



FUNDING, PA 202, AND GASB 74/75 ACTUARIAL VALUATION

Fiscal Year Ending November 30, 2023

CITY OF LIVONIA RETIREE HEALTH AND DISABILITY BENEFITS PLAN

CONTACT

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March 18, 2024

**Michael Slater
City of Livonia
33000 Civic Center Drive
Livonia, MI 48154**

This report summarizes the GASB actuarial valuation for the City of Livonia 2022/23 fiscal year. To the best of our knowledge, the report presents a fair position of the funded status of the plan in accordance with GASB Statement No. 74 (Financial Reporting for Post-Employment Benefit Plans Other Than Pension Plans) and GASB Statement No. 75 (Accounting and Financial Reporting by Employers for Post-Employment Benefits Other Than Pensions). This report may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The information presented herein is based on the actuarial assumptions and substantive plan provisions summarized in this report and participant information furnished to us by the Plan Sponsor. Asset information has been provided to us by the trustee. We have reviewed the employee census provided by the Plan Sponsor for reasonableness when compared to the prior information provided but have not audited the information at the source, and therefore do not accept responsibility for the accuracy or the completeness of the data on which the information is based. When relevant data may be missing, we may have made assumptions we feel are neutral or conservative to the purpose of the measurement. We are not aware of any significant issues with and have relied on the data provided.

The discount rate, other economic assumptions, and demographic assumptions have been selected by the Plan Sponsor with the concurrence of Nyhart. In our opinion, the actuarial assumptions are individually reasonable and in combination represent our estimate of anticipated experience of the Plan. All calculations have been made in accordance with generally accepted actuarial principles and practice.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- plan experience differing from that anticipated by the economic or demographic assumptions;
- changes in economic or demographic assumptions;
- 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 plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement.

To our knowledge, there have been no significant events prior to the current year's measurement date or as of the date of this report that could materially affect the results contained herein.



Neither Nyhart nor any of its employees has any relationship with the plan or its sponsor that could impair or appear to impair the objectivity of this report. Our professional work is in full compliance with the American Academy of Actuaries "Code of Professional Conduct" Precept 7 regarding conflict of interest. The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States.

Should you have any questions please do not hesitate to contact us.

A handwritten signature in black ink that reads "John Mallows".

John Mallows, FSA, MAAA
Actuary

A handwritten signature in black ink that reads "Cody Kocher".

Cody Kocher, FSA, MAAA
Actuary

Executive Summary

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Summary of Results

Presented below is the summary of GASB 75 results for the fiscal year ending November 30, 2023 compared to the prior fiscal year as shown in the City's Notes to Financial Statement.

	As of November 30, 2022	As of November 30, 2023
Total OPEB Liability	\$ 218,392,030	\$ 132,146,007
Actuarial Value of Assets	\$ (121,774,444)	\$ (129,152,658)
Net OPEB Liability	\$ 96,617,586	\$ 2,993,349
Funded Ratio	55.8%	97.7%

	FY 2021/22	FY 2022/23
OPEB Expense	\$ (12,316,729)	\$ (93,159,509)
Annual Employer Contributions	\$ 3,413,483	\$ 3,871,252
Actuarially Determined Contribution	\$ 3,018,366	\$ 6,808,439

	As of November 30, 2022	As of November 30, 2023
Discount Rate	7.10%	7.00%
Expected Return on Assets	7.10%	7.00%

	As of November 30, 2023
Total Active Participants	459
Total Retiree Participants	728

The active participants' number above may include active employees who currently have no health care coverage. Refer to Summary of Participants section for an accurate breakdown of active employees with and without coverage.

Executive Summary

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Summary of Results

Below is a breakdown of total GASB 75 liabilities allocated to past and current service compared to the prior year. The table below also provides a breakdown of the Total OPEB Liability allocated to pre- and post- Medicare eligibility. The liability shown below includes explicit (if any) and implicit subsidies. Refer to the Substantive Plan Provisions section for complete information on the Plan Sponsor's GASB subsidies.

Present Value of Future Benefits	As of November 30, 2022	As of November 30, 2023
Active Employees	\$ 49,078,746	\$ 33,353,190
Retired Employees	178,460,878	105,515,203
Total Present Value of Future Benefits	\$ 227,539,624	\$ 138,868,393

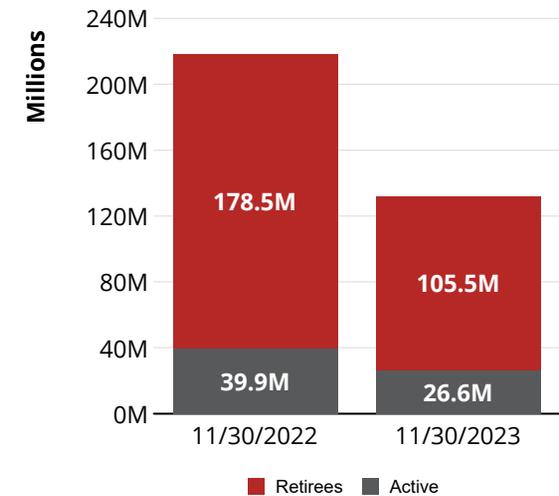
Total OPEB Liability	As of November 30, 2022	As of November 30, 2023
Active Pre-Medicare	\$ 13,173,279	\$ 14,429,589
Active Post-Medicare	26,757,873	12,201,215
Active Liability	\$ 39,931,152	\$ 26,630,804

Retiree Pre-Medicare	\$ 36,578,078	\$ 41,081,606
Retiree Post-Medicare	141,882,800	64,433,597
Retiree Liability	\$ 178,460,878	\$ 105,515,203

Total OPEB Liability	\$ 218,392,030	\$ 132,146,007
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	As of November 30, 2022	As of November 30, 2023
Discount Rate	7.10%	7.00%

Changes In Total OPEB Liability



Present Value of Future Benefits (PVFB) is the amount needed as of November 30, 2023 and November 30, 2022, to fully fund the City's retiree health care subsidies for existing and future retirees and their dependents assuming all actuarial assumptions are met.

Total OPEB Liability is the portion of PVFB considered to be accrued or earned as of November 30, 2023 and November 30, 2022. This amount is a required disclosure in the Required Supplementary Information

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Schedule of Changes in Net OPEB Liability and Related Ratios

OPEB Liability	FY 2022/23	FY 2021/22	FY 2020/21	FY 2019/20	FY 2018/19
Total OPEB Liability					
Total OPEB Liability - beginning of year	\$ 218,392,030	\$ 204,403,511	\$ 207,550,435	\$ 211,268,799	\$ 288,458,743
Service cost	1,347,853	2,003,858	1,638,292	2,753,080	5,782,551
Interest	15,328,641	14,545,843	14,973,640	15,505,638	14,135,767
Change of benefit terms	(98,769,109)	(8,533,120)	5,428,511	0	0
Changes in assumptions	2,093,808	71,910	(10,851,167)	538,411	(74,592,646)
Differences between expected and actual experience	1,573,964	14,818,580	(6,049,507)	(13,380,004)	(14,440,265)
Benefit payments	(7,821,180)	(8,918,552)	(8,286,693)	(9,135,489)	(8,075,351)
Net change in total OPEB liability	\$ (86,246,023)	\$ 13,988,519	\$ (3,146,924)	\$ (3,718,364)	\$ (77,189,944)
Total OPEB Liability - end of year	\$ 132,146,007	\$ 218,392,030	\$ 204,403,511	\$ 207,550,435	\$ 211,268,799
Plan Fiduciary Net Position					
Plan fiduciary net position - beginning of year	\$ 121,774,444	\$ 138,324,771	\$ 122,755,757	\$ 115,581,878	\$ 105,989,115
Contributions - employer	3,871,252	3,413,483	5,529,951	5,331,203	4,939,531
Contributions - active employees	312,925	347,962	375,139	389,287	426,231
Net investment income	11,058,543	(11,342,121)	18,004,347	10,638,551	12,351,227
Benefit payments	(7,821,180)	(8,918,552)	(8,286,693)	(9,135,489)	(8,075,351)
Trust administrative expenses	(43,326)	(51,099)	(53,730)	(49,673)	(48,875)
Net change in plan fiduciary net position	\$ 7,378,214	\$ (16,550,327)	\$ 15,569,014	\$ 7,173,879	\$ 9,592,763
Plan fiduciary net position - end of year	\$ 129,152,658	\$ 121,774,444	\$ 138,324,771	\$ 122,755,757	\$ 115,581,878
Net OPEB Liability - end of year	\$ 2,993,349	\$ 96,617,586	\$ 66,078,740	\$ 84,794,678	\$ 95,686,921
Plan fiduciary net position as % of total OPEB liability	97.7%	55.8%	67.7%	59.1%	54.7%
Covered employee payroll	\$ 33,760,648	\$ 34,261,025	\$ 38,631,666	\$ 36,744,168	\$ 35,774,188
Net OPEB liability as % of covered payroll	8.9%	282.0%	171.0%	230.8%	267.5%

