MAAA

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I. SUMMARY

Valuation Date	June 30, 2023	June 30, 2022
GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Date	June 30, 2023	June 30, 2022
Plan Membership:		
Inactives Currently Receiving Benefits	60	57
Inactives Not Yet Receiving Benefits	0	0
Active Plan Members	<u>47</u>	<u>50</u>
Total	107	107
Covered Payroll	\$ 2,783,550	\$ 2,810,667
Net Pension Liability		
Total Pension Liability	\$ 4,007,347	\$ 3,878,998
Plan Fiduciary Net Position	<u>2,591,233</u>	<u>2,314,927</u>
Net Pension Liability	\$ 1,416,114	\$ 1,564,071
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	64.66%	59.68%
Net Pension Liability		
As a Percentage of Covered Payroll	50.87%	55.65%
Total Pension Expense	\$ 138,284	\$ 149,500
Development of Single Discount Rate		
Single Discount Rate	7.40%	7.50%
Long-Term Expected Rate of Return	7.40%	7.50%
High-quality Municipal Bond Rate	4.13%	4.09%
Number of Years Future Benefit Payments		
Are Expected to be Paid	All Years	All Years

II. GASB EXHIBITS

SCHEDULE OF CHANGES IN NET PENSION LIABILITY

GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Period Ending	June 30, 2023	June 30, 2022
Total Pension Liability		
Service Cost	44,932	45,787
Interest	283,542	281,506
Changes in Benefit Terms	0	0
Experience Gains/Losses	39,243	(22,217)
Changes of Assumptions	47,379	0
Benefit Payments	<u>(286,747)</u>	<u>(267,409)</u>
Net Change in Total Pension Liability	128,349	37,667
Total Pension Liability – Beginning	<u>3,878,998</u>	<u>3,841,331</u>
Total Pension Liability – Ending (a)	\$ 4,007,347	\$ 3,878,998
Plan Fiduciary Net Position		
Contributions – Employer	329,201	349,494
Contributions – Employee	0	0
Net Investment Income	235,635	(368,012)
Benefit Payments	(286,747)	(267,409)
Administrative Expense	(4,372)	(7,005)
Other	<u>2,589</u>	<u>2,024</u>
Net Change in Plan Fiduciary Net Position	276,306	(290,908)
Plan Fiduciary Net Position – Beginning	2,314,927	2,605,835
Adjustment to beginning of year	<u>0</u>	<u>0</u>
Plan Fiduciary Net Position – Ending (b)	\$ 2,591,233	\$ 2,314,927
Net Pension Liability – Ending (a) – (b)	\$ 1,416,114	\$ 1,564,071
Plan Fiduciary Net Position		
As % of Total Pension Liability	64.66%	59.68%
Covered Payroll	\$ 2,783,550	\$ 2,810,667
Net Pension Liability		
As % of Covered Payroll	50.87%	55.65%

SENSITIVITY TO CHANGES IN DISCOUNT RATE

GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Date	June 30, 2023	June 30, 2022
Discount Rate	7.40%	7.50%
+ 1% Discount Rate	8.40%	8.50%
- 1% Discount Rate	6.40%	6.50%
Sponsor's Net Pension Liability		
Current Discount Rate	\$ 1,416,114	\$ 1,564,071
1% Increase in Discount Rate	1,054,736	1,216,095
1% Decrease in Discount Rate	1,845,962	1,977,111

PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF
RESOURCES RELATED TO PENSIONS
YEAR-END JUNE 30, 2023

For the year ended June 30, 2023, the Sponsor will recognize a Pension expense of \$138,284.

On June 30, 2023, the Sponsor reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between actual and expected experience	39,905	25,385
Changes of assumptions	37,904	19,909
Net difference between projected and actual earnings on pension plan investments	118,703	0
Total	\$ 196,512	\$ 45,294

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year-ended June 30:

2024	\$ 19,009
2025	\$ 15,970
2026	\$ 114,753
2027	\$ 1,486
2028	\$ 0
Thereafter	\$ 0

III. SUPPLEMENTARY GASB 68 EXPENSE DETAIL

COMPONENTS OF PENSION EXPENSE
YEAR-END JUNE 30, 2023

	Net Pension Liability	Deferred Outflows	Deferred Inflows	Pension Expense
Beginning Balance	\$ 1,564,071	\$ 548,608	\$ 440,350	
Total Pension Liability Factors:				
Service Cost	44,932	0	0	44,932
Interest	283,542	0	0	283,542
Changes in Benefit Terms	0	0	0	0
Experience Gains/Losses	39,243	39,243	0	0
Current Year Amortization	0	(21,600)	(38,949)	(17,349)
Changes of Assumptions	47,379	47,379	0	0
Current Year Amortization	0	(9,475)	(53,185)	(43,710)
Benefit Payments	(286,747)	0	0	0
Net Change	128,349	55,547	(92,134)	267,415
PlanFiduciaryNetPosition:				
Contributions - Employer	329,201	0	0	0
Projected Net Investment Income	174,951	0	0	(174,951)
Difference in Projected and Actual Earnings	60,684	0	60,684	0
Current Year Amortization	0	(157,147)	(113,110)	44,037
Benefit Payments	(286,747)	0	0	0
Administrative Expenses	(4,372)	0	0	4,372
Other	2,589	0	0	(2,589)
Net Change	276,306	(157,147)	(52,426)	(129,131)
Adjustment to beginning of year	0	0	0	0
Ending Balance	\$ 1,416,114	\$ 447,008	\$ 295,790	\$ 138,284

AMORTIZATION SCHEDULE – EXPERIENCE

Year First Reported	Initial Base	Recognition Period	2023	2024	2025	2026	2027	Thereafter
2023	\$ 39,243	5	\$ 7,847	\$ 7,849	\$ 7,849	\$ 7,849	\$ 7,849	0
2022	(22,217)	6	(3,703)	(3,703)	(3,702)	(3,703)	(3,702)	0
2021	21,271	5	4,254	4,254	4,255	0	0	0
2020	(151,559)	4.30	(35,246)	(10,575)	0	0	0	0
2019	136,155	4.30	9,499	0	0	0	0	0
Net Increase (Decrease) in Pension Expense			\$ (17,349)	\$ (2,175)	\$ 8,402	\$ 4,146	\$ 4,147	0

AMORTIZATION SCHEDULE – CHANGES OF ASSUMPTIONS

Year First Reported	Initial Base	Recognition Period	2023	2024	2025	2026	2027	Thereafter
2023	\$ 47,379	5	\$ 9,475	\$ 9,476	\$ 9,476	\$ 9,476	\$ 9,476	0
2021	(15,148)	5	(3,030)	(3,030)	(3,031)	0	0	0
2020	(198,496)	4.30	(46,162)	(13,848)	0	0	0	0
2019	(57,257)	4.30	(3,993)	0	0	0	0	0
Net Increase (Decrease) in Pension Expense			\$ (43,710)	\$ (7,402)	\$ 6,445	\$ 9,476	\$ 9,476	0

AMORTIZATION SCHEDULE – INVESTMENTS

Year First Reported	Initial Base	Recognition Period	2023	2024	2025	2026	2027	Thereafter
2023	\$ (60,684)	5	\$ (12,136)	\$ (12,137)	\$ (12,137)	\$ (12,137)	\$ (12,137)	0
2022	566,265	5	114,233	114,235	114,234	113,268	0	0
2021	(504,869)	5	(100,974)	(100,974)	(100,974)	0	0	0
2020	137,309	5	27,462	27,462	0	0	0	0
2019	77,259	5	15,452	0	0	0	0	0
Net Increase (Decrease) in Pension Expense			\$ 44,037	\$ 28,586	\$ 1,123	\$ 101,131	\$ (12,137)	0

IV. ADDITIONAL INFORMATION

SCHEDULE OF CONTRIBUTIONS

Plan Year Ended	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contrib. as % of Covered Payroll
06/30/2023	\$ 229,734	\$ 329,201	\$ (99,467)	\$ 2,783,550	11.83%
06/30/2022	\$ 304,370	\$ 349,494	\$ (45,124)	\$ 2,810,667	12.43%

The following assumptions were used to determine the Actuarially Determined Contribution for the plan year ending June 30, 2023:

Calculation Timing	The Actuarially Determined Contribution is calculated using a June 30, 2021 valuation date.
Interest Rate	7.50%
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the June 30, 2021 Actuarial Valuation Report for the City of Grosse Pointe Woods Employees Retirement System - Supplemental Annuity Valuation prepared by Foster & Foster Actuaries and Consultants.

ASSUMPTIONS

Valuation Date	June 30, 2023	June 30, 2022
GASB 67/68 Measurement Date	June 30, 2023	June 30, 2022
GASB 68 Reporting Date	June 30, 2023	June 30, 2022
Discount Rate	7.40%	7.50%
Long-Term Rate of Return	7.40%	7.50%
Mortality		
Base Tables	PubS-2010 and PubG-2010	PubS-2010 and PubG-2010
Mortality Improvement Type	Generational.	Generational.
Mortality Improvement Scale	MP-2018	MP-2018
Adjustments – Actives	None.	None.
Adjustments – Retirees	None.	None.
Adjustments – Disableds	None.	None.
Adjustments – Survivors	None.	None.
Salary Scale	Age-based table.	Age-based rates
Inflation	2.50%	2.50%
Latest Experience Study Date	April 24, 2023	

A summary of other assumptions reflected in the valuation can be found in the June 30, 2023 actuarial valuation report.

Changes in Assumptions

Total Pension Liability and GASB 68 Pension Expense measured as of June 30, 2023 reflect the following assumption changes:

- The discount rate was updated from 7.50% to 7.40%.
- Long-term rate of return was decreased from 7.50% to 7.40%.
- Updated retirement, termination, and disability rate tables.

Development of the Discount Rate

The projection of cash flows used to determine the Discount Rate assumed that current Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate.

Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments (7.40 percent) was applied to all periods of projected benefit payments to determine the Total Pension Liability.

No projected benefit payments were discounted using a high-quality municipal bond rate of 4.13 percent. The high-quality municipal bond rate was based on the daily rate closest to, but not later than the measurement date of the S&P Municipal Bond 20 Year High Grade Rate Index.

The single equivalent Discount Rate was 7.40 percent.

SUMMARY OF CURRENT PLAN

Plan Description

The plan is a single-employer defined benefit pension plan administered by a Board of Trustees comprised of five members: a) the Mayor; b) a member of the City Council; c) a resident appointed by the Mayor; and d) two employees (one general and one public safety).

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

A summary of the benefit provisions can be found in the Actuarial Valuation as of June 30, 2023 for the City of Grosse Pointe Woods Employees Retirement System - Supplemental Annuity Valuation prepared by Foster & Foster Actuaries and Consultants.

Benefit Changes

No benefit changes have been reflected since the prior year.

CITY OF GROSSE POINTE WOODS
EMPLOYEES RETIREMENT SYSTEM

ACTUARIAL VALUATION
AS OF JUNE 30, 2023

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR BEGINNING JULY 1, 2024

P.A. 202 VALUATION
AS OF JUNE 30, 2023



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS



August 28, 2023

Board of Trustees
City of Grosse Pointe Woods Employees Retirement System

Re: Actuarial Valuation Report – City of Grosse Pointe Woods Employees Retirement System

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Grosse Pointe Woods Employees Retirement System. The funding valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year. Use of the results for other purposes may not be applicable and could produce significantly different results.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the Retirement System, as well as applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

The funding percentages and unfunded accrued liability as measured based on the actuarial value of assets will differ from similar measures based on the market value of assets. These measures, as provided, are appropriate for determining the adequacy of future contributions, but may not be appropriate for the purpose of settling a portion or all of its liabilities.

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by the Board, financial reports prepared by the custodian bank and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

The undersigned is familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Grosse Pointe Woods, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the City of Grosse Pointe Woods Employees Retirement System. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 630-620-0200.

Respectfully submitted,

Foster & Foster, Inc.

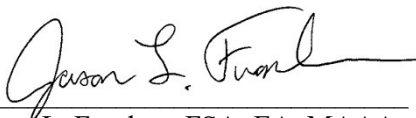
By: 
Jason L. Franken, FSA, EA, MAAA

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SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Grosse Pointe Woods Employees Retirement System, performed as of June 30, 2023, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year beginning July 1, 2024.

The contribution requirements, compared with those set forth in the June 30, 2022 actuarial report, are as follows:

Valuation Date	6/30/2023	6/30/2022
Applicable to Fiscal Year Beginning	<u>7/1/2024</u>	<u>7/1/2023</u>
Total Recommended Contribution	\$2,628,546	\$2,205,664
% of Projected Annual Payroll	46.42%	38.91%
Member Contributions (Est.)	(333,413)	(326,695)
% of Projected Annual Payroll	(5.89%)	(5.76%)
City Recommended Contribution	2,295,133	1,878,969
% of Projected Annual Payroll	40.53%	33.15%

As you can see, the Total Recommended Contribution shows an increase from the June 30, 2022 actuarial valuation report. The increase is largely attributable to assumption and method changes, along with unfavorable plan experience.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of unfavorable experience included an investment return of 5.51% (Actuarial Asset Basis) which fell short of the 7.50% assumption and more retirements than expected. These losses were offset in part by a gain associated with higher than expected active mortality experience.

CHANGES SINCE THE PRIOR VALUATION

The valuation reflects the following assumption changes:

- The interest rate was decreased from 7.50% to 7.40%.
- Reduced assumed payroll growth rate from 3.50% to 3.00%.
- Updated retirement, termination, and disability rate tables.

The valuation reflects the following method changes:

- Administrative expenses have been included in the contribution requirement.
- The 25-year open amortization period was updated to a 20-year amortization period that will phase into a 15-year open amortization.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

Valuation Date	New Asmp/Mthd <u>6/30/2023</u>	Old Asmp/Mthd <u>6/30/2023</u>	<u>6/30/2022</u>
A. Participant Data			
Number Included			
Actives	76	76	79
Service Retirees	90	90	86
Beneficiaries	18	18	17
Disability Retirees	0	0	0
Terminated Vested	<u>12</u>	<u>12</u>	<u>16</u>
Total	196	196	198
Total Projected Annual Payroll	\$5,661,562	\$5,661,562	\$5,668,368
Payroll Under Assumed Ret. Age	5,661,562	5,661,562	5,668,369
Annual Rate of Payments to:			
Service Retirees	3,150,364	3,150,364	3,013,205
Beneficiaries	556,774	556,774	513,185
Disability Retirees	0	0	0
Terminated Vested	134,569	134,569	148,317
B. Assets			
Actuarial Value	42,304,500	42,304,500	41,703,710
Market Value	40,385,352	40,385,352	38,115,937
C. Liabilities			
Present Value of Benefits (PVB)			
Actives			
Retirement Benefits	20,943,983	21,199,084	20,957,181
Disability Benefits	1,233,681	1,729,210	1,739,611
Death Benefits	279,276	277,568	285,755
Vested Benefits	800,171	653,185	649,688
Service Retirees ¹	41,152,637	40,751,396	39,273,933
Beneficiaries	5,377,261	5,338,552	4,830,917
Disability Retirees	0	0	0
Terminated Vested	<u>1,187,645</u>	<u>1,172,640</u>	<u>1,280,240</u>
Total	70,974,654	71,121,635	69,017,325

¹ Includes reserve for EROP balances. \$0 as of 6/30/2023 and \$0 as of 6/30/2022.

C. Liabilities - (Continued)	New Asmp/Mthd <u>6/30/2023</u>	Old Asmp/Mthd <u>6/30/2023</u>	<u>6/30/2022</u>
Present Value of Future Salaries	47,164,655	48,688,616	48,053,737
Normal Cost (Retirement)	621,011	637,547	638,282
Normal Cost (Disability)	62,509	79,380	80,269
Normal Cost (Death)	15,195	15,191	15,744
Normal Cost (Vesting)	<u>70,514</u>	<u>53,595</u>	<u>53,018</u>
Total Normal Cost (EAN)	769,229	785,713	787,313
Present Value of Future Normal Costs	6,239,476	6,548,756	6,500,055
Accrued Liability (Retirement)	15,803,923	15,781,375	15,569,871
Accrued Liability (Disability)	661,826	1,053,197	1,074,738
Accrued Liability (Death)	167,436	164,263	171,391
Accrued Liability (Vesting)	384,450	311,456	316,180
Accrued Liability (Inactives) ¹	<u>47,717,543</u>	<u>47,262,588</u>	<u>45,385,090</u>
Total Actuarial Accrued Liability	64,735,178	64,572,879	62,517,270
Unfunded Actuarial Accrued Liability (UAAL)	22,430,678	22,268,379	20,813,560
Funded Ratio (AVA / AL)	65.4%	65.5%	66.7%

¹ Includes reserve for EROP balances. \$0 as of 6/30/2023 and \$0 as of 6/30/2022.

	New Asmp/Mthd <u>6/30/2023</u>	Old Asmp/Mthd <u>6/30/2023</u>	<u>6/30/2022</u>
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives ¹	47,717,543	47,262,588	45,385,090
Actives	4,728,682	4,566,926	4,250,204
Member Contributions	<u>4,107,306</u>	<u>4,107,306</u>	<u>4,226,004</u>
Total	56,553,531	55,936,820	53,861,298
Non-vested Accrued Benefits	<u>2,760,465</u>	<u>3,418,078</u>	<u>3,396,747</u>
Total Present Value Accrued Benefits	59,313,996	59,354,898	57,258,045
Funded Ratio (MVA / PVAB)	68.1%	68.0%	66.6%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	(40,902)	0	
Plan Experience	0	1,871,299	
Benefits Paid	0	(3,921,734)	
Interest	0	4,147,288	
Other	<u>0</u>	<u>0</u>	
Total	0	2,096,853	

¹ Includes reserve for EROP balances. \$0 as of 6/30/2023 and \$0 as of 6/30/2022.

Valuation Date	New Asmp/Mthd 6/30/2023	Old Asmp/Mthd 6/30/2023	6/30/2022
Applicable to Fiscal Year Beginning	<u>7/1/2024</u>	<u>7/1/2024</u>	<u>7/1/2023</u>

E. Pension Cost

Normal Cost ¹	\$826,152	\$844,641	\$846,361
% of Total Annual Payroll ¹	14.59	14.92	14.93
Administrative Expenses ¹	61,218	0	0
% of Total Annual Payroll ¹	1.08	0.00	0.00
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 20 years (as of 6/30/2023; 25 years before change) ¹	1,741,176	1,454,316	1,359,303
% of Total Annual Payroll ¹	30.75	25.69	23.98
Total Recommended Contribution	2,628,546	2,298,957	2,205,664
% of Total Annual Payroll ¹	46.42	40.61	38.91
Expected Member Contributions ¹	(333,413)	(333,413)	(326,695)
% of Total Annual Payroll ¹	(5.89)	(5.89)	(5.76)
Expected City Contribution	2,295,133	1,965,544	1,878,969
% of Total Annual Payroll ¹	40.53	34.72	33.15

F. Past Contributions

Plan Years Ending: 6/30/2023

Total Recommended Contribution	2,176,932
City Requirement	1,878,969

Actual Contributions Made:

Members (excluding buyback)	297,963
City	<u>2,042,555</u>
Total	2,340,518

G. Net Actuarial (Gain)/Loss 1,501,124

¹ Contributions developed as of 6/30/2023 displayed above have been adjusted to account for assumed interest.

H. Schedule Illustrating the Amortization of the Total Unfunded Actuarial Accrued Liability as of:

<u>Year</u>	<u>Projected Unfunded Accrued Liability</u>
2023	22,430,678
2024	22,349,372
2025	22,209,814
2030	20,516,612
2034	18,892,310
2039	17,041,558
2043	15,692,374

I. (i) 3 Year Comparison of Actual and Assumed Salary Increases

		<u>Actual</u>	<u>Assumed</u>
Year Ended	6/30/2023	11.60%	4.57%
Year Ended	6/30/2022	2.73%	4.55%
Year Ended	6/30/2021	12.40%	4.48%

(ii) 3 Year Comparison of Investment Return on Actuarial Value

		<u>Actual</u>	<u>Assumed</u>
Year Ended	6/30/2023	5.51%	7.50%
Year Ended	6/30/2022	4.66%	7.50%
Year Ended	6/30/2021	9.99%	7.50%

PENSION COST BY DIVISION

	<u>General</u>	<u>Public Safety</u>	<u>Total</u>
Projected Payroll	2,925,368	2,736,194	5,661,562
Total Normal Cost ¹	370,694	455,458	826,152
% of Total Annual Payroll ¹	12.67	16.65	14.59
Administrative Expenses ¹	31,632	29,586	61,218
% of Total Annual Payroll ¹	1.08	1.08	1.08
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 20 years (as of 6/30/2023) ¹	899,678	841,498	1,741,176
% of Total Annual Payroll ¹	30.75	30.75	30.75
Total Recommended Contribution ¹	1,302,004	1,326,542	2,628,546
% of Total Annual Payroll ¹	44.51	48.48	46.42
Expected Member Contributions ¹	(157,092)	(176,321)	(333,413)
% of Total Annual Payroll ¹	(5.37)	(6.44)	(5.89)
Expected City Contribution	1,144,912	1,150,221	2,295,133
% of Total Annual Payroll ¹	39.14	42.04	40.53

¹ Contributions developed as of 6/30/2023 displayed above have been adjusted to account for assumed interest

DEVELOPMENT OF JUNE 30, 2023 AMORTIZATION PAYMENT

(1) Unfunded Actuarial Accrued Liability as of June 30, 2022	\$20,813,560
(2) Sponsor Normal Cost developed as of June 30, 2022	476,120
(3) Expected administrative expenses for the year ended June 30, 2023	0
(4) Expected interest on (1), (2) and (3)	1,596,726
(5) Sponsor contributions to the System during the year ended June 30, 2023	2,042,555
(6) Expected interest on (5)	76,596
(7) Expected Unfunded Actuarial Accrued Liability as of June 30, 2023, (1)+(2)+(3)+(4)-(5)-(6)	20,767,255
(8) Change to UAAL due to Assumption/Method Change	162,299
(9) Change to UAAL due to Actuarial (Gain)/Loss	1,501,124
(10) Unfunded Accrued Liability as of June 30, 2023	22,430,678
(11) UAAL Subject to Amortization (100% AAL less Actuarial Assets)	22,430,678

<u>Date Established</u>	<u>Years Remaining</u>	<u>6/30/2023 Amount</u>	<u>Amortization Amount</u>
6/30/2023	20	22,430,678	1,621,207

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of June 30, 2022	\$20,813,560
(2) Expected UAAL as of June 30, 2023	20,767,255
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	811,542
Salary Increases	(83,200)
Active Decrements	185,308
Inactive Mortality	147,607
Other	<u>439,867</u>
Change in UAAL due to (Gain)/Loss	1,501,124
Change to UAAL due to Assumption/Method Change	<u>162,299</u>
(4) Actual UAAL as of June 30, 2023	\$22,430,678

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of June 30, 2022	\$ 1,878,969
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	(1,720)
Change in Assumed Administrative Expense	-
Investment Return (Actuarial Asset Basis)	53,001
Salary Increases	(5,434)
New Entrants	3,439
Active Decrements	12,102
Inactive Mortality	9,640
Contributions (More) or Less than Recommended	(11,084)
Increase in Amortization Payment Due to Payroll Growth Assumption	47,576
Change in Expected Member Contributions	(6,718)
Assumption/Method Change	329,589
Other	<u>(14,227)</u>
Total Change in Contribution	416,164
(3) Contribution Determined as of June 30, 2023	\$2,295,133

P.A. 202 REPORTING
AS OF JUNE 30, 2023

Michigan Public Act 202 of 2017 requires municipal retirement systems in the state to submit information concerning their actuarial accrued liabilities and funded status based on uniform assumptions. The information is to be furnished by the municipality on Form 5572.

Form 5572

Line

24	Actuarial Value of Assets	42,304,500
25	Actuarial Accrued Liabilities	69,872,554
26	Funded Ratio	60.5%
27	Actuarially Determined Contribution	3,412,033

The information was calculated based on the following assumptions, in compliance with the Uniform Assumptions pursuant to PA 202, applicable for fiscal year 2023. All other assumptions are as described in the Actuarial Assumptions and Methods section of this report.

Investment Rate of Return	6.85%
Discount Rate (equivalent single rate used)	6.69%
Periods with sufficient assets	6.85%
Periods without sufficient assets	3.54%
Salary Increase	Experience-based rates
Mortality Table	Pub-2010 with MP-2021
Amortization Period for Unfunded	
Actuarial Accrued Liability	16 years
Cost Method	Entry Age Normal
Amortization Method	Level percent of pay
Payroll Growth Assumption	3.00%

FUNDING HISTORY

Valuation Date	Applicable Fiscal Year Beginning	Valuation Assets ¹	Actuarial Accrued Liabilities ¹	Funded Ratio	Unfunded Actuarial Accrued Liabilities ¹	General	Public Safety
						Recommended Employer Contribution - as a% of Payroll	Recommended Employer Contribution - as a% of Payroll
6/30/2004	7/1/2005	34,404	33,804	101.8%	(600)	8.12%	12.64%
6/30/2005	7/1/2006	33,329	36,141	92.2%	2,812	12.54%	15.50%
6/30/2006	7/1/2007	33,549	36,846	91.1%	3,297	15.21%	18.59%
6/30/2007	7/1/2008	35,801	38,744	92.4%	2,943	14.65%	17.98%
6/30/2008	7/1/2009	37,728	36,310	103.9%	(1,418)	6.22%	7.98%
6/30/2009	7/1/2010	37,149	40,417	91.9%	3,268	10.56%	12.26%
6/30/2010	7/1/2011	36,074	41,541	86.8%	5,467	12.64%	14.28%
6/30/2011	7/1/2012	37,667	42,738	88.1%	5,071	12.55%	14.25%
6/30/2012	7/1/2013	37,369	44,747	83.5%	7,378	15.29%	16.99%
6/30/2013	7/1/2014	37,171	44,950	82.7%	7,779	16.12%	18.14%
6/30/2014	7/1/2015	37,751	45,453	83.1%	7,702	16.82%	19.24%
6/30/2015	7/1/2016	39,363	49,481	79.6%	10,118	20.28%	23.57%
6/30/2016	7/1/2017	39,271	51,299	76.6%	12,028	23.55%	26.03%
6/30/2017	7/1/2018	40,087	50,976	78.6%	10,889	22.31%	24.18%
6/30/2018	7/1/2019	40,347	53,727	75.1%	13,380	25.39%	28.75%
6/30/2019	7/1/2020	39,610	55,232	71.7%	15,622	27.56%	31.19%
6/30/2020	7/1/2021	39,021	59,469	65.6%	20,448	33.85%	38.46%
6/30/2021	7/1/2022	41,122	63,086	65.2%	21,964	33.64%	37.54%
6/30/2022	7/1/2023	41,704	62,517	66.7%	20,814	32.09%	34.30%
6/30/2023	7/1/2024	42,305	64,735	65.4%	22,431	39.14%	42.04%

¹Dollar values reported in thousands.

PROJECTION OF BENEFIT PAYMENTS

Year	Payments for Current Actives	Payments for Current Inactives	Total Payments
2023	173,676	3,694,953	3,868,629
2024	249,639	3,743,238	3,992,877
2025	330,675	3,797,286	4,127,961
2026	377,368	3,828,140	4,205,508
2027	458,657	3,865,052	4,323,709
2028	567,410	3,905,689	4,473,099
2029	730,994	3,953,875	4,684,869
2030	996,634	3,960,942	4,957,576
2031	1,381,488	3,961,211	5,342,699
2032	1,361,545	3,954,746	5,316,291
2033	1,416,907	3,941,628	5,358,535
2034	1,627,773	3,926,357	5,554,130
2035	2,047,496	3,909,284	5,956,780
2036	2,364,098	3,884,927	6,249,025
2037	2,592,122	3,842,525	6,434,647
2038	2,683,194	3,791,679	6,474,873
2039	2,703,471	3,736,369	6,439,840
2040	2,824,110	3,674,070	6,498,180
2041	2,882,796	3,604,117	6,486,913
2042	2,821,850	3,526,327	6,348,177
2043	2,789,423	3,440,698	6,230,121
2044	2,932,730	3,352,950	6,285,680
2045	3,060,279	3,254,008	6,314,287
2046	3,254,413	3,132,421	6,386,834
2047	3,476,975	2,997,228	6,474,203
2048	3,592,700	2,866,408	6,459,108
2049	3,604,740	2,717,274	6,322,014
2050	3,737,881	2,546,230	6,284,111
2051	3,839,335	2,380,981	6,220,316
2052	4,040,205	2,233,551	6,273,756
2053	4,012,988	2,091,503	6,104,491
2054	3,932,129	1,951,728	5,883,857
2055	4,010,892	1,810,377	5,821,269
2056	4,091,098	1,669,569	5,760,667
2057	4,112,560	1,529,634	5,642,194
2058	4,134,462	1,391,925	5,526,387
2059	4,049,512	1,266,389	5,315,901
2060	3,976,568	1,149,613	5,126,181
2061	3,960,490	1,040,688	5,001,178
2062	3,871,094	939,498	4,810,592

SUPPLEMENTAL ANNUITY VALUATION

Valuation Date	6/30/2023	6/30/2022
Applicable to Fiscal Year Beginning	<u>7/1/2024</u>	<u>7/1/2023</u>
Total Actuarial Accrued Liability	4,017,964	3,885,922
Market Value of Assets	<u>2,591,233</u>	<u>2,314,927</u>
Unfunded Actuarial Accrued Liability	1,426,731	1,570,995
Pension Cost		
Total Normal Cost (EAN) ¹	36,472	48,336
Administrative Expenses ¹	4,696	0
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 10 years (as of 6/30/2023) ¹	206,907	228,872
Total Recommended Contribution	248,075	277,208

¹ Contributions developed as of 6/30/2023 displayed above have been adjusted to account for assumed interest.

SUPPLEMENTAL ANNUITY VALUATION
BY DIVISION

	<u>General</u>	<u>Public Safety</u>	<u>Total</u>
Total Actuarial Accrued Liability	3,716,204	301,760	4,017,964
Market Value of Assets	<u>2,396,624</u>	<u>194,609</u>	<u>2,591,233</u>
Unfunded Actuarial Accrued Liability	1,319,580	107,151	1,426,731
 Pension Cost - Total			
Total Normal Cost	36,472	0	36,472
Administrative Expenses	4,696	0	4,696
UAAL Amortization	<u>191,367</u>	<u>15,540</u>	<u>206,907</u>
Total Recommended Contribution	232,535	15,540	248,075
 Pension Cost - Dollars Per Active Member			
Total Normal Cost	776	0	
UAAL Amortization	<u>4,072</u>	<u>536</u>	
Total Recommended Contribution	4,948	536	
 Participant Summary			
Counts			
Actives	47	29 ¹	76
Retirees and Beneficiaries	52	8	60
 Supplemental Annuities			
Total Annuities	254,319	40,101	294,420
Average Annuities	4,891	5,013	4,907

¹ Summarized for cost per active member only. Currently no Public Safety members are eligible.

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	7.40% per year compounded annually, net of investment related expenses.
Mortality Rate	<p>Active Lives PubS-2010 and PubG-2010 Employee mortality tables, with generational improvements using Scale MP-2018.</p> <p>Inactive Lives PubS-2010 and PubG-2010 Healthy Retiree mortality tables, with generational improvements using Scale MP-2018.</p>
Retirement Age	See table later in this section.
Disability Rate	0.20% for all general employees. 0.60% for all public safety employees. 100% of disabilities are assumed to be in the non-duty.
Termination Rate	See table later in this section.
Inflation	2.50%.
Salary Increases	See table below.

Ages	Inflation	Merit and Longevity	
		General	Public Safety
20	3.50%	3.84%	2.99%
25	3.50%	3.13%	2.99%
30	3.50%	2.69%	2.60%
35	3.50%	2.37%	1.10%
40	3.50%	2.14%	0.20%
45	3.50%	1.68%	0.20%
50	3.50%	1.14%	0.20%
55	3.50%	0.66%	0.10%
60	3.50%	0.16%	0.00%

Marital Status	90% of Members are assumed to be married.
Spouse's Age	Males are assumed to be three years older than females.
Member Contribution Interest	2.00%.
Cost-of-Living Adjustment	2.50%.

Annuity Withdrawal Assumptions	100% of members are assumed to elect a lump sum of member contributions in exchange for a reduced annuity benefit at retirement. The annuity offset is equal to the annuitized value of the member contributions using a 7.40% assumed interest rate.												
EROP Assumptions	<p>100% of eligible members elect to enter EROP according to the assumed retirement rates.</p> <p>Members are assumed to remain in EROP for 5 years and take their balance at the end of the EROP period.</p> <p>The EROP is assumed to continue beyond the six-year sunset provision. Members who become eligible to enter EROP after the six-year sunset are assumed to elect EROP when eligible.</p>												
Funding Method	Entry Age Normal.												
Actuarial Asset Method	Investment gains and losses are smoothed over a five-year period. In the first year, 20% of the gain or loss is recognized. In the second year 40%, in the third year 60%, in the fourth year 80%, and in the fifth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of the Market Value of Assets.												
Funding Policy Amortization Method	<p>The UAAL is amortized according to a level percentage of payroll method. The initial amortization amount is 100% of the Accrued Liability less the Actuarial Value of Assets. Ultimately, the amortization period will be a 15-year rolling methodology, with a phase in to 15 years as follows:</p> <table> <tr> <td>2023</td><td>20 Year Amortization</td></tr> <tr> <td>2024</td><td>19 Year Amortization</td></tr> <tr> <td>2025</td><td>18 Year Amortization</td></tr> <tr> <td>2026</td><td>17 Year Amortization</td></tr> <tr> <td>2027</td><td>16 Year Amortization</td></tr> <tr> <td>2028 and Later</td><td>15 Year Amortization</td></tr> </table> <p>The use of a rolling amortization methodology with a reasonable amortization period and coupled with a payroll growth rate that is not too high will produce a significant annual payment towards the principal on the UAAL, resulting in an annual decrease in the UAAL, assuming the actuarial assumptions materialize.</p> <p>The UAAL for the supplemental plan is amortized over a 10-year rolling period according to a level dollar basis.</p>	2023	20 Year Amortization	2024	19 Year Amortization	2025	18 Year Amortization	2026	17 Year Amortization	2027	16 Year Amortization	2028 and Later	15 Year Amortization
2023	20 Year Amortization												
2024	19 Year Amortization												
2025	18 Year Amortization												
2026	17 Year Amortization												
2027	16 Year Amortization												
2028 and Later	15 Year Amortization												
Payroll Growth	3.00%.												

Administrative Expenses

Expenses paid out of the fund other than investment-related expenses are assumed to be equal to the average of those paid in the previous 3 years, rounded to the nearest 1,000.

Basis for Assumptions

Experience study dated April 24, 2023.

Decrement Tables

General - % Terminating During the Year							Public Safety - % Terminating During the Year						
Service							Service						
Age	0	1	2	3	4	5+	Age	0	1	2	3	4	5+
<							< 27	3%	3%	4%	8%	3%	3.0%
27	10%	15%	15%	20%	8%	7.0%	30	3%	3%	4%	8%	3%	3.0%
30	10%	15%	15%	20%	8%	7.0%	35	3%	3%	4%	8%	3%	2.0%
35	10%	15%	15%	20%	8%	5.0%	40	3%	3%	4%	8%	3%	1.0%
40	10%	15%	15%	20%	8%	4.0%	45	3%	3%	4%	8%	3%	0.5%
45	10%	15%	15%	20%	8%	3.0%	50	3%	3%	4%	8%	3%	0.5%
50	10%	15%	15%	20%	8%	3.0%	55+	3%	3%	4%	8%	3%	1.0%
55+	10%	15%	15%	20%	8%	1.0%							

% Retiring During the Year		
	General	Public Safety
Age	Rate	Rate
50-53	20%	20%
54	35%	20%
55	35%	30%
56	35%	10%
57-58	20%	10%
59	40%	10%
60	40%	40%
61-62	10%	40%
63	10%	50%
64	10%	70%
65-66	30%	100%
67	40%	100%
68	50%	100%
69	70%	100%
70+	100%	100%

GLOSSARY

Total Annual Payroll is the projected annual rate of pay for the fiscal year following the valuation date of all covered members.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Normal (Current Year's) Cost is the current year's cost for benefits yet to be funded.

Unfunded Accrued Liability is the excess of the Accrued Actuarial Liability over the Actuarial Value of Assets.

Total Recommended Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability over closed period (20 years as of June 30, 2023). The recommended amount is adjusted for interest according to the timing of contributions during the year.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

- (a) The normal cost accrual rate equals:
 - (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
 - (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.
- (b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
- (c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various assumption scenarios. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.
- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

- Contribution Risk: This risk results from the potential that actual employer contributions may deviate from actuarially determined contributions, which are determined in accordance with the Board's funding policy. The funding policy is intended to result in contribution requirements that if paid when due, will result in a reasonable expectation that assets will accumulate to be sufficient to pay plan benefits when due. Contribution deficits, particularly large deficits and those that occur repeatedly, increase future contribution requirements and put the plan at risk for not being able to pay plan benefits when due.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature plans with a substantial inactive liability. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled "Plan Maturity Measures and Other Risk Metrics". Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has decreased from 68.1% on June 30, 2020 to 63.3% on June 30, 2023, indicating that the plan has been maturing.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 73.7%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors will need to be made up for over a shorter time horizon than would be needed for a less mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has stayed approximately the same from June 30, 2020 to June 30, 2023.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, stayed approximately the same from June 30, 2020 to June 30, 2023. The current Net Cash Flow Ratio of -4.1% indicates that contributions are not currently covering the plan's benefit payments and administrative expenses.

Low Default-Risk Obligation Measure

ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, was revised as of December 2021 to include a “low-default-risk obligation measure” (LDROM). This liability measure is consistent with the determination of the actuarial accrued liability shown on page 8 in terms of member data, plan provisions, and assumptions/methods, including the use of the Entry Age Normal Cost Method, except that the interest rate is tied to low-default-risk fixed income securities. The S&P Municipal Bond 20 Year High Grade Rate Index (daily rate closest to, but not later than, the measurement date) was selected to represent a current market rate of low risk but longer-term investments that could be included in a low-risk asset portfolio. The interest rate used in this valuation was 4.13%, resulting in an LDROM of \$99,657,134. The LDROM should not be considered the “correct” liability measurement; it simply shows a possible outcome if the Board elected to hold a very low risk asset portfolio. Given that plan benefits are paid over time through the combination of contributions and investment returns, prudent investments selected by the Board help to balance asset accumulation through these two sources.

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>6/30/2023</u>	<u>6/30/2022</u>	<u>6/30/2021</u>	<u>6/30/2020</u>
<u>Support Ratio</u>				
Total Actives	76	79	78	77
Total Inactives	120	119	115	113
Actives / Inactives	63.3%	66.4%	67.8%	68.1%
 <u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	40,385,352	38,115,937	45,943,628	35,546,210
Total Annual Payroll	5,661,562	5,668,368	5,616,709	5,003,657
MVA / Total Annual Payroll	713.3%	672.4%	818.0%	710.4%
 <u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	47,717,543	45,385,090	43,672,884	42,863,926
Total Accrued Liability	64,735,178	62,517,270	63,085,667	59,468,968
Inactive AL / Total AL	73.7%	72.6%	69.2%	72.1%
 <u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	42,304,500	41,703,710	41,121,607	39,020,573
Total Accrued Liability	64,735,178	62,517,270	63,085,667	59,468,968
AVA / Total Accrued Liability	65.4%	66.7%	65.2%	65.6%
 <u>Net Cash Flow Ratio</u>				
Net Cash Flow ¹	(1,653,442)	(1,303,740)	(1,712,263)	(1,805,866)
Market Value of Assets (MVA)	40,385,352	38,115,937	45,943,628	35,546,210
Ratio	-4.1%	-3.4%	-3.7%	-5.1%

¹ Determined as total contributions minus benefit payments and administrative expenses.

STATEMENT OF FIDUCIARY NET POSITION
June 30, 2023

<u>ASSETS</u>	MARKET VALUE
Total Cash and Equivalents	683,096
Receivables:	
Accounts Receivable-Other	1,057
Total Receivable	1,057
Investments:	
Fixed Income	7,221,418
Domestic and International Equities	15,041,921
Other Investments	17,437,860
Total Investments	39,701,199
Total Assets	40,385,352
<u>LIABILITIES</u>	
Total Liabilities	0
Net Assets:	
Active and Retired Members' Equity	40,385,352
NET POSITION RESTRICTED FOR PENSIONS	40,385,352
TOTAL LIABILITIES AND NET ASSETS	40,385,352

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED June 30, 2023
Market Value Basis

ADDITIONS

Contributions:

Member	297,963
City	2,042,555

Total Contributions	2,340,518
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Investment Income:

Interest & Dividends	3,965,431
Less Expenses ¹	(42,574)

Net Investment Income	3,922,857
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Total Additions	6,263,375
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DEDUCTIONS

Distributions to Members:

Benefit Payments	3,921,734
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Total Distributions	3,921,734
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Administrative Expenses	72,226
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Total Deductions	3,993,960
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Net Increase in Net Position	2,269,415
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NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	38,115,937
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End of the Year	40,385,352
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¹ Expenses include investment advisory, custodial and performance monitoring fees

ACTUARIAL ASSET VALUATION

June 30, 2023

Development of Actuarial Value of Assets

Market Value of Assets, 6/30/2023	40,385,352
(Gains)/Losses Not Yet Recognized	1,919,148
Preliminary Actuarial Value of Assets, 6/30/2023	42,304,500
6/30/2023 Limited Actuarial Assets, Total	42,304,500

Development of Investment Gain/Loss

Market Value of Assets, 6/30/2022	38,115,937
Actuarial Value of Assets, 6/30/2022	41,703,710
Contributions Less Benefit Payments and Administrative Expenses	(1,653,442)
Expected Investment Earnings ¹	3,065,774
Actual Net Investment Earnings	3,922,857
2023 Actuarial Investment Gain/(Loss)	857,083

¹ Expected Investment Earnings = 7.50% x (41,703,710 + 0.5 x -1,653,442)

Plan Year Ending	Gain/(Loss)	Gains/(Losses) Not Yet Recognized				
		Amounts Not Yet Recognized by Valuation Year				
		2023	2024	2025	2026	2027
6/30/2018	0	0	0	0	0	0
6/30/2019	(1,760,767)	0	0	0	0	0
6/30/2020	(2,842,690)	(568,538)	0	0	0	0
6/30/2021	9,247,348	3,698,939	1,849,470	0	0	0
6/30/2022	(9,558,691)	(5,735,215)	(3,823,476)	(1,911,738)	0	0
6/30/2023	857,083	685,666	514,250	342,833	171,417	0
Total		(1,919,148)	(1,459,756)	(1,568,905)	171,417	0

Development of Asset Returns

(A) 6/30/2022 Actuarial Assets:	41,703,710
(I) Net Investment Income:	
1. Change in Actuarial Value	(1,668,625)
2. Investment Expenses	(42,574)
Total	2,254,232
(B) 6/30/2023 Preliminary Actuarial Assets:	42,304,500
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	5.51%
Market Value of Assets Rate of Return:	10.52%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(811,542)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
June 30, 2023
Actuarial Asset Basis

	INCOME	
Contributions:		
Member	297,963	
City	2,042,555	
Total Contributions		2,340,518
Earnings from Investments		
Interest & Dividends	3,965,431	
Change in Actuarial Value	(1,668,625)	
Total Earnings and Investment Gains		2,296,806
	EXPENSES	
Administrative Expenses:		
Investment Related ¹	42,574	
Other	72,226	
Total Administrative Expenses		114,800
Distributions to Members:		
Benefit Payments	3,921,734	
Total Distributions		3,921,734
Change in Net Assets for the Year		600,790
Net Assets Beginning of the Year		41,703,710
Net Assets End of the Year		42,304,500
Excess Earnings Reserve		

¹ Investment Related expenses include investment advisory, custodial and performance monitoring fees.

