

CITY OF GROSSE POINTE WOODS  
EMPLOYEES RETIREMENT SYSTEM

ACTUARIAL VALUATION  
AS OF JUNE 30, 2022

CONTRIBUTIONS APPLICABLE TO THE  
PLAN/FISCAL YEAR BEGINNING JULY 1, 2023

P.A. 202 VALUATION  
AS OF JUNE 30, 2022

GASB 67/68 DISCLOSURE INFORMATION  
AS OF JUNE 30, 2022



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS



October 26, 2022

Board of Trustees  
City of Grosse Pointe Woods Employees Retirement System

Re: Actuarial Valuation Report (including revised GASB Statements No. 67 and No. 68) – City of GrossePointe 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. Included are the related results for GASB Statements No. 67 and No. 68. 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. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No 68. Use of the results for other purposes may not be applicable and could produce significantly different results.

The valuations have 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 reflect 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 valuations, 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 valuations, 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.

The total pension liability, net pension liability, and certain sensitivity information shown in the GASB results are based on an actuarial valuation performed as of the valuation date.

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.

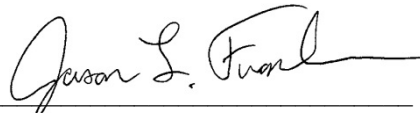
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the 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, 2022, 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, 2023.

The contribution requirements, compared with those set forth in the June 30, 2021 actuarial report, are as follows:

Valuation Date	6/30/2022	6/30/2021
Applicable to Fiscal Year Beginning	<u>7/1/2023</u>	<u>7/1/2022</u>
Total Recommended Contribution	\$2,205,664	\$2,318,511
% of Projected Annual Payroll	38.91%	41.28%
Member Contributions (Est.)	(326,695)	(325,220)
% of Projected Annual Payroll	(5.76%)	(5.79%)
City Recommended Contribution	1,878,969	1,993,291
% of Projected Annual Payroll	33.15%	35.49%

As you can see, the Total Recommended Contribution shows a decrease from the June 30, 2021 actuarial valuation report. The decrease is attributable to the plan changes.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of unfavorable experience included an investment return of 4.70% (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 inactive mortality.

## CHANGES SINCE THE PRIOR VALUATION

The valuation reflects the following plan changes:

- The pension multiplier for Public Safety Officers hired after July 1, 2011, was changed from 2.0% to 2.5%.
- Effective September 12, 2022, the plan implemented the Employee Retention Option Program (EROP) program for both Command and Public Safety Officers.

The valuation reflects no assumption or method changes.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

Valuation Date	New Benefits <u>6/30/2022</u>	Old Benefits <u>6/30/2022</u>	<u>6/30/2021</u>
<b>A. Participant Data</b>			
Number Included			
Actives	79	79	78
Service Retirees	86	86	86
Beneficiaries	17	17	16
Disability Retirees	0	0	0
Terminated Vested	<u>16</u>	<u>16</u>	<u>13</u>
Total	198	198	193
Total Projected Annual Payroll	\$5,668,368	\$5,668,368	\$5,616,709
Payroll Under Assumed Ret. Age	5,668,369	5,668,369	5,616,709
Annual Rate of Payments to:			
Service Retirees	3,013,205	3,013,205	2,912,997
Beneficiaries	513,185	513,185	494,303
Disability Retirees	0	0	0
Terminated Vested	148,317	148,317	148,979
<b>B. Assets</b>			
Actuarial Value	41,703,710	41,703,710	41,121,607
Market Value	38,115,937	38,115,937	45,943,628
<b>C. Liabilities</b>			
Present Value of Benefits (PVB)			
Actives			
Retirement Benefits	20,957,181	23,090,287	23,467,261
Disability Benefits	1,739,611	1,682,999	1,696,845
Death Benefits	285,755	279,547	280,339
Vested Benefits	649,688	639,493	624,104
Service Retirees	39,273,933	39,273,933	37,735,035
Beneficiaries	4,830,917	4,830,917	4,745,522
Disability Retirees	0	0	0
Terminated Vested	<u>1,280,240</u>	<u>1,280,240</u>	<u>1,192,327</u>
Total	69,017,325	71,077,416	69,741,433

C. Liabilities - (Continued)	New Benefits <u>6/30/2022</u>	Old Benefits <u>6/30/2022</u>	<u>6/30/2021</u>
Present Value of Future Salaries	48,053,737	48,053,737	46,823,263
Normal Cost (Retirement)	638,282	683,078	683,244
Normal Cost (Disability)	80,269	77,092	76,585
Normal Cost (Death)	15,744	15,405	15,058
Normal Cost (Vesting)	<u>53,018</u>	<u>52,428</u>	<u>47,505</u>
Total Normal Cost (EAN)	787,313	828,003	822,392
Present Value of Future Normal Costs	6,500,055	6,756,773	6,655,766
Accrued Liability (Retirement)	15,569,871	17,396,293	17,853,421
Accrued Liability (Disability)	1,074,738	1,057,302	1,075,164
Accrued Liability (Death)	171,391	169,249	171,866
Accrued Liability (Vesting)	316,180	312,709	312,332
Accrued Liability (Inactives) <sup>1</sup>	<u>45,385,090</u>	<u>45,385,090</u>	<u>43,672,884</u>
Total Actuarial Accrued Liability	62,517,270	64,320,643	63,085,667
Unfunded Actuarial Accrued Liability (UAAL)	20,813,560	22,616,933	21,964,060
Funded Ratio (AVA / AL)	66.7%	64.8%	65.2%

<sup>1</sup> Includes reserve for EROP balances. \$0 as of 6/30/2022.



	New Benefits <u>6/30/2022</u>	Old Benefits <u>6/30/2022</u>	<u>6/30/2021</u>
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives <sup>1</sup>	45,385,090	45,385,090	43,672,884
Actives	4,250,204	4,483,883	5,634,279
Member Contributions	<u>4,226,004</u>	<u>4,226,004</u>	<u>4,396,347</u>
Total	53,861,298	54,094,977	53,703,510
Non-vested Accrued Benefits	<u>3,396,747</u>	<u>4,471,875</u>	<u>3,661,772</u>
Total Present Value Accrued Benefits	57,258,045	58,566,852	57,365,282
Funded Ratio (MVA / PVAB)	66.6%	65.1%	80.1%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	(1,308,807)	0	
Assumption Changes	0	0	
Plan Experience	0	620,343	
Benefits Paid	0	(3,586,669)	
Interest	0	4,167,896	
Other	<u>0</u>	<u>0</u>	
Total	0	1,201,570	

<sup>1</sup> Includes reserve for EROP balances. \$0 as of 6/30/2022.

