

CITY OF MARYSVILLE
POLICE OFFICERS AND FIREFIGHTERS RETIREMENT SYSTEM

ACTUARIAL VALUATION
AS OF JUNE 30, 2022

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR BEGINNING JULY 1, 2022

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 17, 2022

Board of Trustees
City of Marysville Police Officers and Firefighters Retirement System

Re: Actuarial Valuation Report (including GASB Statements No. 67 and No. 68) – City of Marysville Police Officers and Firefighters Retirement System

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Marysville Police Officers and Firefighters 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 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 Marysville, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the City of Marysville Police Officers and Firefighters 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 Marysville Police Officers and Firefighters 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, 2022.

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>7/1/2022</u>	<u>7/1/2021</u>
Total Recommended Contribution	\$1,105,493	\$1,055,893
% of Projected Annual Payroll	55.42%	58.00%
Member Contributions (Est.)	(167,910)	(156,562)
% of Projected Annual Payroll	(8.42%)	(8.60%)
City Recommended Contribution	937,583	899,331
% of Projected Annual Payroll	47.00%	49.40%

As you can see, the Total Recommended Contribution shows an increase from the June 30, 2021 actuarial valuation report. The increase is attributable to unfavorable plan experience and the natural increase in the amortization payment due to the payroll growth assumption.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of unfavorable experience included an investment return of 4.77% (Actuarial Asset Basis) which fell short of the 7.50% assumption, an average salary increase of 8.80% which exceeded the 4.00% assumption, and more retirements than expected. These losses were offset in part by gains associated with higher than expected inactive mortality and more turnover than expected.

CHANGES SINCE THE PRIOR VALUATION

The valuation reflects no plan changes.

The valuation reflects no assumption or method changes.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

Valuation Date	<u>6/30/2022</u>	<u>6/30/2021</u>
A. Participant Data		
Number Included		
Actives	23	22
Service Retirees	22	21
Beneficiaries	12	11
Disability Retirees	0	0
Terminated Vested	<u>1</u>	<u>0</u>
Total	58	54
Total Projected Annual Payroll	\$2,200,499	\$2,017,635
Payroll Under Assumed Ret. Age	1,994,835	1,820,489
Annual Rate of Payments to:		
Service Retirees	1,471,609	1,350,794
Beneficiaries	298,520	286,244
Disability Retirees	0	0
Terminated Vested	20,119	0
B. Assets		
Actuarial Value	16,638,497	16,272,384
Market Value	15,103,851	17,565,629
C. Liabilities		
Present Value of Benefits (PVB)		
Actives		
Retirement Benefits	11,114,263	11,820,802
Disability Benefits	251,074	232,630
Death Benefits	123,846	121,748
Vested Benefits	295,185	269,291
Service Retirees	16,055,358	14,487,653
Beneficiaries	2,421,332	2,254,012
Disability Retirees	0	0
Terminated Vested	<u>124,943</u>	<u>0</u>
Total	30,386,001	29,186,136

C. Liabilities - (Continued)	<u>6/30/2022</u>	<u>6/30/2021</u>
Present Value of Future Salaries	15,048,168	11,483,331
Normal Cost (Retirement)	237,405	247,540
Normal Cost (Disability)	15,514	15,387
Normal Cost (Death)	5,900	6,189
Normal Cost (Vesting)	<u>36,621</u>	<u>37,220</u>
Total Normal Cost (EAN)	295,440	306,336
Present Value of Future Normal Costs	2,104,167	1,850,179
Accrued Liability (Retirement)	9,426,224	10,343,966
Accrued Liability (Disability)	136,951	138,776
Accrued Liability (Death)	81,503	83,919
Accrued Liability (Vesting)	35,523	27,631
Accrued Liability (Inactives)	<u>18,601,633</u>	<u>16,741,665</u>
Total Actuarial Accrued Liability	28,281,834	27,335,957
Unfunded Actuarial Accrued Liability (UAAL)	11,643,337	11,063,573
Funded Ratio (AVA / AL)	58.8%	59.5%