STATISTICAL DATA

Valuation Date	<u>6/30/2023</u>	<u>6/30/2022</u>	<u>6/30/2021</u>	<u>6/30/2020</u>
<u>Actives</u>				
Number	76	79	78	77
Average Current Age	43.4	44.4	45.1	45.8
Average Age at Employment	32.2	33.2	33.0	33.5
Average Past Service	11.2	11.2	12.1	12.3
Average Annual Salary	\$71,163	\$68,679	\$68,880	\$62,222
<u>Service Retirees</u>				
Number	90	86	86	86
Average Current Age	69.5	69.1	69.4	N/A
Average Annual Benefit	\$35,004	\$35,037	\$33,872	\$33,262 ¹
EROP Retirees incl. in Retirees	0	0	0	0
<u>Beneficiaries</u>				
Number	18	17	16	13
Average Current Age	74.3	74.6	74.8	N/A
Average Annual Benefit	\$30,932	\$30,187	\$30,894	N/A
EDROs incl. in Beneficiaries	3	3	2	2
<u>Disability Retirees</u>				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
<u>Terminated Vested</u>				
Number	12	16	13	14
Average Current Age	53.6	50.7	N/A	N/A
Average Annual Benefit ²	\$12,234	\$11,409	\$11,460	\$11,513

¹ 6/30/2020 Retiree average annual benefit amount includes retirees, beneficiaries and disableds.

² Average Annual Benefit for Terminated Vested members reflects the benefit for members entitled to a future annual benefit from the plan.

STATISTICAL DATA BY DIVISION

	<u>6/30/2023</u>	<u>6/30/2022</u>	<u>6/30/2021</u>	<u>6/30/2020</u>
<u>Actives - General</u>				
Number	47	50	49	48
Average Current Age	44.5	45.1	46.3	47.6
Average Age at Employment	35.0	35.9	35.8	36.6
Average Past Service	9.6	9.2	10.6	11.0
Average Annual Salary	\$59,224	\$56,213	\$57,476	\$51,583
<u>Actives - Public Safety</u>				
Number	29	29	29	29
Average Current Age	41.6	43.3	43.1	42.7
Average Age at Employment	27.7	28.6	28.5	28.3
Average Past Service	13.9	14.6	14.6	14.4
Average Annual Salary	\$90,511	\$90,172	\$88,148	\$79,832

AGE AND SERVICE DISTRIBUTION
TOTAL

AGE	PAST SERVICE											Total	Total Pay ¹
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+		
20 - 24	1	1	0	0	0	0	0	0	0	0	0	2	\$ 101,571
25 - 29	2	1	2	1	0	0	0	0	0	0	0	6	\$ 337,025
30 - 34	2	3	0	0	0	4	0	0	0	0	0	9	\$ 594,438
35 - 39	0	2	2	1	0	3	2	1	0	0	0	11	\$ 658,065
40 - 44	1	0	0	0	0	1	1	6	3	0	0	12	\$ 1,043,740
45 - 49	0	0	0	0	1	1	0	2	6	0	0	10	\$ 772,498
50 - 54	0	1	0	0	2	3	0	2	5	3	0	16	\$ 1,235,784
55 - 59	1	0	0	0	0	2	0	0	1	1	0	5	\$ 381,455
60 - 64	0	1	0	1	0	2	0	0	0	0	0	4	\$ 232,008
65+	0	0	0	0	0	0	1	0	0	0	0	1	\$ 51,779
Total	7	9	4	3	3	16	4	11	15	4	0	76	\$ 5,408,364

¹ Total Pay is salaries for the period ending 6/30/2023.

AGE AND SERVICE DISTRIBUTION
GENERAL

AGE	PAST SERVICE											Total	Total Pay ¹
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+		
20 - 24	0	1	0	0	0	0	0	0	0	0	0	1	\$ 47,056
25 - 29	1	1	1	1	0	0	0	0	0	0	0	4	\$ 199,519
30 - 34	1	2	0	0	0	1	0	0	0	0	0	4	\$ 191,928
35 - 39	0	2	2	0	0	3	2	1	0	0	0	10	\$ 584,334
40 - 44	1	0	0	0	0	1	0	1	0	0	0	3	\$ 180,001
45 - 49	0	0	0	0	1	1	0	0	4	0	0	6	\$ 355,451
50 - 54	0	1	0	0	2	2	0	1	2	3	0	11	\$ 763,466
55 - 59	1	0	0	0	0	1	0	0	1	0	0	3	\$ 178,007
60 - 64	0	1	0	1	0	2	0	0	0	0	0	4	\$ 232,008
65+	0	0	0	0	0	0	1	0	0	0	0	1	\$ 51,779
Total	4	8	3	2	3	11	3	3	7	3	0	47	\$ 2,783,550

¹ Total Pay is salaries for the period ending 6/30/2023.

AGE AND SERVICE DISTRIBUTION
PUBLIC SAFETY

AGE	PAST SERVICE											Total	Total Pay ¹
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+		
20 - 24	1	0	0	0	0	0	0	0	0	0	0	1	\$ 54,515
25 - 29	1	0	1	0	0	0	0	0	0	0	0	2	\$ 137,506
30 - 34	1	1	0	0	0	3	0	0	0	0	0	5	\$ 402,510
35 - 39	0	0	0	1	0	0	0	0	0	0	0	1	\$ 73,731
40 - 44	0	0	0	0	0	0	1	5	3	0	0	9	\$ 863,739
45 - 49	0	0	0	0	0	0	0	2	2	0	0	4	\$ 417,047
50 - 54	0	0	0	0	0	1	0	1	3	0	0	5	\$ 472,318
55 - 59	0	0	0	0	0	1	0	0	0	1	0	2	\$ 203,448
60 - 64	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0
65+	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0
Total	3	1	1	1	0	5	1	8	8	1	0	29	\$2,624,814

¹ Total Pay is salaries for the period ending 6/30/2023.

AGE DISTRIBUTION
RETIREES, DISABLEDS AND BENEFICIARIES

AGE	<u>General</u>		<u>Public Safety</u>		<u>Total</u>	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
< 45	0	\$ 0	0	\$ 0	0	\$ 0
45 - 49	0	\$ 0	2	\$ 89,941	2	\$ 89,941
50 - 54	1	\$ 32,386	1	\$ 44,957	2	\$ 77,343
55 - 59	3	\$ 85,103	6	\$ 281,262	9	\$ 366,365
60 - 64	11	\$ 215,869	8	\$ 385,427	19	\$ 601,296
65 - 69	12	\$ 288,386	8	\$ 415,052	20	\$ 703,438
70 - 74	12	\$ 293,768	8	\$ 379,238	20	\$ 673,006
75 - 79	4	\$ 48,621	11	\$ 482,427	15	\$ 531,048
80 - 84	7	\$ 178,773	7	\$ 343,402	14	\$ 522,175
85 - 89	6	\$ 114,327	1	\$ 28,200	7	\$ 142,527
90 - 94	0	\$ 0	0	\$ 0	0	\$ 0
95 - 99	0	\$ 0	0	\$ 0	0	\$ 0
100 +	0	\$ 0	0	\$ 0	0	\$ 0
Total	56	\$ 1,257,234	52	\$ 2,449,904	108	\$ 3,707,139

AGE DISTRIBUTION
INACTIVE VESTED MEMBERS

AGE	<u>General</u>		<u>Public Safety</u>		<u>Total</u>	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
< 45	1	\$ 7,739	0	\$ 0	1	\$ 7,739
45 - 49	2	\$ 22,314	0	\$ 0	2	\$ 22,314
50 - 54	3	\$ 32,172	0	\$ 0	3	\$ 32,172
55 - 59	5	\$ 66,103	0	\$ 0	5	\$ 66,103
60 - 64	0	\$ 0	0	\$ 0	0	\$ 0
65+	1	\$ 6,240	0	\$ 0	1	\$ 6,240
Total	12	\$ 134,569	0	\$ 0	12	\$ 134,569

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 6/30/2022	79
b. Terminations	
i. Vested (partial or full) with deferred benefits	0
ii. Non-vested or full lump sum distribution received	(1)
iii. Refunded	(4)
c. Deaths	
i. Beneficiary receiving benefits	(1)
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(4)
f. EROP	<u>0</u>
g. Continuing participants	69
h. New entrants	<u>7</u>
i. Total active life participants in valuation	76

2. Non-Active lives (including beneficiaries receiving benefits)

	Service Retirees, Vested Receiving <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested <u>Deferred</u>	<u>Total</u>
a. Number prior valuation	86	17	0	16	119
Retired	6	0	0	(2)	4
EROP	0	0	0	0	0
Vested Deferred	0	0	0	0	0
Death, With Survivor	(1)	2	0	0	1
Death, No Survivor	(1)	(1)	0	0	(2)
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	(3)	(3)
Rehires	0	0	0	0	0
New EDROs	0	0	0	0	0
Terminated, Due Refund	0	0	0	1	1
Hired/Termed in Same Year	0	0	0	0	0
b. Number current valuation	90	18	0	12	120

SUMMARY OF CURRENT PLAN PROVISIONS

Plan Administration	<p>The Plan is a single employer defined benefit pension plan administered by a Board of Trustees comprised of five members:</p> <ul style="list-style-type: none">a.) The Mayor,b.) A member of the City Council,c.) A resident appointed by the Mayor, andd.) Two employees (one general and one public safety).
Final Average Compensation (FAC)	<p>General members: Highest 4 years.</p> <p>Communications Dispatcher: Highest 4 years.</p> <p>Public Safety Officers: Highest 4 years.</p> <p>Public Safety Command Officers: Highest 3 calendar years of compensation out of the last eight calendar years prior to retirement.</p>
Regular Retirement	
Eligibility	<p>Age 50 with 25 years of service, age 55 with 20 years of service, or age 60 with 10 or more years of service.</p>
Annual Benefit	<p>General members hired before March 30, 2011: FAC times sum of 2.00% times the first 25 years of service plus 1.00% times years of service in excess of 25 years.</p> <p>General members hired after March 30, 2011: 1.75% times FAC times years of service.</p> <p>Dispatchers/Communications Dispatcher hired before July 1, 2011: 2.125% times FAC times years of service.</p> <p>Dispatchers/Communications Dispatcher hired after July 1, 2011: 1.75% times FAC times years of service.</p> <p>Public Safety Officers and Command: 2.50% times FAC times years of service, maximum of 75% of FAC.</p>

Duty Disability Retirement

Eligibility	No age or service requirements.
Benefit	Computed as regular retirement with additional service credit granted to the earlier of the date the member would attain age 55 years or the date the member would have satisfied regular retirement eligibility conditions had the member continued in City employment. General/Communications Dispatcher members have worker's compensation offsets. Public Safety members, depending upon whether or not they are eligible for a service retirement at the time of injury, may elect to choose between worker's compensation benefits or a disability pension.

Non-Duty Disability Retirement

Eligibility	10 or more years of credited service.
Benefit	Computed as a regular retirement.

Deferred Retirement

Eligibility	10 or more years of service.
Annual Benefit	Computed as regular retirement but based on service and final average compensation at time of termination. Benefits begin at age 60.

Duty Death in Service Survivor's Pension

Eligibility	No age or service requirements. Must be in receipt of worker's compensation.
Benefit	Upon termination of worker's compensation a benefit equal to the worker's compensation amount shall be paid to the widow, unmarried children under 18 and dependent parents. Maximum benefit to the widow: 50% of final average compensation, to the children: 20% of final average compensation, and to the parents: 16-2/3% of final average compensation.

Non-Duty Death in Service Survivor's Pension

Eligibility	10 years of service.
Benefit	Computed as a regular retirement but actuarially reduced in accordance with a 100% joint and survivor election.

Employee Retention Option Plan (EROP)

Eligibility	Command and Public Safety Officers: Age 50 with 25 years of service, or Age 55 with 20 years of service. 5-year maximum period of participation.										
Benefit	85% of participant's regular monthly accrued retirement benefit deposited into EROP account earning 3.00% interest. Not subject to COLA increases. Member contributions cease upon EROP entry.										
Member Contributions	General members: 5.00% of annual compensation. Communications Dispatcher hired before July 1 2008: 6.00% of annual compensation. Communications Dispatcher hired after July 1 2008: 5.00% of annual compensation. Public Safety Members: 6.00% of annual compensation.										
Annuity Withdrawal	A member may withdraw accumulated member contributions in a lump sum at retirement. The retirement allowance is reduced by the actuarial equivalent of the annuity withdrawn, based on actuarial assumptions concerning interest and mortality used in the annual actuarial valuation.										
Pop-Up Provision	Upon the death of the beneficiary, a retiree who had previously selected either Option II or Option III will have the retirement allowance recomputed as a straight life allowance.										
Supplemental Annuities											
Eligibility	Age 50 with 25 years of service, age 55 with 20 years of service, or age 60 with 20 years of service. General members who qualify for a disability retirement are also eligible. Public Safety members with retirements effective after December 31, 1994 are not eligible.										
Amount	<table> <tr> <th><u>Years of Service</u></th><th><u>Monthly Benefit</u></th></tr> <tr> <td>10-14</td><td>\$250</td></tr> <tr> <td>15-19</td><td>300</td></tr> <tr> <td>20-24</td><td>350</td></tr> <tr> <td>25+</td><td>400</td></tr> </table>	<u>Years of Service</u>	<u>Monthly Benefit</u>	10-14	\$250	15-19	300	20-24	350	25+	400
<u>Years of Service</u>	<u>Monthly Benefit</u>										
10-14	\$250										
15-19	300										
20-24	350										
25+	400										

Post-Retirement Cost-of-Living

Eligibility

Hired before July 1, 2016.

Amount

Annual adjustments based upon changes in the Consumer Price Index subject to a maximum increase of 2.5% of the adjusted retirement allowance. The cost-of-living adjustment shall be paid on both the base pensions and, for retirements on or after 7/1/90, supplemental annuity distributions.

City of Grosse Pointe Woods Employees' Retirement System

Summary Annual Report

June 30, 2023

Dear Member:

The following is a summary of your retirement System. Each year, an actuarial valuation is prepared to compare assets to liabilities. Assets are held and invested in a trust separate from other City assets. The only disbursements from this trust are to members who are retired or disabled, beneficiaries of members, members who receive contribution refunds, and for Retirement System expenses.

As Retirement Board Members, our tasks include making sure trust assets are invested prudently, required City and member contributions are received and that benefits are paid in accordance with the Retirement System's provisions.

Various professionals are hired to help in the administration of the System. They are listed in the column to the right.

The City is funding Retirement System benefits as they accrue in accordance with a sound level percent of payroll funding objective.

Respectfully submitted,

Board of Trustees
City of Grosse Pointe Woods Retirement System

Board Members

Arthur W. Bryant
Chairman

Brian Conigliaro
Trustee

Matthew Crook,
Trustee

Victoria Granger,
Trustee

Gary Zarb,
Trustee

Shawn Murphy
Pension Administrator

Tina Hoenicke
Board Secretary

Actuarial Information Used for this Report:

1. 76 active members
2. 108 retirees/beneficiaries (and 12 deferred retirees)
3. Plan is open to new hires
4. \$35,004 average annual pension benefit
5. \$3,921,734 annual pension benefits paid
6. \$5,408,364 valuation payroll used (Combined General and Public Safety)
7. Employer's normal cost of benefits **effective July 1, 2024** is 8.38% General Employees and 11.29% for Public Safety employees.
8. Employer's actual total contribution rate **effective July 1, 2024** is 39.14% General employees and 42.04% for Public Safety employees
9. Weighted average member contribution rate **effective July 1, 2024** is 5.37% General employees and 6.44% for Public Safety employees.
10. The required employer contribution for the fiscal year was received
11. 7.40% assumed rate of investment return (net of expenses)
12. 3.0% assumed rate of long-term wage inflation
13. 5-year smoothing method used
14. 20-year amortization period that will phase into a 15 year open amortization period
15. Method used is level percent of payroll
16. Cost method is individual entry-age
17. Current funding value of assets is 65.4% of accrued liability

Professional Advisors

Investment Fiduciaries
Fund Evaluation Group (FEG)

Service Providers

Rosati, Schultz, Joppich & Amtsbuechler, P.C.
City Attorney

Foster & Foster Actuaries & Consultants,
Actuary
Michael VanOverbeke,
Special Pension Attorney

Investment Performance*

	1	3	5	7	10
Combined	Year	Year	Year	Year	Year
Account	10.7%	8.5%	5.9%	6.8%	6.2%

*Calendar year ending June 30, 2023 (net of fees)

2022-2023 Actual Expenditures

Pension Payments/ Withdrawals:	\$ 3,730,726
Refund of Member Contributions:	\$ 191,008
Investment Fees:	\$ 42,754
Memberships/Training/Education:	\$ 188
Administrative Expenses:	\$ 72,038
Total:	<u>\$ 4,036,534</u>

City of Grosse Pointe Woods Employees' Retirement System

Summary Annual Report (cont.)

Actuarial Valuation Summary

Foster & Foster Actuaries and Consultants were hired to prepare the June 30, 2023 Actuarial Valuation. The funding objective of the System is to contribute an amount as a percent of payroll that remains level from year to year. The actual level of contribution is dependent on past and assumed future experience, including investment performance, and benefit provisions.

Below is a summary of the results:

Contribution Requirements	<u>General</u>	<u>Public Safety</u>
Normal Cost of Benefits		
Total	13.75%	17.73%
Member portion	5.37%	6.44%
Employer portion	8.38%	11.29%
Amortization of unfunded liability		
(20 years)	30.75%	30.75%
Computed Employer Rate	39.14%	42.04%

*Contribution rates are expressed as percents of eligible member payroll. *Weighted average.*

Assets & Liabilities

Funded Status

Market Value of Assets	\$ 40,385,351
Valuation Assets	\$ 42,304,500
Actuarial Accrued Liability	\$ 64,735,178
Funded Ratio	65.40%

Actuary's Statement – The System is being funded based on sound actuarial assumption, methods, and level percent of payroll funding objective. For a complete analysis, please review the June 30, 2023 actuarial valuation.

Revenues & Expenditures

Beginning Balance (Market Value) – July 1, 2022	\$ 38,115,937
Revenues	
Employees' contributions	\$ 297,963
Employer contribution	\$ 2,042,554
Investment income	\$ 3,922,857
Other Income	\$ 0
Total	\$ 6,263,374
Expenditures	
Pension payments	\$ 3,730,726
Refund of member contributions	\$ 191,008
Administrative Expenses	\$ 72,226
Total	\$ 3,993,960
Ending Balance (Market Value) – June 30, 2023	\$ 40,385,351
Recognized Return on Smoothed Funding Value of Assets	5.51%

City of Grosse Pointe Woods, Michigan

Required Supplementary Information Schedule of Changes in the Net Pension Liability and Related Ratios Pension Plan

Last Ten Fiscal Years

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service cost	\$ 1,029,506	\$ 1,080,805	\$ 1,459,769	\$ 1,381,734	\$ 1,419,981	\$ 872,705	\$ 812,794	\$ 893,380	\$ 692,961	\$ 675,799
Interest	4,655,548	4,517,849	4,149,881	4,160,628	4,115,769	3,739,452	3,713,413	3,802,189	3,521,128	3,499,326
Changes in benefit terms	(2,108,032)	196,683	-	-	-	-	-	-	-	-
Differences between expected and actual experience	716,258	(630,363)	(219,966)	(2,041,992)	61,396	1,898,141	(1,943,674)	(509,341)	501,262	(579,977)
Changes in assumptions	(5,158,946)	(2,730,443)	(13,509,818)	1,372,928	(2,730,629)	17,877,664	(3,946,934)	7,000,034	5,686,156	-
Benefit payments, including refunds	(3,921,734)	(3,586,669)	(3,570,576)	(3,403,902)	(3,346,109)	(3,354,997)	(3,215,776)	(3,187,512)	(3,315,548)	(3,092,014)
Net Change in Total Pension Liability	(4,787,400)	(1,152,138)	(11,690,710)	1,469,396	(479,592)	21,032,965	(4,580,177)	7,998,750	7,085,959	503,134
Total Pension Liability - Beginning of year	69,496,136	70,648,274	82,338,984	80,869,588	81,349,180	60,316,215	64,896,392	56,897,642	49,811,683	49,308,549
Total Pension Liability - End of year	\$ 64,708,736	\$ 69,496,136	\$ 70,648,274	\$ 82,338,984	\$ 80,869,588	\$ 81,349,180	\$ 60,316,215	\$ 64,896,392	\$ 56,897,642	\$ 49,811,683
Plan Fiduciary Net Position										
Contributions - Employer	\$ 2,042,555	\$ 2,044,344	\$ 1,623,076	\$ 1,406,409	\$ 1,215,450	\$ 1,230,649	\$ 1,076,052	\$ 925,683	\$ 889,829	\$ 888,696
Contributions - Member	297,963	290,887	282,203	262,296	263,799	249,835	243,096	252,579	258,967	275,808
Net investment income (loss)	3,922,857	(6,523,478)	12,109,682	157,140	1,291,520	2,128,175	3,992,724	(1,359,930)	15,073	6,669,874
Administrative expenses	(72,227)	(52,775)	(46,967)	(70,669)	(58,125)	(62,843)	(37,168)	(51,765)	(69,537)	(44,753)
Benefit payments, including refunds	(3,921,734)	(3,586,669)	(3,570,576)	(3,403,902)	(3,346,109)	(3,354,997)	(3,215,776)	(3,187,512)	(3,315,548)	(3,092,015)
Other	-	-	-	-	-	22,728	12,254	-	-	-
Net Change in Plan Fiduciary Net Position	2,269,414	(7,827,691)	10,397,418	(1,648,726)	(633,465)	213,547	2,071,182	(3,420,945)	(2,221,216)	4,697,610
Plan Fiduciary Net Position - Beginning of year	38,115,937	45,943,628	35,546,210	37,194,936	37,828,401	37,614,854	35,543,672	38,964,617	41,185,833	36,488,223
Plan Fiduciary Net Position - End of year	\$ 40,385,351	\$ 38,115,937	\$ 45,943,628	\$ 35,546,210	\$ 37,194,936	\$ 37,828,401	\$ 37,614,854	\$ 35,543,672	\$ 38,964,617	\$ 41,185,833
City's Net Pension Liability - Ending	\$ 24,323,385	\$ 31,380,199	\$ 24,704,646	\$ 46,792,774	\$ 43,674,652	\$ 43,520,779	\$ 22,701,361	\$ 29,352,720	\$ 17,933,025	\$ 8,625,850
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	62.41 %	54.85 %	65.03 %	43.17 %	45.99 %	46.50 %	62.36 %	55.02 %	68.48 %	82.69 %
Covered Payroll	\$ 5,408,364	\$ 5,425,650	\$ 5,372,630	\$ 4,791,109	\$ 4,716,600	\$ 4,544,155	\$ 4,493,845	\$ 4,592,611	\$ 4,651,563	\$ 4,411,702
City's Net Pension Liability as a Percentage of Covered Payroll	449.74 %	578.37 %	459.82 %	976.66 %	925.98 %	957.73 %	505.17 %	632.60 %	385.53 %	195.50 %

City of Grosse Pointe Woods, Michigan

Required Supplementary Information Schedule of Changes in the Net Pension Liability and Related Ratios Pension Plan (Continued)

Last Ten Fiscal Years

Assumption Changes

Assumption changes were made for each year as follows:

2015: Changed from the 1994 uninsured pension mortality table to the RP-2014 Healthy Annuitant Mortality Table and the discount rate from 8.0 to 6.82 percent
2016: Changed the investment rate of return from 8.0 to 7.8 percent, inflation from 4.0 to 3.5 percent, and the discount rate to 5.83 percent
2017: Changed the discount rate to 6.33 percent
2018: Changed the investment rate of return to 7.75 percent, inflation to 2.5 percent, the mortality table to the RP-2014 Mortality Table with MP-2017, and the discount rate to 5.12 percent
2019: Changed the discount rate to 5.21 percent
2020: Changed the investment rate of return to 7.50 percent, mortality table to the Pub-2010 Mortality Table with MP-2018 improvement scale, and the discount rate to 5.06 percent
2021: Changed the discount rate to 6.46 percent
2022: Changed the discount rate to 6.79 percent
2023: Changed the investment rate of return to 7.40 percent. Changed the discount rate to 7.35 percent due to a change in the crossover.

Changes in Benefit Terms

2023: The \$2.1 million change in benefit terms resulted from the plan's addition of an Employee Retention Option Plan (EROP).

City of Grosse Pointe Woods, Michigan

**Required Supplementary Information
Schedule of Pension Investment Returns
Pension Plan and Pension Plan Supplemental Annuity**

**Last Ten Fiscal Years
Years Ended June 30**

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return - Net of investment expense	7.97 %	(16.99)%	36.24 %	1.52 %	4.89 %	4.84 %	11.60 %	(3.50)%	0.10 %	8.00 %

City of Grosse Pointe Woods, Michigan

Required Supplementary Information Schedule of Pension Contributions Pension Plan

**Last Ten Fiscal Years
Years Ended June 30**

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	\$ 2,003,000	\$ 2,044,000	\$ 1,623,000	\$ 1,406,000	\$ 1,215,000	\$ 1,231,000	\$ 1,076,000	\$ 926,000	\$ 890,000	\$ 889,000
Contributions in relation to the actuarially determined contribution	2,043,000	2,044,000	1,623,000	1,406,000	1,215,000	1,231,000	1,076,000	926,000	890,000	889,000
Additional Contribution	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered Payroll	\$ 5,408,364	\$ 5,425,650	\$ 5,372,630	\$ 4,791,109	\$ 4,716,600	\$ 4,544,155	\$ 4,493,845	\$ 4,592,611	\$ 4,651,563	\$ 4,411,702
Contributions as a Percentage of Covered Payroll	37.77 %	37.67 %	30.21 %	29.35 %	25.76 %	27.09 %	23.94 %	20.17 %	19.13 %	17.06 %

Notes to Schedule of Pension Contributions - Pension Plan

Actuarial valuation information relative to the determination of contributions:

Valuation date Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which the contributions are reported. Covered payroll is as of June 30 of the current fiscal year.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll
Remaining amortization period	25 years, open
Asset valuation method	5-year smoothed market
Inflation	2.50 percent
Salary increase	3.50 - 7.30 percent, including inflation
Investment rate of return	7.40 percent - Net of expense
Mortality	Pub-2010 Mortality Table with MP-2018

City of Grosse Pointe Woods, Michigan

Required Supplementary Information Schedule of Changes in the Net Pension Liability and Related Ratios Supplemental Annuity

Last Ten Fiscal Years

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service cost	\$ 44,932	\$ 45,787	\$ 43,432	\$ 51,793	\$ 47,748	\$ 59,640	\$ 39,299	\$ 37,233	\$ 28,387	\$ 33,212
Interest	283,542	281,506	275,505	272,594	259,909	239,740	254,061	269,224	234,285	236,533
Differences between expected and actual experience	39,243	(22,217)	21,271	(151,559)	136,155	161,463	(227,980)	(232,788)	(399,452)	(42,908)
Changes in assumptions	47,379	-	(15,148)	(198,496)	(57,257)	567,907	-	86,953	831,276	-
Benefit payments, including refunds	(286,747)	(267,409)	(266,789)	(278,103)	(275,592)	(242,921)	(257,534)	(263,715)	(247,158)	(257,888)
Net Change in Total Pension Liability	128,349	37,667	58,271	(303,771)	110,963	785,829	(192,154)	(103,093)	447,338	(31,051)
Total Pension Liability - Beginning of year	3,878,998	3,841,331	3,783,060	4,086,831	3,975,868	3,190,039	3,382,193	3,485,286	3,037,948	3,068,999
Total Pension Liability - End of year	\$ 4,007,347	\$ 3,878,998	\$ 3,841,331	\$ 3,783,060	\$ 4,086,831	\$ 3,975,868	\$ 3,190,039	\$ 3,382,193	\$ 3,485,286	\$ 3,037,948
Plan Fiduciary Net Position										
Contributions - Employer	\$ 329,201	\$ 349,494	\$ 318,174	\$ 335,830	\$ 311,792	\$ 298,389	\$ 290,000	\$ 297,360	\$ 286,439	\$ 277,776
Net investment income (loss)	235,635	(368,012)	649,743	7,796	59,811	91,098	159,415	3,963	(9,093)	230,642
Administrative expenses	(4,372)	(7,005)	(2,519)	(3,506)	(2,693)	(5,768)	(995)	-	(22,140)	-
Benefit payments, including refunds	(286,747)	(267,409)	(266,789)	(278,103)	(275,592)	(242,921)	(257,534)	(263,715)	(247,158)	(257,888)
Other	2,589	2,024	-	-	-	960	-	-	-	-
Net Change in Plan Fiduciary Net Position	276,306	(290,908)	698,609	62,017	93,318	141,758	190,886	37,608	8,048	250,530
Plan Fiduciary Net Position - Beginning of year	2,314,927	2,605,835	1,907,226	1,845,209	1,751,891	1,610,133	1,419,247	1,381,639	1,373,591	1,123,061
Plan Fiduciary Net Position - End of year	\$ 2,591,233	\$ 2,314,927	\$ 2,605,835	\$ 1,907,226	\$ 1,845,209	\$ 1,751,891	\$ 1,610,133	\$ 1,419,247	\$ 1,381,639	\$ 1,373,591
City's Net Pension Liability - Ending	\$ 1,416,114	\$ 1,564,071	\$ 1,235,496	\$ 1,875,834	\$ 2,241,622	\$ 2,223,977	\$ 1,579,906	\$ 1,962,946	\$ 2,103,647	\$ 1,664,357
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	64.66 %	59.68 %	67.84 %	50.41 %	45.15 %	44.06 %	50.47 %	41.96 %	39.64 %	45.21 %
Covered Payroll	\$ 2,783,550	\$ 2,810,667	\$ 2,816,325	\$ 2,475,978	\$ 2,525,337	\$ 2,231,884	\$ 2,258,831	\$ 2,347,151	\$ 2,358,679	\$ 2,196,932
City's Net Pension Liability as a Percentage of Covered Payroll	50.87 %	55.65 %	43.87 %	75.76 %	88.77 %	99.65 %	69.94 %	83.63 %	89.19 %	75.76 %

City of Grosse Pointe Woods, Michigan

Required Supplementary Information Schedule of Changes in the Net Pension Liability and Related Ratios Supplemental Annuity (Continued)

Last Ten Fiscal Years

GASB Statement No. 67 was implemented for the FYE June 30, 2014 and does not require retroactive implementation. The required supplementary information is intended to show information for 10 years, and additional years' information will be displayed as it becomes available.

Assumption Changes

Assumption changes were made for each year as follows:

- 2015:** Changed from the 1994 uninsured pension mortality table to the RP-2014 Healthy Annuitant Mortality Table, inflation from 0.0 to 4.0 percent, and the discount rate from 8.0 to 7.98 percent
- 2016:** Changed the investment rate of return from 8.0 to 7.8 percent, inflation to 3.5 percent, and the discount rate to 7.71 percent
- 2018:** Changed the investment rate of return to 7.75 percent, inflation to 2.5 percent, the mortality table to the RP-2014 Mortality Table with MP-2017, and the discount rate to 6.73 percent
- 2019:** Changed the discount rate to 6.86 percent
- 2020:** Changed the investment rate of return to 7.50 percent, mortality table to the Pub-2010 Mortality Table with MP-2018 improvement scale, and the discount rate to 7.46 percent
- 2021:** Changed the discount rate to 7.50 percent
- 2023:** Changed the investment rate of return to 7.40 percent and the discount rate to 7.40 percent.

City of Grosse Pointe Woods, Michigan

Required Supplementary Information Schedule of Pension Contributions Supplemental Annuity

**Last Ten Fiscal Years
Years Ended June 30**

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	\$ 329,201	\$ 349,494	\$ 318,174	\$ 335,830	\$ 311,792	\$ 298,000	\$ 290,000	\$ 297,360	\$ 286,439	\$ 277,776
Contributions in relation to the actuarially determined contribution	329,201	349,494	318,174	335,830	311,792	298,000	290,000	297,360	286,439	277,776
Contribution Deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered Payroll	\$ 2,783,550	\$ 2,810,667	\$ 2,816,325	\$ 2,475,978	\$ 2,525,337	\$ 2,231,884	\$ 2,258,831	\$ 2,347,151	\$ 2,358,679	\$ 2,196,932
Contributions as a Percentage of Covered Payroll	11.83 %	12.43 %	11.30 %	13.56 %	12.35 %	13.35 %	12.84 %	12.67 %	12.14 %	12.64 %

Notes to Schedule of Pension Contributions - Supplemental Annuity

Actuarial valuation information relative to the determination of contributions:

Valuation date Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. Covered payroll is as of June 30 of the current fiscal year. Public safety members retiring after December 31, 1994 are not covered.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level dollar
Remaining amortization period	25 years, open
Asset valuation method	Market
Inflation	2.50 percent
Salary increase	0.00 percent
Investment rate of return	7.40 percent - Net of expense
Mortality	Pub-2010 Mortality Table with MP-2018



COMPOSITE PERFORMANCE REVIEW

Report for Periods Ending December 31, 2023

City of Grosse Pointe Woods Employees Retirement System



Presented by:

Jeffrey A. Davis, CFA, CAIA
Senior Vice President

Andrew Manley
Institutional Portfolio Analyst



City of Grosse Pointe Woods Employees Retirement System

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FOURTH QUARTER 2023 MARKET SUMMARY

Strong performance tailwinds that supported the financial markets in November persisted in December, punctuating a year marked by performance gains out of nearly every asset class and category. With the worst cyclical inflationary pressures likely in the rearview mirror, market participants embraced the Federal Reserve's (Fed) mid-December implicit confirmation of an anticipated easing in its current restrictive stance.

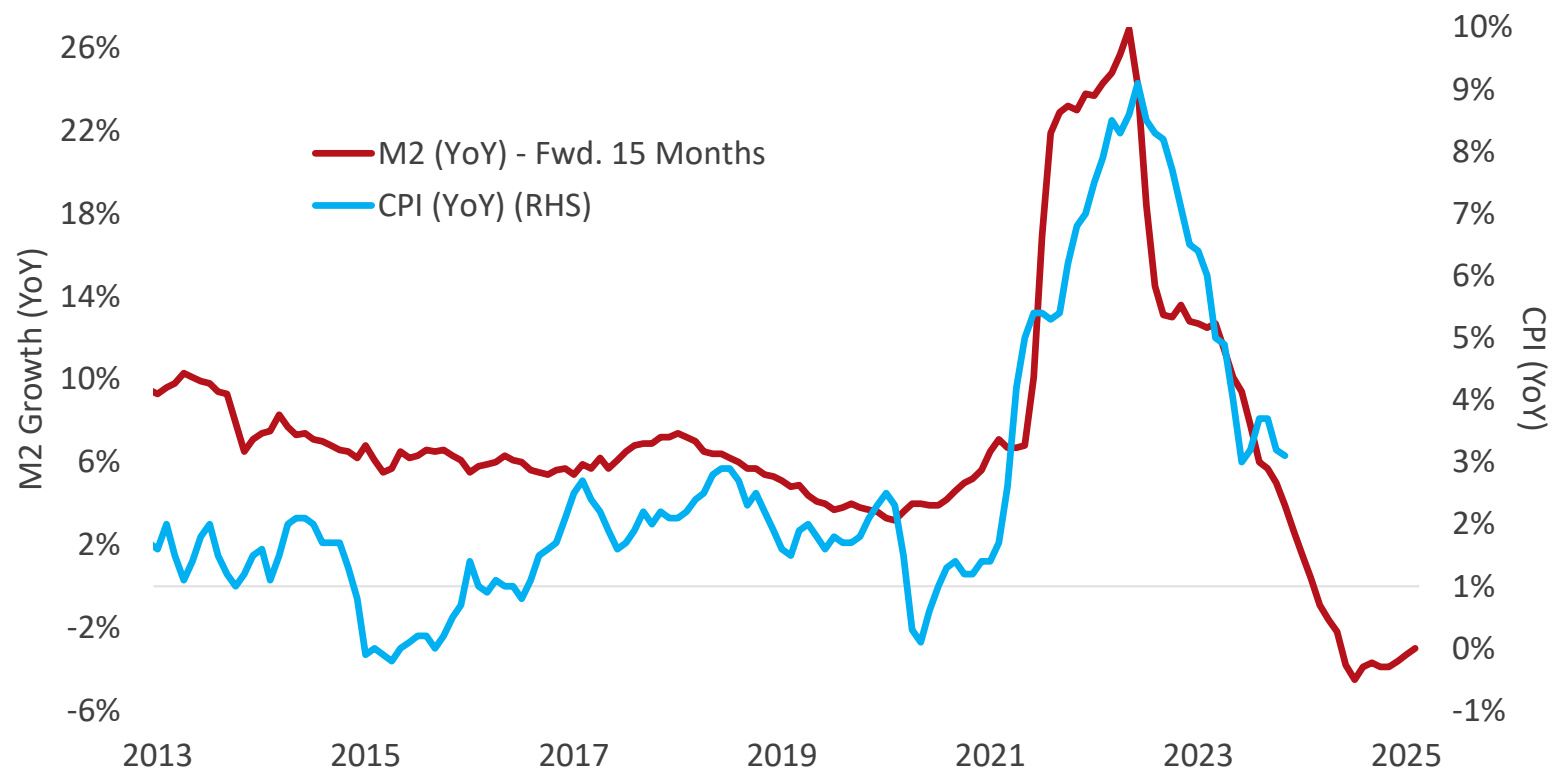
Across the equity markets, small capitalization U.S. stocks outperformed their larger cap counterparts in the fourth quarter. While positive in absolute terms, both international developed and emerging market equity gains underperformed domestic in the quarter, despite a meaningful move lower in the U.S. dollar in the year's final two months. After appearing on the verge of posting an unprecedented third consecutive calendar year decline, core bond returns rallied during the quarter, with the Bloomberg U.S. Aggregate Bond Index notching a 6.8% total return in the fourth quarter and a 5.5% gain for 2023. Similar to the equity and bond markets, real asset returns were generally positive, particularly for the interest-rate-sensitive real estate sector. In contrast, commodity futures faced performance headwinds amid global growth uncertainty.

ECONOMIC AND MARKET INSIGHTS

- U.S. headline inflation, which increased to a 9.1% annual pace in summer 2022, has since declined to a 3.1% rate through November 2023, with the sharp reversal in money supply growth continuing to serve as a downward force on inflation's advance.
- Despite downward pressure on inflation in 2023, core inflation not only stands at double the Federal Reserve's (Fed) 2% target, but "sticky" inflation remains above 4% and may prove a complicating factor in the Fed's aim at achieving a soft landing.

DECLINING MONEY GROWTH SHOULD HELP TEMPER INFLATION

M2 Money Growth, Forward 15 Months vs. Consumer Price Inflation, Year-over-Year



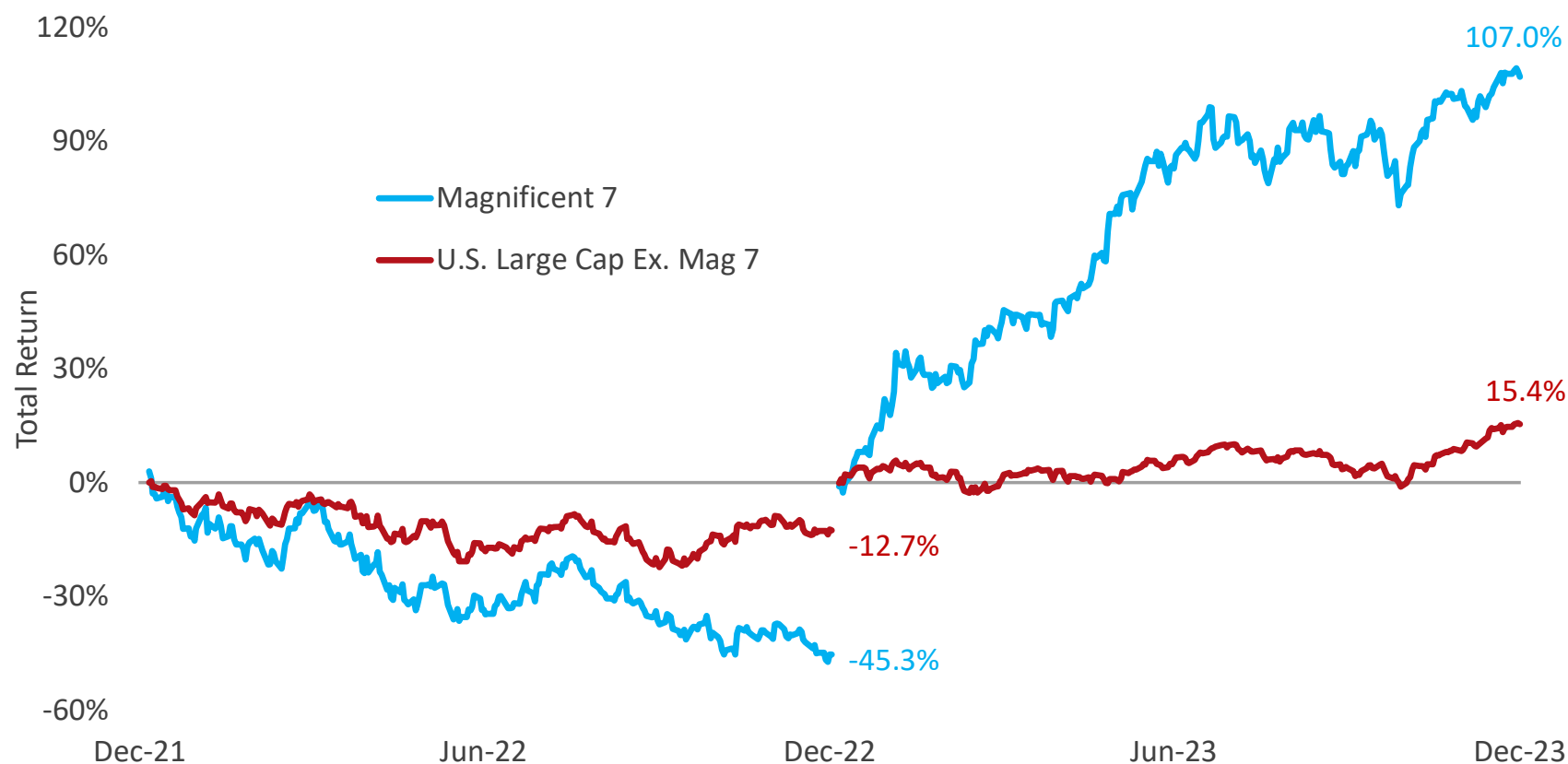
Data sources: Federal Reserve and Bloomberg, L.P.; Data as of November 2023

ECONOMIC AND MARKET INSIGHTS

- Mega-cap tech stocks suffered tremendously in the repricing of risk assets in 2022 but rallied strongly in 2023 as Fed tightening slowed and inflation fell from its peak.
- The strong rally in 2023 more than reversed the declines from 2022 and allowed the Magnificent 7 to strongly outperform the rest of the market, leading to a historically high concentration of broad market performance being driven by a limited number of stocks.