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Schedule of Changes in Net OPEB Liability and Related Ratios (Continued)

OPEB Liability	FY 2017/18	FY 2016/17
Total OPEB Liability		
Total OPEB Liability - beginning of year	\$ 241,182,425	\$ 197,133,647
Service cost	5,181,469	4,381,818
Interest	12,715,690	12,061,649
Change of benefit terms	0	0
Changes in assumptions	51,279,390	24,668,349
Differences between expected and actual experience	(14,191,268)	9,974,080
Benefit payments	(7,708,963)	(7,037,118)
Net change in total OPEB liability	\$ 47,276,318	\$ 44,048,778
Total OPEB Liability - end of year	\$ 288,458,743	\$ 241,182,425
Plan Fiduciary Net Position		
Plan fiduciary net position - beginning of year	\$ 110,340,110	\$ 96,645,668
Contributions - employer	4,499,322	5,087,462
Contributions - active employees	473,346	484,737
Net investment income	(1,556,471)	15,195,332
Benefit payments	(7,708,963)	(7,037,118)
Trust administrative expenses	(58,229)	(35,971)
Net change in plan fiduciary net position	\$ (4,350,995)	\$ 13,694,442
Plan fiduciary net position - end of year	\$ 105,989,115	\$ 110,340,110
Net OPEB Liability - end of year	\$ 182,469,628	\$ 130,842,315
Plan fiduciary net position as % of total OPEB liability	36.7%	45.7%
Covered employee payroll	\$ 36,890,435	\$ 34,729,209
Net OPEB liability as % of covered payroll	494.6%	376.8%

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Schedule of Employer Contributions

The Actuarially Determined Contributions (ADC) shown below are based on the Annual Required Contribution (ARC) calculated in prior GASB 45 actuarial valuations as shown in the City's financial statements.

	FY 2022/23	FY 2021/22	FY 2020/21	FY 2019/20	FY 2018/19
Actuarially Determined Contribution (ADC)	\$ 6,808,439	\$ 3,018,366	\$ 4,031,442	\$ 3,251,858	\$ 4,054,515
Contributions in relation to the ADC	3,871,252	3,413,483	5,529,951	5,331,203	4,924,890
Contribution deficiency/(excess)	\$ 2,937,187	\$ (395,117)	\$ (1,498,509)	\$ (2,079,345)	\$ (870,375)
Covered employee payroll	\$ 33,760,648	\$ 34,261,025	\$ 38,631,666	\$ 36,744,168	\$ 35,774,188
Contribution as a % of covered payroll	11.5%	10.0%	14.3%	14.5%	13.8%

	FY 2017/18	FY 2016/17	FY 2015/16	FY 2014/15	FY 2013/14
Actuarially Determined Contribution (ADC)	\$ 4,018,307	\$ 4,517,014	\$ 5,108,040	\$ 5,907,902	\$ 7,066,283
Contributions in relation to the ADC	4,499,324	5,087,462	4,665,664	5,361,926	6,388,086
Contribution deficiency/(excess)	\$ (481,017)	\$ (570,448)	\$ 442,376	\$ 545,976	\$ 678,197
Covered employee payroll	\$ 36,890,435	\$ 34,729,209	\$ 31,408,000	\$ 30,560,000	\$ 30,964,000
Contribution as a % of covered payroll	12.2%	14.6%	14.9%	17.5%	20.6%

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

OPEB Expense

OPEB Expense	FY 2022/23	FY 2021/22
Discount Rate		
Beginning of year	7.10%	7.20%
End of year	7.00%	7.10%
Service cost	\$ 1,347,853	\$ 2,003,858
Interest	15,328,641	14,545,843
Change of benefit terms	(98,769,109)	(8,533,120)
Projected earnings on OPEB plan investments	(8,517,574)	(9,775,147)
Reduction for contributions from active employees	0	0
OPEB plan administrative expenses	43,326	51,099
Current period recognition of deferred outflows / (inflows) of resources		
Differences between expected and actual experience	\$ 5,280,127	\$ 1,927,423
Changes in assumptions	(8,391,976)	(15,509,522)
Net difference between projected and actual earnings on OPEB plan investments	519,203	2,972,837
Total current period recognition	\$ (2,592,646)	\$ (10,609,262)
Total OPEB expense	\$ (93,159,509)	\$ (12,316,729)

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Deferred Outflows / (Inflows) of Resources

Deferred Outflows / (Inflows) of Resources represents the following items that have not been recognized in the OPEB Expense:

1. Differences between expected and actual experience of the OPEB plan
2. Changes of assumptions
3. Differences between projected and actual earnings in OPEB plan investments (for funded plans only)

The initial amortization period for the first two items noted above is based on expected future service lives while the difference between the projected and actual earnings in OPEB plan investment is amortized over five years. All balances are amortized linearly on a principal only basis and new bases will be created annually for each of the items above.

Differences between expected and actual experience for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of November 30, 2023
November 30, 2017	\$ 0	N/A	\$ 0	\$ 0
November 30, 2018	\$ (14,191,268)	4	\$ 0	\$ 0
November 30, 2019	\$ (14,440,265)	4	\$ (1,312,753)	\$ 0
November 30, 2020	\$ (13,380,004)	2	\$ 0	\$ 0
November 30, 2021	\$ (6,049,507)	5	\$ (1,209,901)	\$ (2,419,804)
November 30, 2022	\$ 14,818,580	2	\$ 7,409,290	\$ 0
November 30, 2023	\$ 1,573,964	4	\$ 393,491	\$ 1,180,473

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Deferred Outflows / (Inflows) of Resources (Continued)

Changes in assumptions for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of November 30, 2023
November 30, 2017	\$ 0	N/A	\$ 0	\$ 0
November 30, 2018	\$ 51,279,390	4	\$ 0	\$ 0
November 30, 2019	\$ (74,592,646)	4	\$ (6,781,150)	\$ 0
November 30, 2020	\$ 538,411	2	\$ 0	\$ 0
November 30, 2021	\$ (10,851,167)	5	\$ (2,170,233)	\$ (4,340,468)
November 30, 2022	\$ 71,910	2	\$ 35,955	\$ 0
November 30, 2023	\$ 2,093,808	4	\$ 523,452	\$ 1,570,356

Net Difference between projected and actual earnings in OPEB plan investments for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of November 30, 2023
November 30, 2019	\$ (4,520,677)	5	\$ (904,137)	\$ 0
November 30, 2020	\$ (2,327,533)	5	\$ (465,507)	\$ (465,505)
November 30, 2021	\$ (9,132,066)	5	\$ (1,826,413)	\$ (3,652,827)
November 30, 2022	\$ 21,117,268	5	\$ 4,223,454	\$ 12,670,360
November 30, 2023	\$ (2,540,969)	5	\$ (508,194)	\$ (2,032,775)

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Deferred Outflows / (Inflows) of Resources (Continued)

As of fiscal year ending November 30, 2023	Deferred Outflows	Deferred Inflows
Differences between expected and actual experience	\$ 1,180,473	\$ (2,419,804)
Changes in assumptions	1,570,356	(4,340,468)
Net difference between projected and actual earnings in OPEB plan investments	6,519,253	0
Total	\$ 9,270,082	\$ (6,760,272)

Annual Amortization of Deferred Outflows / (Inflows)

The balances as of November 30, 2023 of the deferred outflows / (inflows) of resources will be recognized in OPEB expense in the future fiscal years as noted below.

FYE	Balance
2024	\$ (1,039,849)
2025	\$ (574,349)
2026	\$ 4,632,201
2027	\$ (508,193)
2028	\$ 0
Thereafter	\$ 0

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Sensitivity Results

The following presents the Net OPEB Liability as of November 30, 2023, calculated using the discount rate assumed and what it would be using a 1% higher and 1% lower discount rate.

- The current discount rate is 7.00%.
- The 1% decrease in discount rate would be 6.00%.
- The 1% increase in discount rate would be 8.00%.