	<u>6/30/2022</u>	<u>6/30/2021</u>
D. Actuarial Present Value of Accrued Benefits		
Vested Accrued Benefits		
Inactives	18,601,633	16,741,665
Actives	4,489,743	5,118,504
Member Contributions	<u>2,594,314</u>	<u>2,882,554</u>
Total	25,685,690	24,742,723
Non-vested Accrued Benefits	<u>281,259</u>	<u>356,168</u>
Total Present Value Accrued Benefits	25,966,949	25,098,891
Funded Ratio (MVA / PVAB)	58.2%	70.0%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	784,858	
Benefits Paid	(1,734,185)	
Interest	1,817,385	
Other	<u>0</u>	
Total	868,058	

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

E. Pension Cost

Normal Cost ¹	\$317,598	\$329,311
% of Total Annual Payroll ¹	15.92	18.09
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 22 years (as of 6/30/2022) ¹	787,895	726,582
% of Total Annual Payroll ¹	39.50	39.91
Total Recommended Contribution	1,105,493	1,055,893
% of Total Annual Payroll ¹	55.42	58.00
Expected Member Contributions ¹	(167,910)	(156,562)
% of Total Annual Payroll ¹	(8.42)	(8.60)
Expected City Contribution	937,583	899,331
% of Total Annual Payroll ¹	47.00	49.40

F. Past Contributions

Plan Years Ending: 6/30/2022

Total Recommended Contribution	1,072,899
City	899,331

Actual Contributions Made:

Members (excluding buyback)	173,568
City	<u>1,181,483</u>
Total	1,355,051

G. Net Actuarial (Gain)/Loss 799,709

¹ 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	11,643,337
2023	11,728,692
2024	11,788,933
2029	11,592,849
2034	10,156,224
2039	6,688,383
2044	0

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	6/30/2022	8.80%	4.00%
Year Ended	6/30/2021	2.98%	4.00%
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	4.77%	7.50%
Year Ended	6/30/2021	8.71%	7.50%
Year Ended	6/30/2020	3.06%	7.50%

DEVELOPMENT OF JUNE 30, 2022 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of June 30, 2021	\$11,063,573
(2)	Sponsor Normal Cost developed as of June 30, 2021	163,792
(3)	Expected administrative expenses for the year ended June 30, 2022	0
(4)	Expected interest on (1), (2) and (3)	842,052
(5)	Sponsor contributions to the System during the year ended June 30, 2022	1,181,483
(6)	Expected interest on (5)	44,306
(7)	Expected Unfunded Actuarial Accrued Liability as of June 30, 2022, (1)+(2)+(3)+(4)-(5)-(6)	10,843,628
(8)	Change to UAAL due to Benefits Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	799,709
(10)	Unfunded Accrued Liability as of June 30, 2022	11,643,337
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	11,643,337

<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	22	11,643,337	732,926

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of June 30, 2021	\$11,063,573
(2) Expected UAAL as of June 30, 2022	10,843,628
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	438,917
Salary Increases	384,225
Active Decrements	(1,009)
Inactive Mortality	(476,263)
Other	<u>453,839</u>
Change in UAAL due to (Gain)/Loss	799,709
Change to UAAL due to Benefits Change	<u>0</u>
(4) Actual UAAL as of June 30, 2022	\$11,643,337

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of June 30, 2021	\$	899,331
(2) Summary of Contribution Impact by component:		
Change in Normal Cost		(11,713)
Change in Assumed Administrative Expense		-
Investment Return (Actuarial Asset Basis)		29,701
Salary Increases		26,000
New Entrants		1,788
Active Decrements		(68)
Inactive Mortality		(32,228)
Contributions (More) or Less than Recommended		(19,809)
Increase in Amortization Payment Due to Payroll Growth Assumption		29,063
Change in Expected Member Contributions		11,348
Benefits Change		-
Other		<u>4,170</u>
Total Change in Contribution		38,252
(3) Contribution Determined as of June 30, 2022		\$937,583

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	16,638,497
25	Actuarial Accrued Liabilities	31,610,786
26	Funded Ratio	52.6%
27	Actuarially Determined Contribution	1,540,762

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)	6.85%
Periods with sufficient assets	6.85%
Periods without sufficient assets	2.16%
Salary Increase	4.00%
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	4.00%