THE MAGNIFICENT 7 HAVE BEEN HIGHLY VOLATILE AND SUPPORTED THE 2023 EQUITY RALLY

Magnificent 7 vs. the Remainder of the S&P 500 Index Performance in 2022 and 2023

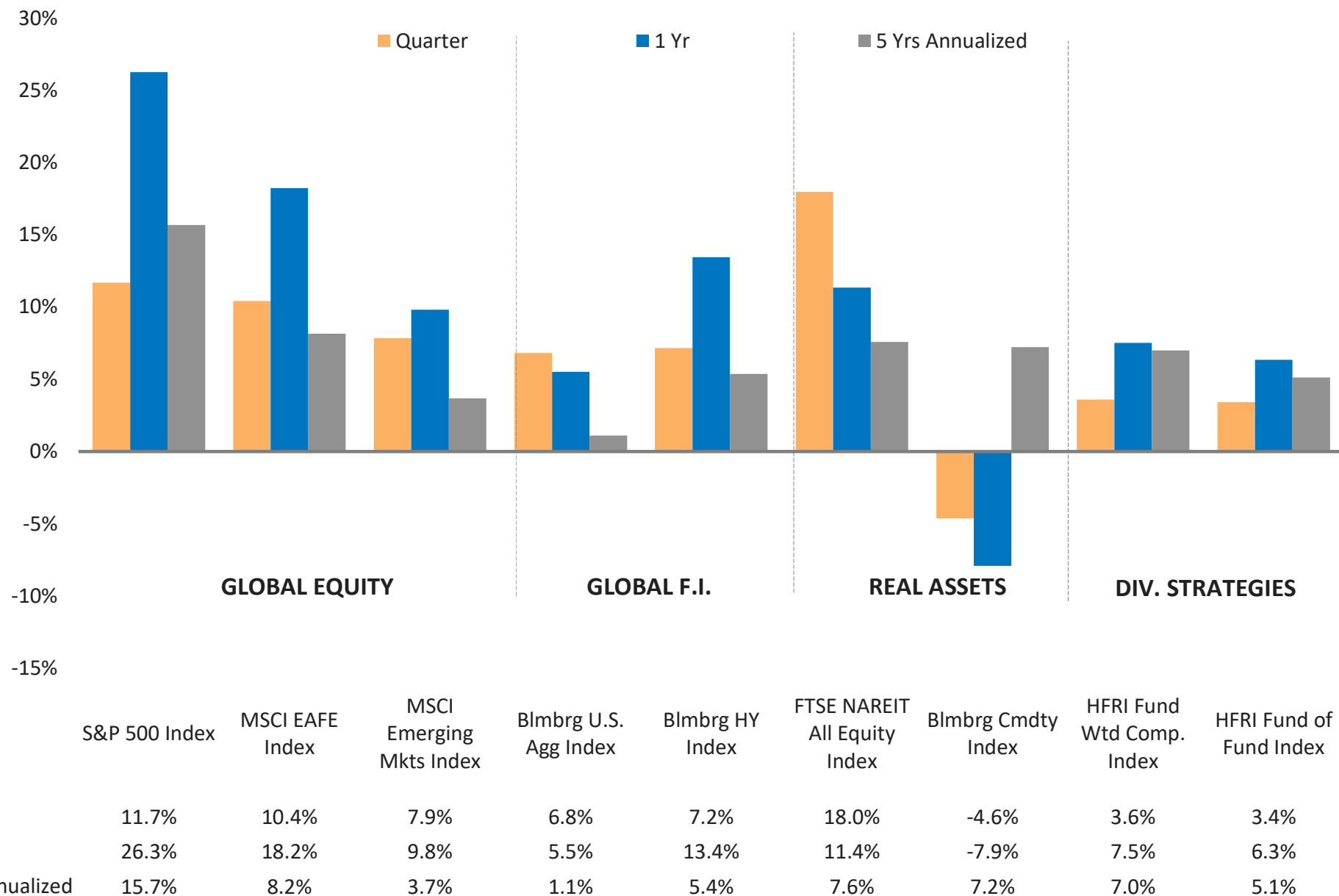


Data source: Bloomberg, L.P.

Note: "Magnificent 7" = Google, Amazon, Apple, Meta, Microsoft, Nvidia, Tesla

MARKET RETURNS

MAJOR ASSET CLASS RETURNS

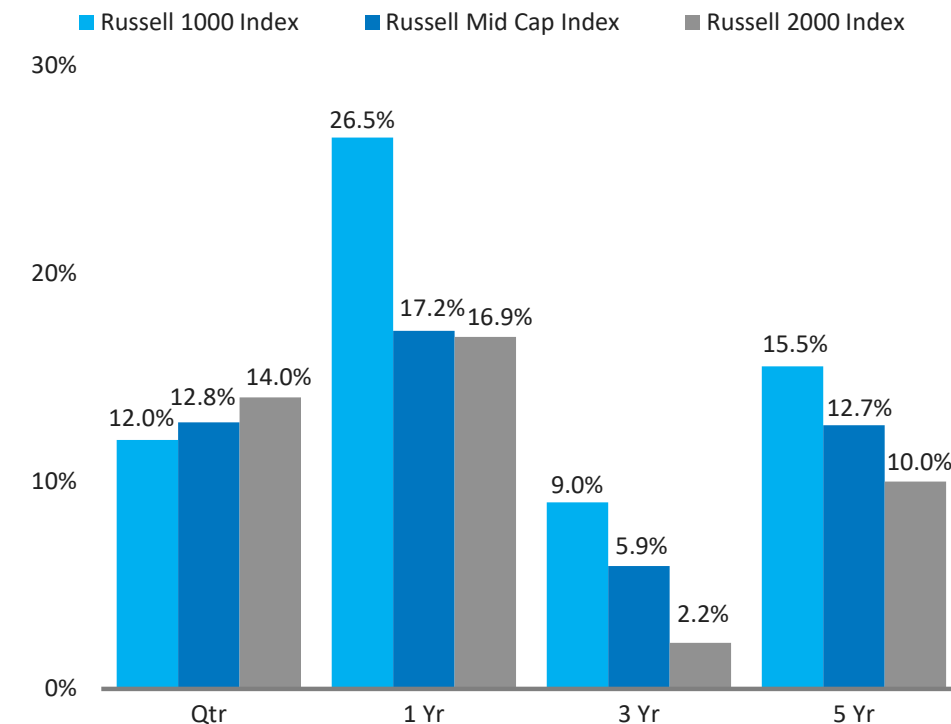


Data sources: Lipper and Hedge Fund Research, data as of the fifth business day following quarter-end

GLOBAL EQUITY, U.S.

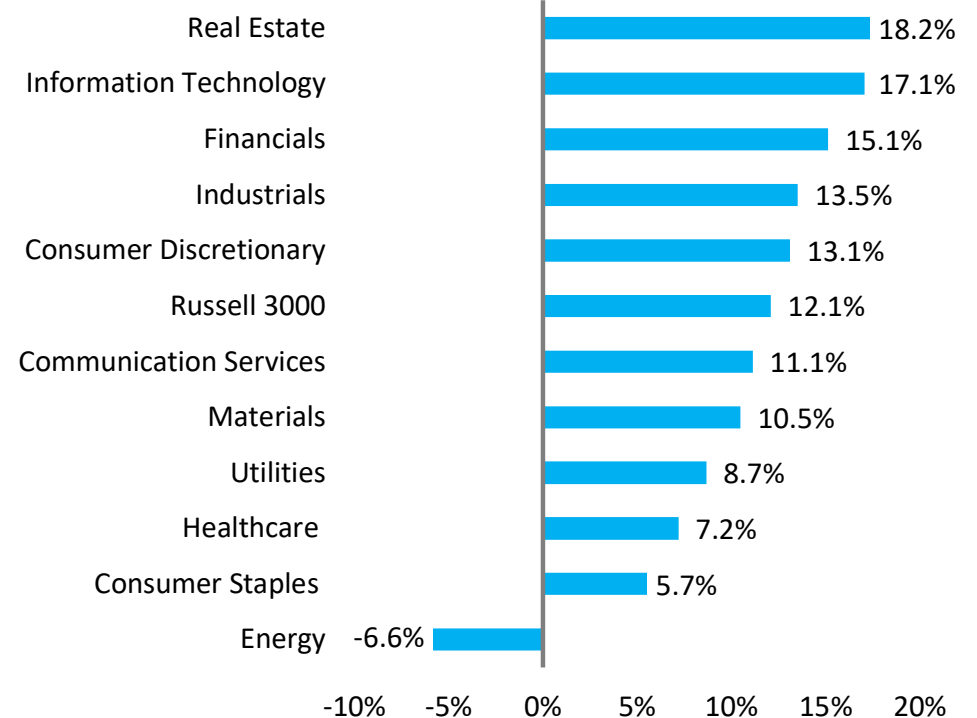
- Global equity markets finished the fourth quarter with a strong rally. The U.S. equity market was a top performer against the developed and emerging markets indices.
- Throughout 2023, the U.S. equity market was consistently impacted by top-down influences. Most significant was the expectation of a Fed pivot to a less hawkish monetary policy. In December, equities rallied in response to a more dovish tone from the Fed, which led the market to expect multiple interest rate cuts next year.
- The late-year rally benefited interest rate-sensitive sectors like real estate and information technology, which were up over 17% in the fourth quarter. While these sectors benefited most, the rally showed breadth relative to most of 2023, in which performance was driven heavily by the top-performing mega-cap stocks. Over the quarter, however, small caps outperformed large caps across both growth and value styles and more than doubled the performance of large cap during December's rally.

LARGE CAP, MID CAP, AND SMALL CAP



Data source: Russell

RUSSELL 3000 SECTOR PERFORMANCE

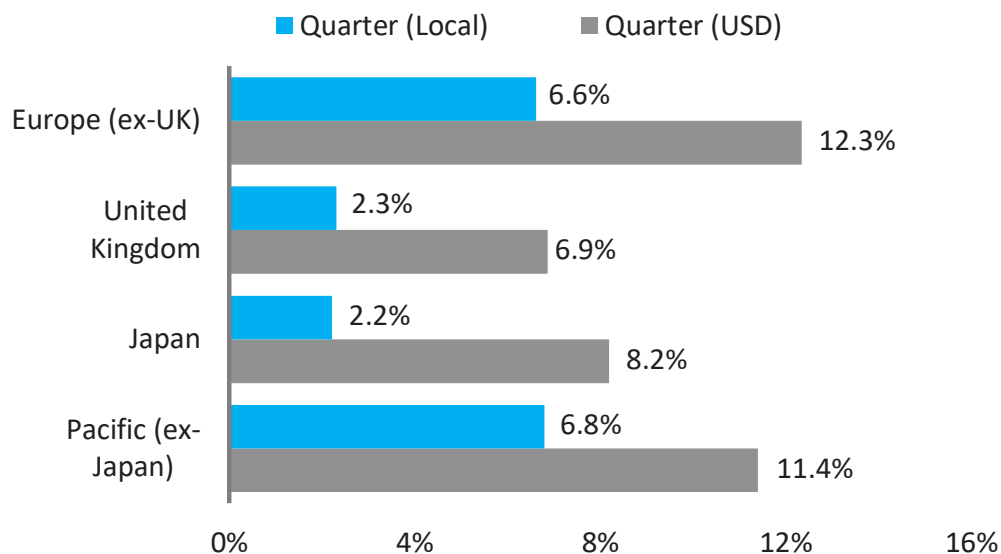


Data source: Factset

GLOBAL EQUITY, NON-U.S.

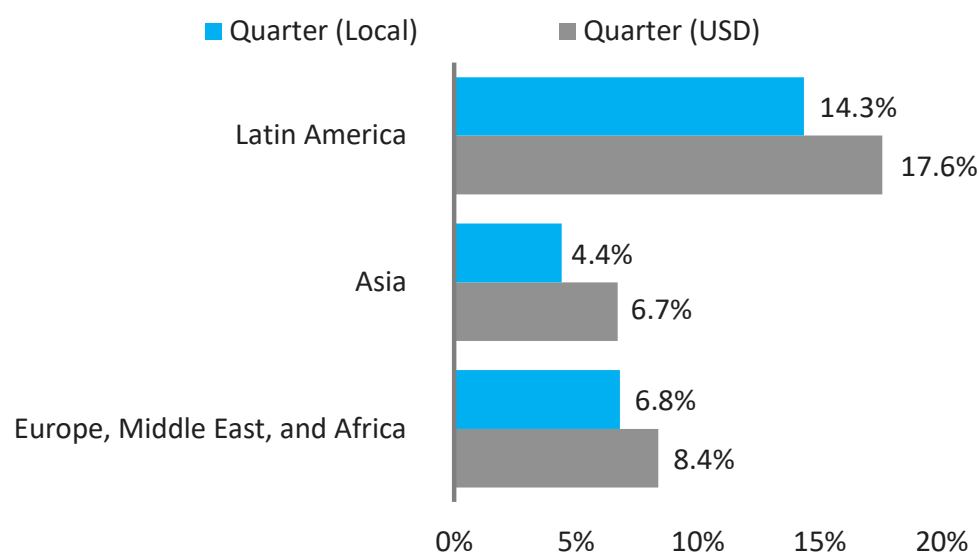
- European equities finished the quarter higher. Like the U.S., real estate and information technology were the top-performing sectors. Economically sensitive sectors like industrials and materials performed well as annual inflation fell to 2.4%. The United Kingdom similarly benefited from falling inflation. The decline of the U.S. dollar against both the euro and the pound was particularly beneficial to U.S. investors, contributing materially to international equity returns in dollar terms.
- Japanese stocks produced positive returns but underperformed the MSCI EAFE Index. Even more dramatically than in Europe, U.S. dollar investors experienced a significant tailwind as the dollar weakened against the yen, almost quadrupling Japan's local currency return.
- Emerging market equity returns were positive but underperformed developed markets. Chinese equities were the primary cause of underperformance as weak economic conditions weighed on Chinese equities throughout 2023. Taiwan, South Korea, and India were the strongest-performing markets in the fourth quarter. Technology and semiconductor stocks continued to appreciate as the theme of artificial intelligence remains a catalyst for outperformance.

MSCI EAFE REGIONAL QUARTERLY RETURNS



Data source: MSCI Barra

MSCI EM REGIONAL QUARTERLY RETURNS



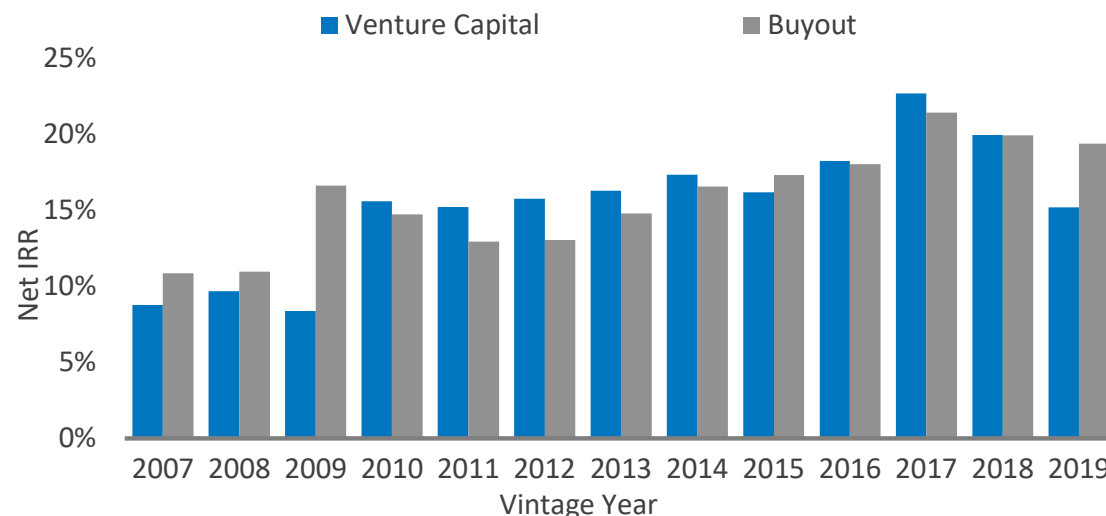
Data source: MSCI Barra

GLOBAL EQUITY, PRIVATE

- Private equity reports performance on a lag; the latest data available are through June 30, 2023.
- Repricing is methodically making its way through the private equity market. Exits have slowed, and deal volume has dropped. Industry performance may return to a more normalized level following years of exuberance, particularly among late-stage technology companies.
- Median private equity returns for venture capital and buyout funds have generally been 15% or better since the 2013 vintage year, with venture returns near 20% for recent vintages.
- Median buyout fund performance exceeded that of venture funds for most of the 2000s through the 2009 vintage year. This dynamic reversed in the subsequent decade's vintage years, with venture funds generally performing better than buyout funds.
- Fundraising activity for venture capital has steadily declined since 2021. Market conditions, investor sentiment, and recent vintage year performance likely contributed to the decline. Buyout fundraising activity remained in line with recent historical averages.

MEDIAN VENTURE CAPITAL AND BUYOUT VINTAGE YEAR IRR

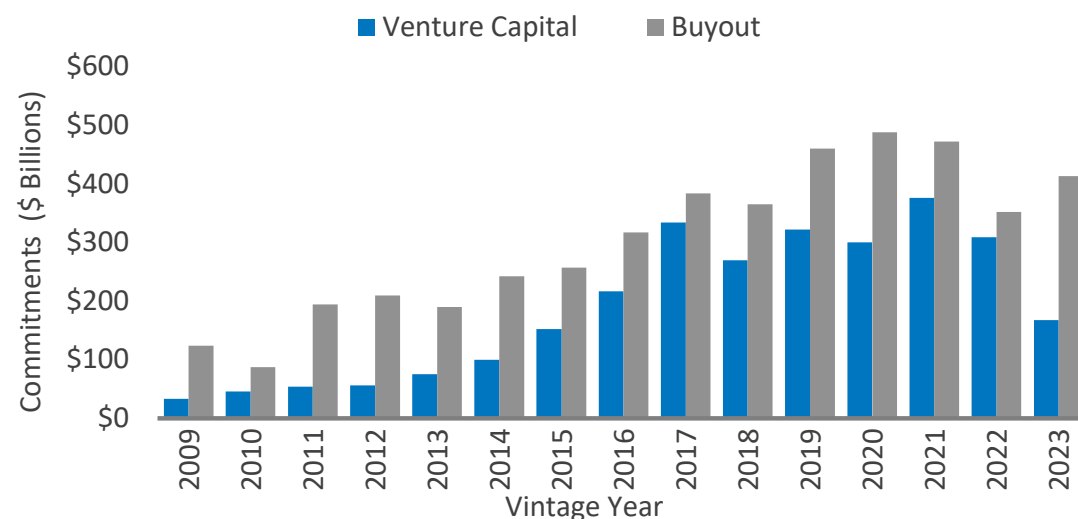
As of June 30, 2023



Data source: Thomson One; the most recent return information available is through June 30, 2023

VENTURE CAPITAL AND BUYOUT FUNDRAISING ACTIVITY

As of December 31, 2023

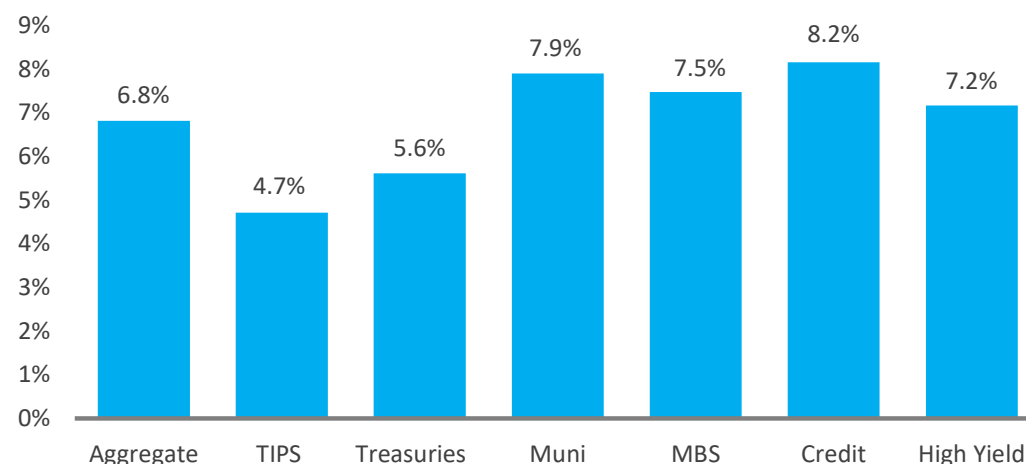


Data source: Pitchbook

GLOBAL FIXED INCOME

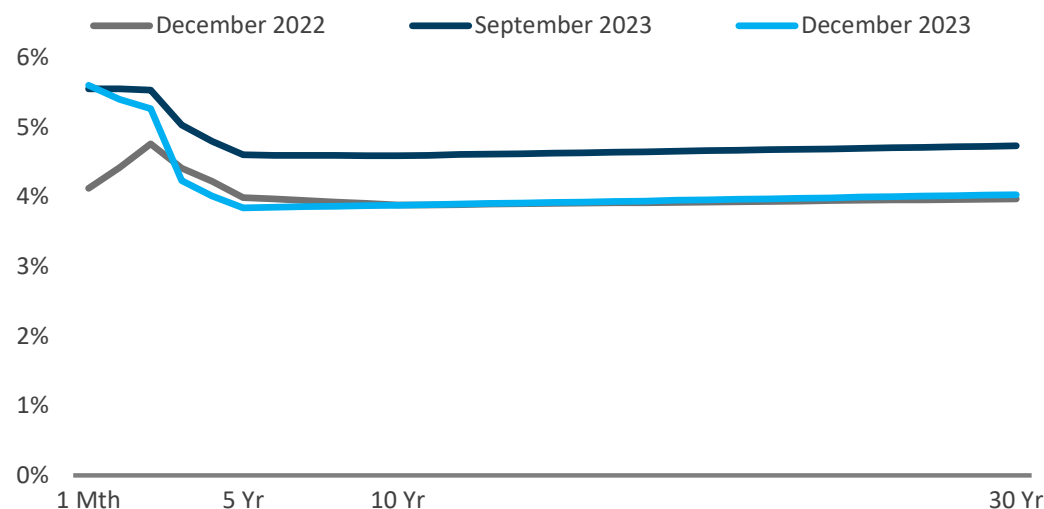
- The Federal Open Market Committee (FOMC) left policy rates unchanged during their December meeting. More importantly, the Fed officials signaled that further rate increases were unnecessary and multiple rate cuts were possible in 2024. The Federal Reserve will continue quantitative tightening, even as its balance sheet has already contracted by more than \$1 trillion.
- Interest rates fell considerably during the quarter, and bonds rallied in anticipation of rate cuts. The long and intermediate segments of the yield curve fell in tandem while securities maturing in less than a year remained in line with the federal funds rate.
- As rates fell, risk appetites rose. High yield corporate spreads, already tight by historical standards, tightened to below 3.5 percentage points. This is the tightest high yield spread since the beginning of the second quarter of 2022 and similar to pre-pandemic levels.

BLOOMBERG U.S. FIXED INCOME INDEX RETURNS



Data source: FactSet

U.S. TREASURY YIELD CURVE

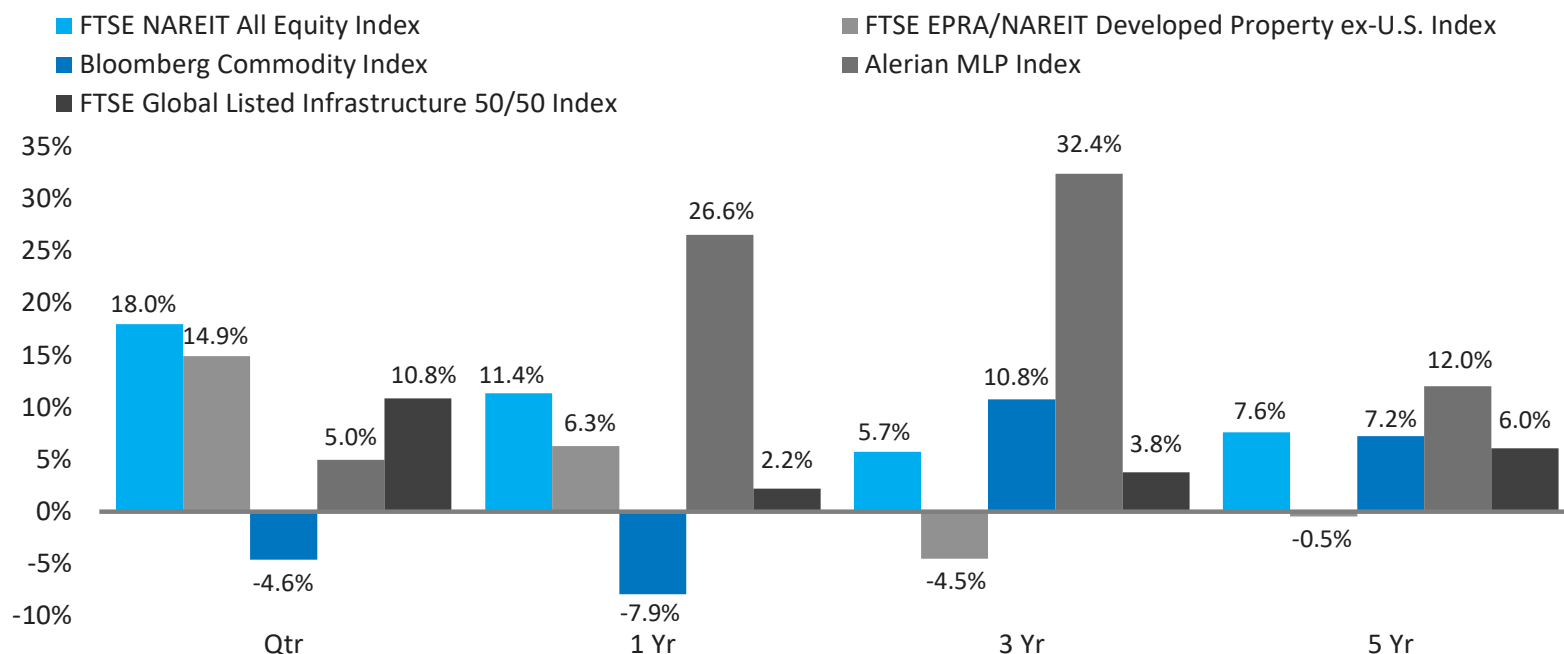


Data source: FactSet

REAL ASSETS

- U.S. and global real estate investment trusts (REITs) rebounded strongly in December following Jerome Powell's announcement that the Fed will likely cut rates in 2024. Both global and U.S. REITs underperformed the broader equity markets in 2023 despite the strong outperformance against equities in the fourth quarter. The regional malls and infrastructure REIT sectors excelled in the fourth quarter, while data centers led 2023 performance.
- Global infrastructure also rallied in December after Powell's announcement. The sector experienced poor performance in 2023 as the sector was viewed as less attractive relative to other yield-focused securities. Midstream was a standout sector, up more than 26% year-to-date as measured by the Alerian MLP Index.
- Despite Houthis attacks on cargo vessels in the Red Sea and increased geopolitical tension in the Middle East, global oil prices declined during the fourth quarter. U.S. crude oil production remained strong, driven by productivity gains and efficient operations, even as producers took rigs offline. Mergers and acquisitions activity also remained strong, with Occidental Petroleum acquiring Crown Rock for \$12 billion in December.

PUBLIC REAL ASSETS – REAL ESTATE, COMMODITIES, MLPs, AND INFRASTRUCTURE

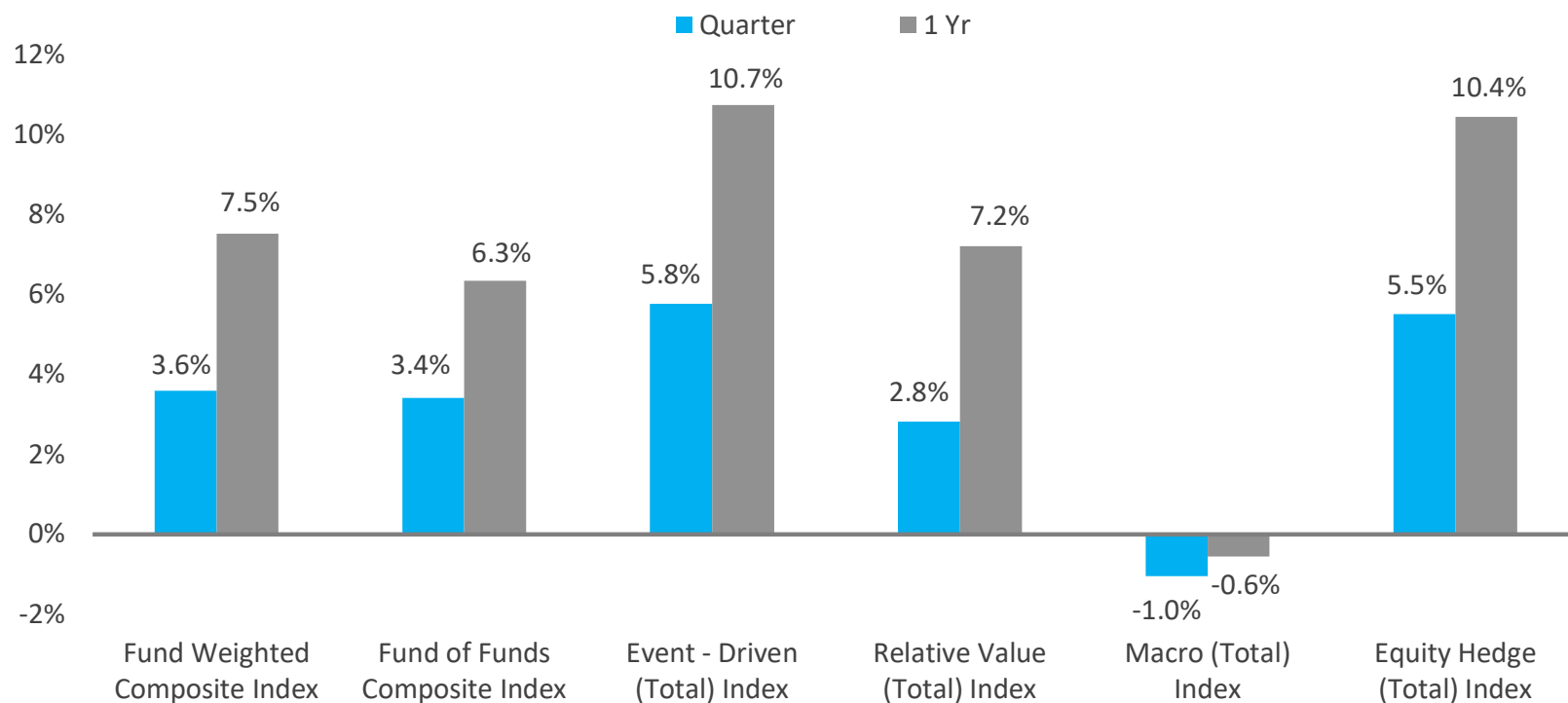


Data sources: NAREIT, FactSet, and Alerian

DIVERSIFYING STRATEGIES, HEDGE FUNDS

- Hedge funds, outside of global macro, produced strong gains across most strategies during the fourth quarter. Equity hedge and event-driven approaches were the best performers.
- Hedge fund strategies ended the year on a high note due to a combination of strong tailwinds, including falling inflation, improving mergers and acquisitions, and the general economic outlook for the upcoming year.
- Systematic trend-following strategies faced continued trend reversals across asset classes, most notably within currencies and commodities. Weakness in the U.S. dollar was a key contributor to losses within foreign exchange markets. Broadly, uncertainty triggered by dynamic economic data, including inflation and rate expectations, resulted in a lack of clarity for numerous assets.

HFRI INDICES PERFORMANCE RETURNS IN U.S. DOLLARS



Data source: HFRI

City of Grosse Pointe Woods Employees Retirement System

Summary of Investment Performance

Report for Periods Ending December 31, 2023

	Annualized							Since		
	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Inception	Date	Market Value
Total Composite	10.0%	5.9%	15.8%	3.8%	9.0%	7.1%	5.5%	5.9%	1/05	\$44,551,993
Target Weighted Index ¹	9.8	6.6	16.0	3.9	8.6	7.0	5.7	6.3		
Broad Policy Index ²	9.8	6.1	17.1	3.1	8.7	7.6	6.3	6.3		
Actuarial Rate ³	1.8	3.6	7.4	7.5	7.6	7.6	7.7	7.7		
Domestic Equity										
iShares S&P 500 Index	11.7	8.0	26.3	10.0	15.7	13.4	-	11.8	8/14	13,527,437
S&P 500 Index	11.7	8.0	26.3	10.0	15.7	13.4	-	11.8		
S&P 500 Equal Weighted Index	11.3	5.3	11.6	7.3	11.6	9.0	-	7.8		
iShares Russell Midcap Index	12.8	7.5	17.1	5.8	12.5	9.9	-	9.3	9/14	2,064,120
Russell Midcap Index	12.8	7.5	17.2	5.9	12.7	10.1	-	9.4		
Small Cap Equity										
Vanguard S&P Small Cap 600 Index	15.1	9.4	16.0	7.2	-	-	-	10.4	8/19	3,062,690
S&P SmallCap 600 Index	15.1	9.4	16.1	7.3	-	-	-	10.4		
International Equity										
EuroPacific Growth Fund	10.3	3.3	15.9	-2.8	7.9	7.2	-	5.3	9/14	2,826,599
MSCI AC World Index ex-US	9.8	5.6	15.6	1.5	7.1	6.3	-	4.1		
Dodge & Cox International Stock Fund	-	-	-	-	-	-	-	4.7	11/23	2,641,326
MSCI AC World Index ex-U.S.	-	-	-	-	-	-	-	5.0		
MSCI EAFE Index	-	-	-	-	-	-	-	5.3		
Brown International Small Company	17.5	6.0	20.4	-	-	-	-	-4.6	5/21	1,126,952
MSCI Small Cap EAFE Index	11.1	7.2	13.2	-	-	-	-	-4.7		
MSCI ACWI ex-U.S. Small Cap Index	10.1	8.3	15.7	-	-	-	-	-2.9		
Redwheel Global Emerging Equity Fund	3.8	2.6	5.5	-8.9	4.7	-	-	-2.1	2/18	1,234,171
DFA Emerging Markets Fund	7.8	5.2	13.1	-1.2	5.0	6.0	-	3.3	9/14	2,887,336
MSCI Emerging Markets Index	7.9	4.7	9.8	-5.1	3.7	5.0	-	2.6		

City of Grosse Pointe Woods Employees Retirement System

Summary of Investment Performance

Report for Periods Ending December 31, 2023

	Annualized									
	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Date	Market Value
Fixed Income										
Dodge & Cox Income Fund	7.3%	4.3%	7.7%	-1.7%	-	-	-	2.4%	2/19	\$3,154,958
Bloomberg IG Credit Index	8.2	4.6	7.7	-3.6	-	-	-	1.8		
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	-	-	-	0.9		
DoubleLine Total Return Bond Fund	6.4	2.8	5.3	-2.6	-	-	-	0.2	2/19	2,849,266
Bloomberg U.S. MBS Index	7.5	3.1	5.0	-2.9	-	-	-	0.1		
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	-	-	-	0.9		
Vanguard Total Bond Fund	6.7	3.4	5.7	-3.4	-	-	-	1.0	2/19	2,722,899
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	-	-	-	0.9		
Low Volatility										
Gateway Fund	4.6	3.1	14.7	4.1	6.1	-	-	4.2	8/18	1,634,498
PIMCO All Asset Fund	6.8	4.4	8.6	3.5	6.2	-	-	5.9	11/18	1,452,826
HFRX Equity Hedge Index	3.6	3.8	6.9	5.1	6.1	-	-	5.1		
Real Estate										
Principal Real Estate Securities Fund	15.3	7.7	13.3	5.8	8.5	6.6	-	7.8	9/14	971,676
FTSE NAREIT Equity REIT Index	16.2	7.9	13.7	7.2	7.4	5.3	-	6.8		
FTSE NAREIT All Equity Index	18.0	8.1	11.4	5.7	7.6	6.0	-	7.2		
Natural Resources										
Tortoise MLP & Pipeline Fund	5.7	9.1	14.2	25.2	10.4	-	-	5.9	8/17	568,230
Alerian MLP Index	5.0	15.4	26.6	32.4	12.0	-	-	7.1		
Tortoise North American Pipeline Index	7.4	8.3	11.6	21.0	11.7	-	-	7.5		
Cohen & Steers Global Listed Infrastructure	11.8	1.5	2.4	-	-	-	-	-2.4	5/22	1,186,651
FTSE Global Core Infrastructure 50/50	10.8	2.0	2.2	-	-	-	-	-3.1		
DJ Brookfield Global Infrastructure Index	11.2	3.5	6.2	-	-	-	-	-2.4		
Cash										
Schwab Government Money Fund	1.3	2.5	4.7	2.0	1.6	1.3	-	1.0	7/14	640,358
U.S. 91-Day Treasury Bills	1.3	2.6	5.0	2.3	1.9	1.8	-	1.3		

City of Grosse Pointe Woods Employees Retirement System

Summary of Investment Performance

Report for Periods Ending December 31, 2023

	Annualized									
	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Date	Market Value
<u>Long Term Manager Performance</u>										
<u>Domestic Equity</u>										
iShares S&P 500 Index	11.7%	8.0%	26.3%	10.0%	15.7%	13.4%	12.0%	9.8%	1/05	
S&P 500 Index	11.7	8.0	26.3	10.0	15.7	13.4	12.0	9.8		
S&P 500 Equal Weighted Index	11.3	5.3	11.6	7.3	11.6	9.0	8.3	7.9		
iShares Russell Midcap Index	12.8	7.5	17.1	5.8	12.5	9.9	9.3	9.3	1/05	
Russell Midcap Index	12.8	7.5	17.2	5.9	12.7	10.1	9.4	9.5		
Vanguard S&P Small Cap 600 Index	15.1	9.4	16.0	7.2	11.0	8.3	8.6	11.8	9/10	
S&P SmallCap 600 Index	15.1	9.4	16.1	7.3	11.0	8.3	8.7	11.9		
<u>International Equity</u>										
EuroPacific Growth Fund	10.3	3.3	15.9	-2.8	7.9	7.2	4.8	5.2	8/08	
MSCI AC World Index ex-U.S.	9.8	5.6	15.6	1.5	7.1	6.3	3.8	3.7		
Dodge & Cox International Stock Fund	6.8	5.4	16.7	6.5	8.6	6.4	4.0	5.7	1/05	
MSCI AC World Index ex-U.S.	9.8	5.6	15.6	1.5	7.1	6.3	3.8	5.1		
MSCI EAFE Index	10.4	5.9	18.2	4.0	8.2	6.9	4.3	5.0		
Brown International Small Company	17.5	6.0	20.4	-2.3	11.4	12.5	-	11.8	9/15	
MSCI Small Cap EAFE Index	11.1	7.2	13.2	-0.7	6.6	6.0	-	6.2		
MSCI ACWI ex-U.S. Small Cap Index	10.1	8.3	15.7	1.5	7.9	6.7	-	6.8		
Redwheel Global Emerging Equity Fund	3.4	2.4	5.6	-8.5	5.4	4.7	4.5	6.1	7/12	
MSCI Emerging Markets Index	7.9	4.7	9.8	-5.1	3.7	5.0	2.7	3.1		
DFA Emerging Markets Fund	7.8	5.2	13.1	-1.2	5.0	6.0	3.4	6.3	1/05	
MSCI Emerging Markets Index	7.9	4.7	9.8	-5.1	3.7	5.0	2.7	5.9		
<u>Fixed Income</u>										
Dodge & Cox Income Fund	7.3	4.3	7.7	-1.7	2.7	2.5	2.8	3.9	1/05	
Bloomberg IG Credit Index	8.2	4.6	7.7	-3.6	2.2	2.1	2.7	3.7		
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	1.1	1.3	1.8	3.1		
DoubleLine Total Return Bond Fund	6.4	2.8	5.3	-2.6	0.3	1.0	1.8	3.5	4/10	
Bloomberg U.S. MBS Index	7.5	3.1	5.0	-2.9	0.3	0.7	1.4	1.8		
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	1.1	1.3	1.8	2.3		
Vanguard Total Bond Fund	6.7	3.4	5.7	-3.4	1.1	1.3	1.8	3.1	1/05	
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	1.1	1.3	1.8	3.1		

City of Grosse Pointe Woods Employees Retirement System

Summary of Investment Performance

Report for Periods Ending December 31, 2023

	Annualized									
	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Date	Market Value
<u>Low Volatility</u>										
Gateway Fund	4.6%	3.1%	14.7%	4.1%	6.1%	5.1%	4.7%	4.4%	1/05	
PIMCO All Asset Fund	6.8	4.4	8.6	3.5	6.2	5.6	4.3	5.2	1/05	
HFRX Equity Hedge Index	3.6	3.8	6.9	5.1	6.1	4.3	2.9	1.7		
<u>Real Estate</u>										
Principal Real Estate Securities Fund	15.3	7.7	13.3	5.8	8.5	6.6	8.6	8.5	1/05	
FTSE NAREIT Equity REIT Index	16.2	7.9	13.7	7.2	7.4	5.3	7.6	7.4		
FTSE NAREIT All Equity Index	18.0	8.1	11.4	5.7	7.6	6.0	8.0	7.7		
<u>Natural Resources</u>										
Tortoise MLP & Pipeline Fund	5.7	9.1	14.2	25.2	10.4	4.7	3.4	6.8	5/11	
Alerian MLP Index	5.0	15.4	26.6	32.4	12.0	5.4	1.9	4.6		
Tortoise North American Pipeline Index	7.4	8.3	11.6	21.0	11.7	6.9	5.8	-		
Cohen & Steers Global Listed Infrastructure	11.8	1.5	2.4	4.4	7.0	7.0	6.0	6.6	1/05	
FTSE Global Core Infrastructure 50/50	10.8	2.0	2.2	3.8	6.0	6.2	5.9	-		
DJ Brookfield Global Infrastructure Index	11.2	3.5	6.2	6.7	6.8	5.3	4.7	7.9		
<u>Cash</u>										
Schwab Government Money Fund	1.3	2.5	4.7	2.0	1.6	1.3	0.9	1.2	1/05	
U.S. 91-Day Treasury Bills	1.3	2.6	5.0	2.3	1.9	1.8	1.3	1.4		

City of Grosse Pointe Woods Employees Retirement System

Summary of Investment Performance

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Footnotes:

* Performance returns are net of investment management fees.

* Calculated returns may differ from the manager's due to differences in security pricing and/or cash flows.

* Manager and index data represent the most current available at the time of report publication.

* For managers and indices that report returns on a lag, 0.0% is utilized for the most recent time period until the actual return data are reported.

* The fiscal year ends in June.

¹ Target Weighted Index is currently comprised of: 30.0% Russell 1000 Index, 5.0% Russell Midcap Index, 7.0% Russell 2000 Index, 10.0% MSCI EAFE Index, 5.0% MSCI Small Cap EAFE Index, 10.0% MSCI Emerging Markets Index, 20.0% Bloomberg U.S. Aggregate Index, 3.0% Alerian MLP Index, 3.0% FTSE NAREIT All Equity Index, and 7.0% HFRI FOF: Conservative Index. Please see Appendix for benchmark history.

² Broad Policy Index is comprised of: 70.0% MSCI AC World Index and 30.0% Bloomberg U.S. Aggregate Index.

³ Actuarial Rate is currently comprised of: 100.0% 7.4% Absolute Return. Please see Appendix for benchmark history.

^A RWC Global Emerging Equity Fund (LT) uses longer term composite returns for performance evaluation rather than the shorter-term mutual fund returns.