	New Benefits	Old Benefits	
Valuation Date	6/30/2022	6/30/2022	6/30/2021
Applicable to Fiscal Year Beginning	<u>7/1/2023</u>	<u>7/1/2023</u>	<u>7/1/2022</u>

E. Pension Cost

Normal Cost <sup>1</sup>	\$846,361	\$890,103	\$884,071
% of Total Annual Payroll <sup>1</sup>	14.93	15.70	15.74
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 25 years (as of 6/30/2022) <sup>1</sup>	1,359,303	1,477,079	1,434,440
% of Total Annual Payroll <sup>1</sup>	23.98	26.06	25.54
Total Recommended Contribution	2,205,664	2,367,182	2,318,511
% of Total Annual Payroll <sup>1</sup>	38.91	41.76	41.28
Expected Member Contributions <sup>1</sup>	(326,695)	(337,463)	(325,220)
% of Total Annual Payroll <sup>1</sup>	(5.76)	(5.95)	(5.79)
Expected City Contribution	1,878,969	2,029,719	1,993,291
% of Total Annual Payroll <sup>1</sup>	33.15	35.81	35.49

F. Past Contributions

Plan Years Ending: 6/30/2022

Total Recommended Contribution	2,284,178
City Requirement	1,993,291

Actual Contributions Made:

Members (excluding buyback)	290,887
City	<u>2,044,344</u>
Total	2,335,231

G. Net Actuarial (Gain)/Loss 566,742

<sup>1</sup> Contributions developed as of 6/30/2022 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>
2022	20,813,560
2023	21,015,274
2024	21,218,942
2030	22,483,081
2036	23,822,531
2041	24,999,499
2047	26,488,866

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	6/30/2022	2.73%	4.55%
Year Ended	6/30/2021	12.40%	4.48%
Year Ended	6/30/2020	N/A	N/A

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	6/30/2022	4.66%	7.50%
Year Ended	6/30/2021	9.99%	7.50%
Year Ended	6/30/2020	0.42%	7.50%

PENSION COST BY DIVISION

	<u>General</u>	<u>Public Safety</u>	<u>Total</u>
Projected Payroll	2,946,177	2,722,192	5,668,369
Total Normal Cost <sup>1</sup>	398,124	448,237	846,361
% of Total Annual Payroll <sup>1</sup>	13.52	16.47	14.93
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 25 years (as of 6/30/2022) <sup>1</sup>			
	706,508	652,795	1,359,303
% of Total Annual Payroll <sup>1</sup>	23.98	23.98	23.98
Total Recommended Contribution <sup>1</sup>	1,104,632	1,101,032	2,205,664
% of Total Annual Payroll <sup>1</sup>	37.49	40.45	38.91
Expected Member Contributions <sup>1</sup>	(159,307)	(167,387)	(326,695)
% of Total Annual Payroll <sup>1</sup>	(5.41)	(6.15)	(5.76)
Expected City Contribution	945,325	933,645	1,878,969
% of Total Annual Payroll <sup>1</sup>	32.09	34.30	33.15

<sup>1</sup> Contributions developed as of 6/30/2022 displayed above have been adjusted to account for assumed interest.

DEVELOPMENT OF JUNE 30, 2022 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of June 30, 2021	\$21,964,060
(2)	Sponsor Normal Cost developed as of June 30, 2021	520,775
(3)	Expected administrative expenses for the year ended June 30, 2022	0
(4)	Expected interest on (1), (2) and (3)	1,686,363
(5)	Sponsor contributions to the System during the year ended June 30, 2022	2,044,344
(6)	Expected interest on (5)	76,663
(7)	Expected Unfunded Actuarial Accrued Liability as of June 30, 2022, (1)+(2)+(3)+(4)-(5)-(6)	22,050,191
(8)	Change to UAAL due to Benefits Change	(1,803,373)
(9)	Change to UAAL due to Actuarial (Gain)/Loss	566,742
(10)	Unfunded Accrued Liability as of June 30, 2022	20,813,560
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	20,813,560

<u>Date</u> <u>Established</u>	<u>Years</u> <u>Remaining</u>	<u>6/30/2022</u> <u>Amount</u>	<u>Amortization</u> <u>Amount</u>
6/30/2022	25	20,813,560	1,264,468

## DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of June 30, 2021	\$21,964,060
(2) Expected UAAL as of June 30, 2022	22,050,191
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	1,148,897
Salary Increases	(127,938)
Active Decrements	814,995
Inactive Mortality	(758,829)
Other	<u>(510,383)</u>
Change in UAAL due to (Gain)/Loss	566,742
Change to UAAL due to Benefits Change	<u>(1,803,373)</u>
(4) Actual UAAL as of June 30, 2022	\$20,813,560

## RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of June 30, 2021	\$ 1,993,291
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	6,032
Change in Assumed Administrative Expense	-
Investment Return (Actuarial Asset Basis)	75,033
Salary Increases	(8,355)
New Entrants	-
Active Decrements	53,226
Inactive Mortality	(49,558)
Contributions (More) or Less than Recommended	(3,459)
Increase in Amortization Payment Due to Payroll Growth Assumption	50,205
Change in Expected Member Contributions	12,243
Benefits Change	(150,750)
Other	<u>(98,939)</u>
Total Change in Contribution	(114,322)
(3) Contribution Determined as of June 30, 2022	\$1,878,969

P.A. 202 REPORTING  
AS OF JUNE 30, 2022

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	41,703,710
25	Actuarial Accrued Liabilities	84,764,731
26	Funded Ratio	49.2%
27	Actuarially Determined Contribution	4,617,875

The information was calculated based on the following assumptions, in compliance with the Uniform Assumptions pursuant to PA 202, applicable for fiscal year 2022. 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)	4.91%
Periods with sufficient assets	6.85%
Periods without sufficient assets	2.16%
Salary Increase	Experience-based rates
Mortality Table	Pub-2010 with MP-2020
Amortization Period for Unfunded	
Actuarial Accrued Liability	17 years
Cost Method	Entry Age Normal
Amortization Method	Level percent of pay
Payroll Growth Assumption	3.50%



## FUNDING HISTORY

				General		Public Safety	
Valuation Date	Applicable Fiscal Year Beginning	Valuation Assets <sup>1</sup>	Actuarial Accrued Liabilities <sup>1</sup>	Funded Ratio	Unfunded Actuarial Accrued Liabilities <sup>1</sup>	Recommended Employer Contribution - as a% of Payroll	Recommended Employer Contribution - as a% of Payroll
6/30/2003	7/1/2004	35,745	32,137	111.2%	(3,608)	1.40%	5.74%
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%

<sup>1</sup>Dollar values reported in thousands.