FUNDING HISTORY

Valuation Date	Applicable Fiscal Year Beginning	Valuation Assets	Actuarial Accrued Liabilities	Funded Ratio	Unfunded Actuarial Accrued Liabilities ¹	Recommended Employer Contribution - as a% of Payroll
6/30/2003	7/1/2004	14,578,126	15,195,489	95.9%	617,363	
6/30/2004	7/1/2005	14,683,776	18,025,358	81.5%	3,341,582	32.76%
6/30/2005	7/1/2006	15,015,228	18,728,091	80.2%	3,712,863	26.42%
6/30/2006	7/1/2007	15,544,392	19,612,395	79.3%	4,068,003	27.61%
6/30/2007	7/1/2008	16,359,155	19,810,294	82.6%	3,451,139	27.03%
6/30/2008	7/1/2009	16,363,541	20,074,706	81.5%	3,711,165	30.85%
6/30/2009	7/1/2010	16,032,814	21,133,862	75.9%	5,101,048	31.66%
6/30/2010	7/1/2011	15,802,957	20,894,397	75.6%	5,091,440	28.16%
6/30/2011	7/1/2012	15,657,192	20,397,994	76.8%	4,740,802	29.97%
6/30/2012	7/1/2013	15,214,758	21,178,733	71.8%	5,963,975	32.12%
6/30/2013	7/1/2014	14,804,132	21,729,016	68.1%	6,924,884	33.01%
6/30/2014	7/1/2015	15,308,292	23,362,115	65.5%	8,053,823	32.42%
6/30/2015	7/1/2016	15,388,502	23,216,650	66.3%	7,828,148	34.11%
6/30/2016	7/1/2017	14,874,871	23,370,787	63.6%	8,495,916	34.11%
6/30/2017	7/1/2018	14,620,289	24,937,767	58.6%	10,317,478	40.65%
6/30/2018	7/1/2019	14,770,125	25,504,045	57.9%	10,733,920	41.50%
6/30/2019	7/1/2020	14,824,322	26,071,144	56.9%	11,246,822	43.71%
6/30/2020	7/1/2021	15,083,692	26,054,774	57.9%	10,971,082	43.32%
6/30/2021	7/1/2022	16,272,384	27,335,957	59.5%	11,063,573	49.40%
6/30/2022	7/1/2023	16,638,497	28,281,834	58.8%	11,643,337	47.00%

PROJECTION OF BENEFIT PAYMENTS

Year	Payments for Current Actives	Payments for Current Inactives	Total Payments
2022	129,219	1,758,837	1,888,056
2023	171,642	1,754,758	1,926,400
2024	324,619	1,747,820	2,072,439
2025	328,045	1,739,411	2,067,456
2026	474,453	1,728,777	2,203,230
2027	539,020	1,713,528	2,252,548
2028	645,136	1,689,807	2,334,943
2029	736,790	1,662,599	2,399,389
2030	827,915	1,630,875	2,458,790
2031	835,782	1,605,793	2,441,575
2032	840,314	1,577,511	2,417,825
2033	918,187	1,536,293	2,454,480
2034	1,027,109	1,490,889	2,517,998
2035	1,061,942	1,442,839	2,504,781
2036	1,298,583	1,392,509	2,691,092
2037	1,381,774	1,337,449	2,719,223
2038	1,500,022	1,279,028	2,779,050
2039	1,507,023	1,218,065	2,725,088
2040	1,516,372	1,154,656	2,671,028
2041	1,524,774	1,090,372	2,615,146
2042	1,532,060	1,025,667	2,557,727
2043	1,644,082	960,952	2,605,034
2044	1,647,630	895,862	2,543,492
2045	1,649,398	830,309	2,479,707
2046	1,647,050	765,255	2,412,305
2047	1,682,522	702,135	2,384,657
2048	1,671,694	641,270	2,312,964
2049	1,658,070	582,969	2,241,039
2050	1,638,956	527,495	2,166,451
2051	1,618,985	475,059	2,094,044
2052	1,638,100	425,880	2,063,980
2053	1,604,106	380,022	1,984,128
2054	1,569,276	337,450	1,906,726
2055	1,565,854	298,141	1,863,995
2056	1,518,287	261,803	1,780,090
2057	1,466,736	228,632	1,695,368
2058	1,410,082	198,570	1,608,652
2059	1,350,196	171,465	1,521,661
2060	1,284,102	147,207	1,431,309
2061	1,215,833	125,663	1,341,496

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	7.50% per year compounded annually, net of investment related expenses.
Mortality Rate	RP-2000 Combined Healthy Mortality Table Projected to 2014. 100% of deaths are assumed to be non-duty-related.
Retirement Age	Retirement assumed at earliest age member become eligible for normal retirement.
Disability Rate	See table later in this section. 90% of disabilities are assumed to be duty-related.
Termination Rate	See table later in this section.
Inflation	2.50%.
Salary Increases	4.00%.
Final Salary Load	Final salary is loaded 15% for Normal Retirement Benefit to account for unused vacation payouts.
Marital Status	100% 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%.
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 actuarial accrued liability is amortized according to a level percentage of payroll method over a closed period. 22 years as of June 30, 2022.
Payroll Growth	4.00%.