City of Grosse Pointe Woods Employees Retirement System

Schedule of Asset and Style Allocation

Asset Class	Current Weight	Target Weight	Target Range
Large Cap Equity	30.4%	30.0%	5.0% - 35.0%
Mid Cap Equity	4.6%	5.0%	0.0% - 15.0%
Small Cap Equity	6.9%	7.0%	5.0% - 30.0%
International Equity	12.3%	10.0%	5.0% - 25.0%
International Small Cap Equity	2.5%	5.0%	0.0% - 15.0%
Emerging Markets	9.3%	10.0%	5.0% - 20.0%
Fixed Income	19.6%	20.0%	5.0% - 30.0%
Public Real Estate	2.2%	3.0%	0.0% - 10.0%
Public Natural Resources	3.9%	3.0%	0.0% - 10.0%
Low Volatility	6.9%	7.0%	0.0% - 20.0%
Cash	1.4%	0.0%	0.0% - 5.0%
Total	100.0%	100.0%	

City of Grosse Pointe Woods Employees Retirement System

Schedule of Asset and Style Allocation

Asset Class - Style	Manager	Portfolio Invested	Portfolio Cash	Market Value	Current Weight
Large Cap Equity - Broad	iShares S&P 500 Index	100.0%	0.0%	\$13,527,437	30.4%
Mid Cap Equity - Broad	iShares Russell Midcap Index	100.0%	0.0%	\$2,064,120	4.6%
Small Cap Equity - Broad	Vanguard S&P Small Cap 600 Index	100.0%	0.0%	\$3,062,690	6.9%
International Equity - Core	EuroPacific Growth Fund	100.0%	0.0%	\$2,826,599	6.3%
International Equity - Value	Dodge & Cox International Stock Fund	100.0%	0.0%	\$2,641,326	5.9%
International Small Cap Equity - Core	Brown International Small Company	100.0%	0.0%	\$1,126,952	2.5%
Emerging Markets - Core	DFA Emerging Markets Fund	100.0%	0.0%	\$2,887,336	6.5%
Emerging Markets - Growth	Redwheel Global Emerging Equity Fund	100.0%	0.0%	\$1,234,171	2.8%
Fixed Income - Core	Dodge & Cox Income Fund	100.0%	0.0%	\$3,154,958	7.1%
Fixed Income - Core	Vanguard Total Bond Fund	100.0%	0.0%	\$2,722,899	6.1%
Fixed Income - Core Plus	DoubleLine Total Return Bond Fund	100.0%	0.0%	\$2,849,266	6.4%
Public Real Estate - Equity	Principal Real Estate Securities Fund	100.0%	0.0%	\$971,676	2.2%
Public Natural Resources - Infrastructure	Cohen & Steers Global Listed Infrastructure	100.0%	0.0%	\$1,186,651	2.7%
Public Natural Resources - MLP	Tortoise MLP & Pipeline Fund	100.0%	0.0%	\$568,230	1.3%
Low Volatility - Liquid	Gateway Fund	100.0%	0.0%	\$1,634,498	3.7%
Low Volatility - Tactical	PIMCO All Asset Fund	100.0%	0.0%	\$1,452,826	3.3%
Cash - Cash	Schwab Government Money Fund	100.0%	0.0%	\$640,358	1.4%
Total				\$44,551,993	100.0%

City of Grosse Pointe Woods Employees Retirement System

Investment Metrics

Report for Periods Ending December 31, 2023

Statistical Measures	Sharpe Ratio	Standard Deviation	Tracking Error	Information Ratio
Total Composite	0.4	16.7%	2.4%	0.1
Target Weighted Index	0.4	15.7	2.0	0.3
Broad Policy Index	0.5	14.9	0.0	--

Asset Growth Summary (in thousands)	Qtr	FYTD
Beginning Market Value	\$ 40,989	\$ 42,768
Net Contributions/(Distributions)	\$ (377)	\$ (566)
Market Appreciation/(Depreciation)	\$ 3,940	\$ 2,350
Ending Market Value	\$ 44,552	\$ 44,552

* Risk Statistics are based on monthly data.

* Target Weighted Index is currently comprised of: 30.0% Russell 1000 Index, 5.0% Russell Midcap Index, 7.0% Russell 2000 Index, 10.0% MSCI EAFE Index, 5.0% MSCI Small Cap EAFE Index, 10.0% MSCI Emerging Markets Index, 20.0% Bloomberg U.S. Aggregate Index, 3.0% Alerian MLP Index, 3.0% FTSE NAREIT All Equity Index, and 7.0% HFRI FOF: Conservative Index. Please see Appendix for benchmark history.

* Broad Policy Index is comprised of: 70.0% MSCI AC World Index and 30.0% Bloomberg U.S. Aggregate Index.

City of Grosse Pointe Woods Employees Retirement System

iShares S&P 500 Index

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
iShares S&P 500 Index	11.7%	8.0%	26.3%	10.0%	15.7%	13.4%	12.0%	9.8%	1/05
S&P 500 Index	11.7	8.0	26.3	10.0	15.7	13.4	12.0	9.8	
S&P 500 Equal Weighted Index	11.3	5.3	11.6	7.3	11.6	9.0	8.3	7.9	
Risk Statistics (5 years)	Beta	Alpha	R²	Standard Deviation	Tracking Error	Information Ratio			
iShares S&P 500 Index	1.00	0.0%	1.00	21.7%	0.0%	-1.3			
S&P 500 Index	1.00	0.0	1.00	21.6	0.0	--			
S&P 500 Equal Weighted Index	1.07	-5.1	0.92	23.6	6.1	0.7			
Portfolio Statistics	Trailing P/E	Trailing P/B	Wtd Avg Mkt Cap	Current Yield	Equity Annual Turnover				
iShares S&P 500 Index	24.0	4.2	721,658.0M	1.5%	--%				
S&P 500 Index	24.0	4.2	721,658.0	1.5	--				
S&P 500 Equal Weighted Index	--	--	--	--	--				

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

iShares S&P 500 Index

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 0.0%	No
Beta < 1.20	Beta = 1.00	Yes
Alpha > 0.0%	Alpha = 0.0%	No
Peer Group Rank > 50th Percentile	Ranks in Top 50th Percentile	Yes

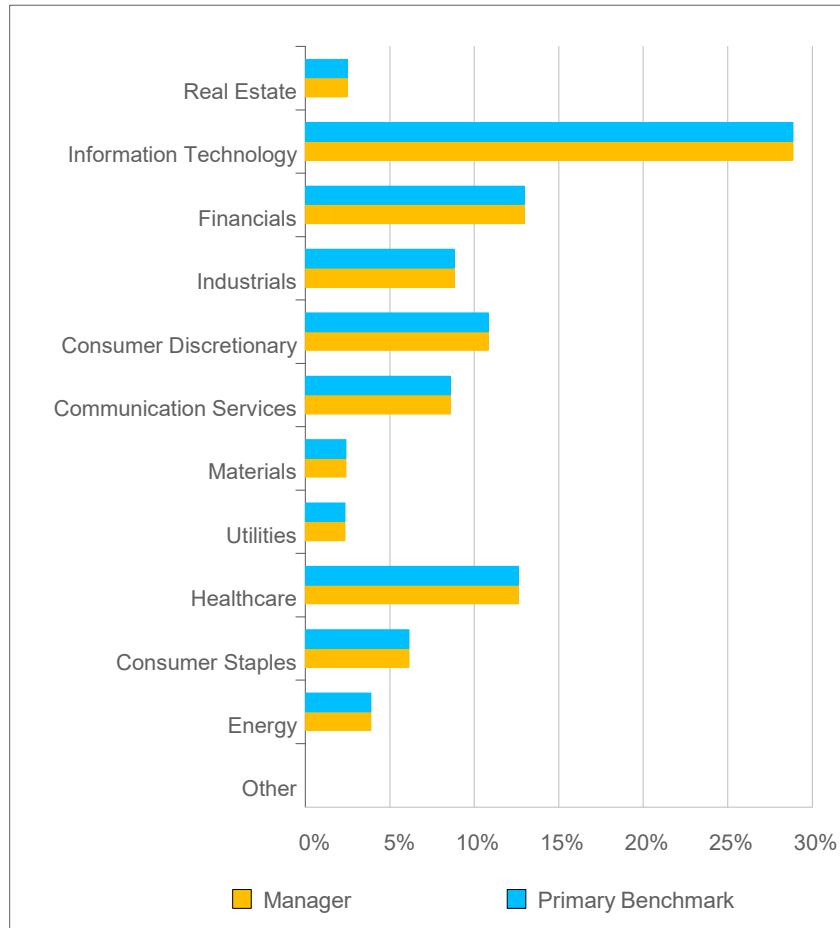
City of Grosse Pointe Woods Employees Retirement System

iShares S&P 500 Index

Equity Sector

Report For Periods Ending December 31, 2023

Sector Allocation



Sector	Sector Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Real Estate	3%	3%	18.8%	12.6%
Information Technology	29	29	17.2	60.8
Financials	13	13	14.0	14.8
Industrials	9	9	13.1	17.7
Consumer Discretionary	11	11	12.4	43.2
Communication Services	9	9	11.0	56.4
Materials	2	2	9.7	12.6
Utilities	2	2	8.6	-7.1
Healthcare	13	13	6.4	2.1
Consumer Staples	6	6	5.5	0.6
Energy	4	4	-6.9	-1.3
Other	0	0	-	-

Top Five Holdings

	Weighting
Apple Inc.	7.0%
Microsoft Corporation	7.0
Amazon.com, Inc.	3.5
NVIDIA Corporation	3.1
Alphabet Inc. Class A	2.1

Number of Holdings: 503

* Sector weightings may not add up to 100% due to rounding.

* Manager data represents the most current available at the time of report publication.

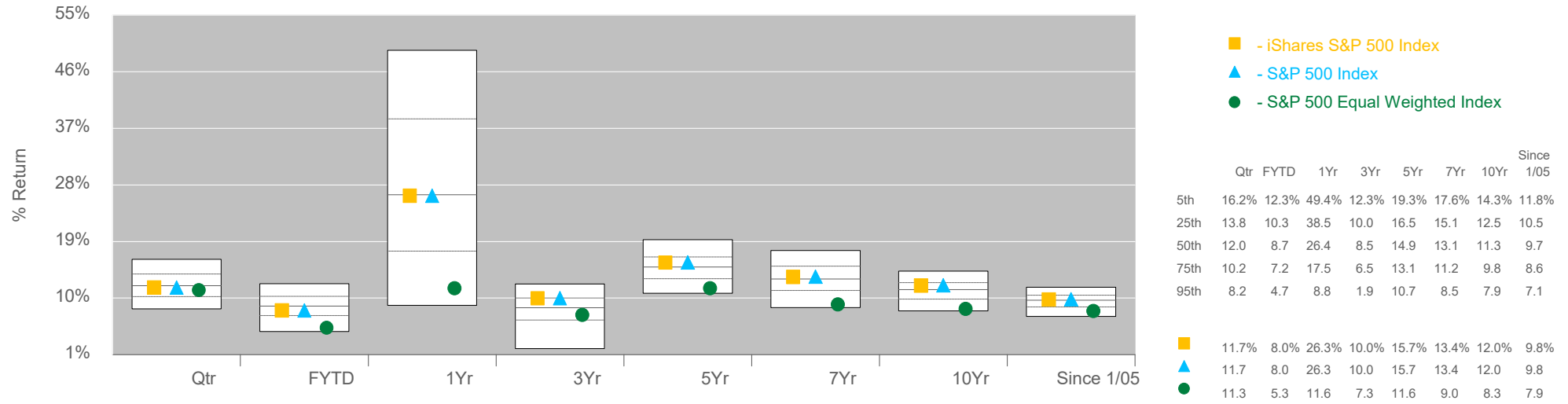
* Effective fourth quarter 2018, Telecommunication Services was replaced by Communication Services by the Global Industry Classification Standard (GICS). Some members of Consumer Discretionary, Technology, and Telecommunication Services were reclassified as Communication Services.

City of Grosse Pointe Woods Employees Retirement System

iShares S&P 500 Index

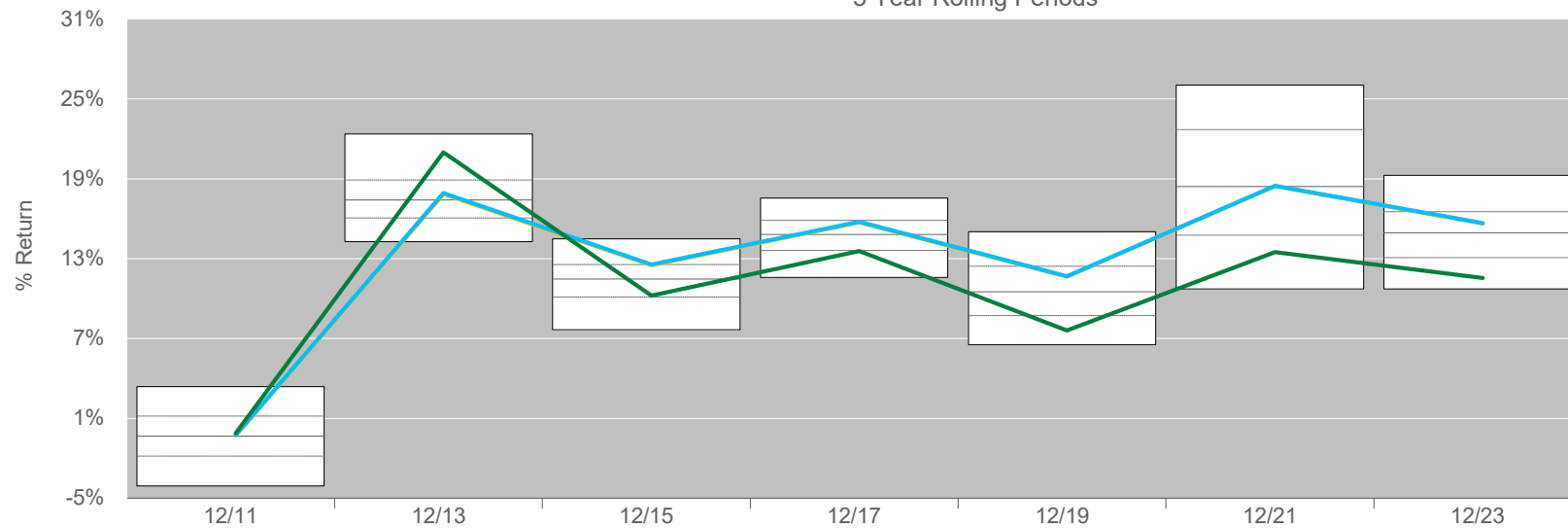
Broad Large Cap Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

iShares Russell Midcap Index

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
iShares Russell Midcap Index	12.8%	7.5%	17.1%	5.8%	12.5%	9.9%	9.3%	9.3%	1/05
Russell Midcap Index	12.8	7.5	17.2	5.9	12.7	10.1	9.4	9.5	
Risk Statistics (5 years)	Beta		Alpha		R ²		Standard Deviation	Tracking Error	Information Ratio
iShares Russell Midcap Index	1.00		-0.2%		1.00		24.7%	0.1%	-3.4
Russell Midcap Index	1.00		0.0		1.00		24.7	0.0	--
Portfolio Statistics	Trailing P/E		Trailing P/B		Wtd Avg Mkt Cap		Current Yield	Equity Annual Turnover	
iShares Russell Midcap Index	18.8		2.8		24,491.0M		1.6%	--%	
Russell Midcap Index	18.8		2.8		24,491.0		1.6	--	

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

iShares Russell Midcap Index

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = -0.2%	No
Beta < 1.20	Beta = 1.00	Yes
Alpha > 0.0%	Alpha = -0.2%	No
Peer Group Rank > 50th Percentile	Ranks in Top 50th Percentile	Yes

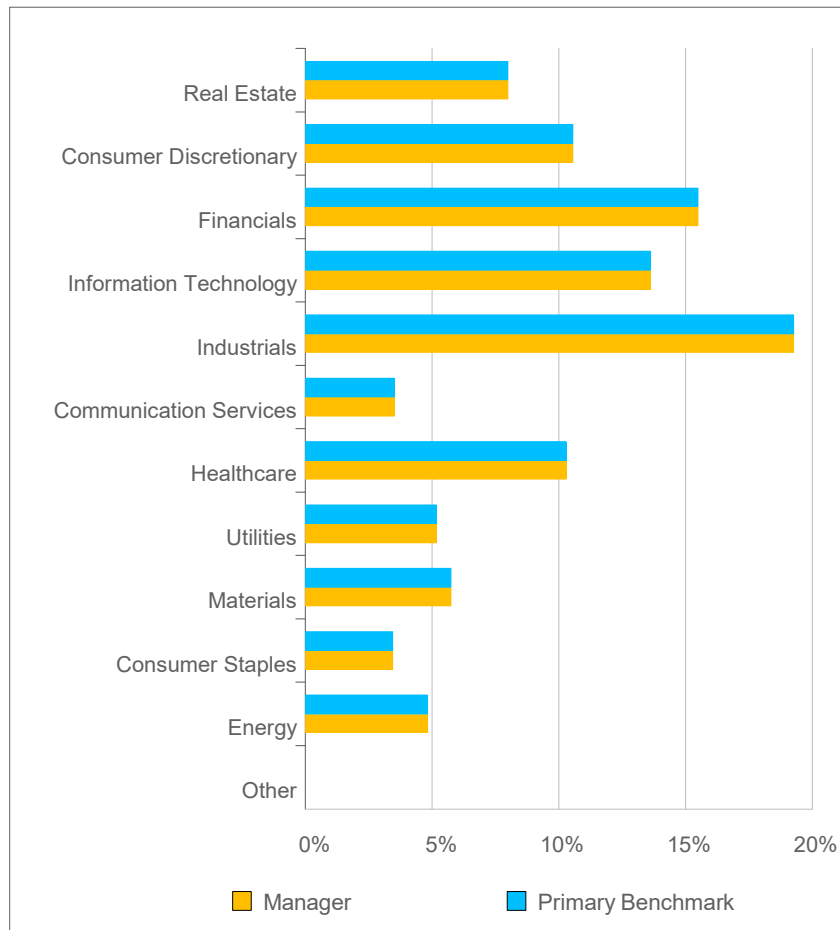
City of Grosse Pointe Woods Employees Retirement System

iShares Russell Midcap Index

Equity Sector

Report For Periods Ending December 31, 2023

Sector Allocation



Sector	Sector Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Real Estate	8%	8%	16.8%	11.7%
Consumer Discretionary	11	11	16.6	25.9
Financials	16	16	16.1	14.1
Information Technology	14	14	15.3	36.3
Industrials	19	19	13.4	29.7
Communication Services	4	4	12.0	20.8
Healthcare	10	10	10.9	2.3
Utilities	5	5	9.6	-2.3
Materials	6	6	9.3	9.4
Consumer Staples	3	3	5.3	-0.1
Energy	5	5	-0.5	5.7
Other	0	0	-	-

Top Five Holdings

Weighting

Phillips 66	0.6%
Parker-Hannifin Corporation	0.6
Amphenol Corporation Class A	0.5
Trane Technologies plc	0.5
KKR & Co Inc	0.5

Number of Holdings: 814

* Sector weightings may not add up to 100% due to rounding.

* Manager data represents the most current available at the time of report publication.

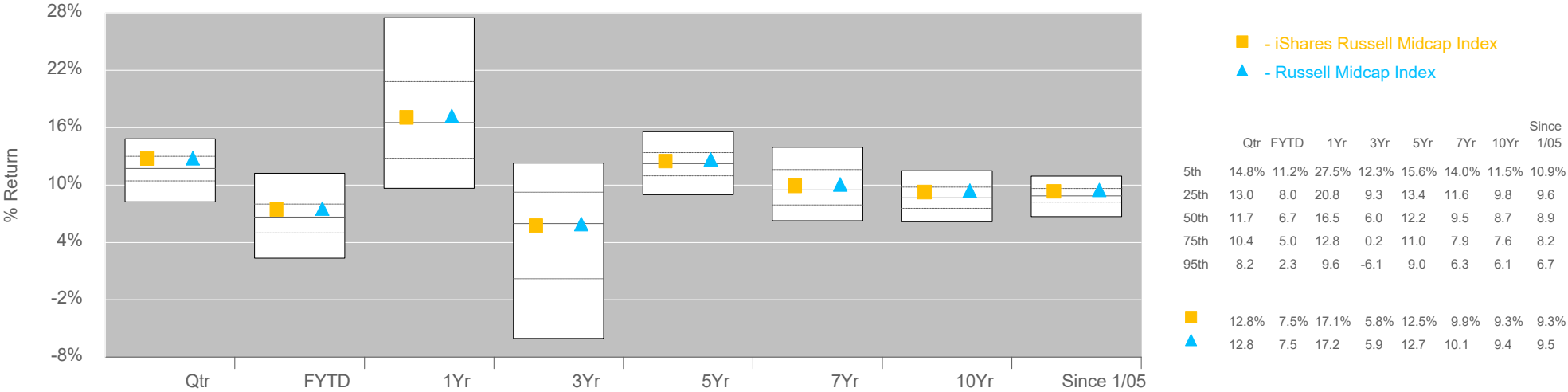
* Effective fourth quarter 2018, Telecommunication Services was replaced by Communication Services by the Global Industry Classification Standard (GICS). Some members of Consumer Discretionary, Technology, and Telecommunication Services were reclassified as Communication Services.

City of Grosse Pointe Woods Employees Retirement System

iShares Russell Midcap Index

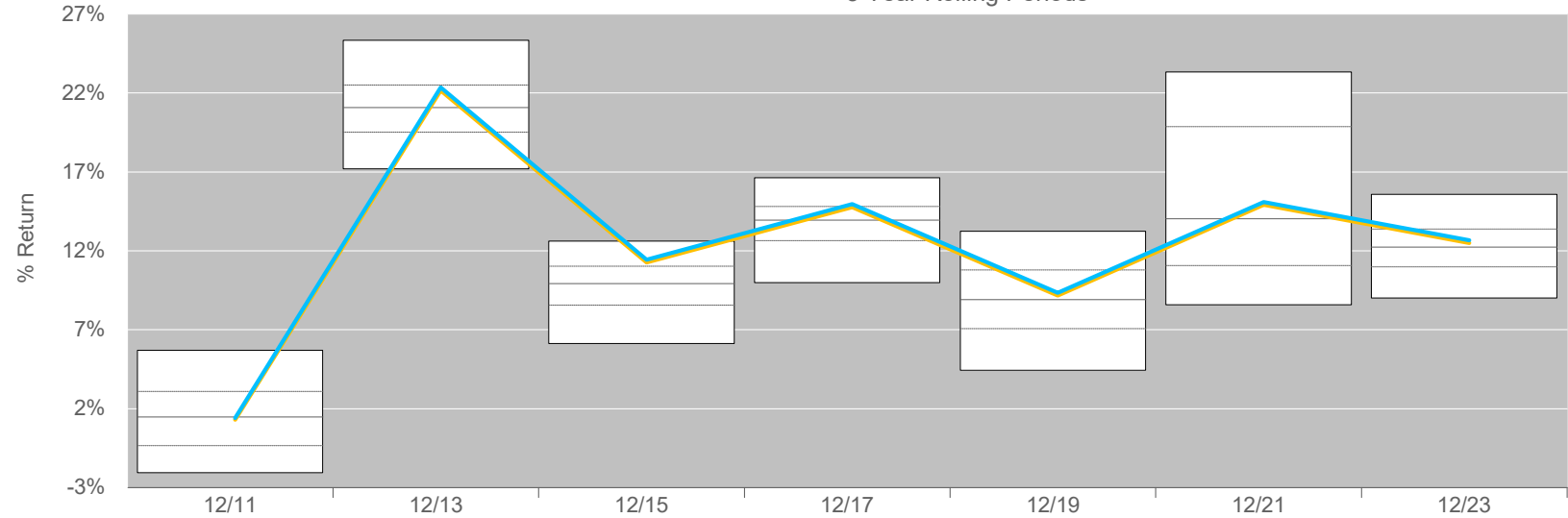
Broad Mid Cap Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Vanguard S&P Small Cap 600 Index

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Vanguard S&P Small Cap 600 Index	15.1%	9.4%	16.0%	7.2%	11.0%	8.3%	8.6%	11.8%	9/10
S&P SmallCap 600 Index	15.1	9.4	16.1	7.3	11.0	8.3	8.7	11.9	
Risk Statistics (5 years)	Beta		Alpha	R ²		Standard Deviation	Tracking Error	Information Ratio	
Vanguard S&P Small Cap 600 Index	1.00		0.0%	1.00		27.7%	0.1%	-0.9	
S&P SmallCap 600 Index	1.00		0.0	1.00		27.7	0.0	--	
Portfolio Statistics	Trailing P/E		Trailing P/B		Wtd Avg Mkt Cap		Current Yield	Equity Annual Turnover	
Vanguard S&P Small Cap 600 Index	15.0		1.8		2,894.0M		1.8%	--%	
S&P SmallCap 600 Index	15.0		1.8		2,894.0		1.8	--	

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Vanguard S&P Small Cap 600 Index

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 0.0%	No
Beta < 1.20	Beta = 1.00	Yes
Alpha > 0.0%	Alpha = 0.0%	No
Peer Group Rank > 50th Percentile	Ranks in Bottom 50th Percentile	No

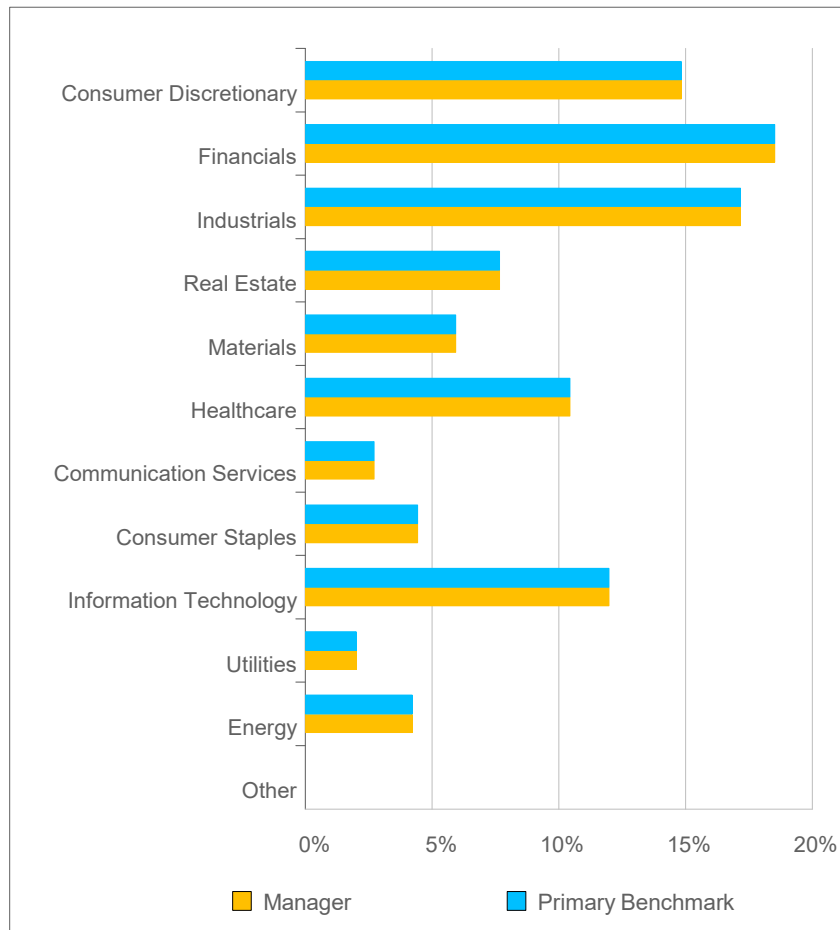
City of Grosse Pointe Woods Employees Retirement System

Vanguard S&P Small Cap 600 Index

Equity Sector

Report For Periods Ending December 31, 2023

Sector Allocation



Sector	Sector Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Consumer Discretionary	15%	15%	22.3%	32.0%
Financials	19	19	20.3	5.5
Industrials	17	17	16.9	31.3
Real Estate	8	8	16.8	7.3
Materials	6	6	15.6	20.4
Healthcare	10	10	14.0	-2.9
Communication Services	3	3	11.3	13.9
Consumer Staples	4	4	10.8	15.0
Information Technology	12	12	10.3	22.4
Utilities	2	2	9.3	-7.6
Energy	4	4	-8.1	4.9
Other	0	0	-	5.6

Top Five Holdings

	Weighting
Cytokinetics, Incorporated	0.7%
e.l.f. Beauty, Inc.	0.7
SPS Commerce, Inc.	0.6
Fabrinet	0.6
Applied Industrial Technologies, Inc.	0.6

Number of Holdings: 602

* Sector weightings may not add up to 100% due to rounding.

* Manager data represents the most current available at the time of report publication.

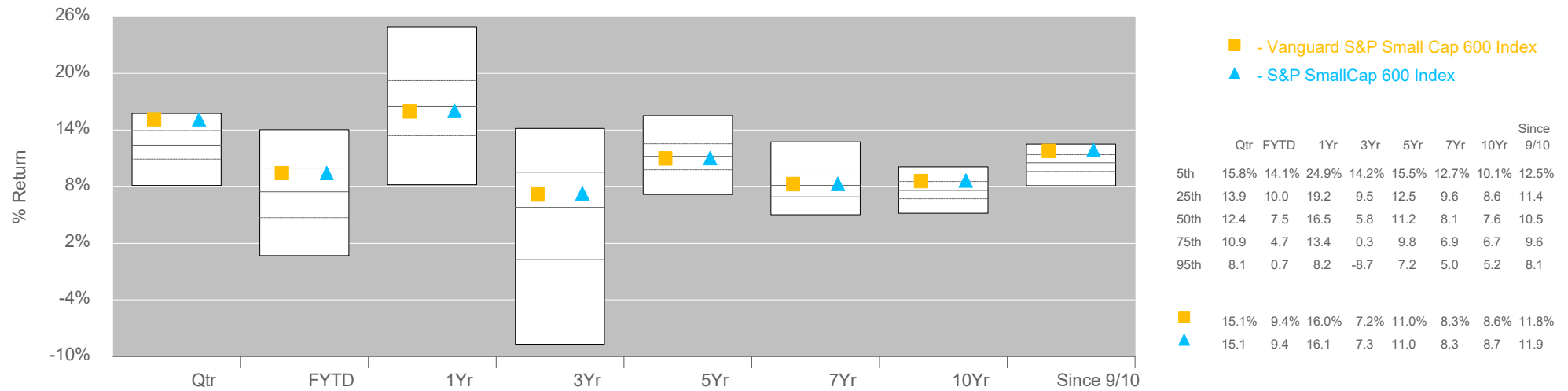
* Effective fourth quarter 2018, Telecommunication Services was replaced by Communication Services by the Global Industry Classification Standard (GICS). Some members of Consumer Discretionary, Technology, and Telecommunication Services were reclassified as Communication Services.

City of Grosse Pointe Woods Employees Retirement System

Vanguard S&P Small Cap 600 Index

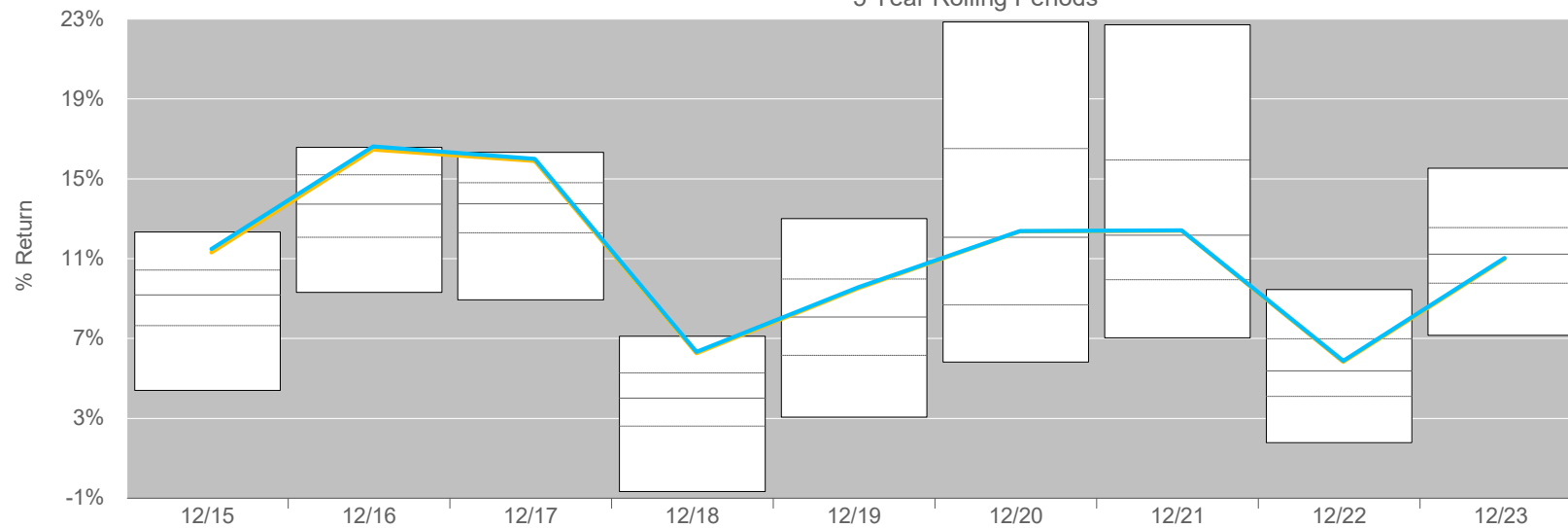
Broad Small Cap Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2010 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

EuroPacific Growth Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
EuroPacific Growth Fund	10.3%	3.3%	15.9%	-2.8%	7.9%	7.2%	4.8%	5.2%	8/08
MSCI AC World Index ex-U.S.	9.8	5.6	15.6	1.5	7.1	6.3	3.8	3.7	
Risk Statistics (5 years)	Beta		Alpha		R ²		Standard Deviation	Tracking Error	Information Ratio
EuroPacific Growth Fund	1.05		0.6%		0.95		21.2%	4.5%	0.2
MSCI AC World Index ex-U.S.	1.00		0.0		1.00		19.4	0.0	--
Portfolio Statistics	Trailing P/E		Trailing P/B		Wtd Avg Mkt Cap		Current Yield	Equity Annual Turnover	
EuroPacific Growth Fund	19.4		3.1		117,089.0M		2.0%	34.0%	
MSCI AC World Index ex-U.S.	11.0		1.8		92,448.0		3.0	--	

* Risk Statistics are based on monthly data. MSCI does not compute the Weighted Average Market Capitalization - the average market capitalization is used as the best available representation.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

EuroPacific Growth Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 0.8%	Yes
Beta < 1.20	Beta = 1.05	Yes
Alpha > 0.0%	Alpha = 0.6%	Yes
Peer Group Rank > 50th Percentile	Ranks in Bottom 50th Percentile	No

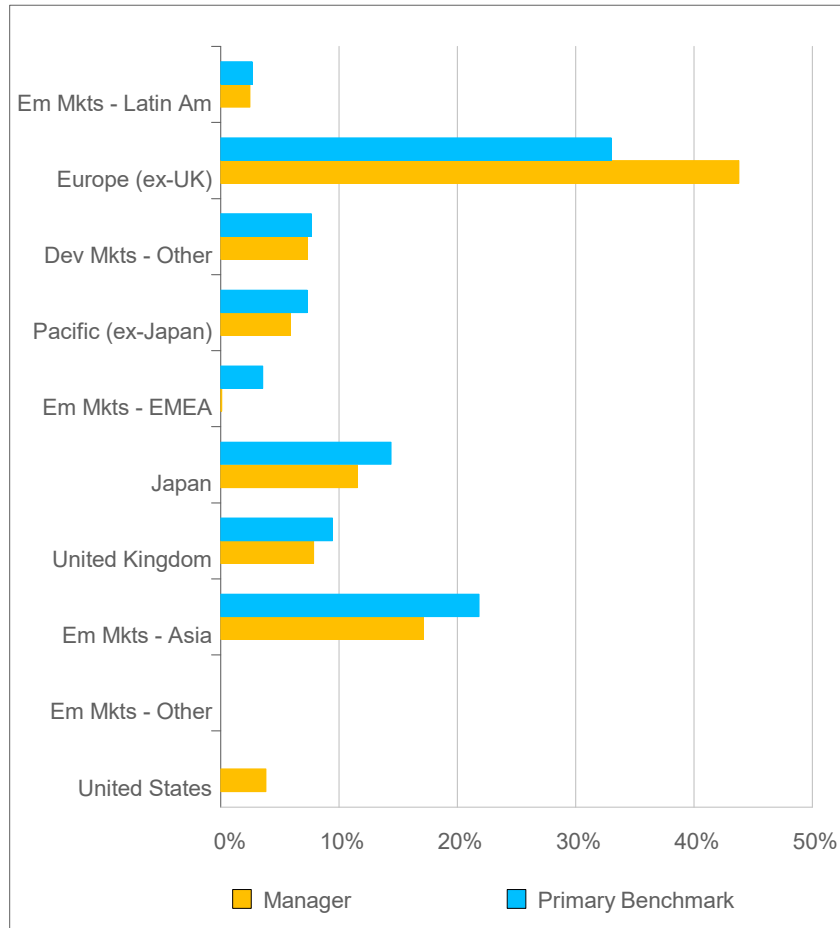
City of Grosse Pointe Woods Employees Retirement System

EuroPacific Growth Fund

International Sector

Report For Periods Ending December 31, 2023

Region Allocation



Region	Region Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Em Mkts - Latin Am	2%	3%	17.8%	33.5%
Europe (ex-UK)	44	33	12.4	22.4
Dev Mkts - Other	7	8	11.5	16.4
Pacific (ex-Japan)	6	7	11.4	6.6
Em Mkts - EMEA	0	4	8.4	8.6
Japan	12	14	8.2	20.8
United Kingdom	8	9	6.9	14.5
Em Mkts - Asia	17	22	6.8	8.2
Em Mkts - Other	0	0	-	-
United States	4	0	-	-

Top Five Countries	Weighting
France	13.5%
Japan	11.6
United Kingdom	7.9
India	7.2
Canada	6.8

Number of Holdings: 320

* Sector weightings may not add up to 100% due to rounding.

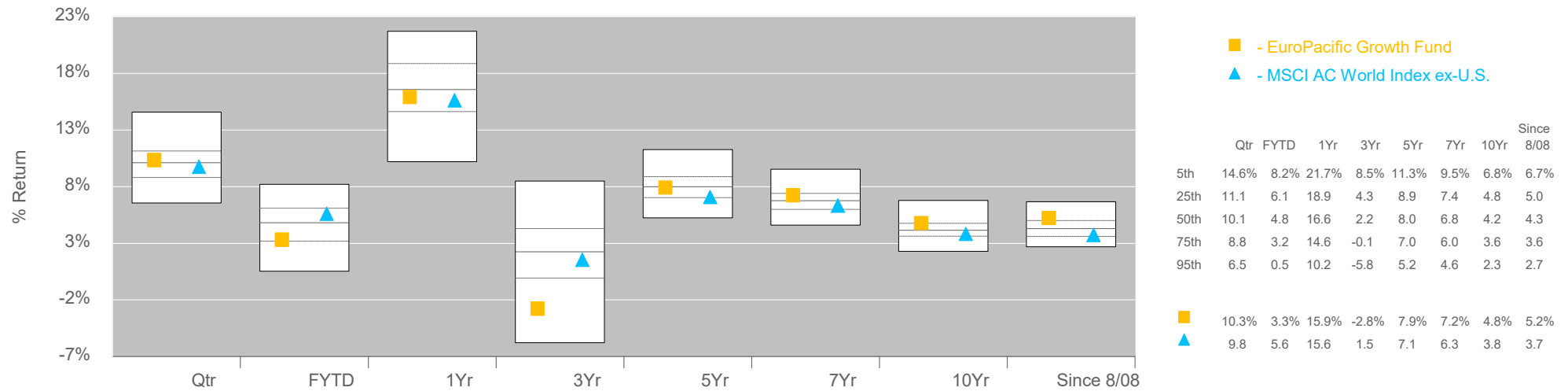
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

EuroPacific Growth Fund

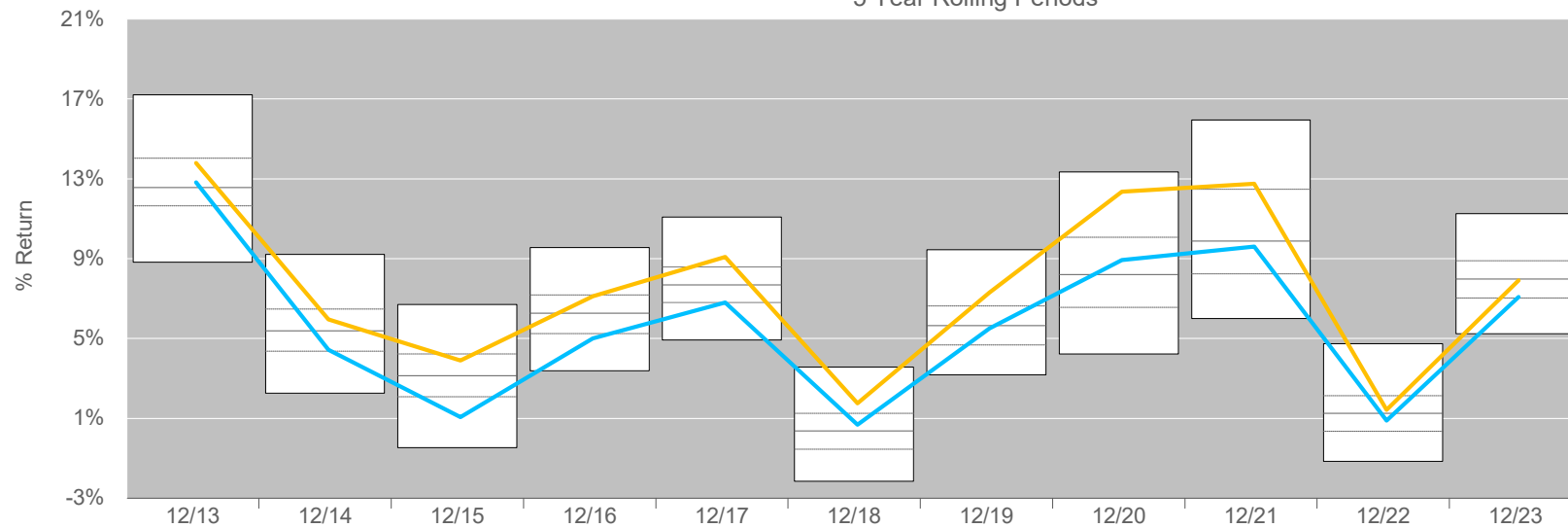
International Equity Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2008 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox International Stock Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Dodge & Cox International Stock Fund	6.8%	5.4%	16.7%	6.5%	8.6%	6.4%	4.0%	5.7%	1/05
MSCI AC World Index ex-U.S.	9.8	5.6	15.6	1.5	7.1	6.3	3.8	5.1	
MSCI EAFE Index	10.4	5.9	18.2	4.0	8.2	6.9	4.3	5.0	
Risk Statistics (5 years)	Beta	Alpha	R ²	Standard Deviation	Tracking Error	Information Ratio			
Dodge & Cox International Stock Fund	1.14	0.8%	0.90	23.9%	7.2%	0.2			
MSCI AC World Index ex-U.S.	1.00	0.0	1.00	19.4	0.0	--			
MSCI EAFE Index	1.00	1.1	0.97	19.9	7.5	0.1			
Portfolio Statistics	Trailing P/E	Trailing P/B	Wtd Avg Mkt Cap	Current Yield	Equity Annual Turnover				
Dodge & Cox International Stock Fund	9.5	1.2	77,000.0M	3.2%	6.0%				
MSCI AC World Index ex-U.S.	11.0	1.8	92,448.0	3.0	--				
MSCI EAFE Index	13.3	1.7	89,600.0	3.1	--				

* Risk Statistics are based on monthly data. MSCI does not compute the Weighted Average Market Capitalization - the average market capitalization is used as the best available representation.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox International Stock Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 1.6%	Yes
Beta < 1.20	Beta = 1.14	Yes
Alpha > 0.0%	Alpha = 0.8%	Yes
Peer Group Rank > 50th Percentile	Ranks in Top 33rd Percentile	Yes

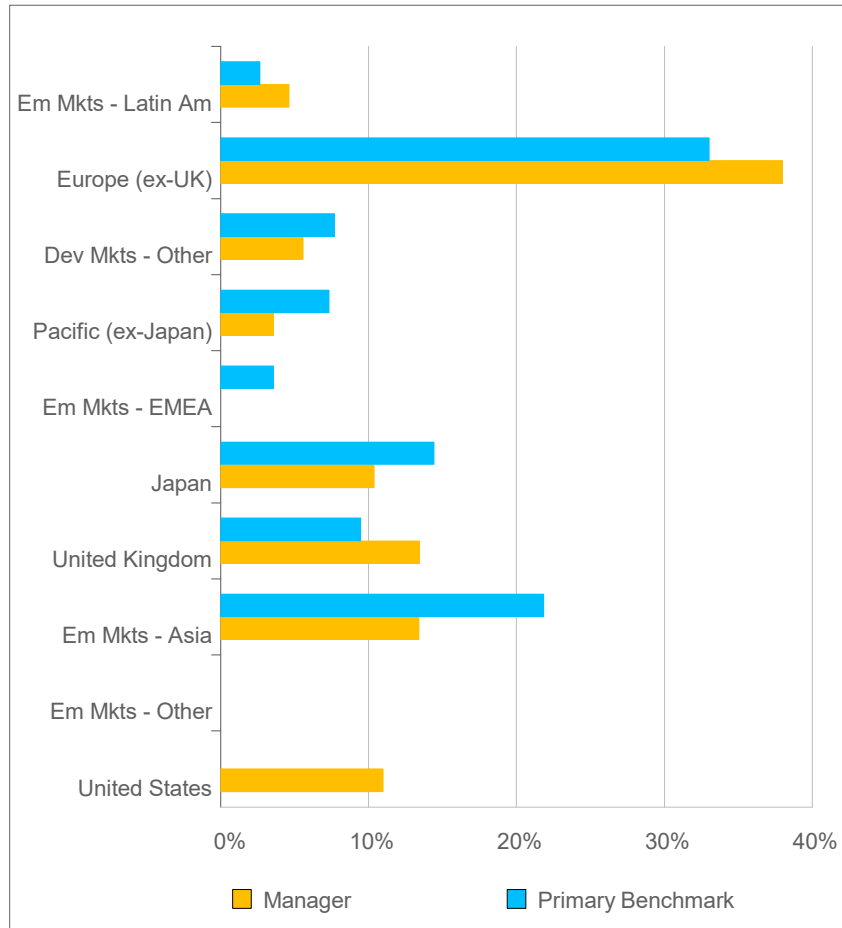
City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox International Stock Fund

International Sector

Report For Periods Ending December 31, 2023

Region Allocation



Region	Region Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Em Mkts - Latin Am	5%	3%	17.8%	33.5%
Europe (ex-UK)	38	33	12.4	22.4
Dev Mkts - Other	6	8	11.5	16.4
Pacific (ex-Japan)	4	7	11.4	6.6
Em Mkts - EMEA	0	4	8.4	8.6
Japan	10	14	8.2	20.8
United Kingdom	13	9	6.9	14.5
Em Mkts - Asia	13	22	6.8	8.2
Em Mkts - Other	0	0	-	-
United States	11	0	-	-

Top Five Countries

	Weighting
United Kingdom	13.5%
France	11.9
Switzerland	11.5
United States	11.0
Japan	10.4

Number of Holdings: 69

* Sector weightings may not add up to 100% due to rounding.