PROJECTION OF BENEFIT PAYMENTS

Year	Payments for Current Actives	Payments for Current Inactives	Total Payments
2022	132,615	3,545,784	3,678,399
2023	223,089	3,566,599	3,789,688
2024	271,831	3,614,605	3,886,436
2025	368,816	3,664,455	4,033,271
2026	433,946	3,691,124	4,125,070
2027	742,433	3,723,846	4,466,279
2028	741,729	3,760,335	4,502,064
2029	939,632	3,804,441	4,744,073
2030	874,076	3,807,591	4,681,667
2031	1,601,942	3,804,048	5,405,990
2032	1,899,131	3,793,836	5,692,967
2033	1,715,761	3,776,998	5,492,759
2034	2,141,662	3,758,001	5,899,663
2035	2,371,928	3,737,175	6,109,103
2036	3,073,369	3,709,040	6,782,409
2037	3,098,708	3,662,797	6,761,505
2038	2,874,193	3,608,101	6,482,294
2039	2,923,053	3,546,181	6,469,234
2040	2,954,001	3,476,118	6,430,119
2041	2,958,520	3,401,849	6,360,369
2042	3,085,118	3,320,926	6,406,044
2043	3,059,143	3,229,368	6,288,511
2044	3,082,817	3,134,665	6,217,482
2045	3,286,101	3,033,333	6,319,434
2046	3,269,403	2,911,282	6,180,685
2047	3,435,809	2,776,877	6,212,686
2048	4,102,749	2,647,922	6,750,671
2049	3,940,857	2,501,728	6,442,585
2050	3,899,247	2,334,681	6,233,928
2051	3,962,046	2,174,408	6,136,454
2052	4,150,451	2,032,869	6,183,320
2053	4,053,820	1,897,565	5,951,385
2054	4,026,184	1,765,281	5,791,465
2055	4,022,666	1,632,027	5,654,693
2056	3,998,354	1,499,762	5,498,116
2057	3,946,846	1,368,661	5,315,507
2058	3,908,186	1,239,957	5,148,143
2059	3,864,349	1,123,511	4,987,860
2060	3,826,989	1,015,831	4,842,820
2061	3,746,678	915,914	4,662,592

SUPPLEMENTAL ANNUITY VALUATION

Valuation Date	6/30/2022	6/30/2021
Applicable to Fiscal Year Beginning	<u>7/1/2023</u>	<u>7/1/2022</u>
Total Actuarial Accrued Liability	3,885,922	3,849,603
Market Value of Assets	<u>2,314,927</u>	<u>2,605,835</u>
Unfunded Actuarial Accrued Liability	1,570,995	1,243,768
Pension Cost		
Total Normal Cost (EAN) <sup>1</sup>	48,336	48,535
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 10 years (as of 6/30/2022) <sup>1</sup>	228,872	181,199
Total Recommended Contribution	277,208	229,734

<sup>1</sup> Contributions developed as of 6/30/2022 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	3,578,798	307,124	3,885,922
Market Value of Assets	<u>2,131,967</u>	<u>182,960</u>	<u>2,314,927</u>
Unfunded Actuarial Accrued Liability	1,446,831	124,164	1,570,995
 Pension Cost - Total			
Total Normal Cost	48,336	0	48,336
UAAL Amortization	<u>210,783</u>	<u>18,089</u>	<u>228,872</u>
Total Recommended Contribution	259,119	18,089	277,208
 Pension Cost - Dollars Per Active Member			
Total Normal Cost	967	0	
UAAL Amortization	<u>4,216</u>	<u>624</u>	
Total Recommended Contribution	5,182	624	
 Participant Summary			
Counts			
Actives	50	29 <sup>1</sup>	79
Retirees and Beneficiaries	49	8	57
 Supplemental Annuities			
Total Annuities	239,987	39,505	279,492
Average Annuities	4,898	4,938	4,903

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

## ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	7.50% per year compounded annually, net of investment related expenses.
Mortality Rate	<p><b>Active Lives</b>                      PubS-2010 and PubG-2010 Employee mortality tables, with generational improvements using Scale MP-2018.</p> <p><b>Inactive Lives</b>                      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	See table later in this section. 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 7.50% 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	The unfunded present value of benefits is amortized according to a level percentage of payroll method over an open 25 year period.
Payroll Growth	3.50%.

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	20%	15%	12%	10%	8%	6.0%	< 27	12%	9%	8%	7%	6%	4.5%
30	20%	15%	12%	10%	8%	6.0%	30	12%	9%	8%	7%	6%	3.9%
35	20%	15%	12%	10%	8%	5.0%	35	12%	9%	8%	7%	6%	2.3%
40	20%	15%	12%	10%	8%	3.0%	40	12%	9%	8%	7%	6%	0.9%
45	20%	15%	12%	10%	8%	2.0%	45	12%	9%	8%	7%	6%	0.5%
50	20%	15%	12%	10%	8%	2.0%	50	12%	9%	8%	7%	6%	0.5%
55+	20%	15%	12%	10%	8%	1.0%	55+	12%	9%	8%	7%	6%	1.0%

% Becoming Disabled  
During the Year

Age	General Rate	Public Safety Rate
20	0.039%	0.088%
25	0.039%	0.144%
30	0.039%	0.296%
35	0.039%	0.488%
40	0.101%	0.680%
45	0.133%	0.872%
50	0.246%	1.064%
55	0.447%	1.264%
60	0.707%	1.464%
65+	0.829%	0.000%

% Retiring  
During the Year

Age	General Rate	Public Safety Rate
50	30%	40%
51	25%	40%
52 - 54	20%	30%
55	30%	40%
56	30%	30%
57 - 59	25%	30%
60	30%	40%
61	15%	15%
62	35%	20%
63 - 64	15%	15%
65	60%	60%
66	30%	30%
67	40%	40%
68	50%	50%
69	90%	70%
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 open period (25 years as of June 30, 2022). 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 stayed about the same from June 30, 2020 to June 30, 2022, indicating that the plan's maturity level has not significantly changed during the period.
- 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 72.6%. 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, 2022, due to sufficient plan contributions.
- 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, increased from -5.1% on June 30, 2020 to -3.6% on June 30, 2022. The current Net Cash Flow Ratio of -3.6% indicates that contributions are not currently covering the plan's benefit payments and administrative expenses.

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

<sup>1</sup> Determined as total contributions minus benefit payments and administrative expenses.

STATEMENT OF FIDUCIARY NET POSITION  
June 30, 2022

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents	778,313
Receivables:	
Accrued Interest and Dividends	179
Total Receivable	179
Investments:	
Fixed Income	6,347,601
Domestic and International Equities	14,558,181
Other Investments	16,431,663
Total Investments	37,337,445
Total Assets	38,115,937
 <u>LIABILITIES</u>	
Total Liabilities	0
Net Assets:	
Active and Retired Members' Equity	38,115,937
NET POSITION RESTRICTED FOR PENSIONS	38,115,937
TOTAL LIABILITIES AND NET ASSETS	38,115,937

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED June 30, 2022  
Market Value Basis

ADDITIONS

Contributions:		
Member	290,887	
City	2,044,344	
 Total Contributions		 2,335,231
 Investment Income:		
Net Increase in Fair Value of Investments		(6,751,573)
Interest & Dividends		299,295
Less Expenses <sup>1</sup>		(71,200)
 Net Investment Income		 (6,523,478)
 Total Additions		 (4,188,247)

DEDUCTIONS

Distributions to Members:		
Benefit Payments	3,586,669	
 Total Distributions		 3,586,669
 Administrative Expenses		 52,302
 Other		 473
 Total Deductions		 3,639,444
 Net Increase in Net Position		 (7,827,691)

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year		45,943,628
End of the Year		38,115,937

<sup>1</sup> Expenses include investment advisory, custodial and performance monitoring fees