As of November 30, 2023	Net OPEB Liability
1% Decrease	\$ 17,436,343
Current Discount Rate	\$ 2,993,349
1% Increase	\$ (9,096,443)

The following presents the Net OPEB Liability as of November 30, 2023, using the health care trend rates assumed and what it would be using 1% higher and 1% lower health care trend rates.

- The current health care trend rate starts at an initial rate of 8.00%, decreasing to an ultimate rate of 4.50%.
- The 1% decrease in health care trend rates would assume an initial rate of 7.00%, decreasing to an ultimate rate of 3.50%.
- The 1% increase in health care trend rates would assume an initial rate of 9.00%, decreasing to an ultimate rate of 5.50%.

As of November 30, 2023	Net OPEB Liability
1% Decrease	\$ (9,556,932)
Current Trend Rates	\$ 2,993,349
1% Increase	\$ 17,927,867

* Post-65 trend rates have been set to an initial rate of 8.00%, after the guaranteed period, decreasing to 6.25% in the following year, and then decreasing by 0.25% annually to an ultimate rate of 4.50%. The sensitivities noted above for +/-1% change in baseline trend rates apply to these rates as well.

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Asset Information

Asset Breakdown	FY 2021/22	FY 2022/23
Assets		
Cash and deposits	\$ 150,961	\$ 264,197
Securities lending cash collateral	4,363,157	3,054,839
Total cash	\$ 4,514,118	\$ 3,319,036
Receivables		
Contributions	\$ 440,184	\$ 877,977
Accrued interest	0	0
Total receivables	\$ 440,184	\$ 877,977
Investments		
Fixed income	\$ 27,998,869	\$ 40,185,683
Equities	88,330,818	84,338,301
Real Estate Investment Trusts	946,107	973,290
Total investments	\$ 117,275,794	\$ 125,497,274
Total Assets	\$ 122,230,096	\$ 129,694,287
Liabilities		
Payables		
Investment management fees	\$ 455,652	\$ 541,629
Securities lending expense	0	0
Total liabilities	\$ 455,652	\$ 541,629
Net Position Restricted to OPEB	\$ 121,774,444	\$ 129,152,658

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Asset Information (Continued)

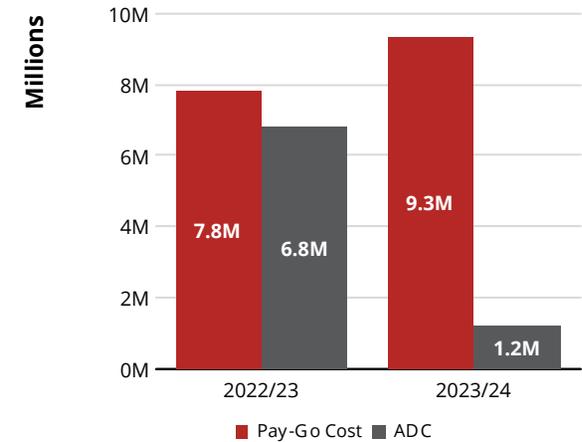
Asset Reconciliation	FY 2021/22	FY 2022/23
Additions		
Contributions Received		
Employer	\$ 3,413,483	\$ 3,871,252
Active employees	347,962	312,925
Total contributions	\$ 3,761,445	\$ 4,184,177
Investment Income		
Net increase in fair value of investments	\$ (16,644,202)	\$ 7,099,539
Interest and dividends	5,640,858	4,317,329
Investment expense, other than from securities lending	(338,777)	(358,325)
Securities lending income	0	0
Securities lending expense	0	0
Net investment income	\$ (11,342,121)	\$ 11,058,543
Total additions	\$ (7,580,676)	\$ 15,242,720
Deductions		
Benefit payments	\$ 8,918,552	\$ 7,821,180
Administrative expenses	51,099	43,326
Other	0	0
Total deductions	\$ 8,969,651	\$ 7,864,506
Net increase in net position	\$ (16,550,327)	\$ 7,378,214
Net position restricted to OPEB		
Beginning of year	\$ 138,324,771	\$ 121,774,444
End of year	\$ 121,774,444	\$ 129,152,658

Actuarially Determined Contributions

City of Livonia GASB 74/75 Valuation For Fiscal Year Ending November 30, 2023

	FY 2022/23		FY 2023/24	
Discount rate (Funding)	7.10%		7.00%	
Payroll growth factor used for amortization	3.00%		3.00%	
Actuarial cost method	Entry Age Normal Level % of Salary		Entry Age Normal Level % of Salary	
Amortization type	Level % of Salary		Level Dollar	
Amortization period (years)	25		24	
Actuarial Accrued Liability (AAL) - beginning of year	\$	218,392,030	\$	132,146,007
Actuarial Value of Assets (AVA) - beginning of year		(131,191,254)		(135,183,513)
Unfunded AAL - beginning of year	\$	87,200,776	\$	(3,037,506)
Normal Cost	\$	999,891	\$	737,486
Amortization of Unfunded AAL		5,357,195		(247,511)
Total normal cost plus amortization	\$	6,357,086	\$	489,975
Interest to end of year		451,353		34,298
Actuarially Determined Contribution - Preliminary	\$	6,808,439	\$	524,273
Expected Benefit Payments		7,821,180		9,303,336
Actuarially Determined Contribution - Final	\$	6,808,439	\$	1,222,159

Cash Vs Accrual Accounting



Actuarially Determined Contribution (ADC) is the target or recommended contribution to a defined benefit OPEB plan, which if paid on an ongoing basis, will provide sufficient resources to fund future costs for services to be earned and liabilities attributed to past services. This is typically higher than the pay-as-you-go cost because it includes recognition of employer costs expected to be paid in future accounting periods.

* Actual benefit payments are used for FY 2022/23. Normal costs shown are net of active employee contributions. Detailed ADC calculations by group are shown on page 40.

Projection of GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

The Total OPEB Liability (TOL) is expected to change on an annual basis as a result of expected and unexpected events. Under normal circumstances, it is generally expected to have a net increase each year. Below is a list of the most common events affecting the total OPEB liability and whether they increase or decrease the liability.

Expected Events

- Increases in TOL due to additional benefit accruals as employees continue to earn service each year
- Increases in TOL due to interest as the employees and retirees age
- Decreases in TOL due to benefit payments

Unexpected Events

- Increases in TOL when actual health care costs increase more than expected. A liability decrease occurs when the reverse happens.
- Increases in TOL when more new retirements occur than expected or fewer terminations occur than anticipated. Liability decreases occur when the opposite outcomes happen.
- Increases or decreases in TOL depending on whether benefits are improved or reduced.

Projection of Total OPEB Liability (TOL)	FY 2022/23	FY 2023/24
TOL as of beginning of year	\$ 218,392,030	\$ 132,146,007
Normal cost as of beginning of year	1,347,853	1,050,411
Exp. benefit payments during the year	(7,821,180)	(9,303,336)
Interest adjustment to end of year	15,328,641	9,003,640
Exp. TOL as of end of year	\$ 227,247,344	\$ 132,896,722
Actuarial Loss / (Gain)	(95,101,337)	TBD
Actual TOL as of end of year	\$ 132,146,007	\$ TBD

Discount rate as of beginning of year	7.10%	7.00%
Discount rate as of end of year	7.00%	TBD

Projection of Actuarial Value of Assets (AVA)	FY 2022/23	FY 2023/24
AVA as of beginning of year	\$ 121,774,444	\$ 129,152,658
Exp. employer contributions during the year	4,184,177	1,535,084
Exp. benefit payments during the year	(7,821,180)	(9,303,336)
Expected investment income	8,517,574	8,771,500
Exp. Trust administrative expenses	(43,326)	(55,099)
Exp. AVA as of end of year	\$ 126,611,689	\$ 130,100,807
Differences between expected and actual experience	2,540,969	TBD
AVA as of end of year	\$ 129,152,658	\$ TBD

Expected asset return as of beginning of year	7.10%	7.00%
Expected asset return as of end of year	7.00%	TBD

* Expected employer contributions in the Projection of Actuarial Value of Assets (AVA) table above include \$312,925 in expected active employee contributions.

