

CITY OF LIVONIA  
RETIREE HEALTH AND DISABILITY BENEFITS PLAN  
ACTUARIAL VALUATION  
AS OF NOVEMBER 30, 2021



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS

April 29, 2022

Board of Trustees  
City of Livonia  
Livonia, Michigan 48154

Dear Board Members:

We are pleased to present to the Board this annual actuarial valuation of the City of Livonia's Retiree Health and Disability Benefits Plan. This valuation was performed to determine the current funded status of the Plan.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following: retiree group benefits plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in retiree group benefits plan provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. Due to the limited scope of this report, we did not provide an analysis of these potential differences.

Foster & Foster does not provide legal, investment or accounting advice. Thus, the information in this report is not intended to supersede or supplant the advice or the interpretations of the City or its affiliated legal, investing or accounting partners.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and we believe it reflects all applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the City of Livonia, represent reasonable expectations of anticipated plan experience.

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.

In conducting the valuation, we have relied on personnel and plan design information supplied by City of Livonia personnel, 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. Because 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 undersigned are familiar with the immediate and long-term aspects of OPEB valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All 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 City of Livonia, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the City of Livonia. 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 239-433-5500.

Respectfully submitted,

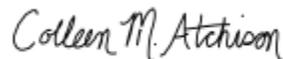
Foster & Foster, Inc.

By:



Jason L. Franken, FSA, EA, MAAA

By:



Colleen M. Atchison, FSA, MAAA

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## SUMMARY OF RESULTS

The annual actuarial valuation of the City of Livonia's Other Postemployment Benefits Program as of November 30, 2021, has been performed, and the results are presented in this Report. For purposes of this valuation, retiree medical and disability benefits were taken into consideration.

The following table shows the results of the November 30, 2021 valuation of the Plan:

Valuation Date	November 30, 2021
Actuarially Determined Contribution	\$ 5,956,424
As a Percent of Covered Payroll	15.42%
<b>Actuarial Accrued Liability (AAL)</b>	
Actives	\$ 40,420,376
Vested Inactives and Retirees	163,983,135
Total	\$ 204,403,511
<b>Normal Cost</b>	\$ 1,725,883
<b>Funded Status as of the Valuation Date</b>	
Actuarial Accrued Liability (AAL)	\$ 204,403,511
Actuarial Value of Assets (AVA)	129,932,688
Unfunded Actuarial Accrued Liability (UAAL)	\$ 74,470,823
Funded Ratio	63.6%
Covered Payroll	\$ 38,631,666
Ratio of UAAL to Covered Payroll	192.8%
<b>Number of Covered Participants</b>	
Actives	583
Inactive Vested Participants	29
Retirees	686
Total	1,298

## Summary of Recommended City Contribution Rates

The City's computed contribution rates for the year beginning December 1, 2022 are indicated below.

Unfunded actuarial accrued liability was amortized as a level percent of payroll over 26 years as adopted by the Board of Trustees. The amortization payment is added to the normal cost to determine the total recommended contribution.

City Portion Contribution Percentages	General	Police	Fire
Defined Benefit Plan Participants			
Non-RHSP	10.65%	24.59%	18.97%
RHSP	0.00%	0.00%	0.00%
Defined Contribution Plan Participants			
Non-RHSP	10.65%	24.59%	18.97%
RHSP	0.00%	0.40%	0.00%

### *Changes since the Prior Valuation*

The following changes have been made since the prior valuation:

- The census data reflects changes in status for the twelve (12) month period since November 30, 2020. The impact of this change on the actuarial accrued liability was approximately -2.8%.
- Data was collected as of November 30, 2021 and valued as of November 30, 2021.
- The valuation reflects a change in Plan Provisions. A certain group of employees who would have been participants in the City's DC retirement plan were allowed to enter the City's Police and Fire Revised Retirement Plan (PFRRP). One hundred thirty-three such actives elected to do so. This resulted in a 2.7% increase in actuarial accrued liability.
- Premiums were updated to those in effect for the 2021-2022 fiscal year. The impact of this change on the actuarial accrued liability was approximately 1.0% due to premiums increasing more than expected.
- The Retirement rates were updated based on the experience study report dated July 16, 2021. The impact of this change on the actuarial accrued liability was approximately -3.8%.
- The Disability rates were updated based on the experience study report dated July 16, 2021. The impact of this change on the actuarial accrued liability was approximately -0.5%.
- The Withdrawal rates were updated based on the experience study report dated July 16, 2021. The impact of this change on the actuarial accrued liability was approximately 1.6%.
- The medical election rate for General members was lowered to 70%. The impact of this change on the actuarial accrued liability was approximately -3.4%.
- Salary increases were adjusted to use separate tables for General, Police, and Fire participants. The impact of this change on the actuarial accrued liability was approximately 0.2%.
- The mortality improvement scale was updated to MP-2020. The impact of this change on the actuarial accrued liability was approximately -1.3%.
- The initial medical trend rate was decreased from 5.9% to 5.8%. The medical trend follows the same schedule as the last valuation, decreasing 0.1% each year to the ultimate rate of 5.0%.
- The payroll growth assumption was lowered to 3.00% from 4.00%.