ACTUARIAL ASSET VALUATION

June 30, 2022

Development of Actuarial Value of Assets

Market Value of Assets, 6/30/2022	38,115,937
(Gains)/Losses Not Yet Recognized	3,587,773
Preliminary Actuarial Value of Assets, 6/30/2022	41,703,710
6/30/2022 Limited Actuarial Assets, Total	41,703,710

Development of Investment Gain/Loss

Market Value of Assets, 6/30/2021	45,943,628
Actuarial Value of Assets, 6/30/2021	41,121,607
Contributions Less Benefit Payments and Administrative Expenses	(1,304,213)
Expected Investment Earnings <sup>1</sup>	3,035,213
Actual Net Investment Earnings	(6,523,478)
2022 Actuarial Investment Gain/(Loss)	(9,558,691)

<sup>1</sup> Expected Investment Earnings = 7.50% x (41,121,607 + 0.5 x -1,304,213)

Gains/(Losses) Not Yet Recognized

Plan Year	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year				
		2022	2023	2024	2025	2026
6/30/2019	(1,760,767)	(352,153)	0	0	0	0
6/30/2020	(2,842,690)	(1,137,076)	(568,538)	0	0	0
6/30/2021	9,247,348	5,548,409	3,698,939	1,849,470	0	0
6/30/2022	(9,558,691)	(7,646,953)	(5,735,215)	(3,823,476)	(1,911,738)	0
Total		(3,587,773)	(2,604,814)	(1,974,006)	(1,911,738)	0

Development of Asset Returns

(A) 6/30/2021 Actuarial Assets:	41,121,607
(I) Net Investment Income:	
1. Interest and Dividends	299,295
2. Change in Actuarial Value	1,658,221
3. Investment Expenses	(71,200)
Total	1,886,316
(B) 6/30/2022 Preliminary Actuarial Assets:	41,703,710
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	4.66%
Market Value of Assets Rate of Return:	-14.40%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(1,148,897)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
 June 30, 2022  
 Actuarial Asset Basis

INCOME		
Contributions:		
Member	290,887	
City	2,044,344	
Total Contributions		2,335,231
Earnings from Investments		
Interest & Dividends	299,295	
Change in Actuarial Value	1,658,221	
Total Earnings and Investment Gains		1,957,516
EXPENSES		
Administrative Expenses:		
Investment Related <sup>1</sup>	71,200	
Other	52,775	
Total Administrative Expenses		123,975
Distributions to Members:		
Benefit Payments	3,586,669	
Total Distributions		3,586,669
Change in Net Assets for the Year		582,103
Net Assets Beginning of the Year		41,121,607
Net Assets End of the Year <sup>2</sup>		41,703,710
Excess Earnings Reserve		

<sup>1</sup> Investment Related expenses include investment advisory, custodial and performance monitoring fees.

<sup>2</sup> Net Assets may be limited for actuarial consideration.



STATISTICAL DATA

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

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

<sup>2</sup> 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>6/30/2022</u>	<u>6/30/2021</u>	<u>6/30/2020</u>	<u>6/30/2019</u>
<u>Actives - General</u>				
Number	50	49	48	N/A
Average Current Age	45.1	46.3	47.6	N/A
Average Age at Employment	35.9	35.8	36.6	N/A
Average Past Service	9.2	10.6	11.0	N/A
Average Annual Salary	\$56,213	\$57,476	\$51,583	N/A
<u>Actives - Public Safety</u>				
Number	29	29	29	N/A
Average Current Age	43.3	43.1	42.7	N/A
Average Age at Employment	28.6	28.5	28.3	N/A
Average Past Service	14.6	14.6	14.4	N/A
Average Annual Salary	\$90,172	\$88,148	\$79,832	N/A

AGE AND SERVICE DISTRIBUTION  
TOTAL

AGE	PAST SERVICE											Total	Total Pay <sup>1</sup>
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+		
20 - 24	1	0	1	0	0	0	0	0	0	0	0	2	\$ 93,637
25 - 29	2	3	0	0	1	0	0	0	0	0	0	6	\$ 342,687
30 - 34	2	0	0	0	0	3	0	0	0	0	0	5	\$ 340,747
35 - 39	2	3	2	0	2	2	2	0	0	0	0	13	\$ 733,555
40 - 44	0	0	0	1	0	1	1	10	0	0	0	13	\$ 1,086,867
45 - 49	1	0	0	0	0	1	0	3	6	0	0	11	\$ 842,114
50 - 54	2	0	0	2	1	3	0	2	8	0	0	18	\$ 1,303,618
55 - 59	0	0	0	0	0	2	0	0	1	0	0	3	\$ 235,815
60 - 64	1	0	1	0	0	2	0	0	1	0	0	5	\$ 251,785
65+	0	0	0	0	0	1	0	1	1	0	0	3	\$ 194,825
Total	11	6	4	3	4	15	3	16	17	0	0	79	\$ 5,425,650

<sup>1</sup> Total Pay is salaries for the period ending 6/30/2022.

AGE AND SERVICE DISTRIBUTION  
GENERAL

AGE	PAST SERVICE											Total	Total Pay <sup>1</sup>
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+		
20 - 24	1	0	1	0	0	0	0	0	0	0	0	2	\$ 93,637
25 - 29	2	2	0	0	0	0	0	0	0	0	0	4	\$ 193,064
30 - 34	1	0	0	0	0	1	0	0	0	0	0	2	\$ 99,094
35 - 39	2	3	0	0	2	2	2	0	0	0	0	11	\$ 590,383
40 - 44	0	0	0	1	0	1	0	1	0	0	0	3	\$ 172,449
45 - 49	1	0	0	0	0	1	0	2	3	0	0	7	\$ 424,756
50 - 54	2	0	0	2	1	1	0	1	5	0	0	12	\$ 747,180
55 - 59	0	0	0	0	0	2	0	0	0	0	0	2	\$ 131,037
60 - 64	1	0	1	0	0	2	0	0	0	0	0	4	\$ 164,243
65+	0	0	0	0	0	1	0	1	1	0	0	3	\$ 194,825
Total	10	5	2	3	3	11	2	5	9	0	0	50	\$ 2,810,667

<sup>1</sup> Total Pay is salaries for the period ending 6/30/2022.

AGE AND SERVICE DISTRIBUTION  
PUBLIC SAFETY

AGE	PAST SERVICE											Total	Total Pay <sup>1</sup>	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+			
20 - 24	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0
25 - 29	0	1	0	0	1	0	0	0	0	0	0	2	\$ 149,623	
30 - 34	1	0	0	0	0	2	0	0	0	0	0	3	\$ 241,653	
35 - 39	0	0	2	0	0	0	0	0	0	0	0	2	\$ 143,172	
40 - 44	0	0	0	0	0	0	1	9	0	0	0	10	\$ 914,418	
45 - 49	0	0	0	0	0	0	0	1	3	0	0	4	\$ 417,358	
50 - 54	0	0	0	0	0	2	0	1	3	0	0	6	\$ 556,438	
55 - 59	0	0	0	0	0	0	0	0	1	0	0	1	\$ 104,778	
60 - 64	0	0	0	0	0	0	0	0	1	0	0	1	\$ 87,542	
65+	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0	
Total	1	1	2	0	1	4	1	11	8	0	0	29	\$2,614,983	

<sup>1</sup> Total Pay is salaries for the period ending 6/30/2022.