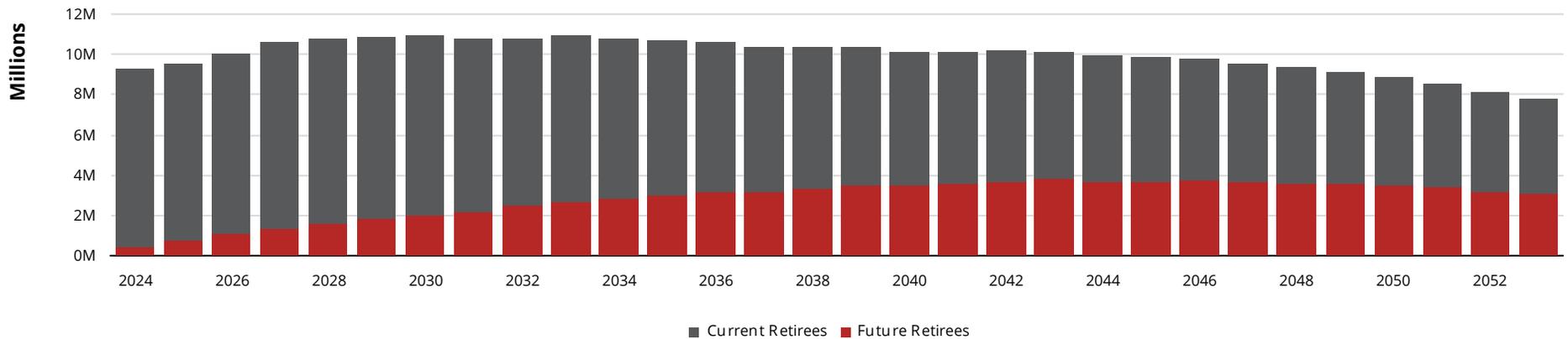
Cash Flow Projections

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

The below projections show the actuarially estimated employer-paid contributions for retiree health benefits for the next thirty years. Results are shown separately for a closed group of current/future retirees. These projections include explicit and implicit subsidies.

FYE	Current Retirees	Future Retirees*	Total	FYE	Current Retirees	Future Retirees*	Total	FYE	Current Retirees	Future Retirees*	Total
2024	\$ 8,866,822	\$ 436,514	\$ 9,303,336	2034	\$ 7,931,329	\$ 2,810,192	\$ 10,741,521	2044	\$ 6,281,381	\$ 3,680,498	\$ 9,961,879
2025	\$ 8,829,140	\$ 723,732	\$ 9,552,872	2035	\$ 7,702,095	\$ 2,968,064	\$ 10,670,159	2045	\$ 6,183,347	\$ 3,635,472	\$ 9,818,819
2026	\$ 9,002,005	\$ 1,039,804	\$ 10,041,809	2036	\$ 7,452,792	\$ 3,124,394	\$ 10,577,186	2046	\$ 5,984,140	\$ 3,759,653	\$ 9,743,793
2027	\$ 9,297,944	\$ 1,333,448	\$ 10,631,392	2037	\$ 7,186,537	\$ 3,124,937	\$ 10,311,474	2047	\$ 5,842,521	\$ 3,645,280	\$ 9,487,801
2028	\$ 9,219,148	\$ 1,542,753	\$ 10,761,901	2038	\$ 7,055,508	\$ 3,322,105	\$ 10,377,613	2048	\$ 5,715,205	\$ 3,598,622	\$ 9,313,827
2029	\$ 9,032,216	\$ 1,781,635	\$ 10,813,851	2039	\$ 6,912,735	\$ 3,472,917	\$ 10,385,652	2049	\$ 5,486,204	\$ 3,594,060	\$ 9,080,264
2030	\$ 8,940,565	\$ 1,966,695	\$ 10,907,260	2040	\$ 6,637,089	\$ 3,476,213	\$ 10,113,302	2050	\$ 5,324,286	\$ 3,492,216	\$ 8,816,502
2031	\$ 8,558,480	\$ 2,160,675	\$ 10,719,155	2041	\$ 6,594,241	\$ 3,538,507	\$ 10,132,748	2051	\$ 5,144,222	\$ 3,393,404	\$ 8,537,626
2032	\$ 8,335,420	\$ 2,463,734	\$ 10,799,154	2042	\$ 6,535,876	\$ 3,651,330	\$ 10,187,206	2052	\$ 4,898,858	\$ 3,182,872	\$ 8,081,730
2033	\$ 8,300,746	\$ 2,649,132	\$ 10,949,878	2043	\$ 6,299,783	\$ 3,802,691	\$ 10,102,474	2053	\$ 4,693,450	\$ 3,091,425	\$ 7,784,875

Projected Employer Pay-go Cost



* Projections for future retirees do not take into account future new hires.

Discussion of Discount Rates

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Under GASB 74, the discount rate used in valuing OPEB liabilities for funded plans as of the Measurement Date must be based on the long-term expected rate of return on OPEB plan investments that are expected to be used to finance future benefit payments to the extent that (a) they are sufficient to pay for the projected benefit payments and (b) the OPEB plan assets are invested using a strategy that will achieve that return. When the OPEB plan investments are insufficient to cover future benefit payments, a yield for 20-year tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale) must be used.

For the current valuation:

The long-term expected rate of return on OPEB Plan investment is assumed to be 7.00%. As of November 30, 2023, the rate of return is consistent with the rate used in the ERS GASB 67 & 68 disclosure report.

2. The historical returns for four municipal bond indexes are shown below for illustration purposes. These bond indexes, if needed, would have been used to define a range of acceptable discount rates OPEB plans whose funding policy is insufficient to cover projected benefit expenses.

Yield as of	November 30, 2022	November 30, 2023
Bond Buyer Go 20-Bond Municipal Bond Index	3.65%	3.49%
S&P Municipal Bond 20-Year High Grade Rate Index	4.19%	4.30%
Fidelity 20-Year Go Municipal Bond Index	3.89%	4.01%
Bond Index Range	3.65% - 4.19%	3.49% - 4.30%

3. The final equivalent single discount rate used for this year's valuation is 7.10% as of November 30, 2022 and 7.00% as of November 30, 2023 as the OPEB Trust is expected to have sufficient funds to pay for all future projected benefit payments based on the City's funding policy of contributing the ADC annually.

Summary of Plan Participants

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Eligible Active Employees

Actives	Defined Contribution Plan		Defined Benefit Plan	Total	Avg. Age	Avg. Svc	Salary
	Non-RHSP	RHSP					
Eligible for Retiree Health Care	116	4	57	177	54.2	22.6	\$ 15,141,645
Eligible for Disability Benefits Only	0	282	0	282	43.0	5.3	\$ 15,689,568
Total	116	286	57	459	47.3	12.0	\$ 30,831,213

*The 282 active employees participating in the Defined Contribution plan who were hired after their applicable cut-off dates are not eligible to receive retiree health benefits from this plan, but are eligible to receive disability benefits, and have been included in the valuation.

Covered payroll shown elsewhere in this report include \$2,929,435 in payroll for employees that terminated during the year are not shown in the counts above.

Active Age-Service Distribution

Age	Years of Service										Total
	< 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	12	8									20
25 to 29	9	13	14								36
30 to 34	6	15	20	7							48
35 to 39	4	10	16	7	7						44
40 to 44	5	8	9	5	14	9					50
45 to 49	3	10	12	4	5	11	2				47
50 to 54	1	8	21	4	6	15	13	1			69
55 to 59	3	8	13	6	6	7	5	4	6		58
60 to 64	2	4	13	3	8	9	4	4	1	1	49
65 to 69		4	6	3	5	5	3	1	3	1	31
70 & up			1	1		2	2			1	7
Total	45	88	125	40	51	58	29	10	10	3	459

Summary of Plan Participants

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Inactive Employees

Inactives with coverage	Defined Contribution Plan	Defined Benefit Plan	Total	Avg. Age
Retirees/Disableds	189	507	696	71.6
Inactive Vested participants	28	4	32	51.0
Total inactives with coverage	217	511	728	70.7

Retiree Age Distribution

Age	Retirees
< 45	10
45 to 49	12
50 to 54	43
55 to 59	72
60 to 64	110
65 to 69	102
70 to 74	99
75 to 79	119
80 to 84	78
85 to 89	48
90 & up	35
Total	728

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Participation

Plan covers all permanent part-time and full-time AFSCME employees hired before 9/8/2011, LPOA employees hired before 11/2/2011, LCOA, Command, LFFU, and District Court employees hired before 12/1/2012. Members hired after these dates participate in a Retiree Health Savings Plan (RHSP) and will not be eligible for retiree health benefits from the VEBA.