Cost of Living Increase

1.70% per year for members retired prior to 1/1/1998;
 1.40% per year for members retired on or after 1/1/1998;
 1.40% per year after having been retired for 3 years and cease
 after 23 full years of retirement for members hired after
 3/5/1984; none for members hired after 6/30/2011.

Decrement Tables

<u>% Terminating During the Year</u>			<u>% Becoming Disabled During the Year</u>		
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>Male</u>	<u>Female</u>
20	10.88%	17.38%	20	0.020%	0.010%
25	10.88%	17.38%	25	0.020%	0.010%
30	6.89%	9.89%	30	0.050%	0.040%
35	4.84%	7.34%	35	0.080%	0.070%
40	2.79%	4.79%	40	0.110%	0.100%
45	1.61%	3.11%	45	0.190%	0.170%
50	0.44%	1.44%	50	0.270%	0.230%
55	0.00%	0.00%	55	0.470%	0.350%
60	0.00%	0.00%	60	0.670%	0.460%

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 (22 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 decreased from 74.2% on June 30, 2021 to 65.7% on June 30, 2022, 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 65.8%. 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.
- 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, decreased from -1.3% on June 30, 2020 to -2.7% on June 30, 2022. The current Net Cash Flow Ratio of -2.7% 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	23	22	23
Total Inactives	35	32	31
Actives / Inactives	65.7%	68.8%	74.2%

Asset Volatility Ratio

Market Value of Assets (MVA)	15,103,851	17,565,629	14,464,424
Total Annual Payroll	2,200,499	2,017,635	2,069,444
MVA / Total Annual Payroll	686.4%	870.6%	699.0%

Accrued Liability (AL) Ratio

Inactive Accrued Liability	18,601,633	16,741,665	16,046,493
Total Accrued Liability	28,281,834	27,335,957	26,054,774
Inactive AL / Total AL	65.8%	61.2%	61.6%

Funded Ratio

Actuarial Value of Assets (AVA)	16,638,497	16,272,384	15,083,692
Total Accrued Liability	28,281,834	27,335,957	26,054,774
AVA / Total Accrued Liability	58.8%	59.5%	57.9%

Net Cash Flow Ratio

Net Cash Flow ¹	(400,384)	(119,220)	(190,992)
Market Value of Assets (MVA)	15,103,851	17,565,629	14,464,424
Ratio	-2.7%	-0.7%	-1.3%

¹ 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	7,202
Total Cash and Equivalents	7,202
Receivables:	
Accounts Receivable-Other	12,994
Accrued Interest and Dividends	25,619
Total Receivable	38,613
Investments:	
Domestic and International Equities	10,425,897
Other Fixed Income	4,304,968
Other Investments	346,512
Total Investments	15,077,377
Total Assets	15,123,192
 <u>LIABILITIES</u>	
Liabilities:	
Payable:	
Accrued Expenses	19,341
Total Liabilities	19,341
Net Assets:	
Active and Retired Members' Equity	15,103,851
NET POSITION RESTRICTED FOR PENSIONS	15,103,851
TOTAL LIABILITIES AND NET ASSETS	15,123,192

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

ADDITIONS

Contributions:

Member	173,568
City	1,181,483

Total Contributions	1,355,051
---------------------	-----------

Investment Income:

Net Increase in Fair Value of Investments	(1,963,790)
Less Expenses ¹	(97,604)

Net Investment Income	(2,061,394)
-----------------------	-------------

Total Additions	(706,343)
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DEDUCTIONS

Distributions to Members:

Benefit Payments	1,734,185
------------------	-----------

Total Distributions	1,734,185
---------------------	-----------

Administrative Expenses	21,250
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Total Deductions	1,755,435
------------------	-----------

Net Increase in Net Position	(2,461,778)
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NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	17,565,629
-----------------------	------------