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	\$ 87,747	2	\$ 87,747
50 - 54	3	\$ 89,134	0	\$ 0	3	\$ 89,134
55 - 59	4	\$ 117,417	7	\$ 317,483	11	\$ 434,900
60 - 64	9	\$ 174,665	7	\$ 351,111	16	\$ 525,775
65 - 69	9	\$ 236,672	8	\$ 386,617	17	\$ 623,289
70 - 74	12	\$ 245,515	11	\$ 520,616	23	\$ 766,131
75 - 79	2	\$ 38,311	9	\$ 330,706	11	\$ 369,017
80 - 84	8	\$ 209,832	6	\$ 291,896	14	\$ 501,728
85 - 89	4	\$ 55,440	2	\$ 73,228	6	\$ 128,668
90 - 94	0	\$ 0	0	\$ 0	0	\$ 0
95 - 99	0	\$ 0	0	\$ 0	0	\$ 0
100 +	0	\$ 0	0	\$ 0	0	\$ 0
Total	51	\$ 1,166,986	52	\$ 2,359,404	103	\$ 3,526,390

AGE DISTRIBUTION  
INACTIVE VESTED MEMBERS

AGE	Count	<u>Total</u> Annual Pensions
< 45	1	\$ 7,739
45 - 49	2	\$ 22,314
50 - 54	5	\$ 63,838
55 - 59	2	\$ 34,437
60 - 64	2	\$ 13,748
65+	1	\$ 6,240
Total	13	\$ 148,317

## VALUATION PARTICIPANT RECONCILIATION

### 1. Active lives

a. Number in prior valuation 6/30/2021	78
b. Terminations	
i. Vested (partial or full) with deferred benefits	0
ii. Non-vested, due refund	(3)
iii. Refunded	(2)
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(5)
f. DROP	<u>0</u>
g. Continuing participants	68
h. New entrants	<u>11</u>
i. Total active life participants in valuation	79

### 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	16	0	13	115
Retired	5	0	0	0	5
DROP	0	0	0	0	0
Vested Deferred	0	0	0	0	0
Death, With Survivor	(2)	2	0	0	0
Death, No Survivor	(3)	(2)	0	0	(5)
Disabled	0	0	0	0	0
Terminated, Due Refund	0	0	0	3	3
Rehires	0	0	0	0	0
New EDROs	0	1	0	0	1
Data Corrections	0	0	0	0	0
Hired/Termed in Same Year	0	0	0	0	0
b. Number current valuation	86	17	0	16	119



## 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"><li>a.) The Mayor,</li><li>b.) A member of the City Council,</li><li>c.) A resident appointed by the Mayor, and</li><li>d.) Two employees (one general and one public safety).</li></ul>
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><b>General members hired before March 30, 2011:</b> 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><b>General members hired after March 30, 2011:</b> 1.75% times FAC times years of service.</p> <p><b>Dispatchers/Communications Dispatcher hired before July 1, 2011:</b> 2.125% times FAC times years of service.</p> <p><b>Dispatchers/Communications Dispatcher hired after July 1, 2011:</b> 1.75% times FAC times years of service.</p> <p><b>Public Safety Officers and Command:</b> 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	<p>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.</p>										
Benefit	<p>85% of participant's regular monthly accrued retirement benefit deposited into EROP account earning 3.00% interest.</p> <p>Not subject to COLA increases.</p> <p>Member contributions cease upon EROP entry.</p>										
Member Contributions	<p><b>General members:</b> 5.00% of annual compensation.</p> <p><b>Communications Dispatcher hired before July 1 2008:</b>                  6.00% of annual compensation.</p> <p><b>Communications Dispatcher hired after July 1 2008:</b> 5.00% of annual compensation.</p> <p><b>Public Safety Members hired before July 1 2007:</b> 6.00% of annual compensation.</p> <p><b>Public Safety Members hired on or after after July 1 2007:</b>                  5.00% of annual compensation.</p>										
Annuity Withdrawal	<p>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.</p>										
Pop-Up Provision	<p>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.</p>										
Supplemental Annuities											
Eligibility	<p>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.</p>										
Amount	<table border="0" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Years of Service</th> <th style="text-align: left; border-bottom: 1px solid black;">Monthly Benefit</th> </tr> </thead> <tbody> <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> </tbody> </table>	Years of Service	Monthly Benefit	10-14	\$250	15-19	300	20-24	350	25+	400
Years of Service	Monthly Benefit										
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.

## SUMMARY

Valuation Date	6/30/2022	6/30/2021
Measurement Date	6/30/2022	6/30/2021
Plan Membership:		
Inactives Currently Receiving Benefits <sup>1</sup>	103	102
Inactives Not Yet Receiving Benefits	16	13
Active Plan Members	<u>79</u>	<u>78</u>
Total	198	193
Covered Payroll	\$ 5,425,650	\$ 5,372,630
Net Pension Liability		
Total Pension Liability	\$ 69,496,137	\$ 70,648,274
Plan Fiduciary Net Position	<u>38,115,937</u>	<u>45,943,628</u>
Net Pension Liability	\$ 31,380,200	\$ 24,704,646
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	54.85%	65.03%
Net Pension Liability		
As a Percentage of Covered Payroll	578.37%	459.82%
Total Pension Expense	\$ (1,826,286)	\$ 2,255,154
Development of Single Discount Rate		
Single Discount Rate	6.79%	6.46%
Long-Term Expected Rate of Return	7.50%	7.50%
High-quality Municipal Bond Rate	4.09%	2.18%
Number of Years Future Benefit Payments		
Are Expected to be Paid	41	48

<sup>1</sup> Includes members with EDRO (3 for the 06/30/2022 and 2 for the 06/30/2021 measurement date).

SCHEDULE OF CHANGES IN NET PENSION LIABILITY  
PLAN AND CITY REPORTING

GASB 68 Reporting Period Ending	06/30/2022	06/30/2021
Measurement Date	<u>06/30/2022</u>	<u>06/30/2021</u>
Total Pension Liability		
Service Cost	1,080,806	1,459,769
Interest	4,517,849	4,149,881
Changes of Benefit Terms	196,683	-
Differences Between Expected and Actual Experience	(630,363)	(219,966)
Changes of Assumptions	(2,730,443)	(13,509,818)
Benefit Payments, Including Refunds of Employee Contributions	<u>(3,586,669)</u>	<u>(3,570,576)</u>
Net Change in Total Pension Liability	(1,152,137)	(11,690,710)
Total Pension Liability - Beginning	<u>70,648,274</u>	<u>82,338,984</u>
Total Pension Liability - Ending (a)	\$ 69,496,137	\$ 70,648,274
 Plan Fiduciary Net Position		
Contributions - Employer	2,044,344	1,623,076
Contributions - Employee	290,887	282,203
Net Investment Income	(6,523,478)	12,109,682
Benefit Payments, Including Refunds of Employee Contributions	(3,586,669)	(3,570,576)
Administrative Expense	(52,302)	(46,967)
Other	<u>(473)</u>	<u>-</u>
Net Change in Plan Fiduciary Net Position	(7,827,691)	10,397,418
Plan Fiduciary Net Position - Beginning	<u>45,943,628</u>	<u>35,546,210</u>
Plan Fiduciary Net Position - Ending (b)	\$ 38,115,937	\$ 45,943,628
 Net Pension Liability - Ending (a) - (b)	\$ 31,380,200	\$ 24,704,646
 Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	54.85%	65.03%
 Covered Payroll	\$ 5,425,650	\$ 5,372,630
Net Pension Liability as a Percentage of Covered Payroll	578.37%	459.82%