Eligibility

Retirement eligibility requirements for **Defined Benefit plan** participants are as shown below:

1. General – earlier of:
 - a. Any age with 30 years of service
 - b. 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
2. Police – earlier of:
 - a. Any age with 25 years of service
 - b. Age 52 with 10 years of service
 - c. Age 50 with 10 years of service but less than 25 years of service (early retirement)
3. Fire – earlier of:
 - a. Any age with 25 years of service
 - b. Age 52 with 10 years of service
 - c. Age 50 with 10 years of service (early retirement)
4. All members: Receipt of disability retirement benefit or death in service survivor benefit

Retirement eligibility requirements for **Defined Contribution plan** participants are as shown below:

1. General: Age 55 with 10 years of service
2. Police – earlier of:
 - a. Any age with 25 years of service
 - b. Age 52 with 10 years of service
3. Fire – earlier of:
 - a. Any age with 27 years of service
 - b. Age 52 with 10 years of service
4. All members: Receipt of disability retirement benefit

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Medical Benefits

Effective August 1, 2023, Medicare health plans are fully-insured. Pre-65 health plans and Rx benefits are self-insured. The monthly combined medical and prescription drug premium rates by plan effective March 1, 2023 are as shown below.

Health Plans	Non-Medicare		Medicare	
	Single	Dual	Single	Dual
31862-017; 007000994-0081	\$813.46	\$1,952.32	\$311.99	\$623.98
63055-933; 007000994-0061	\$981.94	\$2,356.68	\$415.26	\$830.52
69528-932; 007000994-0068	\$957.31	\$2,297.56	\$359.71	\$719.42
63055-937; 007000994-0063	\$969.87	\$2,327.73	\$388.16	\$776.32
63055-918; 007000994-0057	\$918.33	\$2,204.01	\$350.77	\$701.54
63055-932; 007000994-0060	\$953.68	\$2,288.85	\$359.71	\$719.42
31862-957; 007000994-0074	\$942.40	\$2,261.77	\$382.96	\$765.92
31862-942; 007000994-0053	\$946.75	\$2,272.21	\$394.95	\$789.90
63055-991; 007000994-0073	\$904.97	\$2,171.95	\$350.77	\$701.54
31862-939; 007000994-0050	\$961.60	\$2,307.86	\$402.83	\$805.66
69528-934; 007000994-0070	\$953.68	\$2,288.85	\$359.71	\$719.42
63055-938; 007000994-0064	\$968.09	\$2,323.46	\$388.16	\$776.32
63055-672; 007000994-0083	\$905.08	\$2,172.23	\$351.95	\$703.90
31862-940; 007000994-0051	\$959.82	\$2,303.59	\$402.83	\$805.66
31862-961; 007000994-0087	\$975.05	\$2,340.15	\$385.18	\$770.36
69528-935; 007000994-0071	\$997.34	\$2,393.65	\$359.71	\$719.42
63055-671; 007000994-0082	\$989.10	\$2,373.87	\$385.18	\$770.36
31862-930; 007000994-0044	\$989.70	\$2,375.31	\$415.26	\$830.52
31862-960; 007000994-0088	\$891.03	\$2,138.51	\$351.95	\$703.90
31862-934; 007000994-0047	\$968.77	\$2,325.07	\$415.26	\$830.52
63055-930; 007000994-0058	\$997.34	\$1,994.68	\$359.71	\$719.42
31862-954; 007000994-0055	\$950.03	\$2,280.09	\$386.54	\$773.08
31862-944; 007000994-0054	\$958.94	\$2,301.47	\$401.07	\$802.14
31862-962; 007000994-0089	\$801.84	\$1,924.43	\$311.99	\$623.98
63055-966; 007000994-0066	\$956.01	\$2,294.44	\$388.16	\$776.32
69528-936; 007000994-0072	\$983.99	\$2,361.60	\$359.71	\$719.42
31862-933; 007000994-0046	\$979.15	\$2,349.98	\$415.26	\$830.52

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Medical Benefits (Cont)

The Medicare rates on the previous page include Medicare Advantage rates. The Medicare Advantage rates are effective from January 1, 2024 through December 31, 2025, for 24 months. A pre-tax renewal rate cap of 8%, guaranteed for 12 months, will be applied effective January 1, 2026

Disability Benefit

Employees are eligible for retiree health benefits if they become disabled in the line of duty without any age or years of service requirement. Ten years of service is required for non-duty disability.

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 pages):
 - (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.

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Disability Benefit (continued)

(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.

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

(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 October 17, 2016, and LPOA, LLSA and Police Command on or after December 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) \$350 per month for one year period commencing fourteen years after retirement.
- (o) \$375 per month commencing fifteen years after retirement.

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Spouse Benefit

Defined Benefit Plan:

- a. Upon death of a retiree or upon death of an active employee who met retirement eligibility requirements: Coverage continues to the surviving spouse upon retiree's death until age 65 or life if spouse is receiving a joint & survivor pension benefit
- b. Upon death of an active employee who did not meet retirement eligible requirements: COBRA benefits are available to the surviving spouse

Defined Contribution Plan:

- a. Upon death of a retiree or upon death of an active employee who met retirement eligibility requirements: Coverage continues to surviving spouse upon retiree's death until age 65 or life if spouse is receiving a joint & survivor pension benefit
- b. Upon death of an active employee who did not meet retirement eligible requirements: COBRA benefits are available to the surviving spouse

Retiree Cost Sharing

100% City-paid health benefits are provided to grandfathered retirees:

- a. General: retired before 12/1/2006
- b. Police: retired before 3/1/2014
- c. Fire: retired before 12/1/2012

All other retirees and future retirees pay a premium, with a minimum of \$35 and maximum of \$250 per month. Those who elect the higher benefit plan (POS Blue Choice) also pay the difference in cost between the CB3 plan and the Blue Choice plan with no cap. These copays would be in addition to the percentage sharing noted below for retirees with less than 25 years of service.

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Retiree Cost Sharing (continued)

Non-grandfathered and future retirees are expected to pay monthly contribution for health coverage as outlined below.

General - hired after 3/16/1997 and before 9/8/2011

Age service requirement	% of Premium paid by City	% of Premium paid by Retiree
55 & 10	50%	50%
55 & 15	60%	40%
55 & 20	75%	25%
55 & 25	100%	0%

Participant also pays \$35 per month in addition to the amount above based on age and service

Police Officers, Sergeants, and Lieutenants –

PO hired after 11/23/1998 and before 11/2/2011, Command hired after 12/7/1997 and before 12/1/2012

Age service requirement	% of Premium paid by City	% of Premium paid by Retiree
52 & 10	50%	50%
52 & 15	60%	40%
52 & 20	75%	25%
25 years of service	100%	0%

Participant also pays \$35 per month in addition to the amount above based on age and service

Police Chief, Deputy and Captains - hired after 12/7/1997 and before 12/1/2012:

Age service requirement	% of Premium paid by City	% of Premium paid by Retiree
50 & 10	50%	50%
50 & 15	60%	40%
50 & 20	75%	25%
50 & 25 or 27 years of service	100%	0%

Participant also pays \$35 per month in addition to the amount above based on age and service

Substantive Plan Provisions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Retiree Cost Sharing (continued)

Fire-Hired after 6/30/1998 and before 12/1/2012:

Age service requirement	% of Premium paid by City	% of Premium paid by Retiree
52 & 10	50%	50%
52 & 15	60%	40%
52 & 20	75%	25%
50 & 25 or 27 years of service	100%	0%

Participant also pays \$35 per month in addition to the amount above based on age and service

Active Cost Sharing

2% of Pay

Summary of Key Actuarial Assumptions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

The actuarial assumptions used in this report represent a reasonable long-term expectation of future OPEB outcomes. As national economic and City experience change over time, the assumptions will be tested for ongoing reasonableness and, if necessary, updated.

The discount rate, other economic assumptions, and demographic assumptions have been selected by the Plan Sponsor with the concurrence of Nyhart. In our opinion, the actuarial assumptions are individually reasonable and in combination represent our estimate of anticipated experience of the Plan. All calculations have been made in accordance with generally accepted actuarial principles and practice.

There are changes to the actuarial methods and assumptions since the last GASB valuation, which was for the fiscal year ending November 30, 2020. Refer to Actuary's Notes section for complete information on these changes. For the current year GASB valuation, we have also updated the per capita costs. We expect to update mortality table, health care trend rates, and per capita costs again in the next full GASB valuation, which will be for the fiscal year ending November 30, 2022.

Measurement Date	For fiscal year ending November 30, 2023, a November 30, 2023 measurement date was used.
Actuarial Valuation Date	November 30, 2023 with no adjustments to get to the November 30, 2023 measurement date.
Discount Rate	7.10% as of November 30, 2022 and 7.00% as of November 30, 2023 for accounting disclosure purposes. Refer to the Discussion of Discount Rates section for more information on selection of the discount rate.
Cost Method	Allocation of Actuarial Present Value of Future Benefits for services prior and after the Measurement Date was determined using Entry Age Normal Level % of Salary method where: <ul style="list-style-type: none">• Service cost for each individual participant, payable from date of employment to date of retirement, is sufficient to pay for the participant's benefit at retirement; and• Annual Service Cost is a constant percentage of the participant's salary that is assumed to increase according to the Payroll Growth.