End of the Year	15,103,851
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¹ 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	15,103,851
(Gains)/Losses Not Yet Recognized	1,534,646
Preliminary Actuarial Value of Assets, 6/30/2022	16,638,497
6/30/2022 Limited Actuarial Assets, Total	16,638,497

Development of Investment Gain/Loss

Market Value of Assets, 6/30/2021	17,565,629
Actuarial Value of Assets, 6/30/2021	16,272,384
Contributions Less Benefit Payments and Administrative Expenses	(400,384)
Expected Investment Earnings ¹	1,205,414
Actual Net Investment Earnings	(2,061,394)
2022 Actuarial Investment Gain/(Loss)	(3,266,808)

¹ Expected Investment Earnings = 7.50% x (16,272,384 + 0.5 x -400,384)

Gains/(Losses) Not Yet Recognized

Plan Year	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year				
		2022	2023	2024	2025	2026
6/30/2019	(555,232)	(111,047)	0	0	0	0
6/30/2020	(165,810)	(66,324)	(33,162)	0	0	0
6/30/2021	2,093,619	1,256,171	837,448	418,724	0	0
6/30/2022	(3,266,808)	(2,613,446)	(1,960,085)	(1,306,723)	(653,362)	0
Total		(1,534,646)	(1,155,799)	(887,999)	(653,362)	0

Development of Asset Returns

(A) 6/30/2021 Actuarial Assets:	16,272,384
(I) Net Investment Income:	
1. Change in Actuarial Value	2,827,891
2. Investment Expenses	(97,604)
Total	766,497
(B) 6/30/2022 Preliminary Actuarial Assets:	16,638,497
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	4.77%
Market Value of Assets Rate of Return:	-11.87%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(438,917)

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

INCOME		
Contributions:		
Member	173,568	
City	1,181,483	
Total Contributions		1,355,051
Earnings from Investments		
Net Increase in Investments	(1,963,790)	
Change in Actuarial Value	2,827,891	
Total Earnings and Investment Gains		864,101
EXPENSES		
Administrative Expenses:		
Investment Related ¹	97,604	
Other	21,250	
Total Administrative Expenses		118,854
Distributions to Members:		
Benefit Payments	1,734,185	
Total Distributions		1,734,185
Change in Net Assets for the Year		366,113
Net Assets Beginning of the Year		16,272,384
Net Assets End of the Year		16,638,497
Excess Earnings Reserve		

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

STATISTICAL DATA

Valuation Date	<u>6/30/2022</u>	<u>6/30/2021</u>	<u>6/30/2020</u>
<u>Actives</u>			
Number	23	22	23
Average Current Age	44.7	47.6	47.1
Average Age at Employment	30.1	30.0	30.3
Average Past Service	14.6	17.6	16.8
Average Annual Salary	\$90,741	\$88,183	\$86,515
<u>Service Retirees</u>			
Number	22	21	20
Average Current Age	67.8	70.0	69.6
Average Annual Benefit	\$66,891	\$64,324	\$50,276 ¹
<u>Beneficiaries</u>			
Number	12	11	11
Average Current Age	73.2	74.1	73.1
Average Annual Benefit	\$24,877	\$26,022	N/A
EDROs incl. in Beneficiaries	7	6	6
<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	1	0	0
Average Current Age	45.5	N/A	N/A
Average Annual Benefit	\$20,119	N/A	N/A

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

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	0	0	0	0	0	0	0	0	0	0	0	0	\$	0
25 - 29	2	0	0	0	0	0	0	0	0	0	0	2	\$	154,986
30 - 34	1	0	0	0	0	1	0	0	0	0	0	2	\$	175,602
35 - 39	0	0	0	0	0	0	0	0	0	0	0	0	\$	0
40 - 44	1	0	0	0	0	3	0	3	0	0	0	7	\$	626,457
45 - 49	1	0	0	0	0	0	0	0	2	1	0	4	\$	366,455
50 - 54	0	0	0	0	0	0	0	3	2	1	0	6	\$	565,778
55 - 59	0	0	0	0	0	0	0	0	1	1	0	2	\$	197,753
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	5	0	0	0	0	4	0	6	5	3	0	23	\$	2,087,032