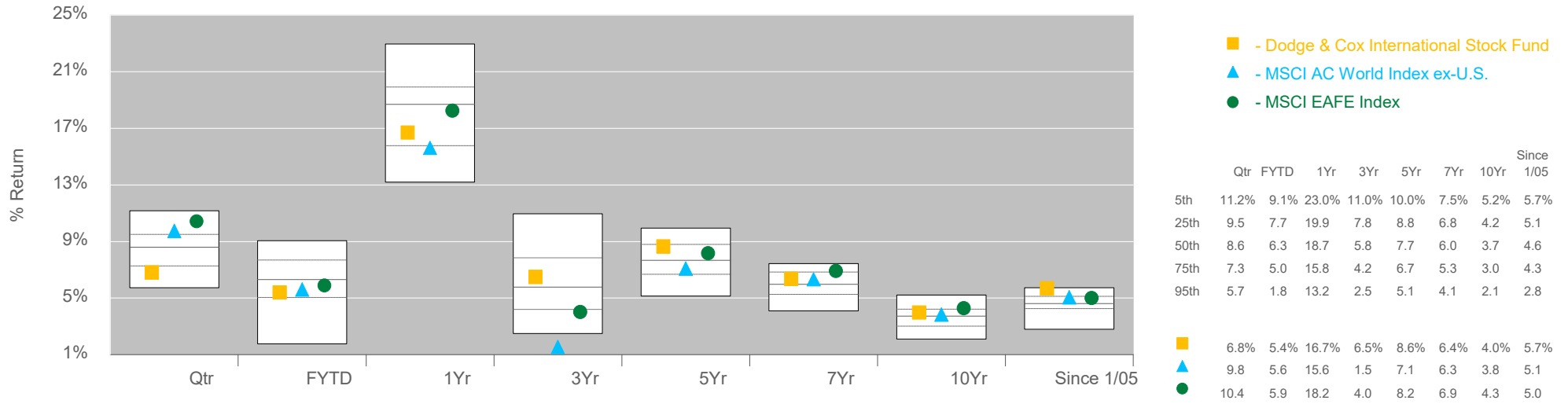
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox International Stock Fund

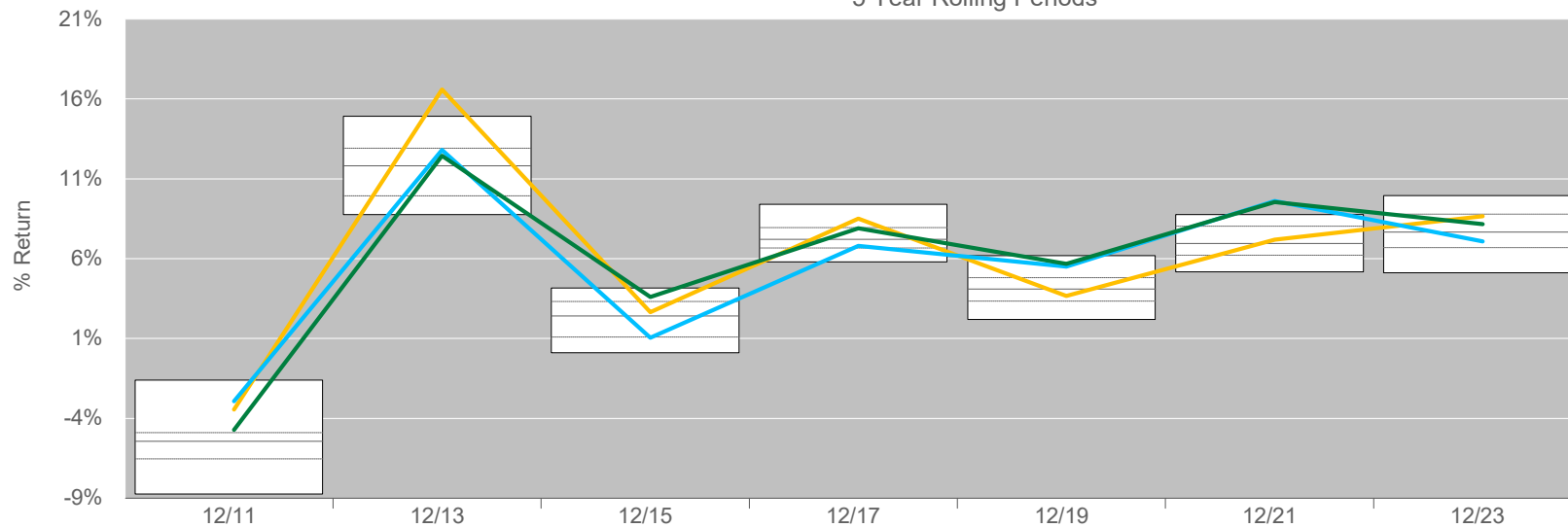
International Value Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods

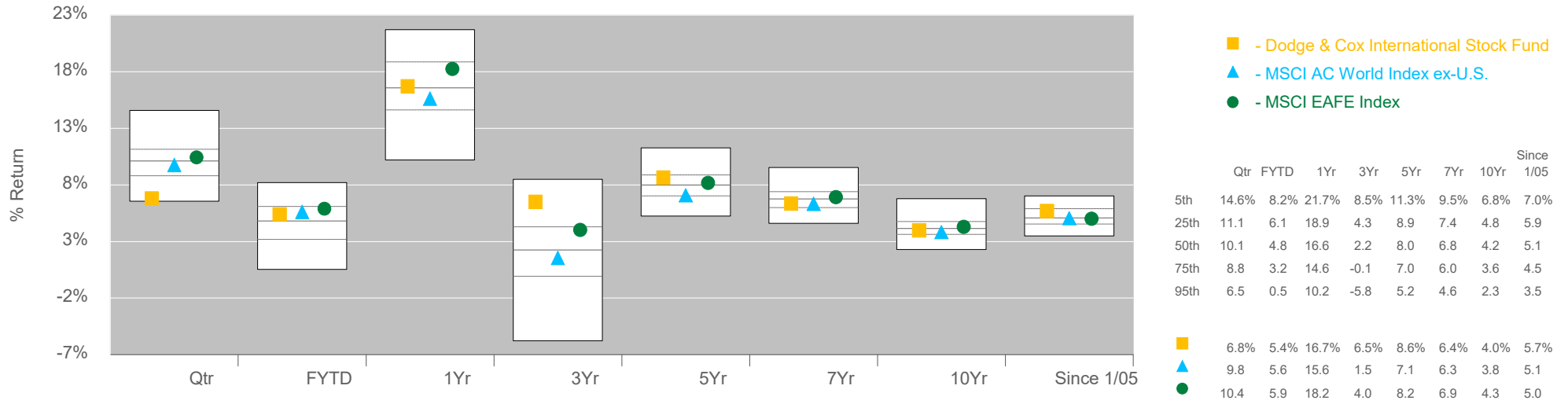


City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox International Stock Fund

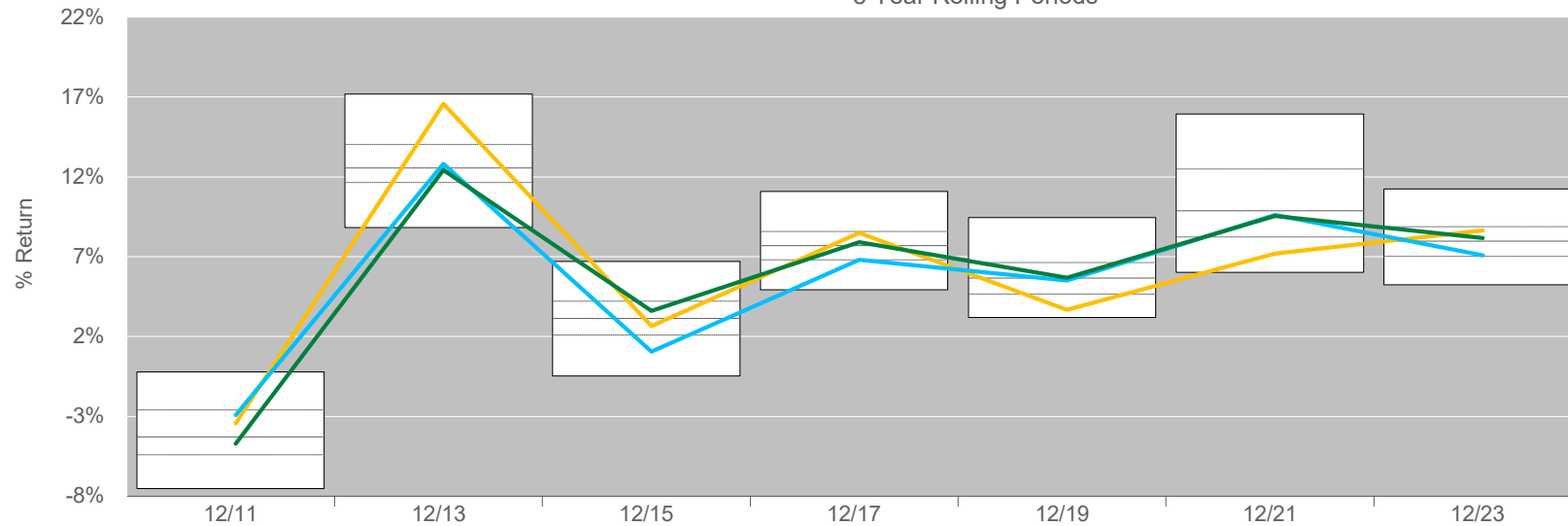
International Equity Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Brown International Small Company

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	Since Inception	Inception Date
Brown International Small Company	17.5%	6.0%	20.4%	-2.3%	11.4%	12.5%	11.8%	9/15
MSCI Small Cap EAFE Index	11.1	7.2	13.2	-0.7	6.6	6.0	6.2	
MSCI ACWI ex-U.S. Small Cap Index	10.1	8.3	15.7	1.5	7.9	6.7	6.8	

Risk Statistics (5 years)	Beta	Alpha	R ²	Standard Deviation	Tracking Error	Information Ratio
Brown International Small Company	0.98	4.9%	0.80	25.2%	9.9%	0.5
MSCI Small Cap EAFE Index	1.00	0.0	1.00	22.0	0.0	--
MSCI ACWI ex-U.S. Small Cap Index	0.98	1.4	0.98	22.1	10.6	0.3

Portfolio Statistics	Trailing P/E	Trailing P/B	Wtd Avg Mkt Cap	Current Yield	Equity Annual Turnover
Brown International Small Company	66.0	11.6	5,746.1 M	1.2%	14.7%
MSCI Small Cap EAFE Index	13.6	1.3	2,851.0	3.0	--
MSCI ACWI ex-U.S. Small Cap Index	13.6	1.4	2,528.0	2.8	--

Asset Growth Summary (in thousands)

Beginning Market Value	\$	0
Net Contributions/(Distributions)	\$	0
Market Appreciation/(Depreciation)	\$	0
Ending Market Value	\$	0

* Risk Statistics are based on monthly data. MSCI does not compute the Weighted Average Market Capitalization - the average market capitalization is used as the best available representation.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Brown International Small Company

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 4.8%	Yes
Beta < 1.20	Beta = 0.98	Yes
Alpha > 0.0%	Alpha = 4.9%	Yes
Peer Group Rank > 50th Percentile	Ranks in Top 5th Percentile	Yes

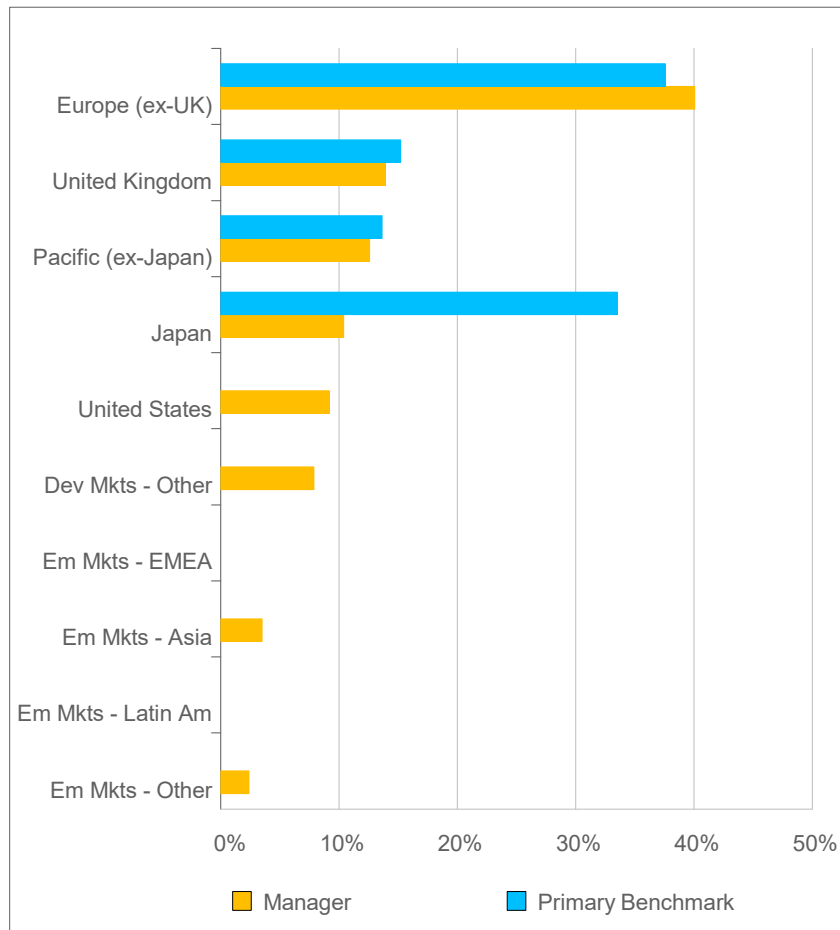
City of Grosse Pointe Woods Employees Retirement System

Brown International Small Company

International Sector

Report For Periods Ending December 31, 2023

Region Allocation



Region	Region Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Europe (ex-UK)	40%	38%	14.4%	16.3%
United Kingdom	14	15	13.3	16.5
Pacific (ex-Japan)	13	14	9.7	4.8
Japan	10	34	7.5	13.8
United States	9	0	-	-
Dev Mkts - Other	8	0	-	-
Em Mkts - EMEA	0	0	-	-
Em Mkts - Asia	4	0	-	-
Em Mkts - Latin Am	0	0	-	-
Em Mkts - Other	2	0	-	-

Top Five Countries	Weighting
United Kingdom	13.9%
France	13.0
Australia	12.6
Japan	10.4
Germany	9.7

Number of Holdings: 38

* Sector weightings may not add up to 100% due to rounding.

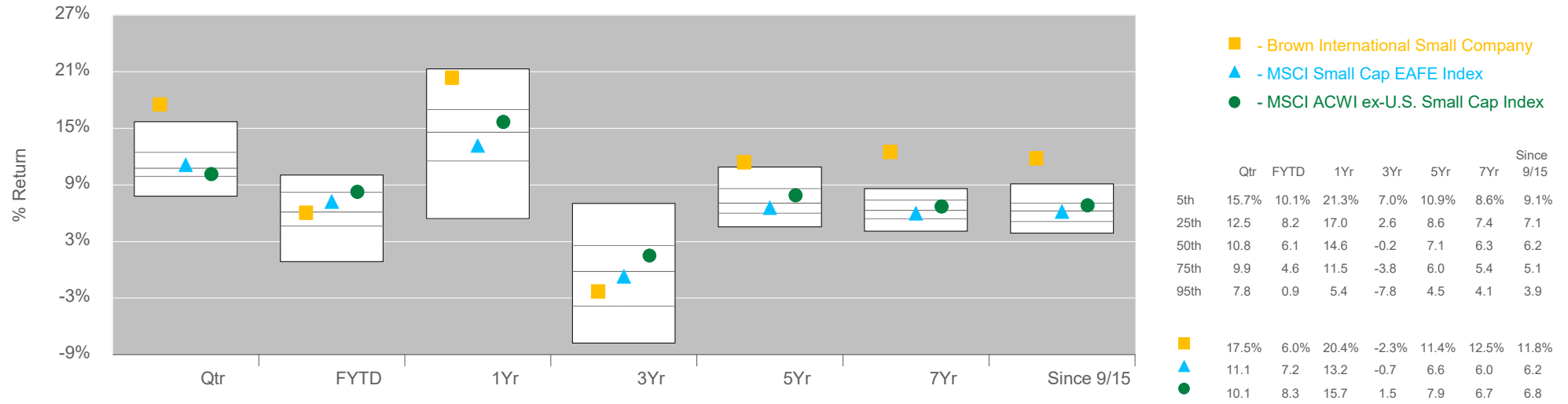
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Brown International Small Company

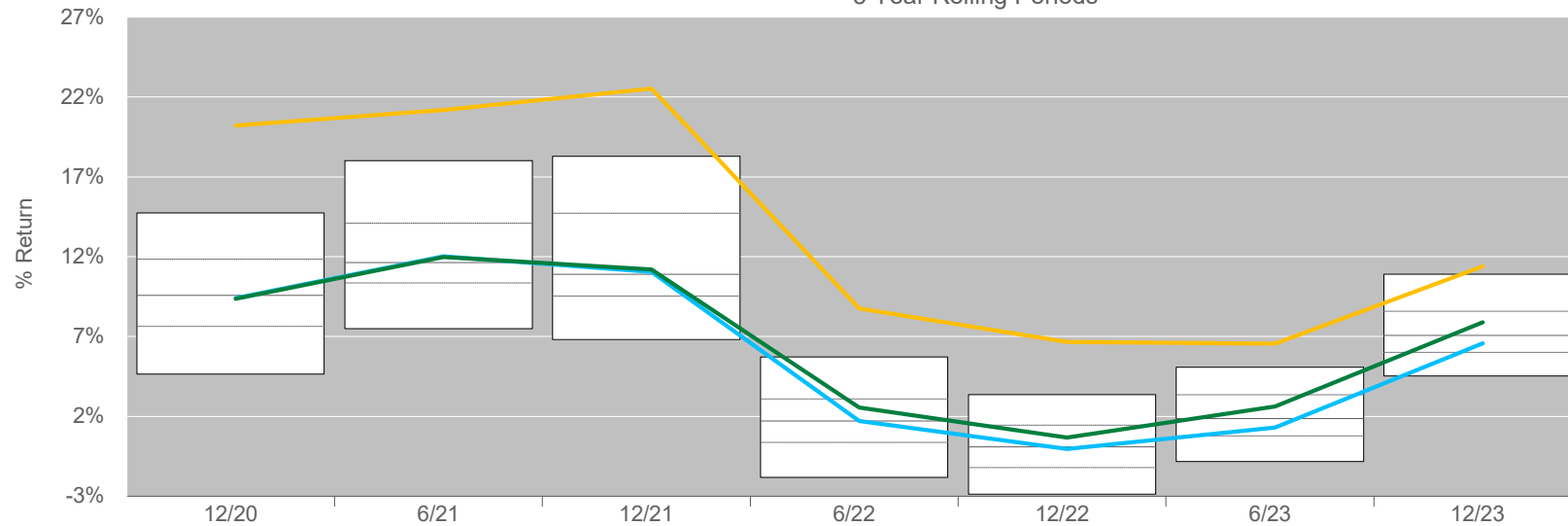
International Small Cap Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2015 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Redwheel Global Emerging Equity Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Redwheel Global Emerging Equity Fund	3.4%	2.4%	5.6%	-8.5%	5.4%	4.7%	4.5%	6.1%	7/12
MSCI Emerging Markets Index	7.9	4.7	9.8	-5.1	3.7	5.0	2.7	3.1	
Risk Statistics (5 years)	Beta		Alpha		R ²		Standard Deviation	Tracking Error	Information Ratio
Redwheel Global Emerging Equity Fund	1.25		1.3%		0.93		27.1%	8.1%	0.2
MSCI Emerging Markets Index	1.00		0.0		1.00		20.3	0.0	--
Portfolio Statistics	Trailing P/E		Trailing P/B		Wtd Avg Mkt Cap		Current Yield	Equity Annual Turnover	
Redwheel Global Emerging Equity Fund	10.9		1.5		81,779.0M		2.7%	93.1%	
MSCI Emerging Markets Index	7.4		1.9		109,149.0		2.9	--	

* Risk Statistics are based on monthly data. MSCI does not compute the Weighted Average Market Capitalization - the average market capitalization is used as the best available representation.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Redwheel Global Emerging Equity Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 1.7%	Yes
Beta < 1.20	Beta = 1.25	No
Alpha > 0.0%	Alpha = 1.3%	Yes
Peer Group Rank > 50th Percentile	Ranks in Top 33rd Percentile	Yes

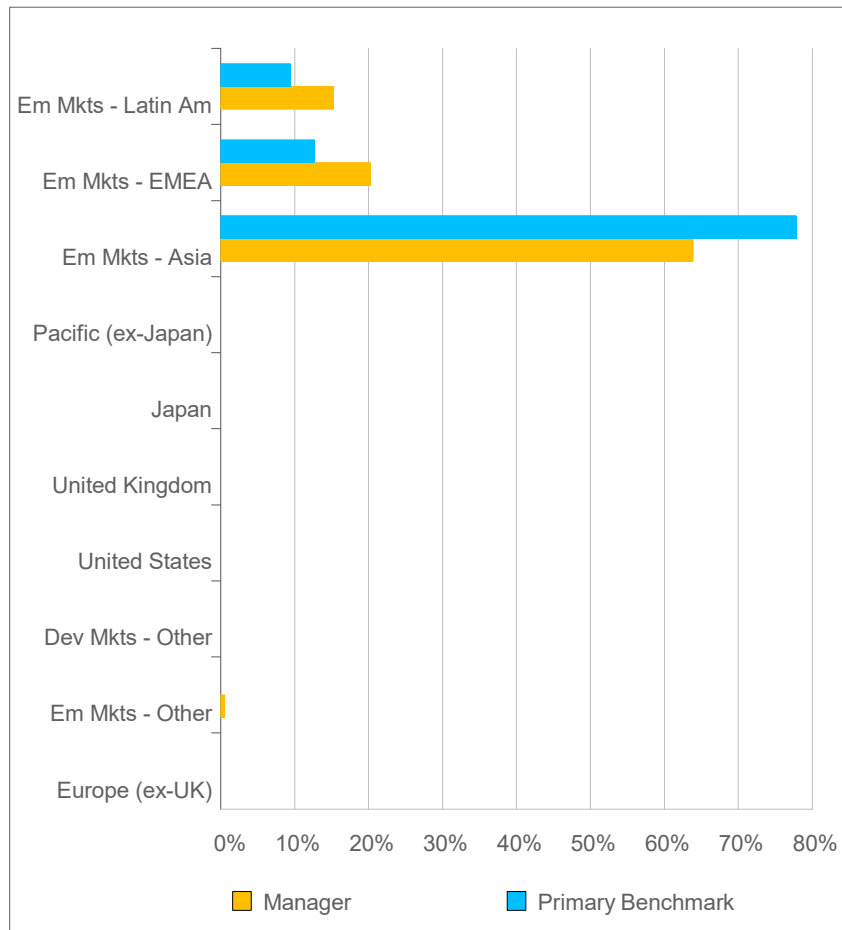
City of Grosse Pointe Woods Employees Retirement System

Redwheel Global Emerging Equity Fund

Emerging Markets Sector

Report For Periods Ending December 31, 2023

Region Allocation



Region	Region Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Em Mkts - Latin Am	15%	9%	17.8%	33.5%
Em Mkts - EMEA	20	13	8.4	8.6
Em Mkts - Asia	64	78	6.8	8.2
Pacific (ex-Japan)	0	0	-2.2	57.8
Japan	0	0	-	-
United Kingdom	0	0	-	-
United States	0	0	-	-
Dev Mkts - Other	0	0	-	-
Em Mkts - Other	1	0	-	-
Europe (ex-UK)	0	0	-	-

Top Five Countries	Weighting
China	32.3%
Brazil	12.1
Taiwan	9.6
Korea, South	9.4
India	7.7

Number of Holdings: 55

* Sector weightings may not add up to 100% due to rounding.

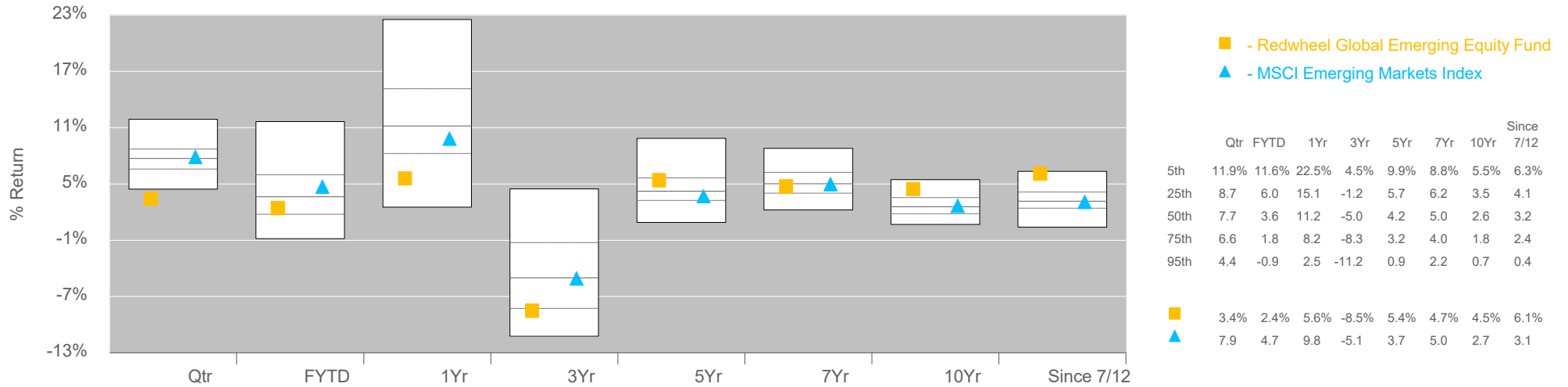
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Redwheel Global Emerging Equity Fund

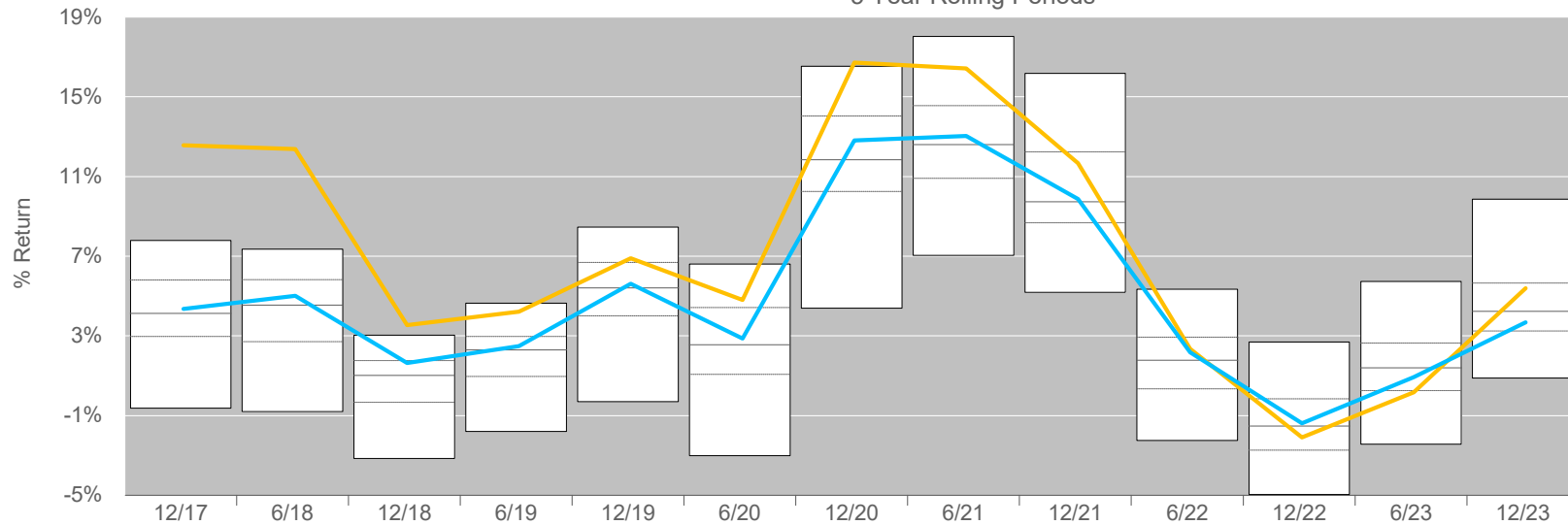
Emerging Markets Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2012 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

DFA Emerging Markets Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
DFA Emerging Markets Fund	7.8%	5.2%	13.1%	-1.2%	5.0%	6.0%	3.4%	6.3%	1/05
MSCI Emerging Markets Index	7.9	4.7	9.8	-5.1	3.7	5.0	2.7	5.9	
Risk Statistics (5 years)	Beta		Alpha		R ²		Standard Deviation	Tracking Error	Information Ratio
DFA Emerging Markets Fund	1.00		1.3%		0.97		20.7%	3.2%	0.4
MSCI Emerging Markets Index	1.00		0.0		1.00		20.3	0.0	--
Portfolio Statistics	Trailing P/E		Trailing P/B		Wtd Avg Mkt Cap		Current Yield	Equity Annual Turnover	
DFA Emerging Markets Fund	12.7		1.6		87,314.8M		2.7%	10.0%	
MSCI Emerging Markets Index	7.4		1.9		109,149.0		2.9	--	

* Risk Statistics are based on monthly data. MSCI does not compute the Weighted Average Market Capitalization - the average market capitalization is used as the best available representation.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

DFA Emerging Markets Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 1.3%	Yes
Beta < 1.20	Beta = 1.00	Yes
Alpha > 0.0%	Alpha = 1.3%	Yes
Peer Group Rank > 50th Percentile	Ranks in Top 50th Percentile	Yes

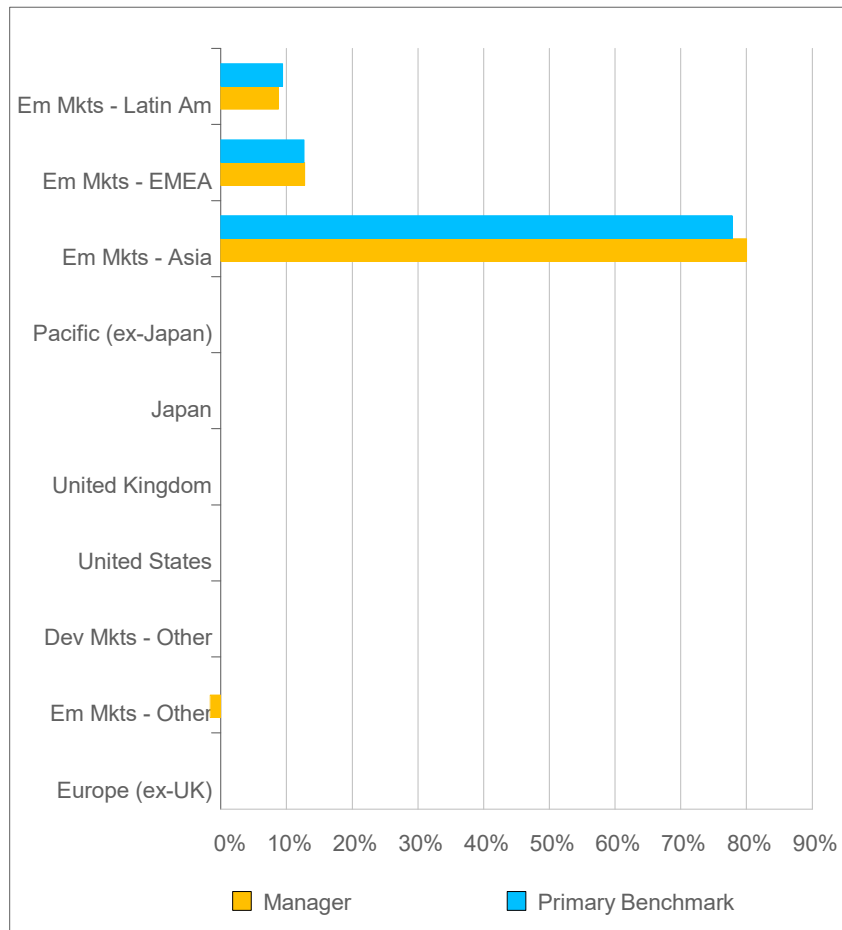
City of Grosse Pointe Woods Employees Retirement System

DFA Emerging Markets Fund

Emerging Markets Sector

Report For Periods Ending December 31, 2023

Region Allocation



Region	Region Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Em Mkts - Latin Am	9%	9%	17.8%	33.5%
Em Mkts - EMEA	13	13	8.4	8.6
Em Mkts - Asia	80	78	6.8	8.2
Pacific (ex-Japan)	0	0	-2.2	57.8
Japan	0	0	-	-
United Kingdom	0	0	-	-
United States	0	0	-	-
Dev Mkts - Other	0	0	-	-
Em Mkts - Other	-2	0	-	-
Europe (ex-UK)	0	0	-	-

Top Five Countries	Weighting
China	23.7%
Taiwan	18.0
India	17.7
Korea, South	13.1
Brazil	5.3

Number of Holdings: 1843

* Sector weightings may not add up to 100% due to rounding.

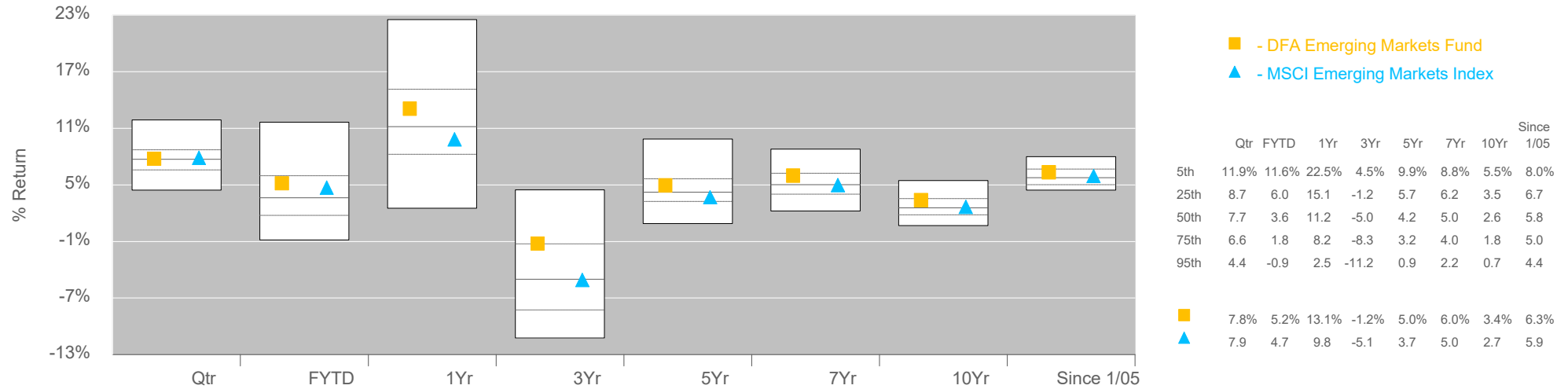
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

DFA Emerging Markets Fund

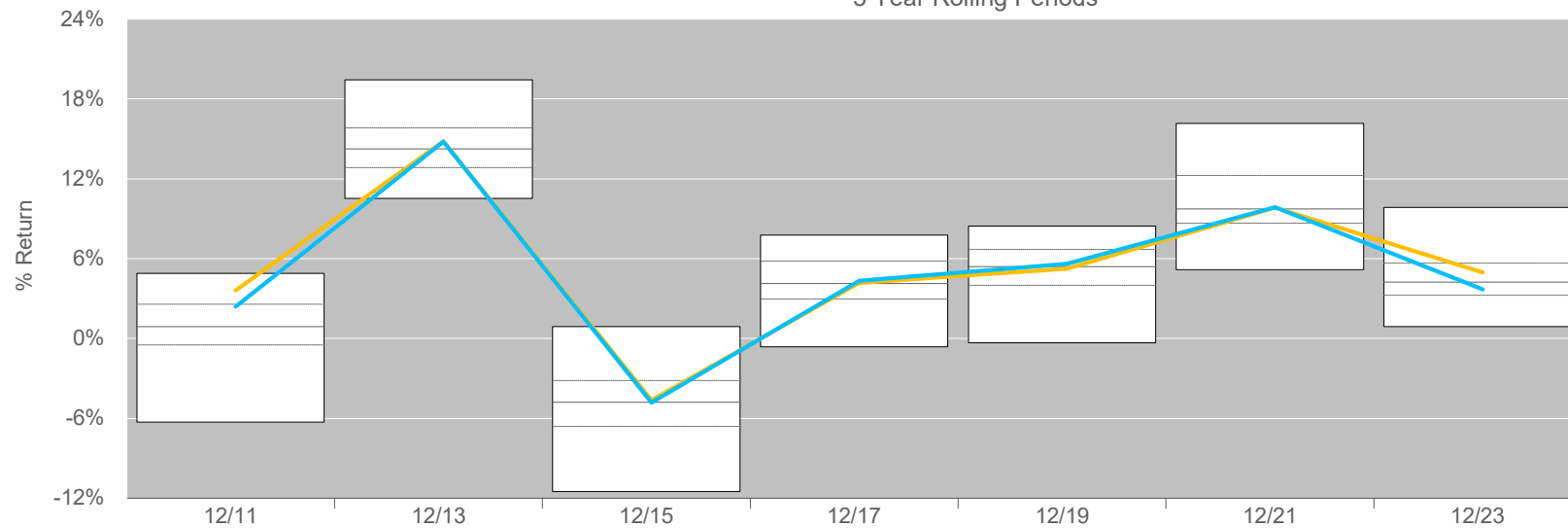
Emerging Markets Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox Income Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Dodge & Cox Income Fund	7.3%	4.3%	7.7%	-1.7%	2.7%	2.5%	2.8%	3.9%	1/05
Bloomberg IG Credit Index	8.2	4.6	7.7	-3.6	2.2	2.1	2.7	3.7	
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	1.1	1.3	1.8	3.1	

Risk Statistics (5 years)	Beta	Alpha	R ²	Standard Deviation	Tracking Error	Information Ratio
Dodge & Cox Income Fund	0.75	0.6%	0.96	6.5%	2.4%	0.2
Bloomberg IG Credit Index	1.00	0.0	1.00	8.4	0.0	--
Bloomberg U.S. Aggregate Index	0.72	-1.0	0.91	6.2	2.1	0.8

Portfolio Statistics	Effective Duration	Wtd Avg Maturity	Wtd Avg Credit	Yield to Worst	FI Annl Turnover
Dodge & Cox Income Fund	5.7yrs	10.4yrs	A	6.2%	42.0%
Bloomberg IG Credit Index	--	--	--	--	--
Bloomberg U.S. Aggregate Index	6.2	8.4	AA	4.5	--

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox Income Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 0.5%	Yes
Beta < 1.20	Beta = 0.75	Yes
Alpha > 0.0%	Alpha = 0.6%	Yes
Peer Group Rank > 50th Percentile	Ranks in Top 5th Percentile	Yes

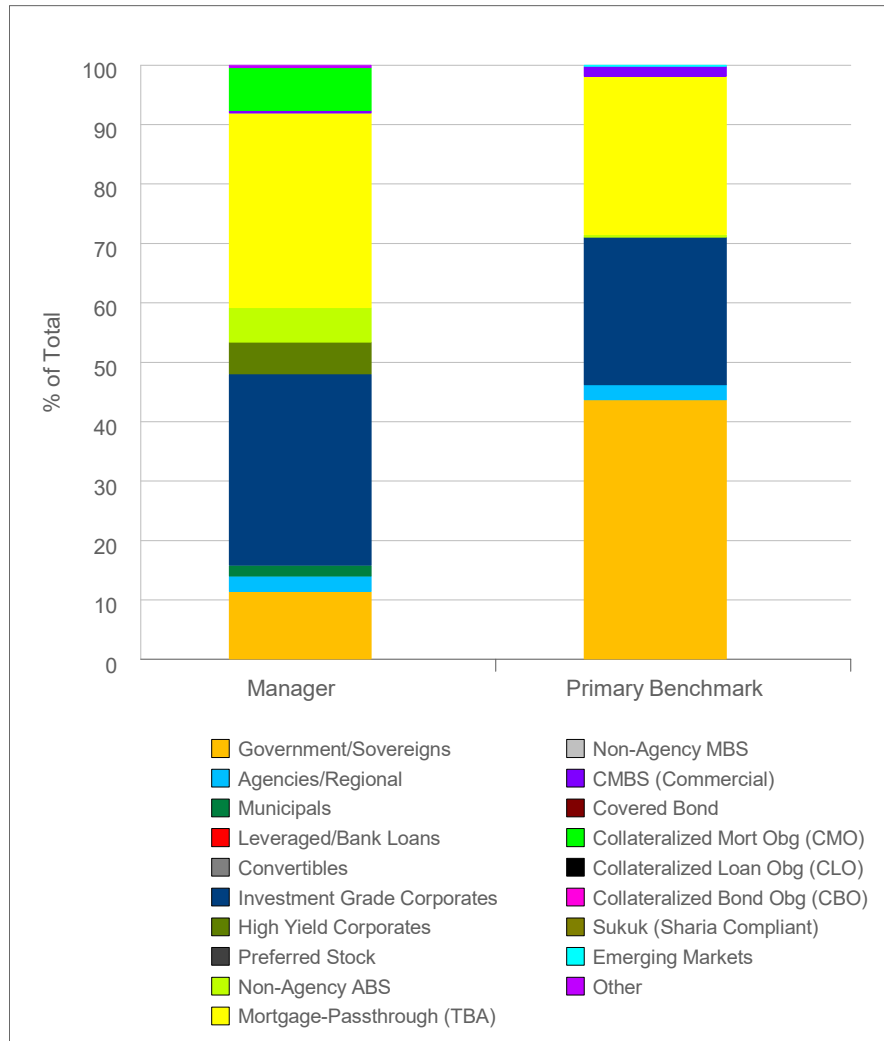
City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox Income Fund

Fixed Income Sector

Report For Periods Ending December 31, 2023

Sector Allocation



Sector	Sector Weightings		Market Total Returns	
	Manager	Benchmark	3 Months	12 Months
Total Weighting	100%	100%	6.8%	5.5%
Government/Sovereigns	11	44	5.7	4.1
Agencies/Regional	3	3	5.1	5.9
Municipals	2	0	-	-
Leveraged/Bank Loans	0	0	-	-
Convertibles	0	0	-	-
Investment Grade Corporates	32	25	8.5	8.6
High Yield Corporates	5	0	9.0	8.5
Preferred Stock	0	0	-	-
Non-Agency ABS	6	0	3.5	5.5
Mortgage-Passthrough (TBA)	33	27	7.6	5.0
Non-Agency MBS	0	0	-	-
CMBS (Commercial)	0	2	5.2	5.4
Covered Bond	0	0	-	-
Collateralized Mort Obg (CMO)	7	0	-	-
Collateralized Loan Obg (CLO)	0	0	-	-
Collateralized Bond Obg (CBO)	0	0	-	-
Sukuk (Sharia Compliant)	0	0	-	-
Emerging Markets	0	0	8.4	9.0
Other	0	0	-	-

*Sector weightings may not add up to 100% due to rounding.