- The investment rate of return was lowered from 7.30% to 7.20%.
- The discount rate of 7.30% from the prior valuation was lowered to 7.20% in connection with the investment rate of return assumption. This resulted in a 1.1% increase in actuarial accrued liability.
- All other assumptions are the same as those in the previous actuarial valuation as of November 30, 2020.

This actuarial valuation involves estimates of the value of reported amounts and assumptions about the probability of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to constant revision as actual experience is compared with past expectations and new estimates are made about the future.

Calculations are based upon the types of benefits provided under the terms of the substantive plan at the time of the valuation and on the pattern of sharing of costs between the employer and plan members to that point. Calculations reflect a long-term perspective, so methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets.

## DEVELOPMENT OF ACTUARIALLY DETERMINED CONTRIBUTION

### TOTAL GROUP

Valuation Date	11/30/2021
<b><i>Unfunded Actuarial Accrued Liability</i></b>	
Actuarial Accrued Liability	\$ 204,403,511
Actuarial Value of Assets	129,932,688
Unfunded Actuarial Accrued Liability (UAAL)	\$ 74,470,823
<b><i>Amortization Amount</i></b>	
Amortization Period	26
Amortization Method	Closed
Discount Rate	7.20%
Payroll Growth Rate	3.00%
Total Amortization Amount	\$ 4,605,680
<b><i>Development of Annual Required Contribution (ARC)</i></b>	
Covered Employee Payroll	\$ 38,631,666
Normal Cost	\$ 1,725,883
Less Employee Contributions	\$ (375,139)
Net Normal Cost Component	\$ 1,350,744
As of Percent of Covered Employee Payroll	3.50%
UAAL Amortization Component	\$ 4,605,680
As of Percent of Covered Employee Payroll	11.92%
<b>Total Annual Required Contribution</b>	<b>\$ 5,956,424</b>
<b>As of Percent of Covered Employee Payroll</b>	<b>15.42%</b>

## DEVELOPMENT OF ACTUARIALLY DETERMINED CONTRIBUTION

### GENERAL

Valuation Date	11/30/2021	
<b><i>Unfunded Actuarial Accrued Liability</i></b>		
Actuarial Accrued Liability	\$	91,916,725
Actuarial Value of Assets		63,647,290
Unfunded Actuarial Accrued Liability (UAAL)	\$	28,269,435
<b><i>Amortization Amount</i></b>		
Amortization Period		26
Amortization Method		Closed
Discount Rate		7.20%
Payroll Growth Rate		3.00%
Total Amortization Amount	\$	1,748,335
<b><i>Development of Annual Required Contribution (ARC)</i></b>		
Covered Employee Payroll	\$	21,377,098
Normal Cost	\$	624,260
Less Employee Contributions	\$	(178,814)
Net Normal Cost Component	\$	445,446
As of Percent of Covered Employee Payroll		2.08%
UAAL Amortization Component	\$	1,748,335
As of Percent of Covered Employee Payroll		8.18%
<b>Total Annual Required Contribution</b>	<b>\$</b>	<b>2,193,781</b>
<b>As of Percent of Covered Employee Payroll</b>		<b>10.26%</b>

## DEVELOPMENT OF ACTUARIALLY DETERMINED CONTRIBUTION

### POLICE

Valuation Date	11/30/2021	
<b><i>Unfunded Actuarial Accrued Liability</i></b>		
Actuarial Accrued Liability	\$	72,295,141
Actuarial Value of Assets		40,162,201
Unfunded Actuarial Accrued Liability (UAAL)	\$	32,132,940
<b><i>Amortization Amount</i></b>		
Amortization Period		26
Amortization Method		Closed
Discount Rate		7.20%
Payroll Growth Rate		3.00%
Total Amortization Amount	\$	1,987,276
<b><i>Development of Annual Required Contribution (ARC)</i></b>		
Covered Employee Payroll	\$	9,605,464
Normal Cost	\$	466,388
Less Employee Contributions	\$	(91,315)
Net Normal Cost Component	\$	375,073
As of Percent of Covered Employee Payroll		3.90%
UAAL Amortization Component	\$	1,987,276
As of Percent of Covered Employee Payroll		20.69%
<b>Total Annual Required Contribution</b>	<b>\$</b>	<b>2,362,349</b>
<b>As of Percent of Covered Employee Payroll</b>		<b>24.59%</b>

## DEVELOPMENT OF ACTUARIALLY DETERMINED CONTRIBUTION

### FIRE

Valuation Date	11/30/2021	
<b><i>Unfunded Actuarial Accrued Liability</i></b>		
Actuarial Accrued Liability	\$	40,191,645
Actuarial Value of Assets		26,123,197
Unfunded Actuarial Accrued Liability (UAAL)	\$	14,068,448
<b><i>Amortization Amount</i></b>		
Amortization Period		26
Amortization Method		Closed
Discount Rate		7.20%
Payroll Growth Rate		3.00%
Total Amortization Amount	\$	870,069
<b><i>Development of Annual Required Contribution (ARC)</i></b>		
Covered Employee Payroll	\$	7,649,104
Normal Cost	\$	635,235
Less Employee Contributions	\$	(105,010)
Net Normal Cost Component	\$	530,225
As of Percent of Covered Employee Payroll		6.93%
UAAL Amortization Component	\$	870,069
As of Percent of Covered Employee Payroll		11.37%
<b>Total Annual Required Contribution</b>	<b>\$</b>	<b>1,400,294</b>
<b>As of Percent of Covered Employee Payroll</b>		<b>18.31%</b>

## INSURANCE PREMIUMS

Annual Insurance Premiums as of 12/1/2021		
Health Insurance		
General, Police, and Fire	\$ 22,575	\$ 15,241

These annual premium amounts shown above include the assumed spouse premiums based on the percent married assumption. These amounts are based on the fiscal year 2022 rates provided by the City of Livonia that best represent the whole population.