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

AGE DISTRIBUTION
 RETIREES, DISABLEDS AND BENEFICIARIES

AGE	Count	Annual Pensions
< 45	0	\$ 0
45 - 49	0	\$ 0
50 - 54	2	\$ 40,453
55 - 59	3	\$ 164,118
60 - 64	7	\$ 468,986
65 - 69	5	\$ 239,538
70 - 74	7	\$ 448,058
75 - 79	2	\$ 127,772
80 - 84	6	\$ 242,037
85 - 89	1	\$ 20,446
90 - 94	0	\$ 0
95 - 99	1	\$ 18,722
100 +	0	\$ 0
Total	34	\$ 1,770,129

AGE DISTRIBUTION
INACTIVE VESTED MEMBERS

AGE	Count	Annual Pensions	
< 45	0	\$	0
45 - 49	1	\$	20,119
50 +	0	\$	0
Total	1	\$	20,119

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 6/30/2021	22
b. Terminations	
i. Vested (partial or full) with deferred benefits	(1)
ii. Non-vested or full lump sum distribution received	0
iii. Refunded	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(3)
f. Continuing participants	18
g. New entrants	<u>5</u>
h. Total active life participants in valuation	23

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	21	11	0	0	32
Retired	3	0	0	0	3
Vested Deferred	0	0	0	1	1
Death, With Survivor	(2)	2	0	0	0
Death, No Survivor	0	(1)	0	0	(1)
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	0	0
Rehires	0	0	0	0	0
New EDROs	0	0	0	0	0
Data Corrections	0	0	0	0	0
Hired/Termed in Same Year	0	0	0	0	0
b. Number current valuation	22	12	0	1	35

SUMMARY OF CURRENT PLAN PROVISIONS

Plan Administration	<p>The Plan is a single employer defined benefit pension plan administered by City of Marysville, Michigan.</p> <p>The Pension Commission has the authority to amend the terms of the Plan and is comprised of:</p> <ul style="list-style-type: none">a.) Mayor or his appointee (must be a Council member),b.) One council member selected by the City Council,c.) One Police officer member and One firefighter member,d.) A citizen who is not a member.
Final Average Salary (FAS)	<p>Average of highest 3 of the final 5 years of employment. Some lump sums included. Overtime capped at 150 hours if hired after June 30, 2019.</p>
Normal Retirement	
Eligibility	<p>Age 55 with 5 or more years of service or Age 57 with 10 or more years of service if hired after June 30, 2019.</p>
Annual Benefit	<p>Straight life pension equals 2.5% of final average compensation times the first 25 years of service plus 2.0% of final salary times service in excess of 25 years. Pension multiplier 1.5% if hired after June 30, 2019.</p>
Duty Death	
Eligibility	<p>No age or service requirement.</p>
Annual Benefit	<p>The participant's accumulated contributions are refunded, plus a pension equal to 1/3 of the last annual rate of compensation is payable to the surviving spouse until their death or remarriage. Unmarried children under age 18 also receive equal shares of 1/4 of the last annual rate of compensation. If no benefits are payable to a spouse or dependent children, a dependent mother or father shall each be paid 1/6 of the last annual rate of compensation. In no event shall these pensions exceed 50% of the maximum annual rate of salary for a patrolman or firefighter, as the case may be, as fixed in the City budget for the fiscal year in which death occurs.</p>
Non-Duty Death Before Retirement	
Eligibility	<p>5 (10 if hired after June 30, 2019) or more years of service.</p>
Annual Benefit	<p>Computed as service retirement but based upon credited service at the date of death.</p>

Duty Disability Retirement

Eligibility

No age or service requirements.

Annual Benefit

If the disability occurs prior to age 55, the amount is computed as a regular retirement based on credited service at the date of disability. A minimum of 50% of final salary applies. The benefit is recomputed at age 55 to include service for the year(s) that a disability pension was paid. If the disability occurs subsequent to age 55 the disability benefit is equal to the annual normal pension. This amount is offset by any amount payable due to Worker's Compensation or any similar law.

Non-Duty Disability Retirement

Eligibility

Total and permanent disability of a member with 5 (10 if hired after June 30, 2019) or more years of credited service.

Annual Benefit

If the disability occurs prior to age 55, the amount is computed as a regular retirement based on credited service at the date of disability. A minimum of 50% of final salary applies. The benefit is recomputed at age 55 to include service for the year(s) that a disability pension was paid. If the disability occurs subsequent to age 55 the disability benefit is equal to the annual normal pension. This amount is offset by any amount payable due to Worker's Compensation or any similar law.

Deferred Retirement

Eligibility

5 (10 if hired after June 30, 2019) or more years of service regardless of age. Benefit begins at regular retirement age.