STATEMENT OF CHANGES IN NET PENSION LIABILITY  
CITY REPORTING

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at June 30, 2021	\$ 70,648,274	\$ 45,943,628	\$ 24,704,646
Changes for a Year:			
Service Cost	1,080,806	-	1,080,806
Interest	4,517,849	-	4,517,849
Differences Between Expected and Actual Experience	(630,363)	-	(630,363)
Changes of Assumptions	(2,730,443)	-	(2,730,443)
Changes of Benefit Terms	196,683	-	196,683
Contributions - Employer	-	2,044,344	(2,044,344)
Contributions - Employee	-	290,887	(290,887)
Net Investment Income	-	(6,523,478)	6,523,478
Benefit Payments, Including Refunds of Employee Contributions	(3,586,669)	(3,586,669)	-
Administrative Expense	-	(52,302)	52,302
Other Changes	-	(473)	473
Net Changes	(1,152,137)	(7,827,691)	6,675,554
Balances at June 30, 2022	\$ 69,496,137	\$ 38,115,937	\$ 31,380,200

*Sensitivity of Net Pension Liability to changes in the Discount Rate:*

	Current Discount		
	1% Decrease 5.79%	Rate 6.79%	1% Increase 7.79%
Sponsor's Net Pension Liability	\$ 40,229,343	\$ 31,380,200	\$ 24,073,474

*Pension Plan Fiduciary Net Position*

Detailed information about the Pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF  
RESOURCES RELATED TO PENSIONS  
YEAR-END JUNE 30, 2022

For the year ended June 30, 2022, the Sponsor will recognize a pension expense of (\$1,826,286).

On June 30, 2022, the Sponsor reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between actual and expected experience	0	1,093,253
Changes of assumptions	343,232	8,802,743
Net difference between projected and actual earnings on pension plan investments	<u>3,606,847</u>	<u>0</u>
Total	\$3,950,079	\$9,895,996

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:

2023	(\$3,513,210)
2024	(\$3,659,064)
2025	(\$757,715)
2026	\$1,984,072
2027	\$0
Thereafter	\$0



COMPONENTS OF PENSION EXPENSE  
YEAR-END JUNE 30, 2022

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 24,704,646	\$ 19,554,817	\$ 3,062,716	
Total Pension Liability Factors:				
Service Cost	1,080,806	-	-	1,080,806
Interest	4,517,849	-	-	4,517,849
Changes in Benefit Terms	196,683	-	-	196,683
Differences Between Expected and Actual Experience With Regard to Economic or Current Year Amortization	(630,363)	630,363	-	-
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs Current Year Amortization	-	(723,080)	(14,167)	(708,913)
Benefit Payments, Including Refunds of Employee Contributions	(2,730,443)	2,730,443	-	-
	-	(4,690,209)	(343,232)	(4,346,977)
Net Change	(3,586,669)	-	-	-
	(1,152,137)	(2,052,483)	(357,399)	739,448
Plan Fiduciary Net Position:				
Contributions - Employer	2,044,344	-	-	-
Contributions - Employee	290,887	-	-	(290,887)
Projected Net Investment Income	3,396,882	-	-	(3,396,882)
Difference Between Projected and Actual Earnings on Pension Plan Investments Current Year Amortization	(9,920,360)	-	9,920,360	-
	-	(1,901,585)	(2,970,845)	1,069,260
Benefit Payments, Including Refunds of Employee Contributions	(3,586,669)	-	-	-
Administrative Expenses	(52,302)	-	-	52,302
Other	(473)	-	-	473
Net Change	(7,827,691)	(1,901,585)	6,949,515	(2,565,734)
Ending Balance	\$ 31,380,200	\$ 15,600,749	\$ 9,654,832	\$ (1,826,286)

AMORTIZATION SCHEDULE – EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Year Base Established	Differences Between Expected and Actual Experience	Recognition Period (Years)	2022	2023	2024	2025	2026	Thereafter
2022	\$ (630,363)	4	\$ (157,590)	\$ (157,591)	\$ (157,591)	\$ (157,591)	\$ -	\$ -
2021	\$ (219,966)	4	\$ (54,992)	\$ (54,992)	\$ (54,992)	\$ -	\$ -	\$ -
2020	\$ (2,041,992)	4	\$ (510,498)	\$ (510,496)	\$ -	\$ -	\$ -	\$ -
2019	\$ 61,369	3.9	\$ 14,167	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			(708,913)	(723,079)	(212,583)	(157,591)	-	-

AMORTIZATION SCHEDULE – CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Year Base Established	Effects of Changes in Assumptions	Recognition Period (Years)	2022	2023	2024	2025	2026	Thereafter
2022	\$ (2,730,443)	4	\$ (682,610)	\$ (682,611)	\$ (682,611)	\$ (682,611)	\$ -	\$ -
2021	\$ (13,509,818)	4	\$ (3,377,455)	\$ (3,377,455)	\$ (3,377,455)	\$ -	\$ -	\$ -
2020	\$ 1,372,928	4	\$ 343,232	\$ 343,232	\$ -	\$ -	\$ -	\$ -
2019	\$ (2,730,629)	3.9	\$ (630,144)	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (4,346,977)	\$ (3,716,834)	\$ (4,060,066)	\$ (682,611)	\$ -	\$ -

AMORTIZATION SCHEDULE – INVESTMENTS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences Between Projected and Actual Earnings on Pension Plan Investments

Year Base Established	Differences		Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences Between Projected and Actual Earnings on Pension Plan Investments						
	Between Projected and Actual Earnings	Recognition Period (Years)	2022	2023	2024	2025	2026	Thereafter	
2022	\$ 9,920,360	5	\$ 1,984,072	\$ 1,984,072	\$ 1,984,072	\$ 1,984,072	\$ 1,984,072	\$ -	
2021	\$ (9,507,925)	5	\$ (1,901,585)	\$ (1,901,585)	\$ (1,901,585)	\$ (1,901,585)	\$ -	\$ -	
2020	\$ 2,655,490	5	\$ 531,098	\$ 531,098	\$ 531,098	\$ -	\$ -	\$ -	
2019	\$ 1,565,588	5	\$ 313,118	\$ 313,118	\$ -	\$ -	\$ -	\$ -	
2018	\$ 712,784	5	\$ 142,557	\$ -	\$ -	\$ -	\$ -	\$ -	
Net Increase (Decrease) in Pension Expense			\$ 1,069,260	\$ 926,703	\$ 613,585	\$ 82,487	\$ 1,984,072	\$ -	