The annual premium rates used in the prior valuation were \$20,617 for Pre-65 participants and \$14,327 for Post-65 participants. These amounts included the assumed spouse premiums based on the percent married assumption as of the prior valuation.

## RESULTS BY GROUP

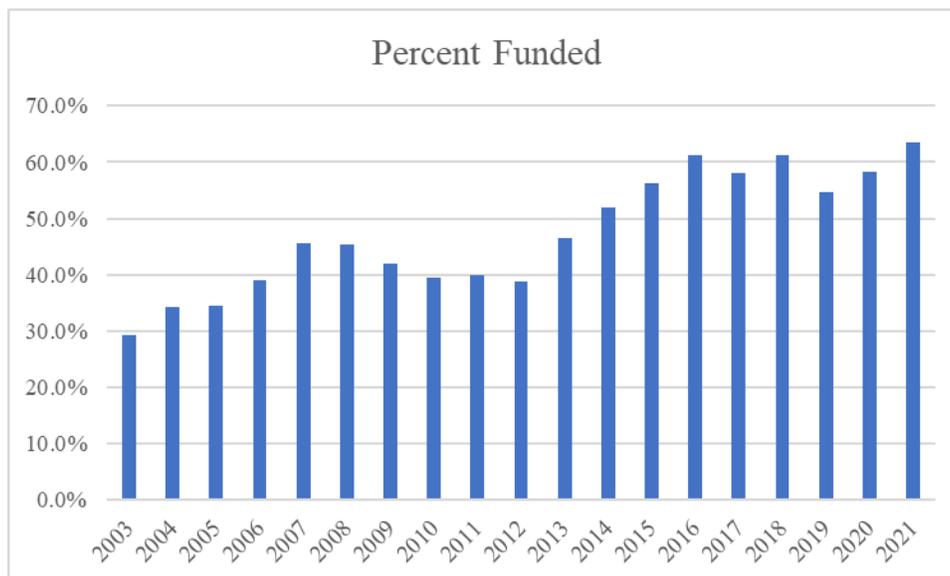
Actuarial Accrued Liability by Group	General		Police		Fire	Total
Actives	\$ 15,713,878	\$ 11,847,106	\$ 12,859,392	\$ 40,420,376		
Vested Inactives and Retirees	76,202,847	60,448,035	27,332,253	163,983,135		
Total	\$ 91,916,725	\$ 72,295,141	\$ 40,191,645	\$ 204,403,511		
Actuarial Value of Assets	63,647,290	40,162,201	26,123,197	129,932,688		
Unfunded Actuarial Accrued Liability (UAAL)	\$ 28,269,435	\$ 32,132,940	\$ 14,068,448	\$ 74,470,823		

Annual Required Contribution by Group	General		Police		Fire	Total
Total Annual Required Contribution	\$ 2,193,781	\$ 2,362,349	\$ 1,400,294	\$ 5,956,424		
As of Percent of Covered Employee Payroll	10.26%	24.59%	18.31%	15.42%		

# COMPARATIVE SCHEDULES

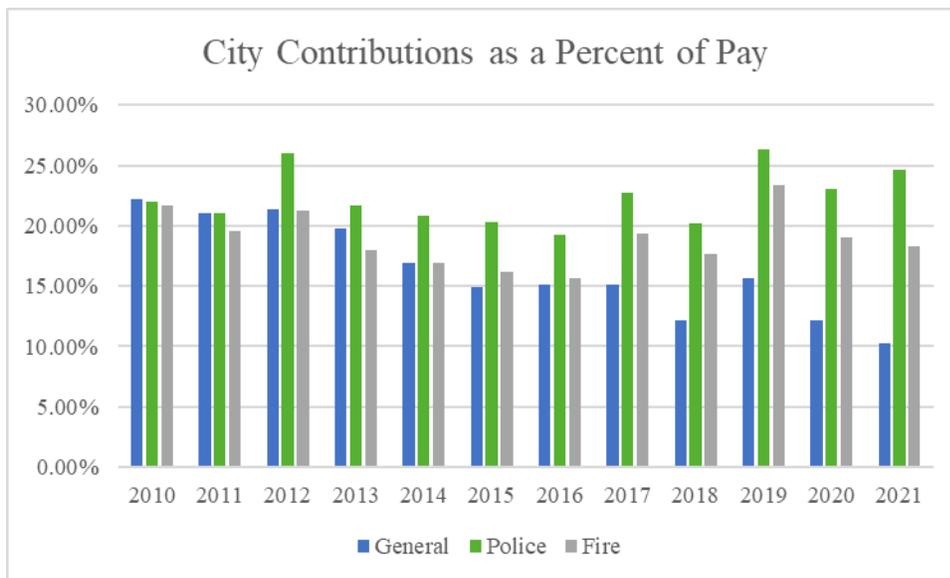
## Unfunded Actuarial Accrued Liability Schedule (in \$000s)