Annual Benefit

Computed as regular retirement but based on service and final average salary at time of termination.

Member Contributions

8.00% of annual salary. 7.00% if hired after June 30, 2019.

Cost-of-Living Adjustments

An annual cost of living supplement is payable and is determined by multiplying each .4 (as a unit) change in the Consumer Price Index (CPI-W 1967 = 100) by one cent (\$.01) and multiplying that product by 2080. Members hired after March 5, 1984, shall receive the cost of living supplement after 3 full years of retirement and shall cease after 23 full years of retirement. Members hired after June 30, 2011, are not eligible for the post-retirement cost of living supplement.

SUMMARY

Valuation Date	6/30/2022	6/30/2021
Measurement Date	6/30/2022	6/30/2021
Plan Membership:		
Inactives Currently Receiving Benefits ¹	27	26
Inactives Not Yet Receiving Benefits	1	0
Active Plan Members	<u>23</u>	<u>22</u>
Total	51	48
Covered Payroll	\$ 2,087,032	\$ 1,940,033
Net Pension Liability		
Total Pension Liability	\$ 28,281,834	\$ 27,335,957
Plan Fiduciary Net Position	<u>15,103,851</u>	<u>17,565,629</u>
Net Pension Liability	\$ 13,177,983	\$ 9,770,328
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	53.40%	64.26%
Net Pension Liability		
As a Percentage of Covered Payroll	631.42%	503.62%
Total Pension Expense	\$ 1,234,388	\$ 645,091
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

¹ Excludes members with EDRO (7 for the 6/30/2022 measurement date and 6 for the 6/30/2021 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	306,336	373,078
Interest	2,008,140	1,922,718
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	365,586	568,614
Changes of Assumptions	-	-
Benefit Payments, Including Refunds of Employee Contributions	<u>(1,734,185)</u>	<u>(1,583,227)</u>
Net Change in Total Pension Liability	945,877	1,281,183
Total Pension Liability - Beginning	<u>27,335,957</u>	<u>26,054,774</u>
Total Pension Liability - Ending (a)	\$ 28,281,834	\$ 27,335,957
 Plan Fiduciary Net Position		
Contributions - Employer	1,181,483	1,314,548
Contributions - Employee	173,568	162,832
Net Investment Income	(2,061,394)	3,220,424
Benefit Payments, Including Refunds of Employee Contributions	(1,734,185)	(1,583,227)
Administrative Expense	<u>(21,250)</u>	<u>(13,372)</u>
Net Change in Plan Fiduciary Net Position	(2,461,778)	3,101,205
Plan Fiduciary Net Position - Beginning	<u>17,565,629</u>	<u>14,464,424</u>
Plan Fiduciary Net Position - Ending (b)	\$ 15,103,851	\$ 17,565,629
 Net Pension Liability - Ending (a) - (b)	\$ 13,177,983	\$ 9,770,328
 Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	53.40%	64.26%
 Covered Payroll	\$ 2,087,032	\$ 1,940,033
Net Pension Liability as a Percentage of Covered Payroll	631.42%	503.62%

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	\$ 27,335,957	\$ 17,565,629	\$ 9,770,328
Changes for a Year:			
Service Cost	306,336	-	306,336
Interest	2,008,140	-	2,008,140
Differences Between Expected and Actual Experience	365,586	-	365,586
Changes of Assumptions	-	-	-
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	1,181,483	(1,181,483)
Contributions - Employee	-	173,568	(173,568)
Net Investment Income	-	(2,061,394)	2,061,394
Benefit Payments, Including Refunds of Employee Contributions	(1,734,185)	(1,734,185)	-
Administrative Expense	-	(21,250)	21,250
Net Changes	945,877	(2,461,778)	3,407,655
Balances at June 30, 2022	\$ 28,281,834	\$ 15,103,851	\$ 13,177,983

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

	Current Discount		
	1% Decrease 6.50%	Rate 7.50%	1% Increase 8.50%
Sponsor's Net Pension Liability	\$ 16,253,457	\$ 13,177,983	\$ 10,577,799

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 \$1,234,388.