*Benchmark weightings are for the Bloomberg U.S. Aggregate Index.

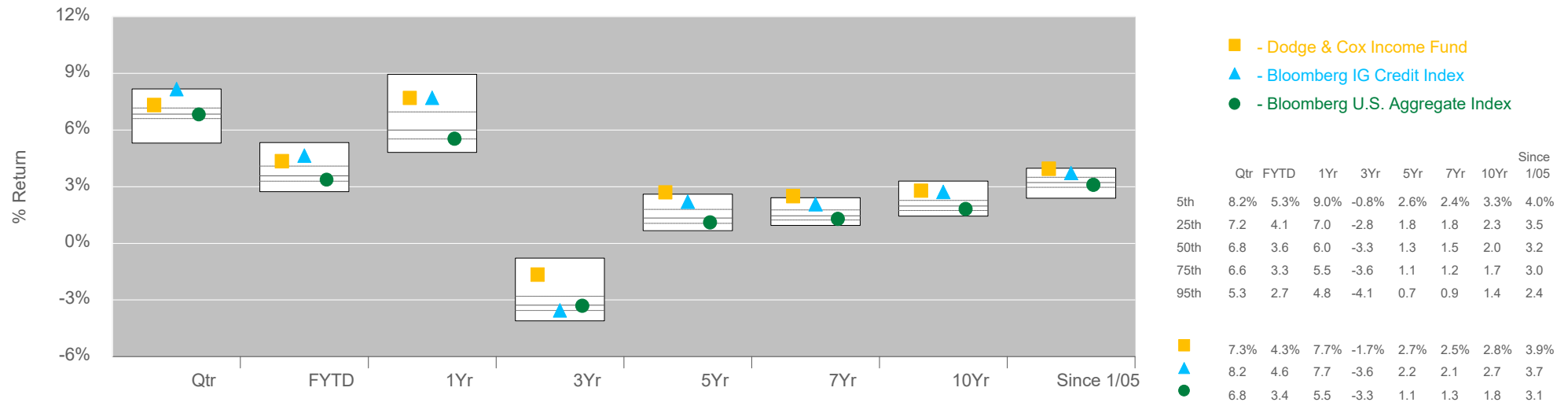
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Dodge & Cox Income Fund

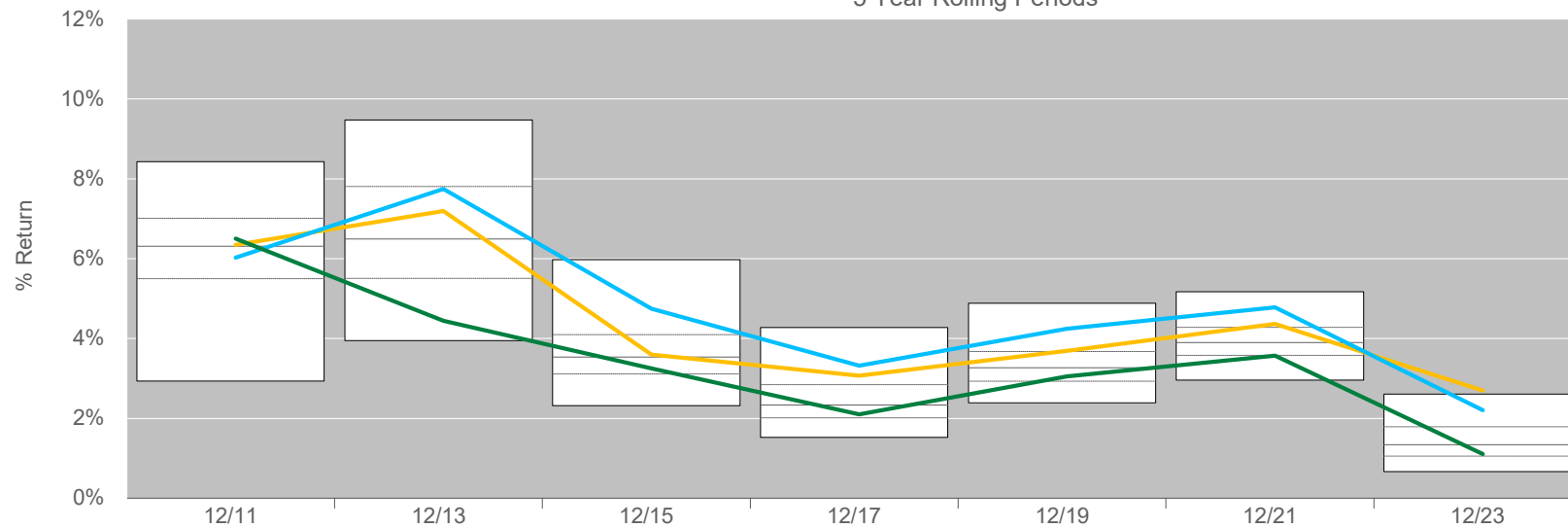
Core Fixed Income Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

DoubleLine Total Return Bond Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
DoubleLine Total Return Bond Fund	6.4%	2.8%	5.3%	-2.6%	0.3%	1.0%	1.8%	3.5%	4/10
Bloomberg U.S. MBS Index	7.5	3.1	5.0	-2.9	0.3	0.7	1.4	1.8	
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	1.1	1.3	1.8	2.3	

Risk Statistics (5 years)	Beta	Alpha	R ²	Standard Deviation	Tracking Error	Information Ratio
DoubleLine Total Return Bond Fund	0.80	-0.2%	0.76	5.7%	3.0%	0.0
Bloomberg U.S. MBS Index	1.00	0.0	1.00	6.2	0.0	--
Bloomberg U.S. Aggregate Index	0.94	0.8	0.89	6.2	2.2	-0.3

Portfolio Statistics	Effective Duration	Wtd Avg Maturity	Wtd Avg Credit	Yield to Worst	FI Annl Turnover
DoubleLine Total Return Bond Fund	6.0yrs	6.9yrs	A	6.1%	37.0%
Bloomberg U.S. MBS Index	--	--	--	--	--
Bloomberg U.S. Aggregate Index	6.2	8.4	AA	4.5	--

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

DoubleLine Total Return Bond Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 0.1%	Yes
Beta < 1.20	Beta = 0.80	Yes
Alpha > 0.0%	Alpha = -0.2%	No
Peer Group Rank > 50th Percentile	Ranks in Bottom 5th Percentile	No

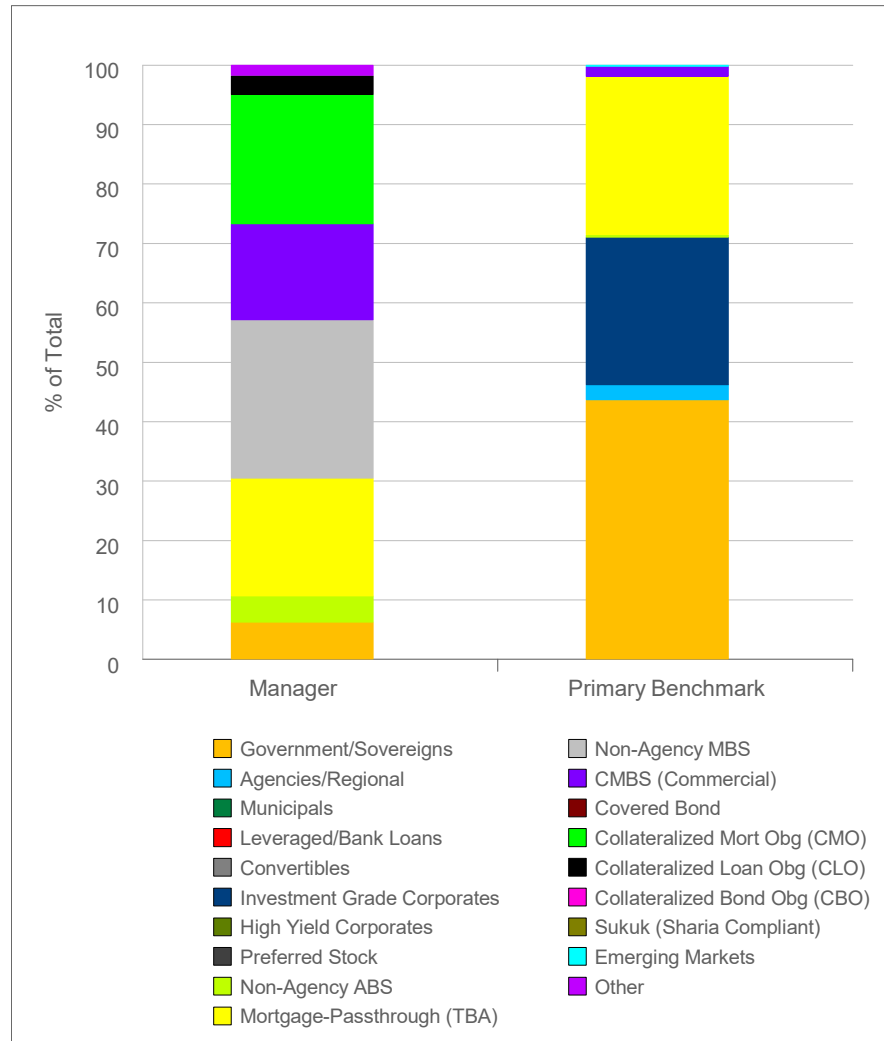
City of Grosse Pointe Woods Employees Retirement System

DoubleLine Total Return Bond Fund

Fixed Income Sector

Report For Periods Ending December 31, 2023

Sector Allocation



Sector	Sector Weightings		Market Total Returns	
	Manager	Benchmark	3 Months	12 Months
Total Weighting	100%	100%	6.8%	5.5%
Government/Sovereigns	6	44	5.7	4.1
Agencies/Regional	0	3	5.1	5.9
Municipals	0	0	-	-
Leveraged/Bank Loans	0	0	-	-
Convertibles	0	0	-	-
Investment Grade Corporates	0	25	8.5	8.6
High Yield Corporates	0	0	9.0	8.5
Preferred Stock	0	0	-	-
Non-Agency ABS	4	0	3.5	5.5
Mortgage-Passthrough (TBA)	20	27	7.6	5.0
Non-Agency MBS	27	0	-	-
CMBS (Commercial)	16	2	5.2	5.4
Covered Bond	0	0	-	-
Collateralized Mort Obg (CMO)	22	0	-	-
Collateralized Loan Obg (CLO)	3	0	-	-
Collateralized Bond Obg (CBO)	0	0	-	-
Sukuk (Sharia Compliant)	0	0	-	-
Emerging Markets	0	0	8.4	9.0
Other	2	0	-	-

*Sector weightings may not add up to 100% due to rounding.

*Benchmark weightings are for the Bloomberg U.S. Aggregate Index.

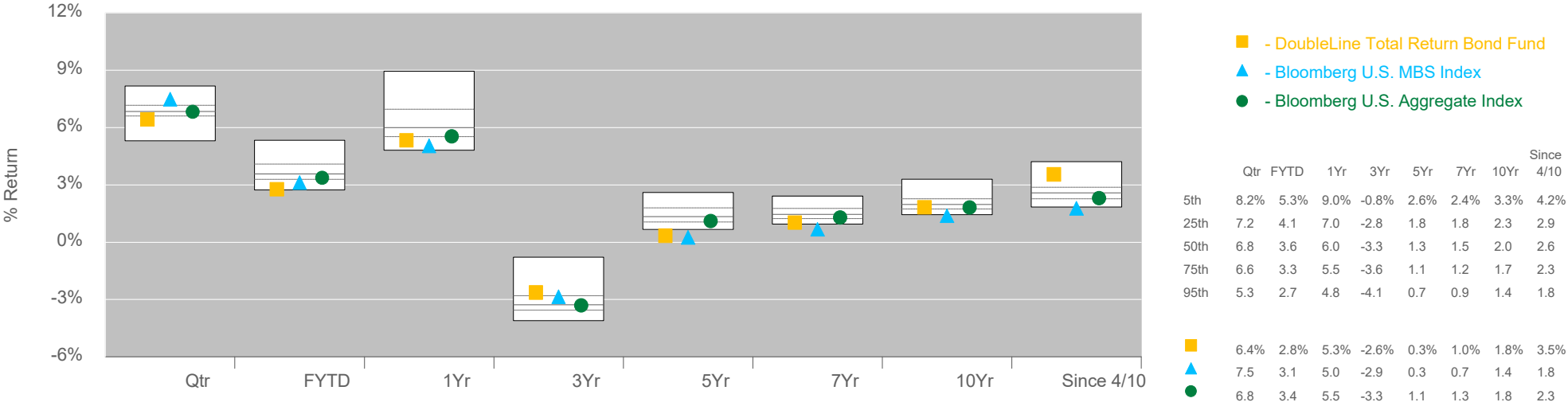
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

DoubleLine Total Return Bond Fund

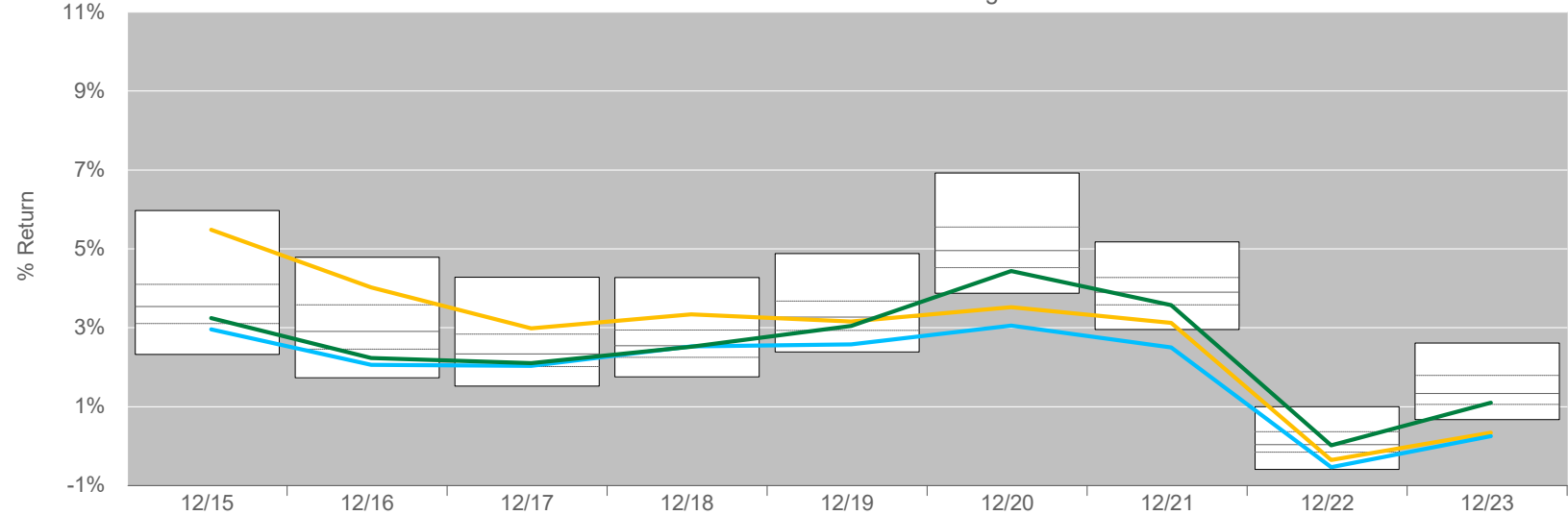
Core Fixed Income Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2010 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Vanguard Total Bond Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Vanguard Total Bond Fund	6.7%	3.4%	5.7%	-3.4%	1.1%	1.3%	1.8%	3.1%	1/05
Bloomberg U.S. Aggregate Index	6.8	3.4	5.5	-3.3	1.1	1.3	1.8	3.1	
Risk Statistics (5 years)	Beta		Alpha		R ²		Standard Deviation	Tracking Error	Information Ratio
Vanguard Total Bond Fund	1.00		0.0%		1.00		6.3%	0.3%	0.0
Bloomberg U.S. Aggregate Index	1.00		0.0		1.00		6.2	0.0	--
Portfolio Statistics	Effective Duration		Wtd Avg Maturity		Wtd Avg Credit		Yield to Worst	FI Annl Turnover	
Vanguard Total Bond Fund	6.2yrs		8.4yrs		AA		4.5%	--%	
Bloomberg U.S. Aggregate Index	6.2		8.4		AA		4.5	--	

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Vanguard Total Bond Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 0.0%	Yes
Beta < 1.20	Beta = 1.00	Yes
Alpha > 0.0%	Alpha = 0.0%	Yes
Peer Group Rank > 50th Percentile	Ranks in Bottom 33rd Percentile	No

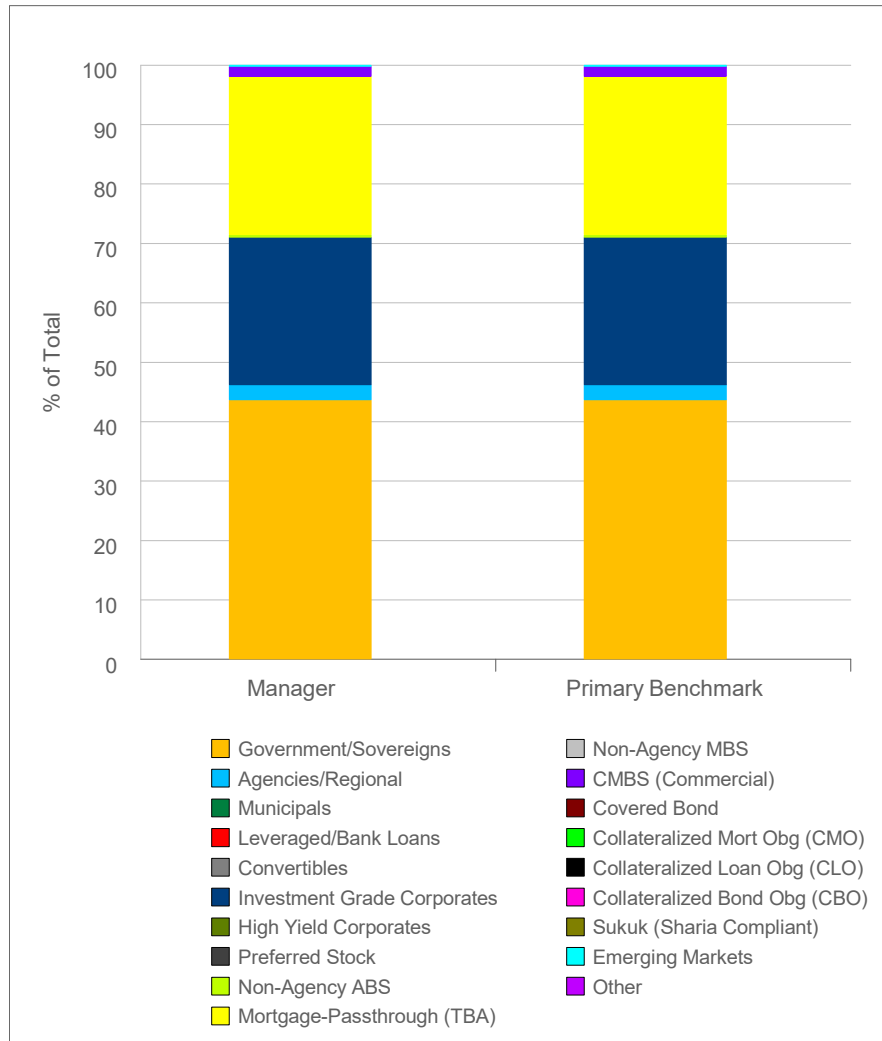
City of Grosse Pointe Woods Employees Retirement System

Vanguard Total Bond Fund

Fixed Income Sector

Report For Periods Ending December 31, 2023

Sector Allocation



Sector	Sector Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Total Weighting	100%	100%	6.8%	5.5%
Government/Sovereigns	44	44	5.7	4.1
Agencies/Regional	3	3	5.1	5.9
Municipals	0	0	-	-
Leveraged/Bank Loans	0	0	-	-
Convertibles	0	0	-	-
Investment Grade Corporates	25	25	8.5	8.6
High Yield Corporates	0	0	9.0	8.5
Preferred Stock	0	0	-	-
Non-Agency ABS	0	0	3.5	5.5
Mortgage-Passthrough (TBA)	27	27	7.6	5.0
Non-Agency MBS	0	0	-	-
CMBS (Commercial)	2	2	5.2	5.4
Covered Bond	0	0	-	-
Collateralized Mort Obg (CMO)	0	0	-	-
Collateralized Loan Obg (CLO)	0	0	-	-
Collateralized Bond Obg (CBO)	0	0	-	-
Sukuk (Sharia Compliant)	0	0	-	-
Emerging Markets	0	0	8.4	9.0
Other	0	0	-	-

*Sector weightings may not add up to 100% due to rounding.

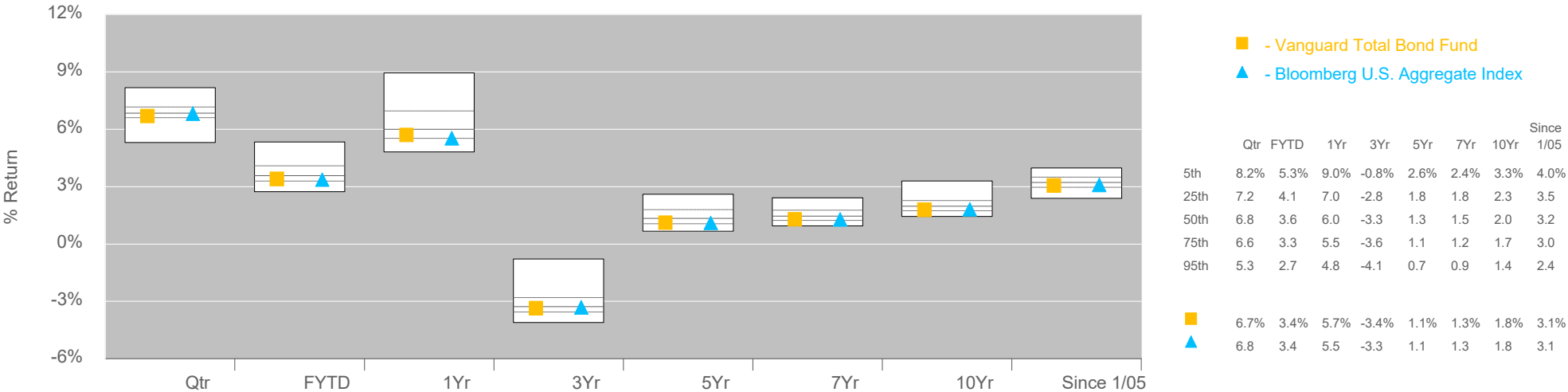
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Vanguard Total Bond Fund

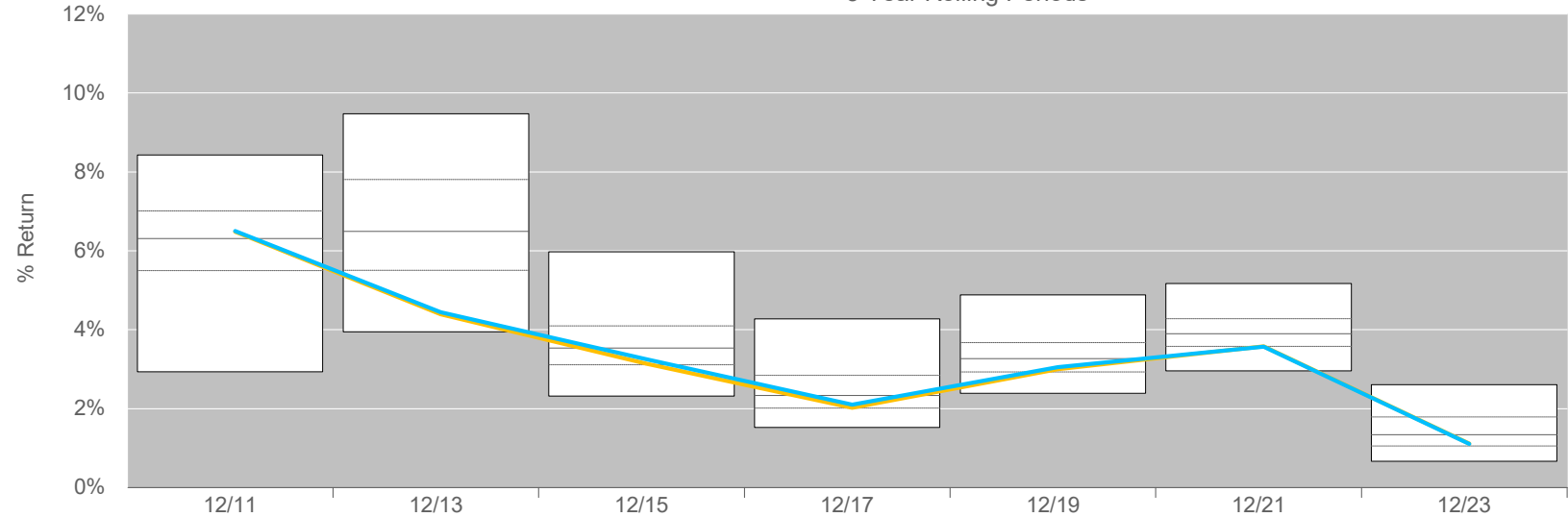
Core Fixed Income Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Principal Real Estate Securities Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Principal Real Estate Securities Fund	15.3%	7.7%	13.3%	5.8%	8.5%	6.6%	8.6%	8.5%	1/05
FTSE NAREIT Equity REIT Index	16.2	7.9	13.7	7.2	7.4	5.3	7.6	7.4	
FTSE NAREIT All Equity Index	18.0	8.1	11.4	5.7	7.6	6.0	8.0	7.7	

Risk Statistics (5 years)	Beta	Alpha	R ²	Standard Deviation	Tracking Error	Information Ratio
Principal Real Estate Securities Fund	0.91	1.6%	0.98	21.9%	3.3%	0.3
FTSE NAREIT Equity REIT Index	1.00	0.0	1.00	23.7	0.0	--
FTSE NAREIT All Equity Index	0.95	0.5	0.98	22.8	2.7	0.3

Portfolio Statistics	Current P/FFO	Growth in FFO	Wtd Avg Mkt Cap	Current Yield	Equity Annual Turnover
Principal Real Estate Securities Fund	18.1	6.0%	35,993.0M	3.7%	16.1%
FTSE NAREIT Equity REIT Index	15.2	-0.9	37,739.0	4.0	--
FTSE NAREIT All Equity Index	15.4	-0.7	42,384.0	3.9	--

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Principal Real Estate Securities Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 1.1%	Yes
Beta < 1.20	Beta = 0.91	Yes
Alpha > 0.0%	Alpha = 1.6%	Yes
Peer Group Rank > 50th Percentile	Ranks in Top 33rd Percentile	Yes

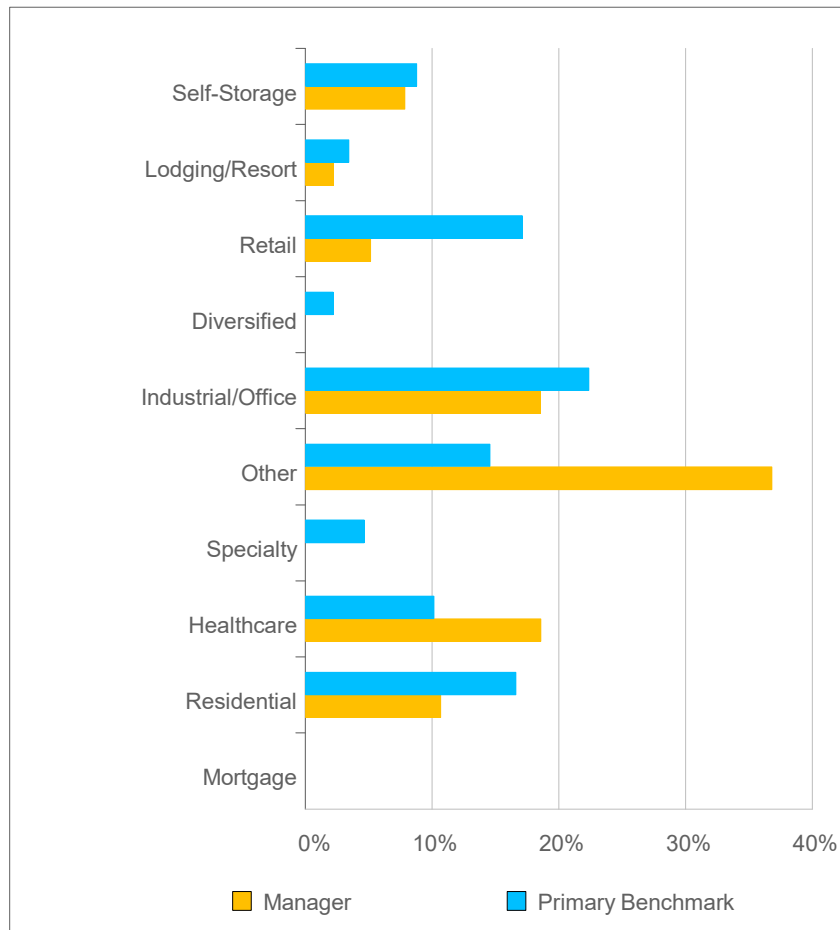
City of Grosse Pointe Woods Employees Retirement System

Principal Real Estate Securities Fund

Real Estate Sector

Report For Periods Ending December 31, 2023

Sector Allocation



Sector	Sector Weightings		Market Total Returns	
	Manager	Primary Benchmark	3 Months	12 Months
Self-Storage	8%	9%	23.5%	15.2%
Lodging/Resort	2	3	23.3	25.1
Retail	5	17	21.5	10.7
Diversified	0	2	20.6	-5.3
Industrial/Office	19	22	18.6	14.0
Other	37	15	14.6	28.4
Specialty	0	5	11.7	4.7
Healthcare	19	10	10.0	13.1
Residential	11	17	9.5	7.7
Mortgage	0	0	-	

* Sector weightings may not add up to 100% due to rounding.

* Accrued income in total market value may not be available for all managers.

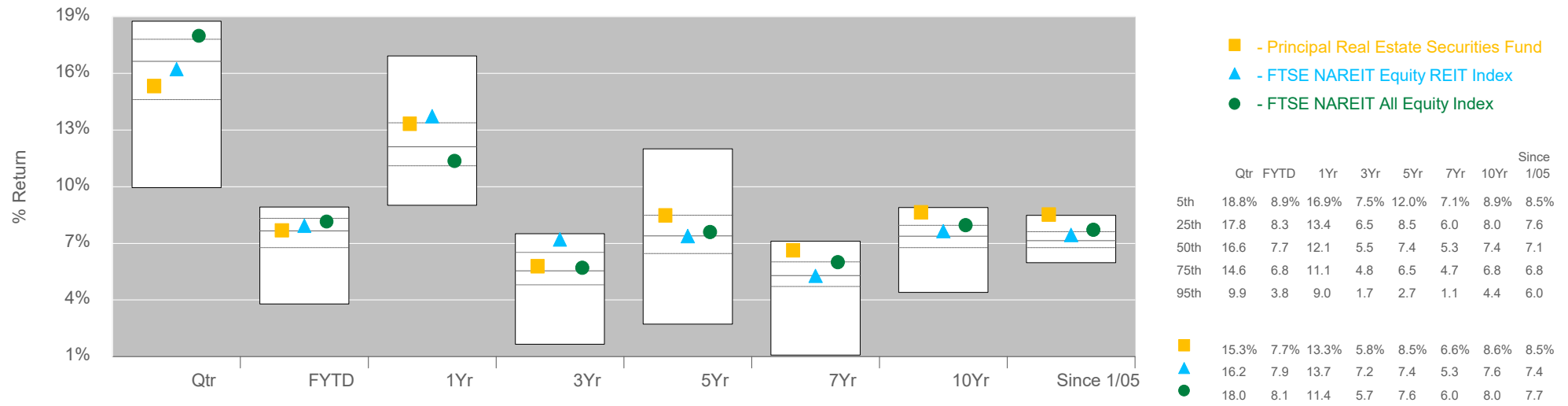
* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Principal Real Estate Securities Fund

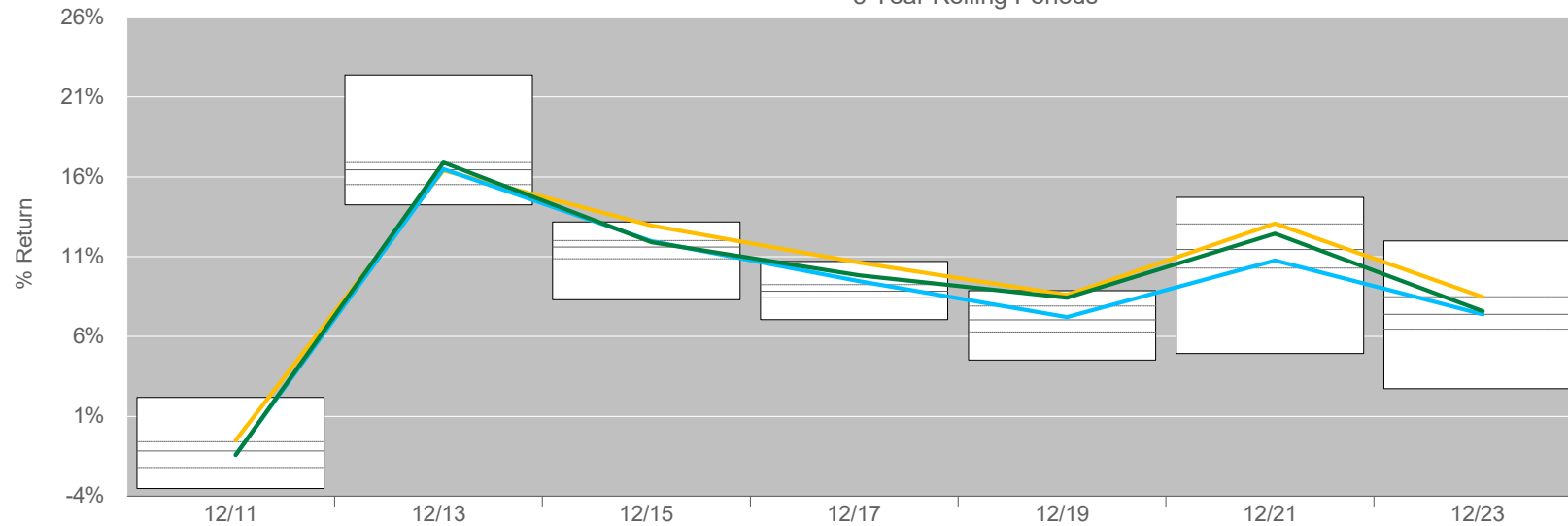
REIT Manager Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2006 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Tortoise MLP & Pipeline Fund

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Tortoise MLP & Pipeline Fund	5.7%	9.1%	14.2%	25.2%	10.4%	4.7%	3.4%	6.8%	5/11
Alerian MLP Index	5.0	15.4	26.6	32.4	12.0	5.4	1.9	4.6	
Tortoise North American Pipeline Index	7.4	8.3	11.6	21.0	11.7	6.9	5.8	--	

Risk Statistics (5 years)	Beta	Alpha	R ²	Standard Deviation	Tracking Error	Information Ratio
Tortoise MLP & Pipeline Fund	0.76	0.8%	0.92	36.2%	12.9%	-0.1
Alerian MLP Index	1.00	0.0	1.00	48.2	0.0	--
Tortoise North American Pipeline Index	0.63	3.4	0.88	30.4	6.3	-0.2

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Tortoise MLP & Pipeline Fund

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

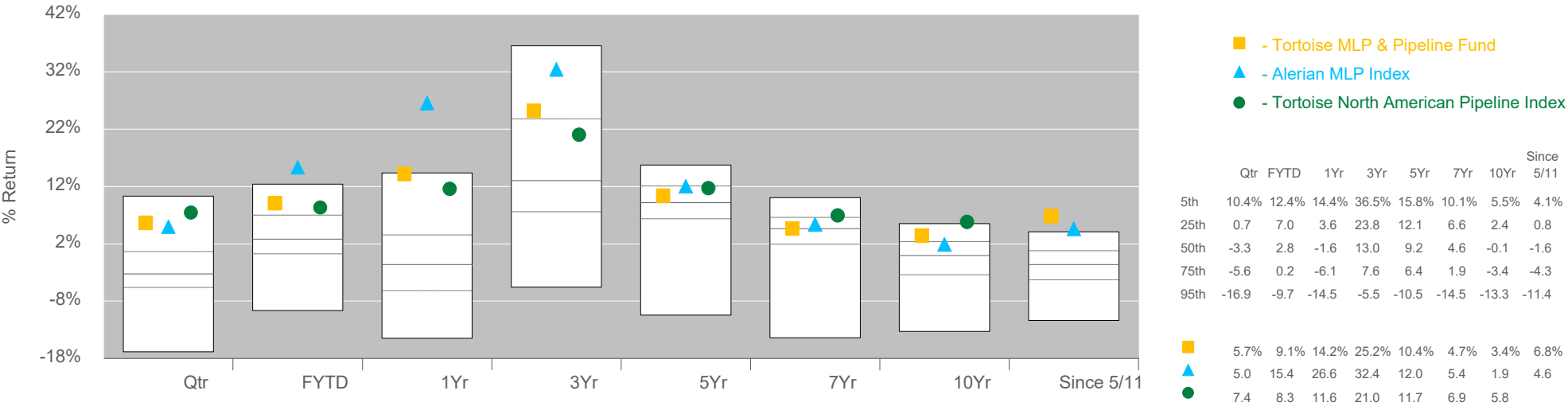
Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = -1.6%	No
Beta < 1.20	Beta = 0.76	Yes
Alpha > 0.0%	Alpha = 0.8%	Yes
Peer Group Rank > 50th Percentile	Ranks in Top 50th Percentile	Yes

City of Grosse Pointe Woods Employees Retirement System

Tortoise MLP & Pipeline Fund

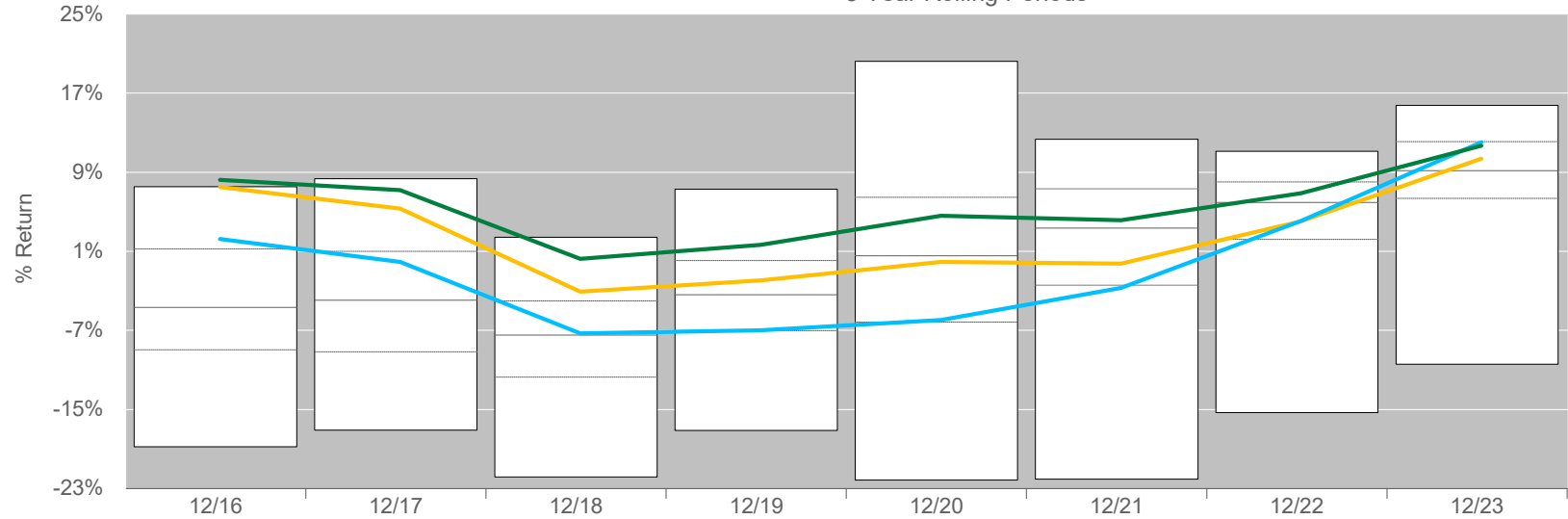
Natural Resources Universe

For Report Periods Ending December 31, 2023



Report From December 31, 2011 to December 31, 2023

5 Year Rolling Periods



City of Grosse Pointe Woods Employees Retirement System

Cohen & Steers Global Listed Infrastructure

Summary of Performance and Statistics

Report For Periods Ending December 31, 2023

Performance Results	Qtr	FYTD	1Yr	3Yr	5Yr	7Yr	10Yr	Since Inception	Inception Date
Cohen & Steers Global Listed Infrastructure	11.8%	1.5%	2.4%	4.4%	7.0%	7.0%	6.0%	6.6%	<i>1/05</i>
FTSE Global Core Infrastructure 50/50	10.8	2.0	2.2	3.8	6.0	6.2	5.9	--	
DJ Brookfield Global Infrastructure Index	11.2	3.5	6.2	6.7	6.8	5.3	4.7	7.9	

Risk Statistics (5 years)	Beta	Alpha	R ²	Standard Deviation	Tracking Error	Information Ratio
Cohen & Steers Global Listed Infrastructure	0.93	1.2%	0.97	16.8%	2.8%	0.3
FTSE Global Core Infrastructure 50/50	1.00	0.0	1.00	17.7	0.0	--
DJ Brookfield Global Infrastructure Index	1.08	0.4	0.95	19.8	5.4	0.0

Asset Growth Summary (in thousands)

Beginning Market Value	\$	0
Net Contributions/(Distributions)	\$	0
Market Appreciation/(Depreciation)	\$	0
Ending Market Value	\$	0

* Risk Statistics are based on monthly data.