SCHEDULE OF CONTRIBUTIONS

Plan Year-End	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
06/30/2022	1,833,259	2,044,344	(211,085)	5,425,650	37.68%
06/30/2021	1,623,075	1,623,076	(1)	5,372,630	30.21%

The following assumptions were used to determine the Actuarially Determined Contribution for the plan year ending June 30, 2022:

Calculation Timing	The Actuarially Determined Contribution is calculated using a June 30, 2020 valuation date.
Interest Rate	7.50%
Mortality Rate	<p><b>Active Lives</b>                      PubS-2010 and PubG-2010 Employee mortality tables, with generational improvements using Scale MP-2018.</p> <p><b>Inactive Lives</b>                      PubS-2010 and PubG-2010 Healthy Retiree mortality tables, with generational improvements using Scale MP-2018.</p>
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the June 30, 2020 Actuarial Valuation Report for the City of Grosse Pointe Woods Employees Retirement System prepared by Rodwan Consulting Company.

ASSUMPTIONS – GASB PENSION LIABILITY AND PENSION EXPENSE

The GASB 67/GASB 68 Pension Liability as of June 30, 2022 and GASB 68 Pension Expense were determined as follows:

Valuation Date	June 30, 2022
Measurement Date	June 30, 2022
GASB 68 Expense Measurement Period	July 1, 2021 - June 30, 2022
Reporting Period	July 1, 2021 - June 30, 2022
Discount Rate	6.79%
Inflation	2.50%
Salary Increases	Age-based rates
Other Assumptions	A summary of complete assumptions can be found in the accompanying Actuarial Valuation as of June 30, 2022 for the City of Grosse Pointe Woods Employees Retirement System prepared by Foster & Foster Actuaries and Consultants.

The GASB 67/GASB 68 Total Pension Liability and GASB 68 Pension Expense reflect the following assumption changes:

- The discount rate was updated from 6.46% to 6.79%.

## NOTES TO THE FINANCIAL STATEMENTS

*Discount Rate*

The Discount Rate used to measure the Total Pension Liability was 6.79 percent.

The projection of cash flows used to determine the Discount Rate assumed that current Plan Member and Sponsor contributions will be made at the current contribution rate. Future Member's contributions in excess of their normal cost were also included.

Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to provide future benefit payments for 41 years. These payments were discounted using a Discount Rate equal to the Long-Term Expected Rate of return of 7.50 percent.

Future benefit payments beyond 41 years were discounted using a high-quality municipal bond rate of 4.09 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 6.79 percent.

## SUMMARY OF CURRENT PLAN

Plan Administration

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 accompanying Actuarial Valuation as of June 30, 2022 for the City of Grosse Pointe Woods Employees Retirement System prepared by Foster & Foster Actuaries and Consultants.

The following plan change was reflected in the 06/30/2022 GASB results:

Effective July 1, 2022, the pension multiplier for Public Safety Officers hired after July 1, 2011 was changed from 2.0% to 2.5%.



## SUMMARY

Valuation Date	6/30/2022	6/30/2021
Measurement Date	6/30/2022	6/30/2021
Plan Membership:		
Inactives Currently Receiving Benefits	57	56
Inactives Not Yet Receiving Benefits	0	0
Active Plan Members	<u>50</u>	<u>49</u>
Total	107	105
Covered Payroll	\$ 2,810,667	\$ 2,816,325
Net Pension Liability		
Total Pension Liability	\$ 3,878,998	\$ 3,841,331
Plan Fiduciary Net Position	<u>2,314,927</u>	<u>2,605,835</u>
Net Pension Liability	\$ 1,564,071	\$ 1,235,496
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	59.68%	67.84%
Net Pension Liability		
As a Percentage of Covered Payroll	55.65%	43.87%
Total Pension Expense	\$ 148,596	\$ 226,510
Development of Single Discount Rate		
Single Discount Rate	7.50%	7.50%
Long-Term Expected Rate of Return	7.50%	7.50%
High-quality Municipal Bond Rate	4.09%	2.18%
Number of Years Future Benefit Payments		
Are Expected to be Paid	99	99

SCHEDULE OF CHANGES IN NET PENSION LIABILITY  
PLAN AND CITY REPORTING

GASB 68 Reporting Period Ending	06/30/2022	06/30/2021
Measurement Date	<u>06/30/2022</u>	<u>06/30/2021</u>
Total Pension Liability		
Service Cost	45,787	43,432
Interest	281,506	275,505
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	(22,217)	21,271
Changes of Assumptions	-	(15,148)
Benefit Payments, Including Refunds of Employee Contributions	<u>(267,409)</u>	<u>(266,789)</u>
Net Change in Total Pension Liability	37,667	58,271
Total Pension Liability - Beginning	<u>3,841,331</u>	<u>3,783,060</u>
Total Pension Liability - Ending (a)	\$ 3,878,998	\$ 3,841,331
 Plan Fiduciary Net Position		
Contributions - Employer	349,494	318,174
Net Investment Income	(368,012)	649,743
Benefit Payments, Including Refunds of Employee Contributions	(267,409)	(266,789)
Administrative Expense	(7,005)	(2,520)
Other	2,024	-
Net Change in Plan Fiduciary Net Position	<u>(290,908)</u>	<u>698,608</u>
Plan Fiduciary Net Position - Beginning	<u>2,605,835</u>	<u>1,907,226</u>
Plan Fiduciary Net Position - Ending (b)	\$ 2,314,927	\$ 2,605,835
 Net Pension Liability - Ending (a) - (b)	\$ 1,564,071	\$ 1,235,496
 Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	59.68%	67.84%
 Covered Payroll	\$ 2,810,667	\$ 2,816,325
Net Pension Liability as a Percentage of Covered Payroll	55.65%	43.87%

STATEMENT OF CHANGES IN NET PENSION LIABILITY  
CITY REPORTING

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Balances at June 30, 2021	\$ 3,841,331	\$ 2,605,835	\$ 1,235,496
Changes for a Year:			
Service Cost	45,787	-	45,787
Interest	281,506	-	281,506
Differences Between Expected and Actual Experience	(22,217)	-	(22,217)
Changes of Assumptions	-	-	-
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	349,494	(349,494)
Contributions - Employee	-	-	-
Net Investment Income	-	(368,012)	368,012
Benefit Payments, Including Refunds of Employee Contributions	(267,409)	(267,409)	-
Administrative Expense	-	(7,005)	7,005
Other Changes	-	2,024	(2,024)
Net Changes	37,667	(290,908)	328,575
Balances at June 30, 2022	\$ 3,878,998	\$ 2,314,927	\$ 1,564,071

*Sensitivity of Net Pension Liability to changes in the Discount Rate:*

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.50%	7.50%	8.50%
Sponsor's Net Pension Liability	\$ 1,977,111	\$ 1,564,071	\$ 1,216,095

*Pension Plan Fiduciary Net Position*

Detailed information about the Pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF  
RESOURCES RELATED TO PENSIONS  
YEAR-END JUNE 30, 2022

For the year ended June 30, 2022, the Sponsor will recognize a pension expense of \$148,596.