Summary of Key Actuarial Assumptions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Payroll Growth

3.00% for general wage inflation (includes 2.50% general price inflation plus 0.50% real wage inflation) plus merit / productivity growth as shown below. The payroll growth assumption is based on the experience study conducted in July, 2021. Sample merit/productivity increases are shown in the table below.

Age	DB	General DC	Police DC	Fire DC
20	4.0%	11.00%	9.00%	11.00%
25	4.0%	9.00%	6.00%	7.00%
30	4.0%	7.00%	4.50%	3.00%
35	4.0%	6.00%	3.50%	2.50%
40	4.0%	5.00%	2.75%	2.00%
45	4.0%	3.00%	2.00%	1.75%
50	4.0%	2.50%	1.50%	1.50%
55	4.0%	2.00%	1.00%	1.25%
60	4.0%	1.50%	1.00%	1.00%
65	4.0%	1.00%	1.00%	1.00%

Employer Funding Policy

The City contributes the Actuarially Determined Contribution annually to an OPEB Trust. A closed amortization period of 27 years was used for FYE 2021, 26 years for FYE 2022, 25 years for FYE 2023 and 24 years for FYE 2024 for the ADC amortization period. A level % of pay amortization method was used as well.

Census Data

Census information was provided by the City and it was provided in January 2023. We have reviewed it for reasonableness and no material modifications were made to the census data. Spouse coverage information was not provided for retirees. A percent married assumption was used to determine the proportion of retirees who elected spouse coverage.

Experience Study

Best actuarial practices call for a periodic assumption review (also referred to as an experience study), and last experience study was conducted in 2021. Nyhart recommends the City to complete an actuarial assumption review every three to five years.

Health Care Coverage Election Rate

70% of general and 100% of Police and Fire active employees are assumed to elect coverage at retirement. 100% of existing retirees are assumed to continue coverage in the future. The election rates assumption was set based on the experience study conducted in July 2021.

Summary of Key Actuarial Assumptions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Spousal Coverage

Spouse coverage information was not provided for retirees. A percent married assumption was used to determine the proportion of retirees who elected spouse coverage.

85% of pre-65 active employees and retirees, and 70% of post-65 active employees and retirees are assumed to be married and elect coverage for their spouse at retirement.

The assumption is consistent with the spousal coverage assumption used in the valuation for fiscal year ending on November 30, 2020 and November 30, 2021, and it will be evaluated for reasonableness as new census is collected for each full valuation.

Mortality

General Employees and Healthy retirees: SOA Pub-2010 General Headcount Weighted Mortality Table fully generational using Scale MP-2021

Police and Fire Employees and Healthy retirees: SOA Pub-2010 Public Safety Headcount Weighted Mortality Table fully generational using Scale MP-2021

Disabled Retirees: 80% of SOA Pub-2010 General Headcount Weighted Mortality Table fully generational using Scale MP-2021

Turnover Rate

Assumption used to project terminations (voluntary and involuntary) prior to meeting minimum retirement eligibility for retiree health coverage. The rates represent the probability of termination in the next 12 months. The turnover rates were set based on the experience study conducted in July, 2021.

Sample annual turnover rates for Defined Benefit participants are shown below:

Sample Ages	YOS	DB General	DB Police	DB 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%

Summary of Key Actuarial Assumptions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Sample annual turnover rates for DC participants are shown below:

Sample Ages	YOS	DC General	DC Police	DC Fire
All ages	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%
25	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%
55		2.00%	2.00%	0.20%
60		2.00%	2.00%	0.20%

Summary of Key Actuarial Assumptions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Retirement Rate

The rates represent the probability of retirement within the next 12 months following the attainment of indicated retirement age or service. The retirement rates were set based on the experience study conducted in July, 2021.

Annual rates of retirement by employee group for DB plan participants are as shown below:

Age	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%			

Summary of Key Actuarial Assumptions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Retirement Rate (continued)

Annual rates of retirement by employee group for DC plan participants are as shown below:

Age	General	Police and Fire
52	0%	15%
53	0%	5%
54	0%	5%
55	15%	15%
56-61	5%	5%
62	15%	15%
63	5%	5%
64-67	30%	30%
68-69	30%	100%
70+	100%	100%

Disability

Sample annual disability rates are as shown below:

Sample Ages	General	Police and 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%

The disability rates were set based on the experience study conducted in July, 2021.

Summary of Key Actuarial Assumption

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Health Care Trend Rates	FYE	Medical/Rx	Medical/Rx
		Pre-65	Pst-65
	2024	8.00%	0.00% ¹
	2025	7.50%	8.00%
	2026	7.00%	6.25%
	2027	6.50%	6.00%
	2028	6.00%	5.75%
	2029	5.50%	5.50%
	2030	5.00%	5.25%
	2031	4.50%	5.00%
	2032	4.50%	4.75%
	2033+	4.50%	4.50%

The initial trend rate was based on a combination of employer history, national trend surveys, and professional judgment.

The ultimate trend rate was selected based on historical medical CPI information.

¹ The City's post-65 Medicare Advantage premiums are fixed for 2024 and 2025, and guaranteed in increase no more than 8% for 2026. As a result, we have not included the impact of the inflation reduction act and Medicare Payment Reform on Medicare Advantage trends since there is a minimal impact due to rate guarantees.

Summary of Key Actuarial Assumption

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Per Capita Costs

Annual per capita costs were calculated based on the City's monthly premium rates effective on March 1, 2023 actuarially increased using health index factors and current enrollment. The costs are assumed to increase with health care trend rates.

Annual per capita costs are as shown below:

Age	Per Capita Costs
<55	\$ 10,600
55 - 59	\$ 13,200
60 - 64	\$ 16,700
65 - 69	\$ 3,300
70 - 74	\$ 4,100
75 +	\$ 4,700

The per capita costs represent the cost of coverage for a retiree-only population.

Actuarial standards require the recognition of higher inherent costs for a retired population versus an active population.

Models

ProVal

Valuation software developed by Winklevoss Technologies, LLC. This software is widely used for the purpose of performing postretirement medical valuations. We coded the plan provisions, assumptions, methods, and participant data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any weakness or limitations in the software and have determined it is appropriate for performing this valuation.

HealthMAPS Manual

Rating manual developed by WTW. Aging factors are used to develop per capita costs by age for plans with limited credible exposure to develop plan-specific factors. We are not aware of any weakness or limitations in the factors and have determined they are appropriate for performing this valuation.

APPENDIX

The background features a complex geometric design. It consists of several overlapping, semi-transparent shapes. A large, solid red shape is prominent in the lower right corner. To its left, there are various shades of gray and white shapes, some of which are semi-transparent, creating a layered effect. The overall composition is modern and minimalist.

Appendix

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Comparison of Participant Demographic Information

The active participants' number below may include active employees who currently have no health care coverage.

	As of November 30, 2022	As of November 30, 2023
Active Participants	478	459
Retired Participants	716	728
Averages for Active		
Age	47.9	47.3
Service	12.1	12.0
Averages for Inactive		
Age	69.9	70.7

Appendix

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Detailed Actuary's Notes

There have been no substantive plan provision changes since the last valuation, which was for the fiscal year ending November 30, 2022.

The following assumptions have been updated since the prior valuation:

1. Health care trend rates for pre-65 ages have been reset to an initial rate of 8.0% decreasing by 0.5% annually down to an ultimate rate of 4.5%. Health care trend rates for post-65 ages have been reset to an initial rate of 6.5% decreasing by 0.25% annually down to an ultimate rate of 4.5% after a fixed 0% trend rate in the first year due to the City's premium guarantee. The net impact of these changes was a slight increase in liabilities.
2. Discount rate as of the Measurement Date was selected by the plan sponsor. The prior valuation used a discount rate of 7.10% as of November 30, 2022. The current valuation uses a discount rate of 7.00% as of November 30, 2023. This change caused an increase in liabilities. Please see the discussion of discount rates on page 17 for more details.

Additionally, premiums and per capita costs for 2023 were reflected, resulting in a significant decrease in liabilities due to lower post-65 plan costs due to the move to Medicare Advantage. The updated census data resulted in an increase in liabilities.