Valuation Date November 30	Valuation Value of Assets	Actuarial Accrued Liability	Percent Funded	Unfunded AAL	Annual Covered Payroll	UAAL as a % of Covered Payroll
2003	\$ 30,475	\$ 104,386	29.2%	\$ 73,911	\$ 34,084	216.8%
2004	37,690	110,156	34.2%	72,466	33,355	217.3%
2005	41,987	122,019	34.4%	80,032	33,312	240.2%
2006	47,673	122,267	39.0%	74,594	34,373	217.0%
2007	52,802	115,685	45.6%	62,883	35,354	177.9%
2008	55,361	122,117	45.3%	66,756	37,403	178.5%
2009	57,845	137,822	42.0%	79,977	36,981	216.3%
2010	60,361	153,223	39.4%	92,862	34,062	272.6%
2011	62,491	156,260	40.0%	93,769	32,871	285.3%
2012	65,667	169,363	38.8%	103,696	30,964	334.9%
2013	74,550	160,552	46.4%	86,002	30,560	281.4%
2014	83,134	159,855	52.0%	76,721	31,408	244.3%
2015	91,646	162,780	56.3%	71,134	32,327	220.0%
2016	98,722	161,226	61.2%	62,504	33,384	187.2%
2017	107,284	184,466	58.2%	77,182	34,729	222.2%
2018	111,004	180,965	61.3%	69,961	36,890	189.6%
2019	115,512	211,269	54.7%	95,757	35,774	267.7%
2020	120,826	207,550	58.2%	86,724	36,744	236.0%
<b>2021</b>	<b>129,933</b>	<b>204,404</b>	<b>63.6%</b>	<b>74,471</b>	<b>38,632</b>	<b>192.8%</b>



### City Contributions Expressed as a Percent of Payroll

Valuation Date	General	Police	Fire
November 30			
2010	22.25%	21.99%	21.70%
2011	21.08%	21.02%	19.59%
2012	21.41%	26.06%	21.26%
2013	19.75%	21.69%	18.00%
2014	16.88%	20.79%	16.89%
2015	14.87%	20.28%	16.17%
2016	15.13%	19.28%	15.62%
2017	15.11%	22.78%	19.34%
2018	12.16%	20.17%	17.70%
2019	15.67%	26.33%	23.39%
2020	12.16%	23.05%	18.98%
<b>2021</b>	<b>10.26%</b>	<b>24.59%</b>	<b>18.31%</b>



## ASSET SUMMARY

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### STATEMENT OF FIDUCIARY NET POSITION November 30, 2021

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Cash (incl. Checking/Savings Accounts)	0
Accrued Interest/Dividends	129,669
Money Market/ Certificates of Deposit	0
Other: Short Term Investments	4,743,826
Total Cash and Equivalents	4,873,495
Receivables:	
Total Receivable	1,446,811
Investments:	
Fixed Income:	34,470,140
Equities:	98,098,598
Other:	923,169
Total Investments	133,491,907
Total Assets	139,812,213
<u>LIABILITIES</u>	
Liabilities:	
Payable:	
Accounts Payable	1,487,442
Total Liabilities	1,487,442
Net Assets:	
Active and Retired Members' Equity	138,324,771

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
 FOR THE YEAR ENDED November 30, 2021  
 Market Value Basis

ADDITIONS

Contributions:

Member	375,139
City	5,529,951

Total Contributions 5,905,090

Investment Income:

Miscellaneous Income	(379)
Net Realized Gain (Loss)	3,328,318
Unrealized Gain (Loss)	12,230,397
Net Increase in Fair Value of Investments	15,558,336
Interest & Dividends	2,822,785
Less Investment Expense <sup>1</sup>	(376,775)

Net Investment Income 18,004,346

Other 0

Total Additions 23,909,436

DEDUCTIONS

Distributions to Members:

Benefit Payments	8,286,693
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Total Distributions 8,286,693

Administrative Expenses 53,728

Other 0

Total Deductions 8,340,421

Net Increase in Net Position 15,569,015

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 122,755,756

End of the Year 138,324,771

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

ACTUARIAL ASSET VALUATION  
 November 30, 2021

Development of Actuarial Value of Assets

Market Value of Assets, 11/30/2021	138,324,771
(Gains)/Losses Not Yet Recognized	<u>(8,392,083)</u>
Actuarial Value of Assets, 11/30/2021	129,932,688
11/30/2021 Limited Actuarial Assets:	129,932,688

Development of Investment Gain/Loss

Market Value of Assets, 11/30/2020	122,755,756
Contributions Less Benefit Payments & Administrative Expenses	(2,435,331)
Expected Investment Earnings <sup>1</sup>	8,872,281
Actual Net Investment Earnings	<u>18,004,346</u>
2021 Actuarial Investment Gain/(Loss)	9,132,065

<sup>1</sup> Expected Investment Earnings = 7.30% x (122,755,756 + 0.5 x -2,435,331)

Gains/(Losses) Not Yet Recognized

Plan Year Ending	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year				
		2021	2022	2023	2024	2025
11/30/2018	(9,497,945)	(1,899,589)	0	0	0	0
11/30/2019	4,144,524	1,657,810	828,905	0	0	0
11/30/2020	2,213,684	1,328,210	885,474	442,737	0	0
11/30/2021	9,132,065	7,305,652	5,479,239	3,652,826	1,826,413	0
Total		8,392,083	7,193,618	4,095,563	1,826,413	0