* Manager data represents the most current available at the time of report publication.

City of Grosse Pointe Woods Employees Retirement System

Cohen & Steers Global Listed Infrastructure

Summary of Performance Relative to Investment Policy Statement Objectives

Report For Periods Ending December 31, 2023

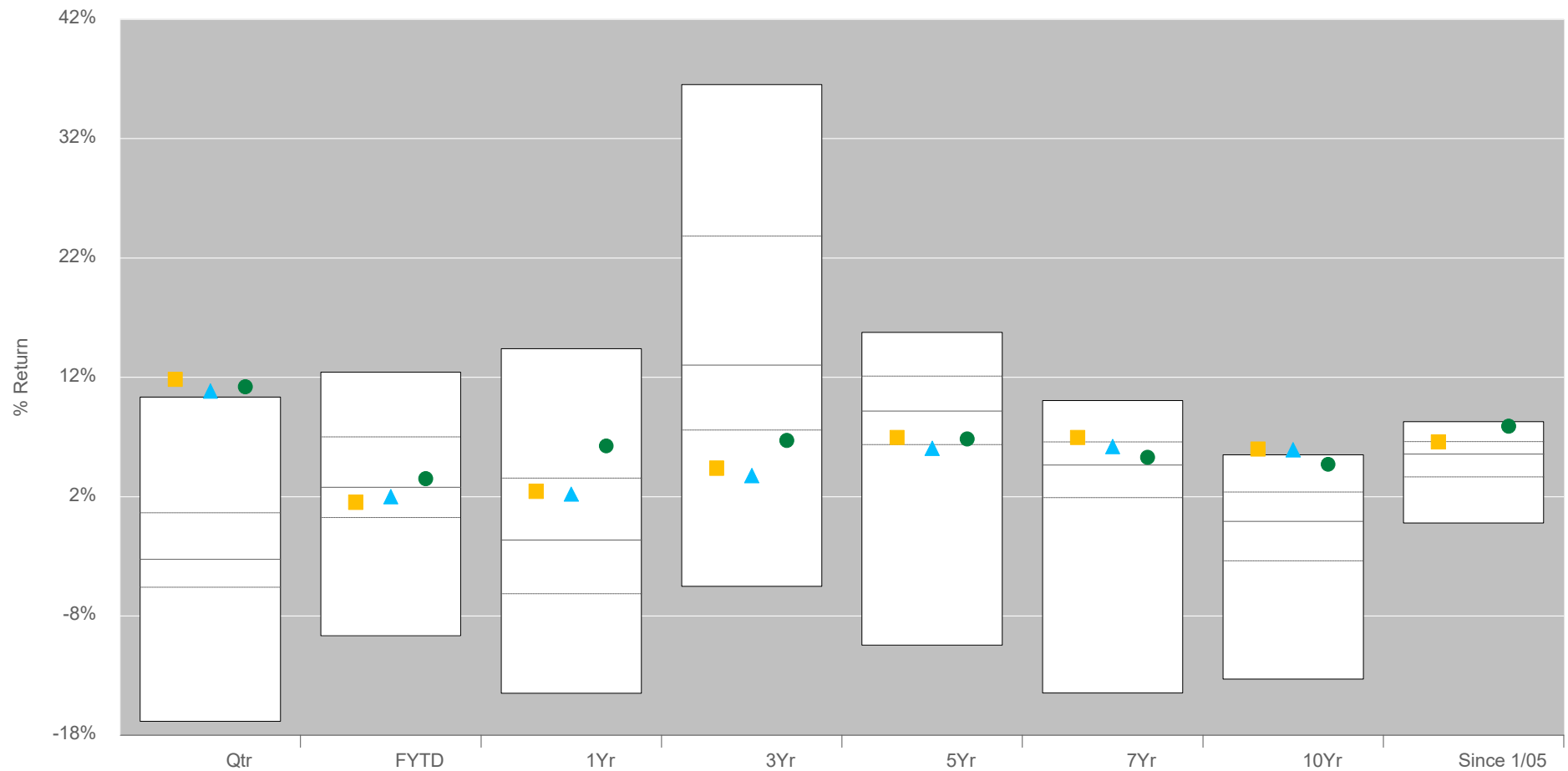
Performance Objectives	Result	Objective Achieved
Measurement Period: Moving 5 Year		
Return > Benchmark	Return over benchmark = 0.9%	Yes
Beta < 1.20	Beta = 0.93	Yes
Alpha > 0.0%	Alpha = 1.2%	Yes
Peer Group Rank > 50th Percentile	Ranks in Bottom 33rd Percentile	No

City of Grosse Pointe Woods Employees Retirement System

Cohen & Steers Global Listed Infrastructure

Natural Resources Universe

For Report Periods Ending December 31, 2023



5th Percentile	10.4%	12.4%	14.4%	36.5%	15.8%	10.1%	5.5%	8.3%
25th Percentile	0.7	7.0	3.6	23.8	12.1	6.6	2.4	6.6
50th Percentile	-3.3	2.8	-1.6	13.0	9.2	4.6	-0.1	5.6
75th Percentile	-5.6	0.2	-6.1	7.6	6.4	1.9	-3.4	3.7
95th Percentile	-16.9	-9.7	-14.5	-5.5	-10.5	-14.5	-13.3	-0.2
■ - Cohen & Steers Global Listed Infrastructure	11.8%	1.5%	2.4%	4.4%	7.0%	7.0%	6.0%	6.6%
▲ - FTSE Global Core Infrastructure	10.8%	2.0	2.2	3.8	6.0	6.2	5.9	--
● - DJ Brookfield Global Infrastructure	11.2%	3.5	6.2	6.7	6.8	5.3	4.7	7.9

City of Grosse Pointe Woods Employees Retirement System

Breakdown of Fees

Report For Periods Ending December 31, 2023

	Annual Fee/ Expense Ratio	Market Value	Percent Allocation	Weighted Average Fee	Annualized Fee
iShares S&P 500 Index	0.04%	\$13,527,437	30.4%	0.01%	\$5,411
iShares Russell Midcap Index	0.20%	\$2,064,120	4.6%	0.01%	\$4,128
Vanguard S&P Small Cap 600 Index	0.10%	\$3,062,690	6.9%	0.01%	\$3,063
EuroPacific Growth Fund	0.57%	\$2,826,599	6.3%	0.04%	\$16,112
Dodge & Cox International Stock Fund	0.63%	\$2,641,326	5.9%	0.04%	\$16,640
Brown International Small Company	1.31%	\$1,126,952	2.5%	0.03%	\$14,763
Redwheel Global Emerging Equity Fund	1.29%	\$1,234,171	2.8%	0.04%	\$15,921
DFA Emerging Markets Fund	0.36%	\$2,887,336	6.5%	0.02%	\$10,394
Dodge & Cox Income Fund	0.41%	\$3,154,958	7.1%	0.03%	\$12,935
DoubleLine Total Return Bond Fund	0.48%	\$2,849,266	6.4%	0.03%	\$13,676
Vanguard Total Bond Fund	0.05%	\$2,722,899	6.1%	0.00%	\$1,361
Gateway Fund	0.70%	\$1,634,498	3.7%	0.03%	\$11,441
PIMCO All Asset Fund	0.89%	\$1,452,826	3.3%	0.03%	\$12,930
Principal Real Estate Securities Fund	0.86%	\$971,676	2.2%	0.02%	\$8,356
Tortoise MLP & Pipeline Fund	0.93%	\$568,230	1.3%	0.01%	\$5,285
Cohen & Steers Global Listed Infrastructure	0.94%	\$1,186,651	2.7%	0.03%	\$11,155
Schwab Government Money Fund	0.23%	\$640,358	1.4%	0.00%	\$1,473
Total Investment Management Fees		\$44,551,993	100.0%	0.37%	\$165,045

* Mutual Fund expense ratios are deducted from the NAV of the fund.

* Annualized fee is an estimate based on market values as of December 31, 2023.

Index Summary Sheet for Periods Ending December 31, 2023

Global Equity	Qtr	YTD	1 Yr	Annualized		
				3 Yr	5 Yr	10 Yr
MSCI AC World Index	11.0%	22.2%	22.2%	5.7%	11.7%	7.9%
MSCI World Index	11.4	23.8	23.8	7.3	12.8	8.6
S&P 500 Index	11.7	26.3	26.3	10.0	15.7	12.0
Russell 3000 Index	12.1	26.0	26.0	8.5	15.2	11.5
Russell 1000 Index	12.0	26.5	26.5	9.0	15.5	11.8
Russell 1000 Growth Index	14.2	42.7	42.7	8.9	19.5	14.9
Russell 1000 Value Index	9.5	11.5	11.5	8.9	10.9	8.4
Russell Midcap Index	12.8	17.2	17.2	5.9	12.7	9.4
Russell Midcap Growth Index	14.5	25.9	25.9	1.3	13.8	10.6
Russell Midcap Value Index	12.1	12.7	12.7	8.4	11.2	8.3
Russell 2000 Index	14.0	16.9	16.9	2.2	10.0	7.2
Russell 2000 Growth Index	12.7	18.7	18.7	-3.5	9.2	7.2
Russell 2000 Value Index	15.3	14.6	14.6	7.9	10.0	6.8
Russell Microcap Index	16.1	9.3	9.3	0.6	8.6	5.8
MSCI AC World Index ex-U.S.	9.8	15.6	15.6	1.5	7.1	3.8
MSCI EAFE Index	10.4	18.2	18.2	4.0	8.2	4.3
MSCI EAFE Growth Index	12.7	17.6	17.6	0.3	8.8	5.1
MSCI EAFE Value Index	8.2	19.0	19.0	7.6	7.1	3.2
MSCI Small Cap EAFE Index	11.1	13.2	13.2	-0.7	6.6	4.8
MSCI Emerging Markets Index	7.9	9.8	9.8	-5.1	3.7	2.7
MSCI Emerging Markets Small Cap Index	8.9	23.9	23.9	6.5	9.9	5.3
MSCI Frontier Markets Index	4.0	11.6	11.6	-0.5	3.3	2.0
HFRI Equity Hedge Index	5.6	10.5	10.5	3.5	8.3	5.2
HFRI Emerging Markets	4.2	8.1	8.1	0.1	4.8	3.1
HFRI FOF: Strategic Index	6.5	9.7	9.7	1.0	5.4	3.3
Thomson One All Private Equity Index	0.0	2.1	2.1	8.1	15.3	14.3
Thomson One Buyout Index	0.0	5.6	5.6	11.1	14.9	14.0
Thomson One Fund of Funds Index	0.0	-3.3	-3.3	5.1	13.1	12.0
Thomson One Venture Capital Index	0.0	-3.9	-3.9	5.0	16.4	15.5
Global Fixed Income						
Bloomberg U.S. Aggregate Index	6.8	5.5	5.5	-3.3	1.1	1.8
Bloomberg U.S. TIPS Index	4.7	3.9	3.9	-1.0	3.2	2.4
Bloomberg Government Bond Index	5.6	4.1	4.1	-3.7	0.6	1.3
Bloomberg Municipals Index	7.9	6.4	6.4	-0.4	2.3	3.0
Bloomberg Asset Backed Index	3.5	5.5	5.5	0.2	1.9	1.8

Index Summary Sheet for Periods Ending December 31, 2023

				Annualized		
	Qtr	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Global Fixed Income (continued)						
Bloomberg US MBS Index	7.5%	5.0%	5.0%	-2.9%	0.3%	1.4%
Bloomberg IG CMBS Index	5.2	5.3	5.3	-2.4	1.6	2.1
Bloomberg U.S. Credit Index	8.2	8.2	8.2	-3.2	2.4	2.8
Bloomberg U.S. Corporate HY Index	7.2	13.4	13.4	2.0	5.4	4.6
Bloomberg Intermediate U.S. G/C Index	4.6	5.2	5.2	-1.6	1.6	1.7
ICE BofA 1-3 Yr. Govt. Bond Index	2.5	4.2	4.2	0.0	1.3	1.1
U.S. 91-Day Treasury Bills	1.3	5.0	5.0	2.3	1.9	1.3
CS Leveraged Loan Index	0.0	9.9	9.9	4.7	5.0	4.1
JPMorgan Non-U.S. GBI Hedged Index	5.8	9.1	9.1	-2.1	1.0	2.6
JPMorgan Non-U.S. GBI Index	10.0	4.0	4.0	-9.7	-3.1	-1.3
JPMorgan EMBI Plus Index	10.5	10.3	10.3	-7.4	-0.9	1.5
JPMorgan EMBI Global Index	9.3	10.5	10.5	-3.1	1.9	3.1
HFRI RV: Fixed Income - Corporate Index	3.0	8.2	8.2	3.2	5.2	4.2
HFRI ED: Distressed/Restructuring Index	3.2	6.7	6.7	5.7	6.3	4.0
Thomson One Distressed Index	0.0	4.2	4.2	12.0	9.9	8.8
Real Assets						
FTSE NAREIT All Equity Index	18.0	11.4	11.4	5.7	7.6	8.0
S&P Developed BMI Property Index	15.4	10.4	10.4	1.3	3.3	3.9
S&P Developed ex-U.S. Property Index	15.3	8.4	8.4	-3.4	0.9	2.2
NCREIF Property Index	0.0	-5.1	-5.1	5.6	5.0	7.1
Bloomberg Commodity Index Total Return	-4.6	-7.9	-7.9	10.8	7.2	-1.1
Alerian MLP Index	5.0	26.6	26.6	32.4	12.0	1.9
NCREIF Timberland Index	0.0	4.9	4.9	8.9	5.7	5.3
Thomson One Private Real Estate Index	0.0	-2.2	-2.2	7.9	7.1	9.0
S&P Real Assets Equity Total Return Index	11.4	7.3	7.3	5.9	6.3	4.6
Diversifying Strategies						
HFRI Fund of Funds Index	3.6	6.6	6.6	2.3	5.2	3.3
HFRI Fund Weighted Composite Index	3.6	7.6	7.6	4.3	7.0	4.5
HFRI FOF: Conservative Index	1.1	4.6	4.6	4.1	5.0	3.3
HFRI Event Driven	5.4	10.4	10.4	5.7	6.8	4.6
HFRI Relative Value Total Index	2.6	7.0	7.0	4.6	4.9	4.0
HFRI Macro Index	-1.1	-0.6	-0.6	5.3	5.5	3.1
Other						
Consumer Price Index - U.S.	0.4	3.3	3.3	5.6	4.1	2.8
U.S. Dollar Index	-4.6	-2.1	-2.1	4.1	1.1	2.3

* For indices that report returns on a lag, 0.0% is utilized for the most recent time period until the actual return data are reported.

City of Grosse Pointe Woods Employees Retirement System

Benchmark Composition Summary

Target Weighted Index

<u>Since Inception</u>	<u>Weight</u>
Russell 1000 Index	15.00%
Russell Midcap Index	4.00%
Russell 2000 Index	6.00%
MSCI EAFE Index	10.00%
MSCI Small Cap EAFE Index	5.00%
MSCI Emerging Markets Index	12.00%
Bloomberg U.S. Aggregate Index	20.00%
HFRI Equity Hedge Index	5.00%
U.S. 91-Day Treasury Bills	1.00%
Bloomberg Commodity Index Total Return	3.00%
FTSE NAREIT All Equity Index	3.00%
HFRI FOF: Conservative Index	10.00%
MSCI Frontier Markets Index	3.00%
S&P 500 Energy Sector Index	3.00%

<u>November 30, 2018</u>	<u>Weight</u>
Russell 1000 Index	23.00%
Russell Midcap Index	5.00%
Russell 2000 Index	7.00%
MSCI EAFE Index	10.00%
MSCI Small Cap EAFE Index	5.00%
MSCI Emerging Markets Index	10.00%
Bloomberg U.S. Aggregate Index	20.00%
U.S. 91-Day Treasury Bills	1.00%
Bloomberg Commodity Index Total Return	3.00%
FTSE NAREIT All Equity Index	3.00%
HFRI FOF: Conservative Index	10.00%
S&P 500 Energy Sector Index	3.00%

<u>August 31, 2020</u>	<u>Weight</u>
Russell 1000 Index	30.00%
Russell Midcap Index	5.00%
Russell 2000 Index	7.00%
MSCI EAFE Index	10.00%
MSCI Small Cap EAFE Index	5.00%
MSCI Emerging Markets Index	10.00%
Bloomberg U.S. Aggregate Index	20.00%
Alerian MLP Index	3.00%
FTSE NAREIT All Equity Index	3.00%
HFRI FOF: Conservative Index	7.00%

Actuarial Rate

<u>Since Inception</u>	<u>Weight</u>
7.75% Absolute Return	100.00%

<u>August 31, 2020</u>	<u>Weight</u>
7.5% Absolute Return	100.00%

<u>June 30, 2023</u>	<u>Weight</u>
7.4% Absolute Return	100.00%

Definitions

Alpha – Measures how well a portfolio performed versus its benchmark after factoring in the amount of risk (as measured by beta) taken. Technically, alpha is the difference between the excess return of a portfolio and the excess return of the benchmark multiplied by beta. Excess return is simply the actual return minus the return of the risk-free asset, U.S. Treasury Bill. A positive alpha indicates the portfolio has performed better than the benchmark on a risk-adjusted basis.

Annual Standard Deviation – A measure of variability in returns. The annual standard deviation measures the dispersion of annual returns around the average annualized return.

Beta – A coefficient measuring a portfolio's relative volatility with respect to its market. Technically, beta is the covariance of a portfolio's return with the benchmark portfolio's return divided by the variance of the benchmark portfolio's return. Thus, a portfolio with a beta greater than 1.00, indicates the portfolio experienced greater volatility than the benchmark, whereas a portfolio with a beta less than 1.00, indicates the portfolio experienced less volatility than the benchmark.

Consumer Price Index – Measures the change in consumer prices, as determined by a monthly survey of the U.S. Bureau of Labor Statistics. CPI components include housing costs, food, transportation and electricity.

Duration – A measure of the price sensitivity of a bond or bond portfolio to a change in interest rates.

Information Ratio – Describes the risk / reward trade-off of alpha and tracking error. Because the formula for calculating information ratio is Alpha divided by Tracking Error, the larger the information ratio, the more attractive the portfolio is from an overall risk return profile.

Max Drawdown – The maximum loss incurred by a portfolio during a specified time period.

R² – Also called the coefficient of determination. On the detail page, R² measures how much of the variation in the investment manager's returns can be explained by movements in the market (benchmark).

Sharpe Ratio – A risk-adjusted measure calculated using standard deviation and excess return to determine reward per unit of risk. The higher the Sharpe ratio, the better the manager's historical risk-adjusted performance.

Tracking Error – A measure that describes the volatility of the expected excess return (alpha) achieved through active management. Since excess return can only be achieved through a portfolio that actively differs from the benchmark, the level of tracking error is indicative of how different the portfolio will perform relative to any given benchmark.

Disclosures

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The information herein was obtained from various sources. FEG does not guarantee the accuracy or completeness of such information provided by third parties. The information in this report is given as of the date indicated and believed to be reliable. FEG assumes no obligation to update this information, or to advise on further developments relating to it. FEG, its affiliates, directors, officers, employees, employee benefit programs and client accounts may have a long position in any securities of issuers discussed in this report.

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Performance results are calculated using information provided by the custodian and/ or independent pricing sources. It is the responsibility of the trustee, custodian and /or manager to ensure the accuracy of market value and transactional data. Performance analysis is calculated using monthly and/or quarterly market values. Performance analysis and asset valuations may or may not include accrued interest and dividend income and are net of management fees. FEG/Consulting fees may or may not be deducted, based on client preference.

FEG's universes are updated monthly and the traditional asset classes are constructed from Lipper data feeds encompassing over 19,000 mutual funds. Lipper classifies approximately 50 asset classes according to the funds' investment objectives and portfolio attributes. FEG screens the Lipper universes to include only institutional and no-load funds. However, because the Lipper data may treat multiple share classes of the same fund as separate funds for the purposes of constructing their universes, FEG further screens the universes to eliminate multiple share classes within the institutional and no-load funds (examples include retirement-share classes and 529-share classes) in an effort to present pure-institutional universes.

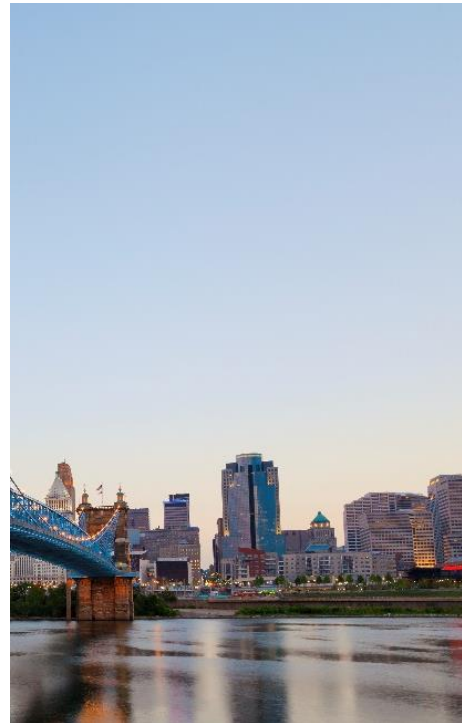
Monitoring of managers includes fundamental research for all investment managers, as well as enhanced coverage for managers that have been approved for FEG's recommended list. A Quarterly Content Questionnaire is the basis of fundamental coverage and requests qualitative (e.g., personnel, organizational changes) and quantitative information (performance, cash flows) on all investment strategies for ongoing monitoring and adherence to investment policy. Clients may have exposure to both fundamental and recommended managers in their portfolio depending on their unique needs. FEG conducts conference calls directly with the active managers that receive enhanced coverage.

Mutual funds are bound by their prospectus, limiting potential deviation from the stated investment strategy.

Clients are encouraged to contact their Investment Advisers immediately if there are changes to their financial situation or investment objectives, or if they wish to impose or modify restrictions on the management of their account(s). Please notify your adviser immediately if you believe that any information on file is incorrect, or have had changes that have not been previously discussed.

Index performance results do not represent any managed portfolio returns. An investor cannot invest directly in a presented index, as an investment vehicle replicating an index would be required. An index does not charge management fees or brokerage expenses, and no such fees or expenses were deducted from the performance shown.

This report is prepared for informational purposes only. Past performance is not indicative of future results.



Presented By:

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Sr. Vice President/Advisor

Andrew L. Manley
Institutional Portfolio Analyst

February 1, 2024

FEG ASSET ALLOCATION STUDY - CITY OF GROSSE POINTE WOODS RETIREMENT SYSTEM



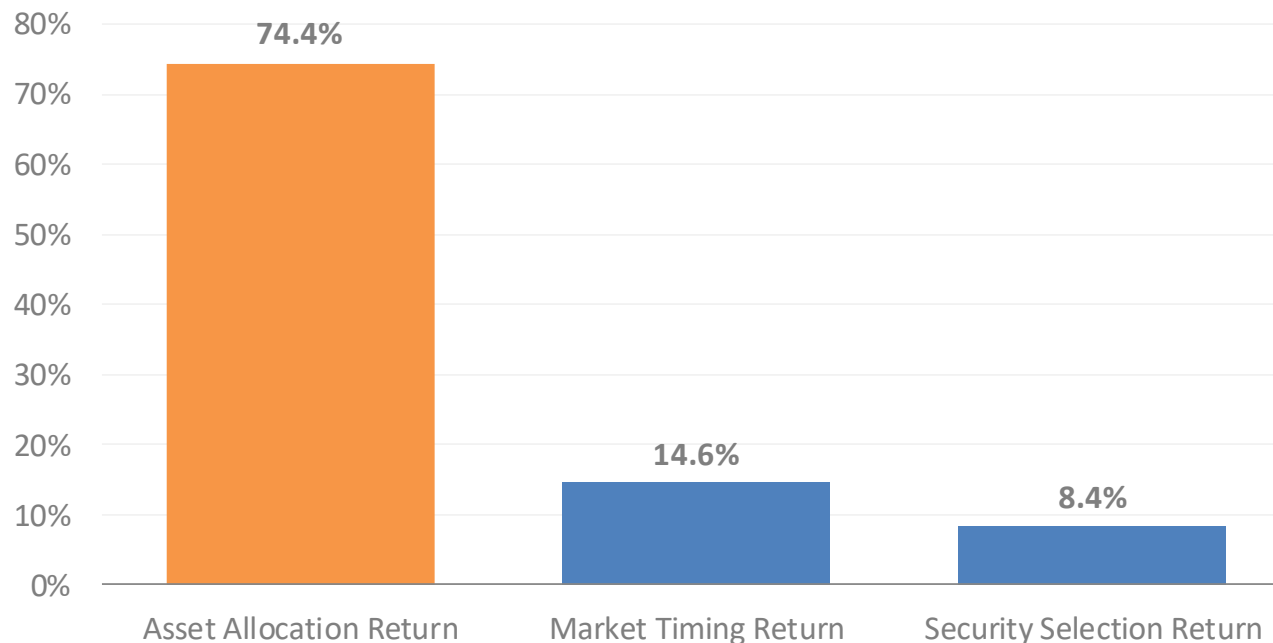
INTRODUCTION: IMPORTANCE OF ASSET ALLOCATION

THE PRIMARY CONTRIBUTOR TO INVESTMENT SUCCESS

- Asset allocation is the most important decision for each investor's ability to reach their goals
- These decisions are for the long-term and impact long-term success
- Allocations are reviewed annually and changes are made when goals change, or markets change considerably

The Importance of Asset Allocation

Contributions to Return Variation



Data source: Brown, Garlappi, and Tiu, 2009, "Asset Allocation and Portfolio Performance: Evidence from University Endowment Funds"

CLIENT OBJECTIVES: RETURN GOAL

FEG INSIGHT

Primary Objective

7.4%

Stated Return Objective

- The long-term target rate (primary objective) for the City of Grosse Point Woods Retirement System is 7.4%.
- The IPS provides secondary goals to:
 - Exceed 3.5% + Rate of Payroll Inflation
 - Equal or exceed the net return of the Target Weighted Index

ASSET CLASSES

	Expected Return	Expected Standard Deviation
GLOBAL EQUITY		
Long-Only Strategies	6.77%	19.26%
U.S. Equity	6.35%	16.20%
Large Cap	6.25%	15.00%
Mid Cap	6.50%	18.00%
Small Cap	7.00%	24.00%
International Equity	7.40%	23.85%
Large Cap Developed	7.00%	20.00%
Small Cap Developed	8.00%	24.00%
Emerging Markets	8.00%	33.00%
Private Equity	9.00%	17.00%

GLOBAL FIXED INCOME & CREDIT		
Interest Rate Sensitive Strategies	5.74%	6.29%
Core (Investment Grade)	5.30%	6.00%
Inflation Protected (TIPS)	5.00%	7.00%
Long Duration Corporate Debt	6.00%	8.50%
Emerging Market Debt	8.00%	13.00%
Credit Sensitive Strategies	7.17%	14.00%
High Yield	7.00%	16.00%
Bank Loans	6.00%	11.00%
Private Debt	8.50%	15.00%

	Expected Return	Expected Standard Deviation
REAL ASSETS		
Real Estate		
Public Real Estate	6.50%	20.00%
Private Real Estate	8.50%	18.00%
Natural Resources		
Commodities	4.50%	19.00%
Private Energy	9.50%	18.00%
Infrastructure		
Energy Infrastructure	6.75%	23.00%
Global Listed Infrastructure	6.50%	15.00%
DIVERSIFYING STRATEGIES		
Semi-Liquid Hedged Strategies	5.83%	8.40%
Event Driven	6.00%	9.50%
Macro	6.00%	7.00%
Relative Value	5.50%	8.00%
Global Hedged Equity	6.25%	13.00%
Illiquid Diversifying Strategies	8.50%	10.00%
Liquid Diversifying Strategies	5.50%	10.00%
Money Markets		
U.S. Inflation	2.75%	
U.S. Cash	3.50%	

SHIFT IN CAPITAL MARKET ASSUMPTIONS OVER LAST 2 YEARS

Global Equity

Long-Only Strategies

	2022 Expected Return	2023 Expected Return	2024 Expected Return
U.S. Equity	4.7%	6.6%	6.4%
Large Cap	4.5%	6.5%	6.3%
Mid Cap	5.0%	6.8%	6.5%
Small Cap	5.5%	7.3%	7.0%

International Equity

Large Cap Developed	5.5%	7.3%	7.0%
Small Cap Developed	5.5%	8.0%	8.0%

Emerging Markets	7.5%	8.5%	8.0%
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Private Equity	8.0%	9.0%	9.0%
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Global Fixed Income/Credit

Rate Sensitive Strategies

Core (Investment Grade)	1.6%	5.0%	5.3%
Inflation Protected (TIPS)	1.3%	4.7%	5.0%
Long Duration Corporate Debt	3.0%	6.0%	6.0%
Emerging Market Debt	5.0%	7.8%	8.0%

Credit Sensitive Strategies

High Yield	3.2%	7.3%	7.0%
Bank Loans	3.0%	6.0%	6.0%
Private Debt	6.5%	8.3%	8.5%

Real Assets

Real Estate

Public Real Estate	4.5%	6.5%	6.5%
Private Real Estate	7.0%	8.3%	8.5%

Natural Resources

Commodities	3.0%	4.5%	4.5%
Private Energy	7.5%	9.5%	9.5%

Infrastructure

Energy Infrastructure/MLPs	6.0%	7.0%	6.8%
Global Listed Infrastructure	5.0%	6.8%	6.5%

Diversifying Strategies

Semi-liquid Hedged Strategies

Event Driven	4.5%	6.0%	6.0%
Macro	4.5%	6.0%	6.0%
Relative Value	4.0%	5.5%	5.5%

Illiquid Diversifying Strategies

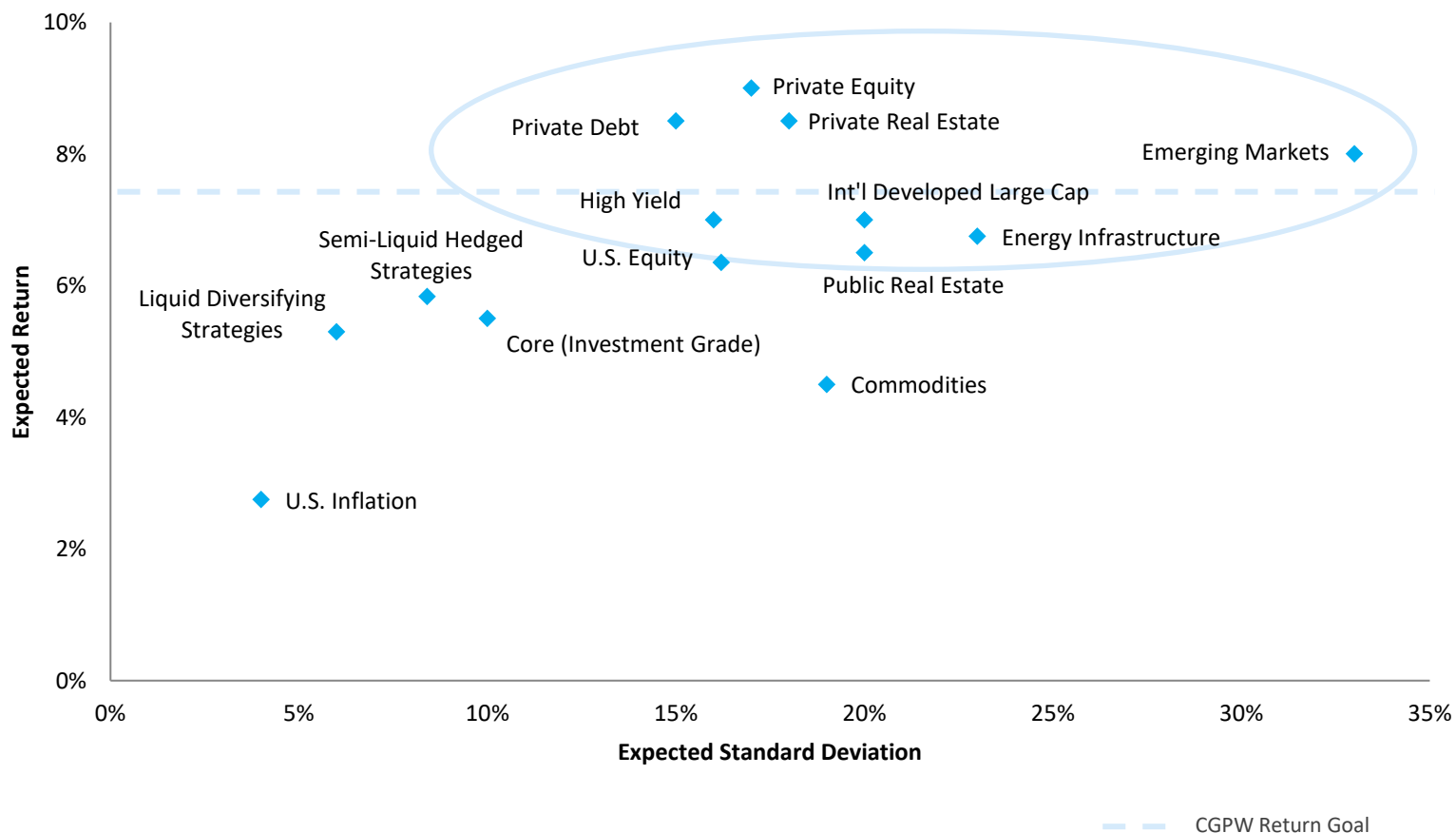
Liquid Diversifying Strategies	4.0%	5.5%	5.5%
Global Hedged Equity	4.5%	6.3%	6.3%

Money Markets

U.S. Inflation	2.3%	3.0%	2.8%
U.S. Cash	1.0%	3.0%	3.5%

FEG INPUTS: RISK AND RETURNS

FEG 7-10 Year Capital Market Assumptions



Data Source: FEG Data. As of January 2024.

FEG Capital Market Assumptions are hypothetical based on asset category. The expected return is the result of a hypothetical allocation of investments represented solely by financial market data, underlying public indices, and FEG expectations in each asset category. Please refer to Disclosures for full disclosures.

FEG INPUTS: ASSET ALLOCATION

	Current	IPS	Increase FI
Broad Allocation			
Global Equity	65.9%	67.0%	64.0%
Global Fixed Income	19.6	20.0	23.0
Real Assets	6.1	6.0	6.0
Diversifying Strategies	6.9	7.0	7.0
<i>Liquid</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
<i>Illiquid</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Risk			
Standard Deviation	12.3%	12.6%	12.2%
100-Year Flood	-21.4	-22.0	-21.0
1-Year Monte Carlo Simulation			
Expected Return (50th Percentile)	8.0	8.1	8.0
10-Year Monte Carlo Simulation			
95th Percentile	13.8%	14.2%	13.8%
Expected Return (50th Percentile)	7.3	7.4	7.3
5th Percentile	1.1	1.1	1.2
Probability of Achieving Returns of:			
Target 6%	63.4%	64.2%	63.8%
Target 7%	52.8	53.7	53.0
Target 8%	42.9	44.0	42.8

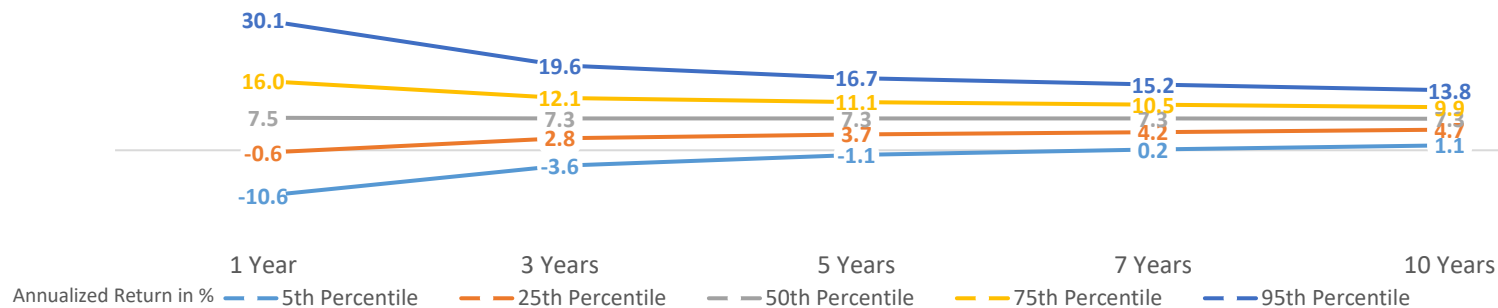
Source: FEG. The asset allocation study shown above is a hypothetical allocation of broad asset categories. The expected return is the result of a hypothetical allocation of investments represented solely by financial market data, underlying public indices, and FEG expectations in each asset category. The allocation does not include or represent investments made in any specific security within each asset category. As such, the expected return of the underlying indices is by no means a projection of a proposed or actual portfolio or indicative of results achieved by any securities. Additionally, an investor cannot directly invest in any index. The asset allocation is constructed under the assumption of various constraints and liquidity needs, as such allocations may not be appropriate for all investment objectives. Expected returns are presented gross of any fees and expenses. 100-year flood = annual return expected to occur 1% of the time or a -2.326 standard deviation event.

FEG INPUTS: ASSET ALLOCATION DETAILED

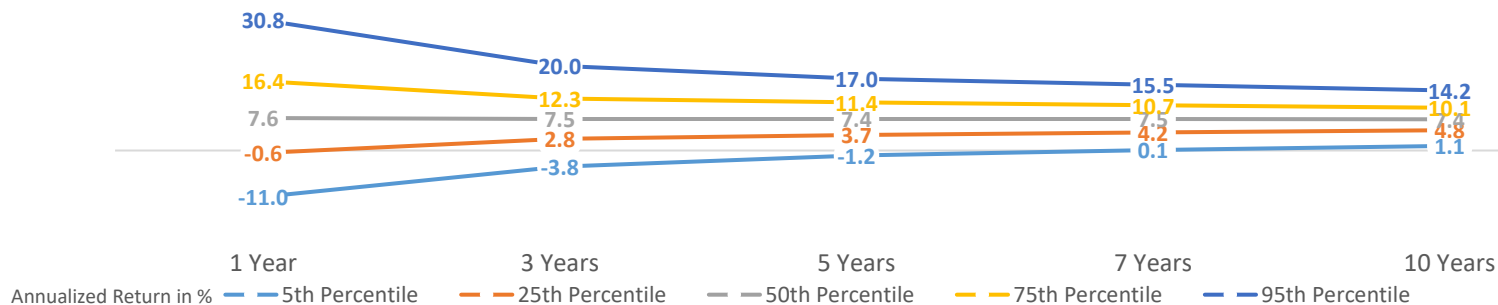
	Current	IPS	Increase FI
Cash	1.4%	0.0%	0.0%
US Large Cap	30.4	30.0	29.0
US Mid Cap	4.6	5.0	5.0
US Small Cap	6.9	7.0	7.0
International Developed Equity	12.3	10.0	9.0
International Small Cap	2.5	5.0	5.0
Emerging Markets Equity	9.3	10.0	9.0
Core Bonds	19.6	20.0	23.0
Public Real Estate	2.2	2.0	2.0
Energy Infrastructure	1.9	2.0	2.0
Global Listed Infrastructure	2.0	2.0	2.0
Liquid Diversifying Strategies	6.9	7.0	7.0
Total	100.0%	100.0%	100.0%

RANGE OF EXPECTED FUTURE RETURNS

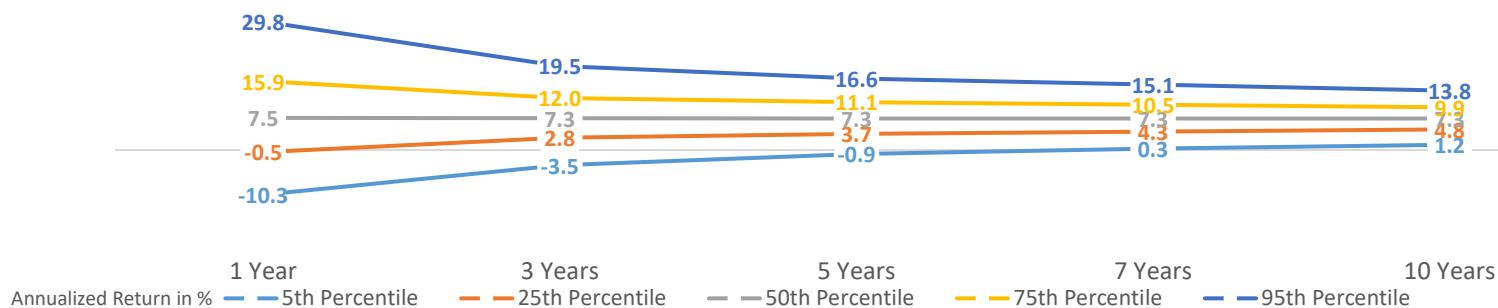
RANGE OF EXPECTED RETURNS - CURRENT



RANGE OF EXPECTED RETURNS - IPS

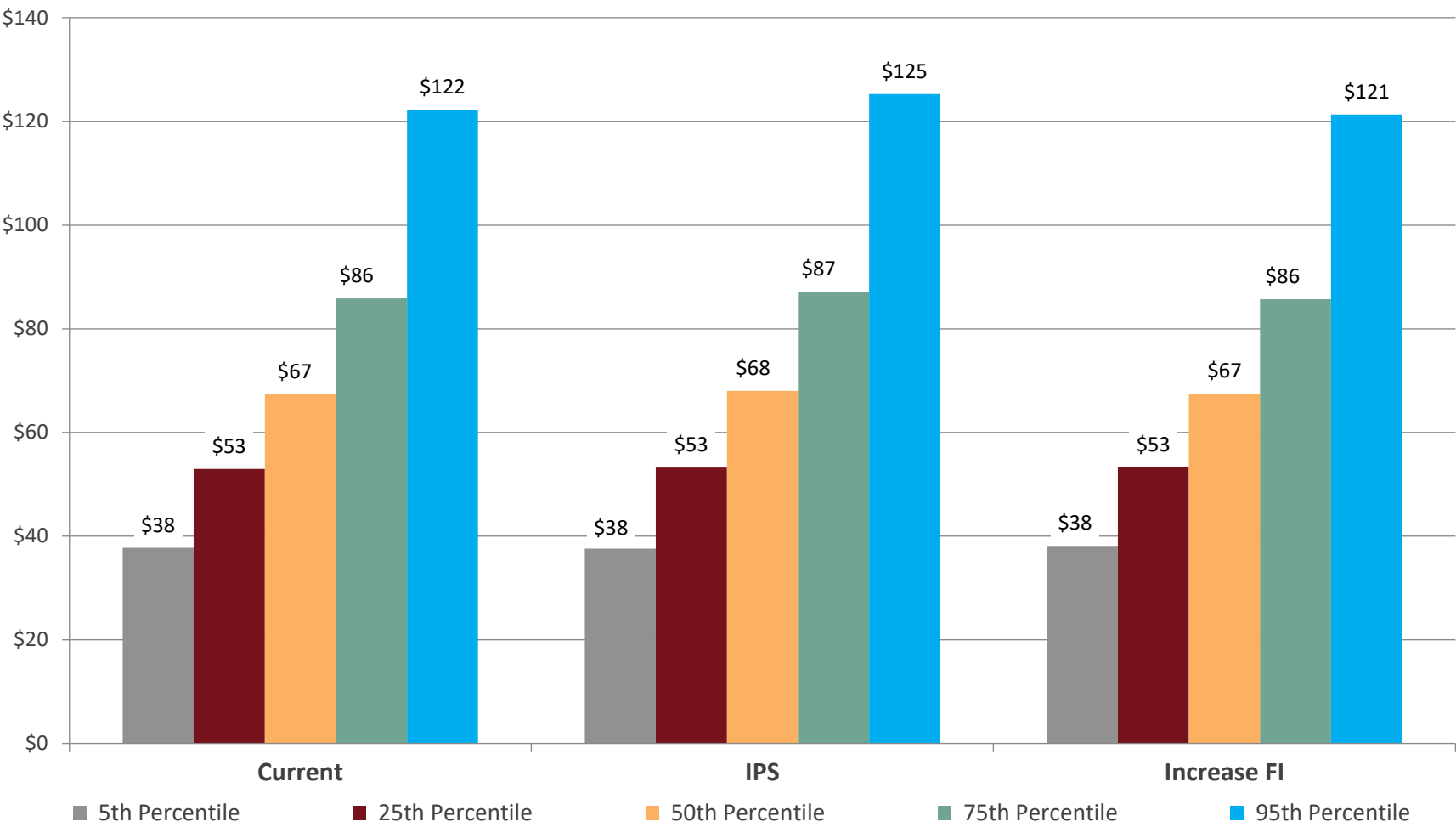


RANGE OF EXPECTED RETURNS - INCREASE FIXED INCOME



FEG INPUTS: 10-YEAR SIMULATED MARKET VALUE

10-YEAR SIMULATED MARKET VALUE (IN MILLIONS)¹



¹ Beginning market value of \$44,551,993. Assumes 4.0% annual spending.