Actuarially Determined Contribution

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

The Actuarially Determined Contributions calculated below are recommended target contributions and assume that the Plan Sponsor has the ability to contribute these amounts on an annual basis. The Plan Sponsor has the responsibility to decide how much it should contribute after considering its other needs and the OPEB participants' needs.

	FY 2023/24			
	General	Police	Fire	Total
Discount rate		7.00%		
Payroll growth factor used for amortization		3.00%		
Actuarial cost method	Entry Age Normal Level % of Pay			
Amortization type	Level Dollar			
Amortization period	24 years			
Actuarial accrued liability (AAL) – beginning of year	\$ 52,683,578	\$ 51,283,164	\$ 28,179,265	\$ 132,146,007
Actuarial value of assets – beginning of year	(65,363,453)	(41,564,016)	(28,256,044)	(135,183,513)
Unfunded AAL – beginning of year	\$ (12,679,875)	9,719,148	(76,779)	(3,037,506)
Normal Cost ²	\$ 380,990	\$ 100,365	\$ 256,131	\$ 737,486
Amortization of UAAL	(1,033,220)	791,965	(6,256)	(247,511)
Total normal cost plus amortization	\$ (652,230)	\$ 892,330	\$ 249,875	\$ 489,975
Interest to the end of year	(45,656)	62,463	17,491	34,298
Actuarially Determined Contribution³	\$ 0	\$ 954,793	\$ 267,366	\$ 1,222,159
Covered Employee Payroll	\$ 23,561,014	\$ 5,469,731	\$ 4,729,903	\$ 33,760,648
ADC as % of Covered Payroll	0.0%	17.5%	5.7%	3.6%
Eligible for Retiree Health Employee Payroll	\$ 8,157,509	\$ 3,418,095	\$ 4,477,032	\$ 16,052,636
ADC as % of Eligible for Retiree Health Payroll	0.0%	27.9%	6.0%	7.6%

Actuarially Determined Contribution (ADC) is the target or recommended contribution to a defined benefit OPEB plan, which if paid on an ongoing basis, will provide sufficient resources to fund future costs for services to be earned and liabilities attributed to past services. This is typically higher than the pay-as-you-go cost because it includes recognition of employer costs expected to be paid in future accounting periods.

² Reduced for employee contributions during the year.

³ Limited to be no less than \$0

Comparative Schedules

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Unfunded Actuarial Accrued Liability (in \$000s)

Valuation Date November 30	Actuarial 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%
2021	129,933	204,404	63.6%	74,471	38,632	192.8%
2022	131,191	218,392	60.1%	87,201	34,261	254.5%
2023	129,153	132,146	97.7%	2,993	33,761	8.9%

Comparative Schedules

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

City Contributions Expressed as a Percentage 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%
2021	10.26%	24.59%	18.31%
2022	13.55%	40.70%	23.60%
2023	0.00%	17.46%	5.65%

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Actuarial Asset Valuation

Actuarial Value of Assets	FY 2022/23
Market value of assets as of end of year	\$ 129,152,659
(Gains)/Losses not yet recognized	\$ 6,030,855
Actuarial Value of Assets as of end of year	\$ 135,183,513

Investment Gain/Loss	FY 2022/23
Market value of assets as of beginning of year	\$ 121,774,444
Contributions Less Benefit Payments and Administrative expenses	\$ (4,038,653)
Expected Investment Earnings	\$ 8,502,613
Actual Net Investment Earnings	\$ 11,416,867
2023 Actuarial Investment Gain/Loss	\$ 2,914,254

Expected Investment Earnings = 7.10% x (121,774,444 + 0.5 x -4,038,653)

Plan Year Ending	Gain/(Loss)	Gain/(Losses) Not Yet Recognized			
		Amounts Not Yet Recognized by Valuation Year			
		2023	2024	2025	2026
November 30, 2020	\$ 2,213,684	\$ 442,737			
November 30, 2021	\$ 9,132,065	\$ 3,652,826	\$ 1,826,413		
November 30, 2022	\$(20,763,035)	\$ (12,457,821)	\$ (8,305,214)	(4,152,607)	
November 30, 2023	\$ 2,914,254	\$ 2,331,403	\$ 1,748,552	\$ 1,165,702	\$ 582,851

GASB Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

Development of Asset Returns		FY 2022/23
(A)	Actuarial Assets as of beginning of year	\$ 131,191,254
(I)	Net Investment Income ⁴	\$ 8,030,912
1.	Actuarial Assets as of end of year	\$ 135,183,513
2.	Actuarial Asset Rate of Return ⁵	6.22%
3.	Market Value of Assets Rate of Return	9.53%

⁴ Net Investment Income = Interest and Dividends + Realized Gains/Losses + Change in Actuarial Value + Investment Expenses

⁵ Actuarial Asset Rate of Return = $(2 * I) / (A + B - 1)$

PA 202 Uniform Assumption Disclosures

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

The information presented below is for the purposes of filing Form No. 5572 under PA 202 uniform assumption requirements. Per regulation, Form No. 5572 must be filed no later than six months after the end of the fiscal year. Governmental fund revenues are not shown below and should be determined by the City. Refer to the Michigan Department of Treasury website for additional information.

Form 5572 Line	Description	City of Livonia
Line 28	Actuarial Value of Assets as of November 30, 2023	\$ 129,152,658
Line 29	Actuarial Accrued Liability as of November 30, 2023	\$ 132,716,464
Line 31	Actuarially Determined Contribution (ADC) for fiscal year ending November 30, 2023	\$ 7,407,565

Line 31 (Actuarially Determined Contribution) was calculated using level dollar amortization with a 6.50% discount rate. The amortization period is a closed, 24-year period.

Under PA 202 requirements, uniform assumption setting is mandated in reporting of liabilities, assets, and ADC. The following is a description of the PA 202 uniform assumption guidance and final assumption used for the City for purposes of calculating the figures above.

Assumption	Uniform Assumption Guidance	City Assumption
Investment Rate of Return	Maximum of 6.85%	6.85% (for funding/ADC purposes)
Discount Rate	Blended discount rate calculated per GASB 74/75: <ul style="list-style-type: none"> Maximum of 6.85% where plan assets are sufficient to make projected benefit payments 3.54% for periods where assets are insufficient to make projected benefit payments 	6.85% (for calculation of the OPEB liability)
Salary Increase	Minimum of 3.25% or based on actuarial experience study within the past 5 years	Same as GASB 75 valuation
Mortality Table	A version of PUB-2010 with Scale MP-2021 generational mortality improvement or based on actuarial experience study within the past 5 years	Same as GASB 75 valuation
Amortization Period	Maximum closed period of 26 years for Retiree Health Systems	24 years, closed
Asset Valuation	Market Value as reported on Financial Statements	Market value for PA 202 instead of smoothed value for funding recommendation
Healthcare Inflation	Non-Medicare: 7.25% decreasing 0.25% per year to a 4.50% long-term rate Medicare: 5.50% decreasing 0.25% per year to 4.50% long-term rate	Same as PA 202 uniform assumption

GLOSSARY

The background features a dark gray upper section. Below it, there are several overlapping geometric shapes in shades of light gray and white, creating a layered effect. A large, vibrant red shape is positioned in the bottom right corner, overlapping the other elements.

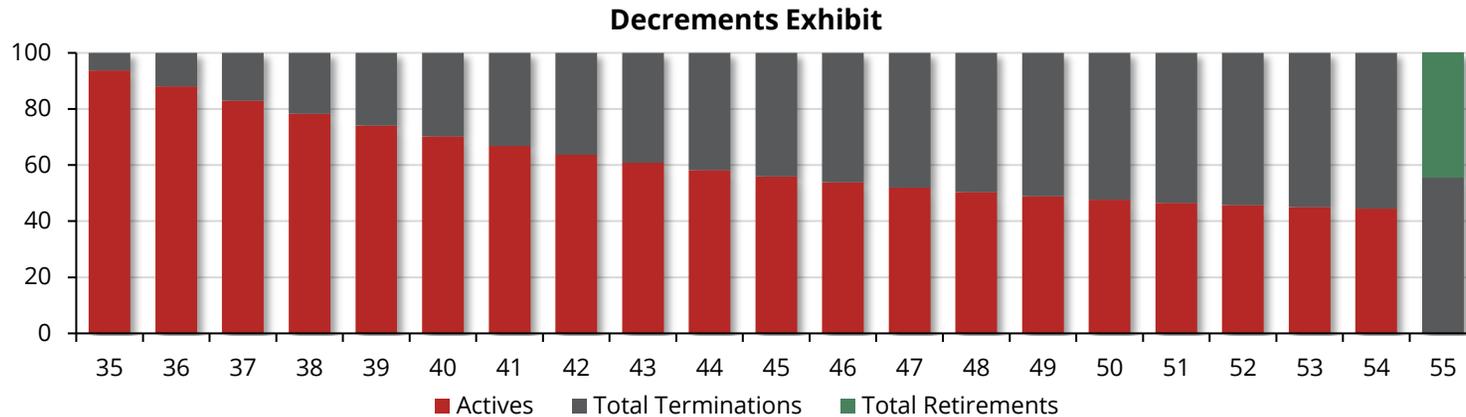
Glossary – Decrements Exhibit

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. Starting with 100 employees at age 35, the illustrated actuarial assumptions show that 44.43 employees out of the original 100 are expected to retire and could elect retiree health benefits at age 55.