Development of Asset Returns

(A) 11/30/2020 Actuarial Assets:	120,825,765
(I) Net Investment Income:	
1. Interest and Dividends	2,822,406
2. Realized Gains (Losses)	3,328,318
3. Change in Actuarial Value	5,768,305
4. Investment Expenses	<u>(376,775)</u>
Total	11,542,254
(B) 11/30/2021 Actuarial Assets:	129,932,688
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	9.65%
Market Value of Assets Rate of Return:	14.81%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	2,810,863

## MEMBER STATISTICS

	Defined Benefit Plan	Defined Contribution Plan	Total
Active Participants	167	416	583
Active Participant Payroll	\$ 13,662,819	\$ 24,968,847	\$ 38,631,666
Retired Participants	503	183	686
Inactive Vested Participants	6	23	29

Payroll	
Defined Benefit	
General	\$ 664,179
Police	6,158,579
Fire	6,840,061
Defined Contribution	
General	\$ 20,712,918
Police	3,446,885
Fire	809,044
Total	
General	\$ 21,377,097
Police	9,605,464
Fire	7,649,105
Total	\$ 38,631,666

## PARTICIPANT DATA—ACTIVE MEMBERS

The following active members were included in the valuation as of November 30, 2021:

	Defined Benefit Plan		Defined Contribution Plan		Total
	Non-RHSP	RHSP	Non-RHSP	RHSP	
Count	79	88	140	276	583
Total Payroll	\$ 7,622,534	\$ 6,040,284	\$ 9,655,327	\$ 15,313,520	\$ 38,631,666
Average Annual Payroll	\$ 96,488	\$ 68,640	\$ 68,967	\$ 55,484	\$ 66,264
Average Age	48.2	29.6	55.8	43.4	45.0
Average Service	21.2	4.3	21.1	4.6	10.8

Defined Benefit Active Members November 30, 2021		
Attained	Number	Payroll
Ages		
<45	112	\$ 8,292,424
45-49	18	\$ 1,910,006
50-54	23	\$ 2,223,100
55-59	11	\$ 992,392
60-64	3	\$ 244,897
65+	0	\$ -
<b>Total</b>	<b>167</b>	<b>\$ 13,662,819</b>

Defined Contribution Active Members November 30, 2021		
Attained	Number	Payroll
Ages		
< 20	1	\$ 37,486
20-24	20	\$ 769,119
25-29	36	\$ 2,035,749
30-34	37	\$ 2,169,458
35-39	38	\$ 2,281,572
40-44	31	\$ 1,918,249
45-49	49	\$ 3,138,334
50-54	61	\$ 3,686,863
55-59	49	\$ 3,084,285
60-64	67	\$ 4,201,624
65+	27	\$ 1,646,108
<b>Total</b>	<b>416</b>	<b>\$ 24,968,847</b>

**DEFINED BENEFIT AGE AND SERVICE DISTRIBUTION**

AGE	TOTAL PAST SERVICE										Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<25	6	12	1	0	0	0	0	0	0	0	19
25 - 29	10	10	9	0	0	0	0	0	0	0	29
30 - 34	3	7	20	4	0	0	0	0	0	0	34
35 - 39	2	0	5	8	1	0	0	0	0	0	16
40 - 44	1	1	1	2	7	2	0	0	0	0	14
45 - 49	0	0	0	1	2	13	2	0	0	0	18
50 - 54	0	0	1	2	1	9	10	0	0	0	23
55 - 59	0	0	0	0	2	1	2	5	1	0	11
60 - 64	0	0	0	0	0	0	2	1	0	0	3
65+	0	0	0	0	0	0	0	0	0	0	0
Total	22	30	37	17	13	25	16	6	1	0	167

**DEFINED CONTRIBUTION AGE AND SERVICE DISTRIBUTION**

AGE	TOTAL PAST SERVICE										Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<25	9	12	0	0	0	0	0	0	0	0	21
25 - 29	4	21	11	0	0	0	0	0	0	0	36
30 - 34	0	23	14	0	0	0	0	0	0	0	37
35 - 39	3	14	10	6	4	1	0	0	0	0	38
40 - 44	2	8	9	5	3	4	0	0	0	0	31
45 - 49	2	13	17	2	4	10	1	0	0	0	49
50 - 54	2	21	16	9	5	5	2	1	0	0	61
55 - 59	5	11	7	5	4	7	3	4	3	0	49
60 - 64	1	8	20	13	5	13	3	1	1	2	67
65+	0	2	6	5	3	4	3	1	1	2	27
Total	28	133	110	45	28	44	12	7	5	4	416

## PARTICIPANT DATA—INACTIVE MEMBERS

The following inactive members were included in the valuation as of November 30, 2021:

	Defined Benefit Plan	Defined Contribution Plan	Total
Retired Participants	503	183	686
Inactive Vested Participants	6	23	29

Retired Participants November 30, 2021				
Attained Ages	General	Police	Fire	Total
<45	0	0	0	0
45-49	0	5	1	6
50-54	2	28	9	39
55-59	23	43	9	75
60-64	53	38	17	108
65-69	54	15	15	84
70-74	90	20	26	136
75-79	54	23	17	94
80-84	41	19	10	70
85-89	25	9	9	43
90-94	13	4	5	22
95+	7	0	2	9
Total	362	204	120	686