On June 30, 2022, 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	22,260	64,336
Changes of assumptions	0	73,094
Net difference between projected and actual earnings on pension plan investments	220,466	0
Total	\$242,726	\$137,430

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:

2023	(\$23,190)
2024	\$12,839
2025	\$9,800
2026	\$109,550
2027	(\$3,703)
Thereafter	\$0

COMPONENTS OF PENSION EXPENSE  
YEAR-END JUNE 30, 2022

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 1,235,496	\$ 620,560	\$ 196,383	
Total Pension Liability Factors:				
Service Cost	45,787	-	-	45,787
Interest	281,506	-	-	281,506
Changes in Benefit Terms	-	-	-	-
Differences Between Expected and Actual Experience				
With Regard to Economic or Demographic Assumptions	(22,217)	22,217	-	-
Current Year Amortization	-	(38,948)	(39,857)	909
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs	-	-	-	-
Current Year Amortization	-	(62,508)	(13,851)	(48,657)
Benefit Payments, Including Refunds of Employee Contributions	(267,409)	-	-	-
Net Change	<u>37,667</u>	<u>(79,239)</u>	<u>(53,708)</u>	<u>279,545</u>
Plan Fiduciary Net Position:				
Contributions - Employer	349,494	-	-	-
Projected Net Investment Income	198,253	-	-	(198,253)
Difference Between Projected and Actual Earnings on Pension Plan Investments				
Current Year Amortization	(566,265)	-	566,265	-
Current Year Amortization	-	(100,974)	(163,297)	62,323
Benefit Payments, Including Refunds of Employee Contributions	(267,409)	-	-	-
Administrative Expenses	(7,005)	-	-	7,005
Other	2,024	-	-	(2,024)
Net Change	<u>(290,908)</u>	<u>(100,974)</u>	<u>402,968</u>	<u>(130,949)</u>
Ending Balance	<u>\$ 1,564,071</u>	<u>\$ 440,347</u>	<u>\$ 545,643</u>	<u>\$ 148,596</u>

AMORTIZATION SCHEDULE – EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Year Base Established	Differences Between Expected and Actual Experience	Recognition Period (Years)	2022	2023	2024	2025	2026	Thereafter
2022	\$ (22,217)	6	\$ (3,702)	\$ (3,703)	\$ (3,703)	\$ (3,703)	\$ (3,703)	\$ (3,703)
2021	\$ 21,271	5	\$ 4,254	\$ 4,254	\$ 4,254	\$ 4,254	\$ -	\$ -
2020	\$ (151,559)	4.3	\$ (35,246)	\$ (35,246)	\$ (10,575)	\$ -	\$ -	\$ -
2019	\$ 136,155	4.3	\$ 31,664	\$ 9,498	\$ -	\$ -	\$ -	\$ -
2018	\$ 161,463	4.1	\$ 3,939	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			909	(25,197)	(10,024)	551	(3,703)	(3,703)

AMORTIZATION SCHEDULE – CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Year Base Established	Effects of Changes in Assumptions	Recognition Period (Years)	2022	2023	2024	2025	2026	Thereafter
2021	\$ (15,148)	5	\$ (3,030)	\$ (3,030)	\$ (3,030)	\$ (3,030)	\$ -	\$ -
2020	\$ (198,496)	4.3	\$ (46,162)	\$ (46,162)	\$ (13,848)	\$ -	\$ -	\$ -
2019	\$ (57,257)	4.3	\$ (13,316)	\$ (3,994)	\$ -	\$ -	\$ -	\$ -
2018	\$ 567,907	4.1	\$ 13,851	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (48,657)	\$ (53,186)	\$ (16,878)	\$ (3,030)	\$ -	\$ -

AMORTIZATION SCHEDULE – INVESTMENTS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences  
Between Projected and Actual Earnings on Pension Plan Investments

Year Base Established	Differences Between Projected and Actual Earnings	Recognition Period (Years)	2022	2023	2024	2025	2026	Thereafter
2022	\$ 566,265	5	\$ 113,253	\$ 113,253	\$ 113,253	\$ 113,253	\$ 113,253	\$ -
2021	\$ (504,869)	5	\$ (100,974)	\$ (100,974)	\$ (100,974)	\$ (100,974)	\$ -	\$ -
2020	\$ 137,309	5	\$ 27,462	\$ 27,462	\$ 27,462	\$ -	\$ -	\$ -
2019	\$ 77,259	5	\$ 15,452	\$ 15,452	\$ -	\$ -	\$ -	\$ -
2018	\$ 35,650	5	\$ 7,130	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 62,323	\$ 55,193	\$ 39,741	\$ 12,279	\$ 113,253	\$ -



SCHEDULE OF CONTRIBUTIONS

Plan Year-End	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
06/30/2022	304,370	349,494	(45,124)	2,527,773	13.83%
06/30/2021	318,174	318,174	-	2,816,325	11.30%

The following assumptions were used to determine the Actuarially Determined Contribution for the plan year ending June 30, 2022:

Calculation Timing	The Actuarially Determined Contribution is calculated using a June 30, 2020 valuation date.
Interest Rate	7.50%
Mortality Rate	<p><b>Active Lives</b>                      PubS-2010 and PubG-2010 Employee mortality tables, with generational improvements using Scale MP-2018.</p> <p><b>Inactive Lives</b>                      PubS-2010 and PubG-2010 Healthy Retiree mortality tables, with generational improvements using Scale MP-2018.</p>
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the June 30, 2020 Actuarial Valuation Report for the City of Grosse Pointe Woods Employees Retirement System prepared by Rodwan Consulting Company.

## ASSUMPTIONS – GASB PENSION LIABILITY AND PENSION EXPENSE

The GASB 67/GASB 68 Pension Liability for Plan reporting as of June 30, 2022 and GASB 68 Pension Expense were determined as follows:

Valuation Date	June 30, 2022
Measurement Date	June 30, 2022
GASB 68 Expense Measurement Period	July 1, 2021 - June 30, 2022
Reporting Period	July 1, 2021 - June 30, 2022
Discount Rate	7.50%
Inflation	2.50%
Salary Increases	Age-based rates
Other Assumptions	A summary of complete assumptions can be found in the accompanying Actuarial Valuation as of June 30, 2022 for the City of Grosse Pointe Woods Employees Retirement System prepared by Foster & Foster Actuaries and Consultants.

## NOTES TO THE FINANCIAL STATEMENTS

*Discount Rate*

The Discount Rate used to measure the Total Pension Liability was 7.50 percent.

The projection of cash flows used to determine the Discount Rate assumed that 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 (7.50 percent) was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50 percent. The municipal bond rate is 4.09 percent (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 resulting single discount rate is 7.50 percent.

## SUMMARY OF CURRENT PLAN

Plan Administration

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 accompanying Actuarial Valuation as of June 30, 2022 for the City of Grosse Pointe Woods Employees Retirement System prepared by Foster & Foster Actuaries and Consultants.