Age	# Remaining Employees	# of Terminations per Year ⁶	# of Retirements per Year	Total Decrements
35	100.000	6.276	0.000	6.276
36	93.724	5.677	0.000	5.677
37	88.047	5.136	0.000	5.136
38	82.911	4.648	0.000	4.648
39	78.262	4.209	0.000	4.209
40	74.053	3.814	0.000	3.814
41	70.239	3.456	0.000	3.456
42	66.783	3.131	0.000	3.131
43	63.652	2.835	0.000	2.835
44	60.817	2.564	0.000	2.564
45	58.253	2.316	0.000	2.316

Age	# Remaining Employees	# of Terminations per Year	# of Retirements per Year	Total Decrements
46	55.938	2.085	0.000	2.085
47	53.853	1.866	0.000	1.866
48	51.987	1.656	0.000	1.656
49	50.331	1.452	0.000	1.452
50	48.880	1.253	0.000	1.253
51	47.627	1.060	0.000	1.060
52	46.567	0.877	0.000	0.877
53	45.690	0.707	0.000	0.707
54	44.983	0.553	0.000	0.553
55	44.430	0.000	44.430	44.430



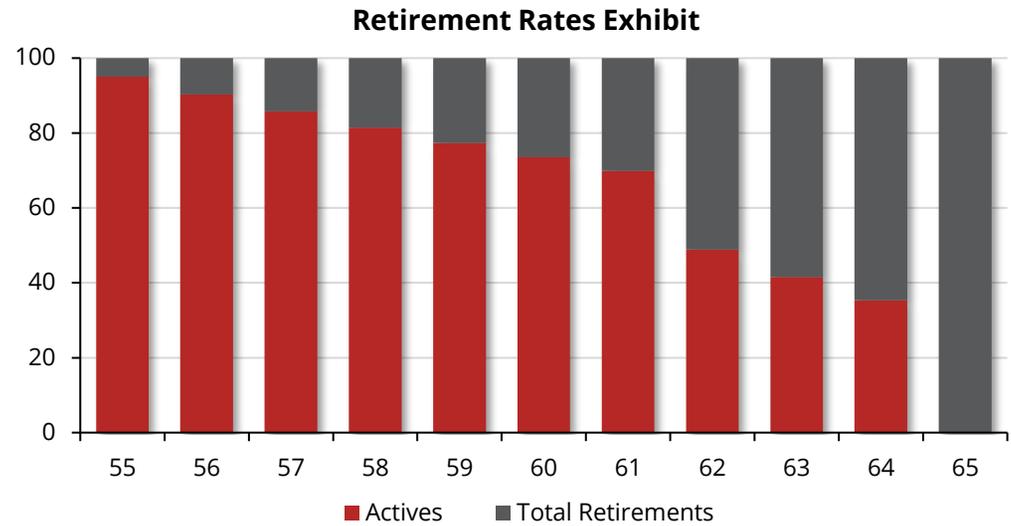
⁶ The above rates are illustrative rates and are not used in our GASB calculations.

Glossary – Retirement Rates Exhibit

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. The illustrated retirement rates show the number of employees who are assumed to retire annually based on 100 employees age 55 who are eligible for retiree health care coverage. The average age at retirement is 62.0.

Age	Active Employees BOY	Annual Retirement Rates*	# Retirements per Year	Active Employees EOY
55	100.000	5.0%	5.000	95.000
56	95.000	5.0%	4.750	90.250
57	90.250	5.0%	4.513	85.738
58	85.738	5.0%	4.287	81.451
59	81.451	5.0%	4.073	77.378
60	77.378	5.0%	3.869	73.509
61	73.509	5.0%	3.675	69.834
62	69.834	30.0%	20.950	48.884
63	48.884	15.0%	7.333	41.551
64	41.551	15.0%	6.233	35.318
65	35.318	100.0%	35.318	0.000



* The above rates are illustrative rates and are not used in our GASB calculations.

Glossary – Definitions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

GASB 75 defines several unique terms not commonly employed in the funding of pension and retiree health plans. The definitions of the terms used in the GASB actuarial valuations are noted below.

1. **Actuarial Assumptions** – Assumptions as to the occurrence of future events affecting health care costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided health care benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.
2. **Actuarial Cost Method** – A procedure for determining the Actuarial Present Value of Future Benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Service Cost and a Total OPEB Liability.
3. **Actuarially Determined Contribution** - A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in accordance with the parameters and in conformity with Actuarial Standards of Practice.
4. **Actuarial Present Value** – The value of an 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:
 - a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, Social Security, marital status, etc.);
 - b. 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
 - c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.
5. **Deferred Outflow / (Inflow) of Resources** – represents the following items that have not been recognized in the OPEB Expense:
 - a. Differences between expected and actual experience of the OPEB plan
 - b. Changes in assumptions
 - c. Differences between projected and actual earnings in OPEB plan investments (for funded plans only)
6. **Explicit Subsidy** – The difference between (a) the amounts required to be contributed by the retirees based on the premium rates and (b) actual cash contribution made by the employer.
7. **Funded Ratio** – The actuarial value of assets expressed as a percentage of the Total OPEB Liability.

Glossary – Definitions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

8. **Healthcare Cost Trend Rate** – The rate of change in the per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
9. **Implicit Subsidy** – In an experience-rated healthcare plan that includes both active employees and retirees with blended premium rates for all plan members, the difference between (a) the age-adjusted premiums approximating claim costs for retirees in the group (which, because of the effect of age on claim costs, generally will be higher than the blended premium rates for all group members) and (b) the amounts required to be contributed by the retirees.
10. **OPEB** – Benefits (such as death benefits, life insurance, disability, and long-term care) that are paid in the period after employment and that are provided separately from a pension plan, as well as healthcare benefits paid in the period after employment, regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.
11. **OPEB Expense** – Changes in the Net OPEB Liability in the current reporting period, which includes Service Cost, interest cost, changes of benefit terms, expected earnings on OPEB Plan investments, reduction of active employees' contributions, OPEB plan administrative expenses, and current period recognition of Deferred Outflows / (Inflows) of Resources.
12. **Pay-as-you-go** – A method of financing a benefit plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.
13. **Per Capita Costs** – The current cost of providing postretirement health care benefits for one year at each age from the youngest age to the oldest age at which plan participants are expected to receive benefits under the plan.
14. **Present Value of Future Benefits** – Total projected benefits include all benefits estimated to be payable to plan members (retirees and beneficiaries, terminated employees entitled to benefits but not yet receiving them, and current active members) as a result of their service through the valuation date and their expected future service. The actuarial present value of total projected benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment. Expressed another way, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient assets to pay total projected benefits when due.
15. **Real Rate of Return** – the rate of return on an investment after adjustment to eliminate inflation.

Glossary – Definitions

City of Livonia GASB 74/75 Valuation for Fiscal Year Ending November 30, 2023

16. **Select and Ultimate Rates** – Actuarial assumptions that contemplate different rates for successive years. Instead of a single assumed rate with respect to, for example, the investment return assumption, the actuary may apply different rates for the early years of a projection and a single rate for all subsequent years. For example, if an actuary applies an assumed investment return of 8% for year 20W0, then 7.5% for 20W1, and 7% for 20W2 and thereafter, then 8% and 7.5% select rates, and 7% is the ultimate rate.
17. **Service Cost** – The portion of the Actuarial Present Value of projected benefit payments that are attributed to a valuation year by the Actuarial Cost Method.
18. **Substantive Plan** – The terms of an OPEB plan as understood by the employer(s) and plan members.
19. **Total OPEB Liability** – That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Benefits which is attributed to past periods of employee service (or not provided for by the future Service Costs).