Inactive Vested Participants November 30, 2021				
Attained				
Ages	General	Police	Fire	Total
<45	4	2	0	6
45-49	1	1	0	2
50-54	8	3	1	12
55-59	3	3	0	6
60-64	0	0	0	0
65-69	0	1	0	1
70-74	0	0	0	0
75-79	0	0	0	0
80-84	0	1	0	1
85-89	0	0	0	0
90-94	0	0	0	0
95+	1	0	0	1
Total	17	11	1	29

## ACTUARIAL ASSUMPTIONS AND FUNDING METHODS

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<u>Valuation Date</u>	November 30, 2021.
<u>Measurement Date</u>	November 30, 2021.
<u>Fiscal Year End</u>	November 30, 2021.
<u>Actuarial Value of Assets</u>	Investment gains and losses are smoothed over a 5-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.
<u>Interest Rate</u>	7.20%
<u>Assumed Investment Return</u>	7.20% per year, net of investment expenses.
<u>Mortality Rates</u>	
General Employees	<i>Healthy Active Lives:</i> <b>Female:</b> PubG.H-2010 for Employees. <b>Male:</b> PubG.H-2010 for Employees.  <i>Healthy Retiree Lives:</i> <b>Female:</b> PubG.H-2010 for Healthy Retirees. <b>Male:</b> PubG.H-2010 for Healthy Retirees.  <i>Disabled Lives:</i> 80% PubG.H-2010 for Disabled Retirees.  All rates are projected generationally with Mortality Improvement Scale MP-2020.
Police and Fire Participants	<i>Healthy Active Lives:</i> <b>Female:</b> PubS.H-2010 for Employees. <b>Male:</b> PubS.H-2010 for Employees.  <i>Healthy Retiree Lives:</i> <b>Female:</b> PubS.H-2010 for Healthy Retirees. <b>Male:</b> PubS.H-2010 for Healthy Retirees.

Mortality Rates (continued)

*Disabled Lives:*  
 80% PubG.H-2010 for Disabled Retirees.

All rates are projected generationally with Mortality Improvement Scale MP-2020.

Payroll Growth Rate

**Sample Annual Rates of Salary Increase**

Age	DB Participants	General	Police	Fire
20	4.00%	14.00%	12.00%	14.00%
25	4.00	12.00	9.00	10.00
30	4.00	10.00	7.50	6.00
35	4.00	9.00	6.50	5.50
40	4.00	8.00	5.75	5.00
45	4.00	6.00	5.00	4.75
50	4.00	5.50	4.50	4.50
55	4.00	5.00	4.00	4.25
60	4.00	4.50	4.00	4.25
65+	4.00	4.00	4.00	4.25

Payroll Growth

3.0%

Medical Inflation

Initial rate of 5.80% in fiscal 2022, grading down to the ultimate trend rate of 5.00% in fiscal 2030. Sample rates below:

<u>Fiscal Year Ending</u>	<u>Rate</u>
2020	6.00%
2021	5.90%
2022	5.80%
2023	5.70%
2024	5.60%
2025	5.50%
2026	5.40%
2027	5.30%
2028	5.20%
2029	5.10%
2030	5.00%

Retirement Rates

See table below.

**Percent of Active Defined Benefit Plan Members Retiring within Year  
 Following Attainment of Indicated Retirement Age or Service**

Retirement Ages	Age Based			Service Based		
	General	Police	Fire	Service	Police	Fire
				25	75%	40%
				26	25	40
				27	25	40%
				28	25	40
45-50	50%		-	29	25	40
51	50		-	30 & up	100	100
52	50	10%	35%			
53	50	10	20			
54	50	10	20			
55	45	10	10			
56	30	10	10			
57	25	10	10			
58	25	10	10			
59	30	10	10			
60	25	100	100			
61	25	100	100			
62	20	100	100			
63	20	100	100			
64	20	100	100			
65	20	100	100			
66	20	100	100			
67	20	100	100			
68	20	100	100			
69 & Up	100	100	100			

### Defined Contribution Participants

Sample Ages	% of Active Members Retiring Within Next Year		
	General	Police	Fire
52	0.00%	15.00%	15.00%
53	0.00	5.00	5.00
54	0.00	5.00	5.00
55	15.00	15.00	15.00
56	5.00	5.00	5.00
57	5.00	5.00	5.00
58	5.00	5.00	5.00
59	5.00	5.00	5.00
60	5.00	5.00	5.00
61	5.00	5.00	5.00
62	15.00	15.00	15.00
63	5.00	5.00	5.00
64	30.00	30.00	30.00
65	30.00	30.00	30.00
66	30.00	30.00	30.00
67	30.00	30.00	30.00
68	30.00	100.00	100.00
69	30.00	100.00	100.00
70+	100.00	100.00	100.00

Termination Rates

See tables below.