Data Sources: FEG, City of Grosse Point Woods. Data for CGPW “Current” as of 12/31/2023. Expected returns are in U.S. dollars net of fees. Please refer to Disclosures for full disclosures.

FEG INPUTS: WHY DIVERSIFICATION?

- FEG recommends diversifying by asset categories to help manage market risks
- FEG views diversification in a simple, yet comprehensive framework of four categories – each with specific roles and risk objectives

ASSET CATEGORIES	ROLE	RISK
GLOBAL EQUITY Stocks, Private Equity, Long/Short Hedge Funds	Total Return	Stock Market Declines
GLOBAL FIXED INCOME AND CREDIT Bonds, Bank Loans, Credit Hedge Funds	Equity Risk Mitigation and Total Return	Rising Rates and/or Credit Downgrades
REAL ASSETS Real Estate, Natural Resources, Infrastructure	Inflation Protection and Total Return	Deflation
DIVERSIFYING STRATEGIES Event Driven, Relative Value, Macro	Diversification and Total Return	Active Management

FEG INPUTS: WHY DIVERSIFICATION?

ASSET CATEGORY	RISK PREMIUM	ROLE
GLOBAL EQUITY		
U.S. and International Market Cap and Style Private and Public Equity Hedge Funds	Equity Market	Total Return
GLOBAL FIXED INCOME/CREDIT		
Investment Grade TIPS	Interest Rates	Equity Risk Mitigation
High Yield Bank Loans Private Debt (Distressed and Mezzanine) Credit Hedge Funds	Credit	Total Return
REAL ASSETS		
Real Estate (Public and Private) Natural Resources (Energy & Infrastructure) Commodities	Inflation	Inflation Protection (along with TIPS)
DIVERSIFYING STRATEGIES		
Macro Event Driven Relative Value	Unconstrained Active Management	Diversification

FEG INPUTS: BENEFITS OF DIVERSIFICATION



TABLE OF INVESTMENT RETURNS

2005-2022 Annual Returns of Key Indices

Strong asset class performance is not persistent

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Emerging Markets 34.0%	Public RE 35.1%	Emerging Markets 39.4%	Int'l Bonds 11.4%	Emerging Markets 78.5%	MLPs 35.9%	Private RE 14.3%	Public RE 19.7%	Small Cap 38.8%	Public RE 28.0%	Private RE 13.3%	Small Cap 21.3%	Emerging Markets 37.3%	Private Equity 9.6%	Large Cap 31.5%	Private Equity 24.3%	Public RE 41.3%	MLPs 30.9%
Private Equity 23.3%	Emerging Markets 32.2%	Private Equity 19.6%	Bonds 5.2%	MLPs 76.4%	Public RE 27.9%	MLPs 13.9%	Emerging Markets 18.2%	Mid Cap 34.8%	Large Cap 13.7%	Private Equity 7.0%	MLPs 18.3%	Int'l 25.0%	Private RE 6.7%	Mid Cap 30.5%	Small Cap 20.0%	MLPs 40.2%	Commod 16.1%
Commod 21.4%	Private Equity 27.0%	Commod 16.2%	Private RE -6.5%	High Yield 58.2%	Small Cap 26.9%	Public RE 8.3%	Int'l 17.3%	Large Cap 32.4%	Mid Cap 13.2%	Public RE 2.8%	High Yield 17.1%	Large Cap 21.8%	Bonds 0.0%	Public RE 28.7%	Large Cap 18.4%	Private Equity 36.9%	Private RE 9.4%
Private RE 20.1%	Int'l 26.3%	Private RE 15.8%	Div Strats -19.0%	Mid Cap 40.5%	Mid Cap 25.5%	Private Equity 8.2%	Mid Cap 17.3%	MLPs 27.6%	Private RE 11.8%	Large Cap 1.4%	Mid Cap 13.8%	Mid Cap 18.5%	Int'l Bonds -1.7%	Small Cap 25.5%	Emerging Markets 18.3%	Large Cap 28.7%	Div Strats -4.3%
Int'l 13.3%	MLPs 26.1%	MLPs 12.7%	Private Equity -24.0%	Int'l 31.8%	Emerging Markets 18.9%	Bonds 7.8%	Small Cap 16.3%	Int'l 22.8%	Private Equity 11.3%	Bonds 0.5%	Large Cap 11.9%	Private Equity 17.7%	High Yield -2.1%	Int'l 22.0%	Hedged Equity 17.9%	Commod 27.1%	Private Equity -6.8%
Diversified Index 12.9%	Diversified Index 18.6%	Diversified Index 11.7%	High Yield -26.2%	Diversified Index 16.1%	Private Equity 17.5%	Int'l Bonds 5.9%	Large Cap 16.0%	Private Equity 18.9%	Bonds 6.0%	Int'l -0.8%	Commod 11.8%	Diversified Index 14.7%	Public RE -4.0%	Emerging Markets 18.4%	Mid Cap 17.1%	Mid Cap 22.6%	Diversified Index -9.2%
Mid Cap 12.7%	Small Cap 18.4%	Int'l Bonds 11.3%	Hedged Equity -26.7%	Public RE 28.0%	Commod 16.8%	High Yield 5.0%	High Yield 15.8%	Hedged Equity 14.3%	Small Cap 4.9%	Hedged Equity -1.0%	Emerging Markets 11.2%	Small Cap -4.6%	Large Cap -4.4%	Diversified Index 16.3%	Div Strats 11.8%	Private RE 17.7%	Hedged Equity -10.4%
Public RE 12.2%	Private RE 16.6%	Int'l 11.2%	Diversified Index -28.4%	Small Cap 27.2%	High Yield 15.1%	Large Cap 2.1%	Private Equity 12.1%	Diversified Index 13.6%	MLPs 4.8%	Div Strats -1.1%	Private Equity 9.8%	Hedged Equity 13.3%	Div Strats -4.7%	High Yield 14.3%	Int'l Bonds 10.5%	Diversified Index 15.1%	High Yield -11.2%
Hedged Equity 10.6%	Large Cap 15.8%	Hedged Equity 10.5%	Small Cap -33.8%	Large Cap 26.5%	Large Cap 15.1%	Mid Cap -1.5%	Diversified Index 11.7%	Private RE 11.0%	Diversified Index 3.6%	Mid Cap -2.4%	Public RE 8.6%	Int'l Bonds 9.9%	Diversified Index -6.0%	Private Equity 14.0%	Diversified Index 9.4%	Small Cap 14.8%	Bonds -13.0%
Div Strats 9.3%	Mid Cap 15.3%	Div Strats 10.0%	Commod -35.6%	Hedged Equity 24.6%	Diversified Index 14.5%	Diversified Index -1.9%	Private RE 10.5%	Div Strats 9.1%	Div Strats 3.0%	Diversified Index -3.7%	Diversified Index 8.4%	Public RE 8.7%	Hedged Equity -7.1%	Hedged Equity 13.7%	Int'l 7.8%	Hedged Equity 11.7%	Int'l -14.5%
MLPs 6.3%	Div Strats 12.9%	Bonds 7.0%	MLPs -36.9%	Div Strats 20.0%	Private RE 13.1%	Small Cap -4.2%	Hedged Equity 7.4%	High Yield 7.4%	High Yield 2.5%	Small Cap -4.4%	Private RE 8.0%	Div Strats 8.6%	Mid Cap -9.1%	Div Strats 10.4%	Bonds 7.5%	Int'l 11.3%	Mid Cap -17.3%
Large Cap 4.9%	High Yield 11.8%	Mid Cap 5.6%	Large Cap -37.0%	Commod 18.9%	Hedged Equity 10.5%	Div Strats -5.3%	Div Strats 6.4%	Public RE 2.9%	Hedged Equity 1.8%	High Yield -4.5%	Hedged Equity 5.5%	High Yield 7.5%	Small Cap -11.0%	Bonds 8.7%	High Yield 7.1%	Div Strats 10.2%	Large Cap -18.1%
Small Cap 4.6%	Hedged Equity 11.7%	Large Cap 5.5%	Public RE -37.7%	Private Equity 15.6%	Div Strats 10.2%	Hedged Equity -8.4%	MLPs 4.8%	Bonds -2.0%	Emerging Markets -2.2%	Int'l Bonds -4.8%	Div Strats 5.4%	Private RE 7.0%	Commod -11.2%	Commod 7.7%	Private RE 1.6%	High Yield 5.3%	Emerging Markets -20.1%
High Yield 2.7%	Int'l Bonds 6.8%	High Yield 1.9%	Mid Cap -41.5%	Bonds 5.9%	Int'l 7.7%	Int'l -12.1%	Bonds 4.2%	Emerging Markets -2.6%	Int'l Bonds -2.5%	Emerging Markets -14.9%	Bonds 2.6%	Bonds 3.5%	MLPs -12.4%	MLPs 6.6%	Commod -3.1%	Bonds -1.5%	Small Cap -20.4%
Bonds 2.4%	Bonds 4.3%	Small Cap -1.6%	Int'l -43.4%	Int'l Bonds 3.9%	Int'l Bonds 6.8%	Commod -13.3%	Int'l Bonds 0.8%	Int'l Bonds -5.1%	Int'l -4.9%	Commod -24.7%	Int'l Bonds 1.9%	Commod 1.7%	Int'l -13.8%	Private RE 6.4%	Public RE -5.1%	Emerging Markets -2.5%	Int'l Bonds -21.9%
Int'l Bonds -9.2%	Commod 2.1%	Public RE -15.7%	Emerging Markets -53.3%	Private RE -16.9%	Bonds 6.5%	Emerging Markets -18.4%	Commod -1.1%	Commod -9.5%	Commod -17.0%	MLPs -32.6%	Int'l 1.0%	MLPs -6.5%	Emerging Markets -14.6%	Int'l Bonds 5.2%	MLPs -28.7%	Int'l Bonds -9.5%	Public RE -24.9%

See disclosures for sources and additional information.

CAPITAL MARKET ASSUMPTIONS

FEG INPUTS: CAPITAL MARKET ASSUMPTIONS

Proprietary capital markets assumptions and our deep economic understanding suggest the following FEG 7- to 10-year Capital Market Assumptions:¹

	Expected Return	Expected Standard Deviation		Expected Return	Expected Standard Deviation
GLOBAL EQUITY			REAL ASSETS		
<i>Long-Only Strategies</i>	7.06%	19.65%	<i>Real Estate</i>		
<i>U.S. Equity</i>	6.64%	16.65%	Public Real Estate	6.50%	20.00%
Large Cap	6.50%	15.00%	Private Real Estate	8.25%	18.00%
Mid Cap	6.75%	18.00%	<i>Natural Resources</i>		
Small Cap	7.25%	24.00%	Commodities	4.50%	19.00%
			Private Energy	9.50%	18.00%
<i>International Equity</i>	7.70%	24.16%	<i>Infrastructure</i>		
Large Cap Developed	7.25%	20.00%	Energy Infrastructure	7.00%	23.00%
Small Cap Developed	8.00%	24.00%	Global Listed Infrastructure	6.75%	15.00%
Emerging Markets	8.50%	33.00%			
Global Hedged Equity	6.25%	13.00%			
Private Equity	9.00%	17.00%			
GLOBAL FIXED INCOME & CREDIT			DIVERSIFYING STRATEGIES		
<i>Interest Rate Sensitive Strategies</i>	5.49%	6.29%	<i>Semi-Liquid Hedged Strategies</i>	5.83%	8.40%
Core (Investment Grade)	5.00%	6.00%	Event Driven	6.00%	9.50%
Inflation Protected (TIPS)	4.70%	7.00%	Macro	6.00%	7.00%
Long Duration Corporate Debt	6.00%	8.50%	Relative Value	5.50%	8.00%
Emerging Market Debt	7.75%	13.00%	Illiquid Diversifying Strategies	8.50%	10.00%
			Liquid Diversifying Strategies	5.50%	10.00%
<i>Credit Sensitive Strategies</i>	7.17%	14.00%			
High Yield	7.25%	16.00%	<i>Money Markets</i>		
Bank Loans	6.00%	11.00%	U.S. Inflation	3.00%	
Private Debt	8.25%	15.00%	U.S. Cash	3.00%	

¹Data Source: FEG Data as of 12/31/2022. FEG Capital Market Assumptions are hypothetical based on asset category. The expected return is the result of a hypothetical allocation of investments represented solely by financial market data, underlying public indices, and FEG expectations in each asset category. Please see Disclosures for full disclosures.



CAPITAL MARKET ASSUMPTIONS PROCESS

DEVELOPING SOUND CAPITAL MARKET ASSUMPTIONS

Recognizing the importance of sound capital market assumptions, FEG has a team and process in place to research and publish capital market assumptions. While FEG’s expected returns have historically been within the return range of the actual results 7-10 years later, the process does not “stop” once we issue these assumptions. We continually refine our models and evaluate our success.



STEP 1: DEVELOP FORECASTS
Evaluate long-term drivers of return by asset category and frame within the broader macroeconomic environment.

STEP 2: CHECKS AND BALANCES
Review internally and externally – checking assumptions and methodologies against others in the investments industry.

STEP 3: RESULTS
Evaluate past results, determine if any deviations were a function of unique markets or embedded within FEG’s forecasting framework. Keep what is working but isolate and correct any issues.

CMA FORECASTING FRAMEWORK

Develop 10-Year Forecasts

Checks and Balances

Results

- FEG’s construction of capital market assumptions considers long-term drivers of return and the macroeconomic environment
- FEG’s capital market assumptions are forward-looking, not backward-looking
- Specific “building blocks” of the assumptions vary by asset category

CONSTRUCTING EQUITY CAPITAL MARKET ASSUMPTIONS

Building Blocks of Equity Returns						Risk Premium	Earnings Yield
Dividend Yield	Share Repurchases	Real Earnings Growth	Valuation Change	Currency	Inflation		

CONSTRUCTING CORPORATE BONDS CAPITAL MARKET ASSUMPTIONS

Building Blocks of High Yield Returns			Spread to Treasuries	Risk Premium
Current Yield	Default Expectations	Recovery Rate		

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CMA INDUSTRY COMPARISONS

Develop 10-Year Forecasts

Checks and Balances

Results

Capital Market Return Expectations are Universally Tempered
Industry Comparison of Assumptions

FEG understands how our expectations compare to the industry, but we also understand the differences in methodologies between those with the highest and lowest expectations.

Note: Comparisons rely on assumptions released in the second half of 2021. One outlier, BlackRock, has a private equity expectation of approximately 15%.

FEG Capital Market Assumptions are based on asset category. Industry averages and ranges are based upon FEG’s sampling of publicly available capital market assumptions. Please refer to Disclosures for full disclosures. Industry is represented by 17 publicly available capital market assumptions. Certain asset classes defined by industry peers may be different and are not intended to be homogeneous with FEG’s categorization of the markets. Peer assumptions may be 5-75 year perspectives. All capital market assumptions are those available in December 2021.

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EXPECTATIONS VERSUS RETURNS

Develop 10-Year Forecasts

Checks and Balances

Results

- Long-term assumptions do not have a specific end date, and asset allocation is continually re-assessed as markets ebb and flow
- FEG has been able to prepare clients for market shifts, although the exact timing and degree of changes (i.e., depth of the financial crisis) are unknowable in advance

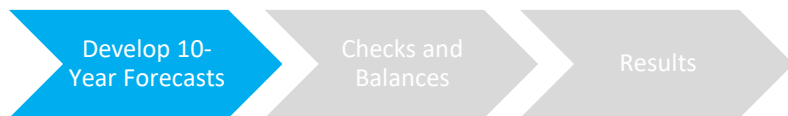
AVERAGE EXPECTED RETURNS VS. ACTUAL
Portfolio Weighted Rolling 10-Year Returns

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CMA FORECASTING FRAMEWORK



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- Specific “building blocks” of the assumptions vary by asset category

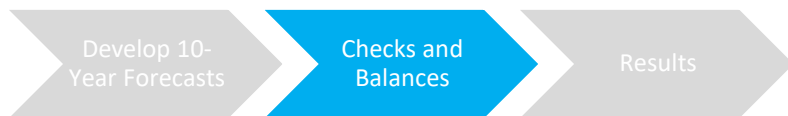
CONSTRUCTING EQUITY CAPITAL MARKET ASSUMPTIONS

Building Blocks of Equity Returns						Risk Premium	Earnings Yield
Dividend Yield	Share Repurchases	Real Earnings Growth	Valuation Change	Currency	Inflation		

CONSTRUCTING CORPORATE BONDS CAPITAL MARKET ASSUMPTIONS

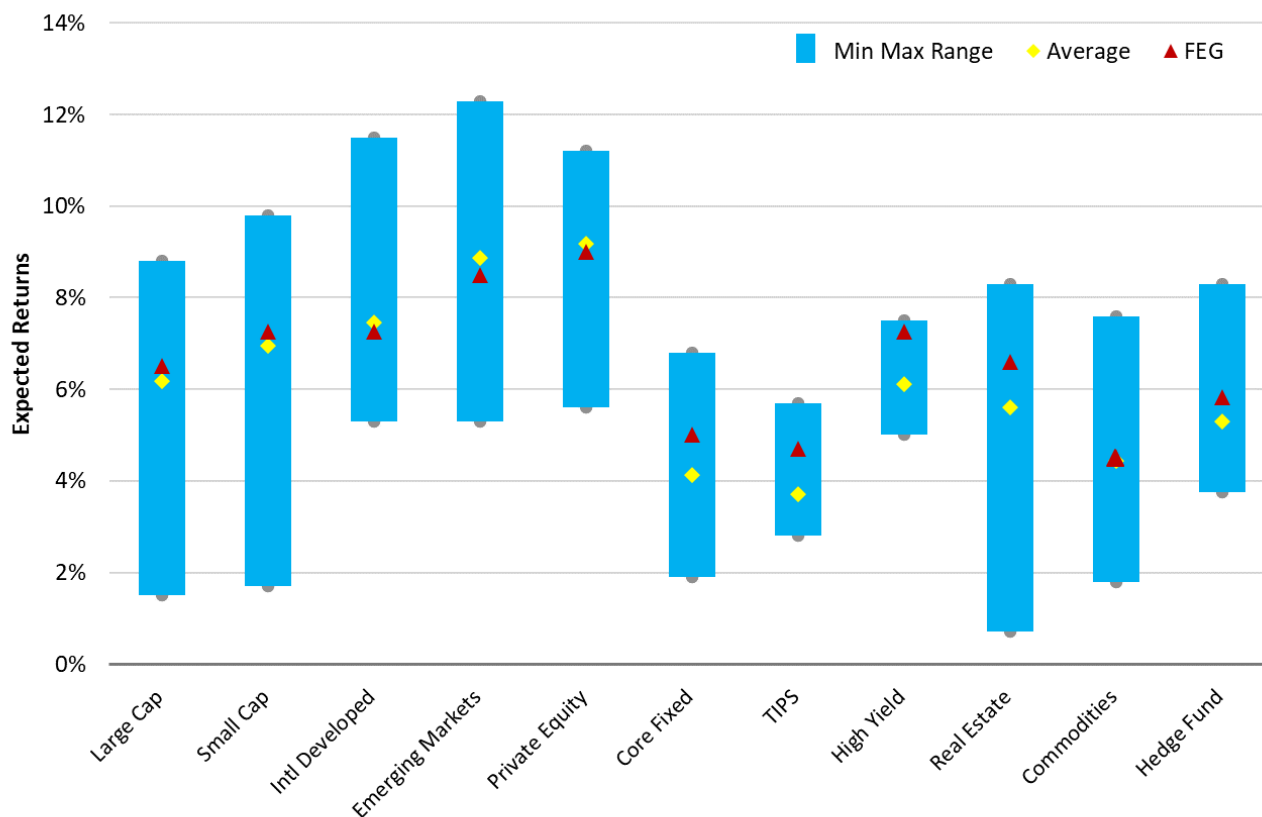
Building Blocks of High Yield Returns			Spread to Treasuries	Risk Premium
Current Yield	Default Expectations	Recovery Rate		

CMA INDUSTRY COMPARISONS



Capital Market Return Expectations are Universally Tempered

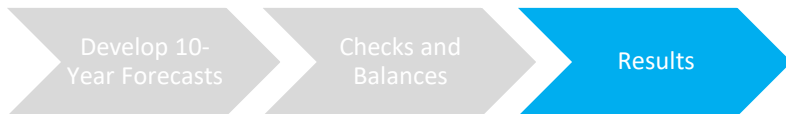
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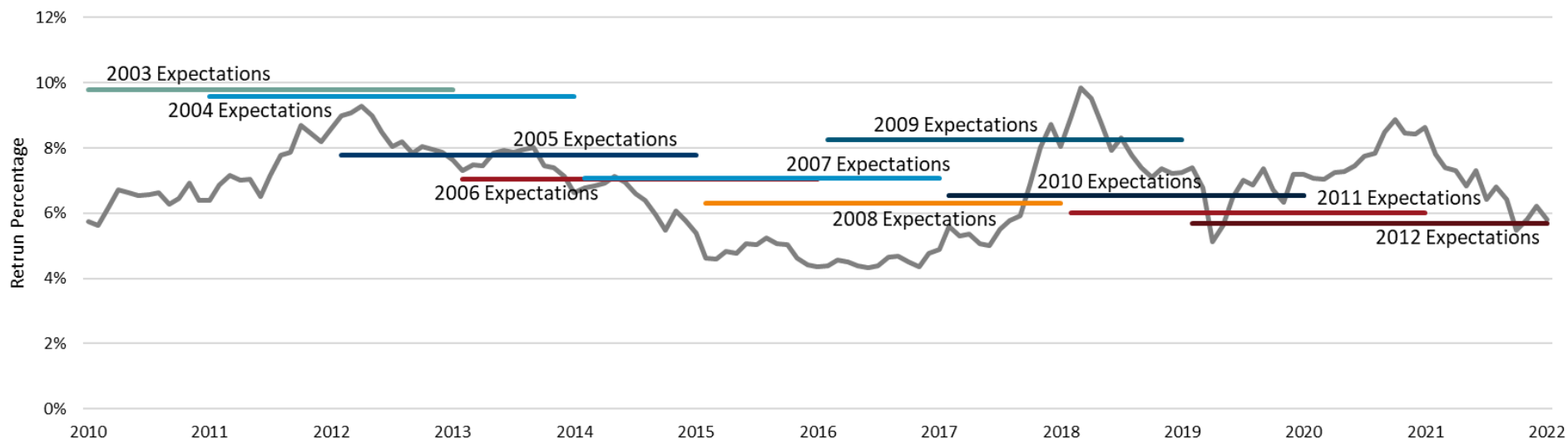
EXPECTATIONS VERSUS RETURNS



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- FEG has been able to prepare clients for market shifts, although the exact timing and degree of changes (i.e., depth of the financial crisis) are unknowable in advance

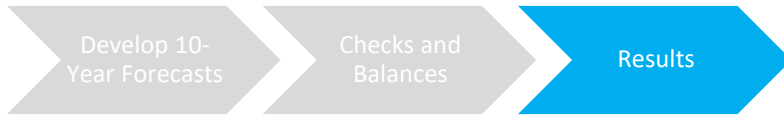
AVERAGE EXPECTED RETURNS VS. ACTUAL

Diversified Weighting Rolling 10-Year Returns

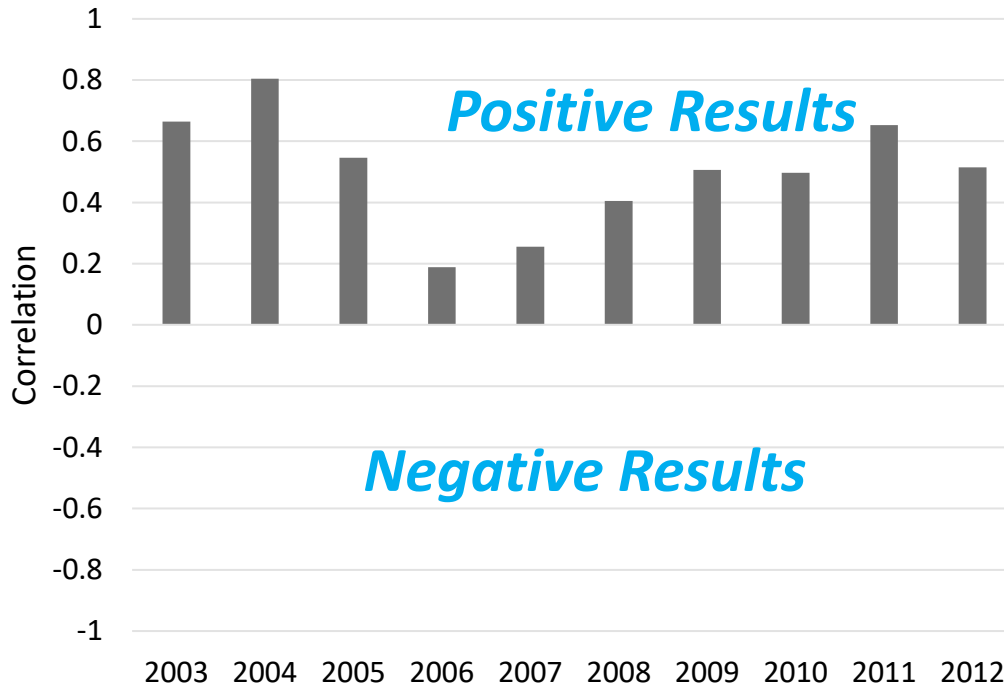


Source: Fund Evaluation Group LLC and data from Lipper. Diversified weights are U.S. Large Cap 15%, U.S. Mid Cap 5%, U.S. Small Cap 3%, International Developed 14%, International Developed Small Cap 3%, Emerging Market Equities 5%, Hedged Equity 5%, Private Equity 10%, Core Bonds 10%, TIPS 4%, High Yield Bonds 4%, Bank Loans 2%, Public Real Estate 5%, Timber 2%, Private Energy 3%, and Absolute Return Hedge Funds 10% and included available asset classes for each year modeled. Allocations are pro-rata allocated for early years where some asset classes were not yet included in FEG's Capital Market Assumptions.

THE IMPORTANCE OF RANK ORDER



CAPITAL MARKET ASSUMPTIONS: RANK CORRELATION OF EXPECTED VS. ACTUAL



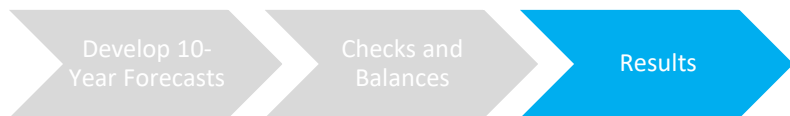
Because every asset allocation decision is relative, one method we use to evaluate our results is rank order (the order in which asset classes fall when ranked by return versus the order of actual returns, e.g., 1st, 2nd, 3rd).

Suppose a market shock, the Great Financial Crisis, for example, dramatically shifts markets and returns, but our relative ranking is accurate. In that case, our assumptions should nevertheless position our clients well (i.e., favor those with the best risk/reward trade-offs) regardless of unique market events.

As such, we review the correlation between the rank order of our expectations to the rank order of actual results.

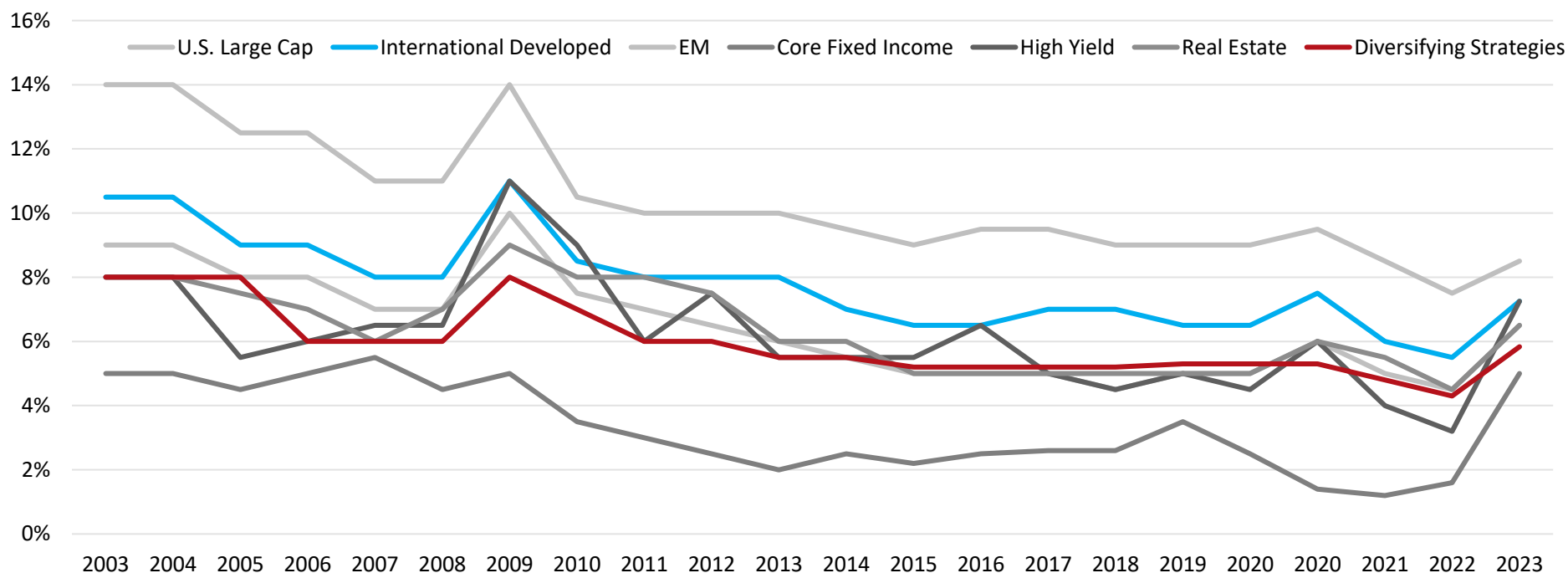
Source: Fund Evaluation Group LLC and data from Lipper as of December 2022

CAPITAL MARKET ASSUMPTIONS OVER TIME



FEG's capital market assumptions have reflected the impact of significant market events as well as improvements in our methodology over time

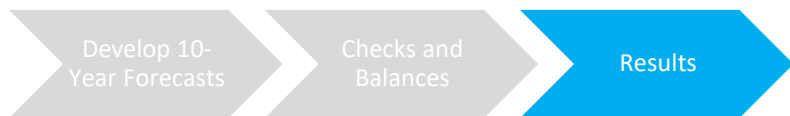
7- to 10-Year Capital Market Assumptions by Year



Data Source: FEG Data. As of December 2022.

FEG Capital Market Assumptions are hypothetical based on asset category. The expected return is the result of a hypothetical allocation of investments represented solely by financial market data, underlying public indices, and FEG expectations in each asset category. Please refer to Disclosures for full disclosures.

ADJUSTMENTS TO THE MODEL



- Upon examining the results from our 2002-2006 assumptions, we identified several unprecedented macroeconomic variables that we could not control, but similarly isolated one weighting, risk premium, within our framework that we could control
- FEG's construction of capital market assumptions in the early part of the previous decade relied too heavily on an assumed risk premium above large cap U.S. equities, and we have refined this approach in the years following the financial crisis

CONSTRUCTING EQUITY CAPITAL MARKET ASSUMPTIONS

Building Blocks of Equity Returns						Risk Premium	Earnings Yield
Dividend Yield	Share Repurchases	Real Earnings Growth	Valuation Change	Currency	Inflation		

DISCLOSURES

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FEG Capital Market Assumptions are the result of hypothetical allocations constructed under various assumptions of various constraints and liquidity needs, and allocations may not be appropriate for all investment objectives. Assumptions of various constraints and liquidity needs, and allocations may not be appropriate for all investment objectives. All projections provided are estimates and are in U.S. dollar terms, unless otherwise specified, and are based on data as of the dates indicated. Given the complex risk-reward trade-offs involved, one should always rely on judgment as well as quantitative optimization approaches in setting strategic allocations to any or all of the asset classes specified. Please note that all information shown is based on qualitative analysis developed by FEG. Exclusive reliance on the above to make an investment decision is not advised. This information is not intended as a recommendation to invest in any particular asset class, product, security, derivative, commodity, currency or strategy or as a promise of future performance. Please note that these asset class and strategy assumptions are passive only—they do not consider the impact of active management. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve. Assumptions, opinions and estimates are provided for illustrative purposes only. They should not be relied upon as recommendations to buy or sell any securities, commodities, derivatives or financial instruments of any kind. Forecasts of financial market trends that are based on current market conditions or historical data constitute a judgment and are subject to change without notice. We do not warrant its accuracy or completeness. This material has been prepared for informational purposes only and is not intended to provide, and should not be relied on for, accounting, legal, tax, investment or tax advice. There is no assurance that any of the target prices mentioned will be attained. Any market prices are only indications of market values and are subject to change.

This presentation contains hypothetical allocations and/or performance. The results do not necessarily represent the actual asset allocation of any client or investor portfolio and may not reflect the impact that material economic and market factors might have had on investment decisions. Investment results achieved by actual client accounts may differ from the results portrayed. Investments cannot be made directly in an index. No representation is being made that any fund or account will or is likely to achieve profits or losses similar to those shown herein. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently realized by any particular trading program. One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. Hypothetical performance results are presented for illustrative purposes only. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in achieving the returns have been stated or fully considered. Changes in the assumptions may have a material impact on the hypothetical returns presented. Past performance is not indicative of future results.

Given the complex risk-reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations. Exclusive reliance on the capital market assumptions is not advised. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise of future performance. Note that these asset class and strategy assumptions are passive only—they do not consider the impact of active management. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve. Assumptions, opinions and estimates are provided for illustrative purposes only. They should not be relied upon as recommendations to buy or sell securities. A manager's ability to achieve similar outcomes is subject to risk factors over which the manager may have no or limited control. Forecasts of financial market trends that are based on current market conditions constitute our judgment and are subject to change without notice. Both past performance and yield may not be a reliable guide to future performance.

Any return expectations provided are not intended as, and must not be regarded as, a representation, warranty or predication that the investment will achieve any particular rate of return over any particular time period or that investors will not incur losses.

Index performance results do not represent any portfolio returns. An investor cannot invest directly in a presented index, as an investment vehicle replicating an index would be required. An index does not charge management fees or brokerage expenses, and no such fees or expenses were deducted from the performance shown.

This presentation is prepared for informational purposes only. It does not address specific investment objectives, or the financial situation and the particular needs of any person who may receive this presentation.

Diversification or Asset Allocation does not assure or guarantee better performance and cannot eliminate the risk of investment loss.

Standard Deviation – A measure of variability in returns. The annual standard deviation measures the dispersion of annual returns around the average annualized return.

DISCLOSURES

Large Cap is represented by the S&P 500 Index which measures the performance of large capitalization U.S. stocks. The S&P 500 is a market-weighted index of 500 stocks that are traded on the NYSE, AMEX, and NASDAQ. www.standardandpoors.com

Mid Cap is represented by the Russell Mid Cap Index which measures performance of U.S. mid capitalization stocks. The Russell Mid Cap Index is a capitalization-weighted index of the 800 smallest companies in the Russell 1000 Index. The stocks are traded on the NYSE, AMEX, and NASDAQ. www.russell.com

Small Cap is represented by the Russell 2000 Index which measures the performance of U.S. small capitalization stocks. The Russell 2000 is a capitalization-weighted index of the 2,000 smallest stocks in the broad U.S. equity market, as defined by the Russell 3000 Index. These stocks are traded on the NYSE, AMEX, and NASDAQ. www.russell.com

International is represented by the MSCI EAFE Index which is a Morgan Stanley Capital International index that is designed to measure the performance of the developed stock markets of Europe, Australasia, and the Far East. www.mscibarra.com

Emerging Markets are represented by the MSCI Emerging Markets Index which is a Morgan Stanley Capital International index that is designed to measure the performance of emerging market stock markets. www.mscibarra.com

Hedged Equity is represented by the Hedge Fund Research, Inc. Fund Weighted Composite Index, an equal weighted index that includes over 2,000 constituent funds, both domestic and offshore with no Fund of Funds included in the index. www.hfri.com

Bonds are represented by the Barclays U.S. Aggregate Bond Index which includes U.S. government, corporate, and mortgage-backed securities with maturities up to 30 years. www.barclays.com

High Yield is represented by the Barclays U.S. Corporate High Yield Index. www.barclays.com

Global REIT is represented by the FTSE EPRA/NAREIT Developed Index which is designed to track the performance of listed real estate companies and REITS worldwide. www.ftse.com

MLPs are represented by the Alerian MLP Index. www.alerian.com

Hedge Funds are represented by the Hedge Fund Research, Inc. Fund of Funds Composite Index. www.hfri.com

Diversified Portfolio is composed of 9% S&P 500 Index; 5% Russell Mid Cap Index; 2% Russell 2000 Index; 16% MSCI EAFE Index; 8% MSCI Emerging Markets Index; 5% HFRI Equity Hedge Index; 5% Thomson One All Private Equity Index; 10% Barclays U.S. Aggregate Bond Index; 6% Barclays U.S. Corporate High Yield Index; 2% J.P. Morgan Non-U.S. Global Bond Index; 2% Thomson One Distressed Index; 3.4% FTSE NAREIT US Real Estate Index; 2% NCREIF Property Index; 3.3% Bloomberg Commodity Index; 3.8% Alerian MLP Index; 2.5% Thomson One Private Natural Resources Index; 15% HFRI Fund Weighted Composite Index.



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Dallas | Indianapolis





DATE	INVOICE #
1/31/24	202401144

.12% first \$50 Million
.10% next \$50 Million
.05% next \$150 Million
.04% next \$250 Million
.03% over \$500 Million
Minimum annual fee \$60,000

Remittance information to accountsreceivable@feg.com



Invoice

Date	Invoice #
12/7/2023	29219

Bill To

City of Grosse Pointe Woods
20025 Mack Plaza Drive
Grosse Pointe Woods, MI 48236

Phone: (630) 620-0200

Fax: (239) 481-0634

Email: AR@foster-foster.com

Website: www.foster-foster.com

Federal EIN: 59-1921114

**City of Grosse Pointe Woods
Retiree Health Care Plan and Trust**

Terms	Due Date
Net 30	1/6/2024

Description	Amount
Preparation of the Public Act 202 Report for the fiscal year ending 06/30/2023	1,450.00

Thank you for your business!

Most preferred method of payment is an ACH deposit.

Please reference Plan name & Invoice # above.

- Account Title: Foster & Foster, Inc.
- Account Number: 6100000360
- Routing Number: 063114661
- Bank Name: Cogent Bank

Balance Due	\$1,450.00
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For payment via a mailed check, please remit to:

Foster & Foster, Inc.

184 Shuman Blvd., Ste.305, Naperville, IL 60563

Shawn Murphy

From: MAPERS <receipts@affinipay.com>
Sent: Wednesday, November 15, 2023 11:44 AM
To: Shawn Murphy
Subject: Payment Receipt from MAPERS for \$200.00

CAUTION: This email originated from outside of the organization. DO NOT click links, open attachments or reply to this message unless you recognize the sender and know the content is safe:



Payment Receipt

\$200.00

MAPERS

525 E Michigan Ave
Suite 409
Saline, Michigan 48176
(734) 944-1144

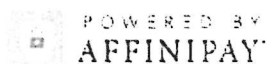
Account Holder

Shawn Murphy
20025 Mack Plaza Drive
Grosse Pointe Woods, Michigan
48236

Payment Summary

Account: Payments
Reference: #4

Amount Paid: \$200.00
Payment Method: MasterCard
Card Number: *****6450
Entry Mode: Manual
Auth Code: 012604
Payment Date: November 15, 2023 11:44 am
Transaction Id: 96344760



www.mapers.org
mdoran@mapers.org



CITY OF GROSSE POINTE WOODS

MEMORANDUM

Date: January 22, 2024
To: Pension Board of Trustees
From: Shawn Murphy, Pension Administrator
Re: Annual Administrative Fee

At the February 2, 2023 Pension Board Meeting, the Board approved an increase in the Annual Administrative Fee for the 2023-2024 budget year from \$10,000 to \$14,000.

I respectfully request a motion to approve the payment of \$14,000 to the City of Grosse Pointe Woods General Fund, for administrative fees. This fee covers services rendered during fiscal year 2023-2024. Funds are to be taken from budget line 731-237-976.000 with a budgeted amount of \$14,000.

Thank you.