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	558,499	71,022
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	1,499,230	0
Total	\$2,057,729	\$71,022

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	\$482,959
2024	\$494,844
2025	\$336,144
2026	\$672,760
2027	\$0
Thereafter	\$0

COMPONENTS OF PENSION EXPENSE
YEAR-END JUNE 30, 2022

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 9,770,328	\$ 1,989,403	\$ 621,360	
Total Pension Liability Factors:				
Service Cost	306,336	-	-	306,336
Interest	2,008,140	-	-	2,008,140
Changes in Benefit Terms	-	-	-	-
Differences Between Expected and Actual Experience With Regard to Economic or Demographic Assumptions	365,586	-	365,586	-
Current Year Amortization	-	(217,986)	(233,549)	15,563
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs	-	-	-	-
Current Year Amortization	-	-	-	-
Benefit Payments, Including Refunds of Employee Contributions	(1,734,185)	-	-	-
Net Change	<u>945,877</u>	<u>(217,986)</u>	<u>132,037</u>	<u>2,330,039</u>
Plan Fiduciary Net Position:				
Contributions - Employer	1,181,483	-	-	-
Contributions - Employee	173,568	-	-	(173,568)
Projected Net Investment Income	1,302,408	-	-	(1,302,408)
Difference Between Projected and Actual Earnings on Pension Plan Investments	(3,363,802)	-	3,363,802	-
Current Year Amortization	-	(428,013)	(787,088)	359,075
Benefit Payments, Including Refunds of Employee Contributions	(1,734,185)	-	-	-
Administrative Expenses	(21,250)	-	-	21,250
Net Change	<u>(2,461,778)</u>	<u>(428,013)</u>	<u>2,576,714</u>	<u>(1,095,651)</u>
Ending Balance	<u>\$ 13,177,983</u>	<u>\$ 1,343,404</u>	<u>\$ 3,330,111</u>	<u>\$ 1,234,388</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	\$ 365,586	4	\$ 91,395	\$ 91,397	\$ 91,397	\$ 91,397	\$ -	\$ -
2021	\$ 568,614	4	\$ 142,154	\$ 142,154	\$ 142,154	\$ -	\$ -	\$ -
2020	\$ (682,216)	3.3	\$ (203,732)	\$ (71,022)	\$ -	\$ -	\$ -	\$ -
2019	\$ (61,765)	3.9	\$ (14,254)	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			15,563	162,529	233,551	91,397	-	-

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	\$ 3,363,802	5	\$ 672,762	\$ 672,760	\$ 672,760	\$ 672,760	\$ 672,760	\$ -	
2021	\$ (2,140,064)	5	\$ (428,013)	\$ (428,013)	\$ (428,013)	\$ (428,013)	\$ -	\$ -	
2020	\$ 82,727	5	\$ 16,545	\$ 16,546	\$ 16,546	\$ -	\$ -	\$ -	
2019	\$ 295,681	5	\$ 59,136	\$ 59,137	\$ -	\$ -	\$ -	\$ -	
2018	\$ 193,229	5	\$ 38,645	\$ -	\$ -	\$ -	\$ -	\$ -	
Net Increase (Decrease) in Pension Expense			\$ 359,075	\$ 320,430	\$ 261,293	\$ 244,747	\$ 672,760	\$ -	

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	899,331	1,181,483	(282,152)	2,087,032	56.61%
06/30/2021	862,003	1,314,548	(452,545)	1,940,033	67.76%

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, 2021 valuation date.
Interest Rate	7.50%
Mortality Rate	RP-2000 Combined Healthy Mortality projected to 2014. 100% of deaths are assumed to be non-duty-related.
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 Marysville Police Officers and Firefighters Retirement System prepared by Foster & Foster Acturies and Consultants.

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	7.50%
Inflation	2.50%
Salary Increases	4.00%
Other Assumptions	A summary of complete assumptions can be found in the accompanying Actuarial Valuation as of June 30, 2022 for the City of Marysville Police Officers and Firefighters 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

Pension Fund

The Plan was established by City Council in 1945 for the purpose of continuing and providing retirement income to certain employees and retired employees and survivor benefits to their eligible beneficiaries.

Plan Administration

The Plan is a single employer defined benefit pension plan administered by the City of Marysville, Michigan.

The Pension Commission has the authority to amend the terms of the Plan and consist of:

- a.) The Mayor or his appointee (must be a Council member);
- b.) One council member selected by the City Council;
- c.) A citizen who is not a member;
- d.) One police officer member, and one firefighter member.

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 Marysville Police Officers and Firefighters Retirement System prepared by Foster & Foster Acturics and Consultants.