### Defined Benefit Participants

Sample Ages	Years of Service	% of Active Members Separating Within Next Year		
		General	Police	Fire
25	5 & Over	4.00%	1.62%	1.62%
30		3.50	1.40	1.40
35		3.25	0.83	0.83
40		2.00	0.32	0.32
45		1.25	0.18	0.18
50		1.25	0.18	0.18
55		0.75	0.18	0.18
60		0.50	0.18	0.18

### Defined Contribution Participants

Sample Ages	Years of Service	% of Active Members Separating Within Next Year		
		General	Police	Fire
All	0	10.00%	10.00%	9.00%
	1	9.00	9.00	7.00
	2	8.00	8.00	5.00
	3	7.00	7.00	4.00
	4	7.00	7.00	3.00
<30	5 & Over	5.00	5.00	3.00
30		3.00	3.00	2.00
35		2.00	3.00	1.00
40		2.00	2.50	0.50
45		2.00	2.50	0.20
50+		2.00	2.00	0.20

Disability Rates

See table of sample rates below

Sample Ages	Percent Becoming Disabled Within Next Year	
	General	Police-Fire
20	0.010%	0.035%
25	0.020	0.060
30	0.035	0.120
35	0.055	0.200
40	0.080	0.275
45	0.100	0.355
50	0.125	0.435
55	0.150	0.515

Health Care Participation

General 70% participation assumed, Police and Fire 100% participation assumed.

Marital Status

85% assumed married for pre-65 participants, 70% assumed married for post-65 participants.

Actuarial Cost Method

Entry Age Normal (Level Percentage of Pay).

Amortization of UAAL

Level Percent of Pay (Closed Amortization over 26 Years)

# SUMMARY OF PLAN PROVISIONS

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## Benefit Provision Summary

### *Participation Requirements*

Participants include all persons in the classified and unclassified service of the City who perform services on a permanent part-time or full-time basis. New hires effective 9/8/2011 for AFSCME, 11/2/2011 for LPOA and 12/1/2012 for LCOA, Command, LFFU and District Court participate in a Retiree Health Savings Plan and will not be eligible for retiree health benefits from the VEBA.

### **Retiree Health Benefits – Defined Benefit Plan Members (Including Members who transferred from the DB Plan to the DC Plan)**

#### *Eligibility*

- General Members: 30 years of service regardless of age, or age 55 with 10 years of service. Permanent part-time General members need only 10 calendar years of membership instead of 10 years of credited service.
- Police Members: 25 years of service regardless of age, or age 52 with 10 years of service. (Age 50 with 10 years but less than 25 years of service early retirement).
- Fire Members: 25 years of service regardless of age, or age 52 with 10 years of service (age 50 with 10 years of service early retirement).
- All Members: Receipt of disability retirement benefit or death in service survivor benefit.

#### *Benefits*

100% City-paid health insurance coverage is provided to all retirees. Spouse coverage is provided while the retiree is alive. Spouse coverage continues after the retiree's death, until attainment of age 65 (or until death if the spouse is receiving a joint and survivor pension). Pursuant to the National Healthcare Reform, effective January 1, 2011, dependent children under age 26 may be covered under the City's Group Health Plan.

#### *Member Contributions*

General, Police, and Fire members contribute 2% of pay.

**Retiree Health Benefits – Defined Contribution Plan Members**

**Eligibility:**

- General Members: Age 55 with 10 years of service.
- Police Members: 25 years of service regardless of age, or age 52 with 10 years of service.
- Fire Members: 27 years of service regardless of age, or age 52 with 10 years of service.
- All members: Receipt of disability retirement benefit.

**Benefits:** A percentage of the premium is paid by the Plan to all retirees who satisfy the above eligibility requirements. Spouse coverage is provided while the retiree is alive, and for life after the retiree's death. The amount of the Plan benefit is described below:

	<u>Age Service Requirement</u>	<u>Percentage of Premium Paid By Plan</u>
General Members:	55 & 10	50%
	55 & 15	60
	55 & 20	75
	55 & 25	100
Police Officers, Sergeants & Lieutenants	<u>Age Service Requirement</u>	<u>Percentage of Premium Paid By Plan</u>
	52 & 10	50%
	52 & 15	60
	52 & 20	75
	25 years of service	100
Police Chief, Deputy Chief & Captains	<u>Age Service Requirement</u>	<u>Percentage of Premium Paid By Plan</u>
	50 & 10	50%
	50 & 15	60
	50 & 20	75
	50 & 25 or 27 years of service	100
Fire Members:	<u>Age Service Requirement</u>	<u>Percentage of Premium Paid By Plan</u>
	52 & 10	50%
	52 & 15	60
	52 & 20	75
	52 & 25 or 27 years of service	100

**Member Contributions**

General members, Police and Fire members contribute 2% of pay.

### Disability Retirement – Defined Contribution Plan Members Only

**Eligibility:**

Termination of City employment by reason of total and permanent disability after completing at least 10 full years of credited service. The 10 year service requirement is waived for duty disability.

**Amount:**

- (1) Disability incurred after age 55: A monthly pension computed in the same manner as Normal Pension (see below) under the City of Livonia Employees Retirement System (Defined Benefit Plan) but based on credited service and Average Final Compensation (AFC) at the time of termination.
- (2) Disability incurred before age 55: A monthly pension computed in the same manner as a Normal Pension under the Defined Benefit Plan but based on AFC at time of termination and the credited service the member would have completed had the member continued in service until age 55. The minimum duty disability pension payable to age 55 is 75% of AFC. Worker's compensation benefits are offset. For non-duty disability cases, the following limitations apply:

<b>Actual Years of Service</b>	<b>Maximum total Years Used to Compute Benefit</b>	<b>Maximum Benefit As a Percentage of AFC</b>
10-15	20	50.0%
16-20	25	62.5
over 20	30 – or actual service if greater	75.0

The Normal Pension under the Defined Benefit Plan is summarized as follows:

General Members:	2.5% of the member's AFC times years of credited service (maximum is 75% of AFC).
Police members:	2.8% of the member's AFC times the first 24 years of credited service, plus 7.8% of AFC for the 25 <sup>th</sup> year of credited service (maximum is 75% of AFC).
Fire Members:	2.8% of the member's AFC times years of credited service (maximum is 75% of AFC).

Average final compensation (AFC) is the average of the highest annual compensations received during any 3 years of service contained within the 10 years of service immediately preceding retirement, including base salary, longevity, shift differential, paid time off, holiday pay, and payment of accumulated vacation time.

An additional cost-of-living allowance is paid to disability retirees. The monthly amount is determined as follows:

- (1) For disability retirees (except as noted on the following page):
  - (a) \$20 per month for a one-year period commencing one year after retirement.
  - (b) \$40 per month for a one-year period commencing two years after retirement.
  - (c) \$60 per month for a one-year period commencing three years after retirement.
  - (d) \$80 per month for a one-year period commencing four years after retirement.
  - (e) \$100 per month for a one-year period commencing five years after retirement.
  - (f) \$120 per month commencing six years after retirement.

(2) For General disability retirees who retire on or after December 1, 2007:

- (a) \$25 per month for one year period commencing one year after retirement.
- (b) \$50 per month for one year period commencing two years after retirement.
- (c) \$75 per month for one year period commencing three years after retirement.
- (d) \$100 per month for one year period commencing four years after retirement.
- (e) \$125 per month for one year period commencing five years after retirement.
- (f) \$150 per month for one year period commencing six years after retirement.
- (g) \$175 per month for one year period commencing seven years after retirement.
- (h) \$200 per month for one year period commencing eight years after retirement.
- (i) \$225 per month for one year period commencing nine years after retirement.
- (j) \$250 per month commencing ten years after retirement.

(3) For Fire disability retirees who retire on or after March 20, 2008 and before December 1, 2008:

- (a) \$20 per month for one year period commencing one year after retirement.
- (b) \$40 per month for one year period commencing two years after retirement.
- (c) \$60 per month for one year period commencing three years after retirement.
- (d) \$80 per month for one year period commencing four years after retirement.
- (e) \$100 per month for one year period commencing five years after retirement.
- (f) \$120 per month for one year period commencing six years after retirement.
- (g) \$140 per month for one year period commencing seven years after retirement.
- (h) \$160 per month for one year period commencing eight years after retirement.
- (i) \$180 per month for one year period commencing nine years after retirement.
- (j) \$200 per month commencing ten years after retirement

(4) For Police and Fire disability retirees who retire on or after December 1, 2008:

- a) \$25 per month for one year period commencing one year after retirement.
- b) \$50 per month for one year period commencing two years after retirement.
- c) \$75 per month for one year period commencing three years after retirement.
- d) \$100 per month for one year period commencing four years after retirement.
- e) \$125 per month for one year period commencing five years after retirement.
- f) \$150 per month for one year period commencing six years after retirement.
- g) \$175 per month for one year period commencing seven years after retirement.
- h) \$200 per month for one year period commencing eight years after retirement.
- i) \$225 per month for one year period commencing nine years after retirement.
- j) \$250 per month commencing ten years after retirement

- (5) Fire members retiring on or after 10/17/16, and LPOA, LLSA and Police Command on or after 12/1/2017, in addition to (4) above:
- k) \$275 per month for one year period commencing eleven years after retirement.
  - l) \$300 per month for one year period commencing twelve years after retirement.
  - m) \$325 per month for one year period commencing thirteen years after retirement.
  - n) \$325 per month for one year period commencing fourteen years after retirement.
  - o) \$375 per month commencing fifteen years after retirement.

***Employee Contributions:***

2%

## GLOSSARY OF ACTUARIAL TERMS

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Actuarial Present Value is the amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

1. adjusted for the probable financial effect of certain intervening events
2. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and
3. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Cost Method is a procedure for determining the Present Value of plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Liability.

Total Annual Payroll is the annual rate of pay for the fiscal year prior to 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 portion of the Actuarial Present Value of plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Actuarial Accrued Liability is the portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of plan benefits and expenses which is not provided for by future Normal Costs.

Unfunded Actuarial Accrued Liability (UAAL) is a liability which arises when a plan is initially established or improved and such establishment or improvement is applicable to all years of past service. Under the Entry Age Normal Actuarial Cost Method, there is also a new UAAL created each year equal to the actuarial gain or loss for that year.

Actuarially Determined Contribution (ADC) represents the level of employer contribution effort that would be required on a sustained, ongoing basis to:

1. fund the Normal Cost (cost associated with new services received) each year and
2. amortize the total unfunded actuarial liabilities (or funding excess) attributed to past services over a period of time (as determined by the plan sponsor, but typically no more than thirty years).

The ADC is a basis for the allocation of the employer's projected cost of providing Other Post-Employment Benefits (OPEB) over periods that approximate the periods in which the employer receives services from the covered employees. Accordingly, the ADC may be used as the foundation on which the measurement of the employer's annual funding can be based.