City of Ann Arbor
Retiree Health Benefits Plan & Trust
Annual Actuarial Valuation
as of June 30, 2022

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800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

November 10, 2022

Board of Trustees
City of Ann Arbor Retiree Health Benefits Plan & Trust
Ann Arbor, Michigan

Re: City of Ann Arbor Retiree Health Benefits Plan & Trust as of June 30, 2022
Actuarial Disclosures

Dear Board Members:

The results of the June 30, 2022 Annual Actuarial Valuation of the City of Ann Arbor Retiree Health Benefits Plan & Trust are presented in this report. This valuation updates the report originally delivered October 11, 2022 to incorporate information provided by the City in accordance with its Funding Policy.

This report was prepared at the request of the Board and is intended for use by the City of Ann Arbor and those designated or approved by the Board or the City. This report may be provided to parties other than the City only in its entirety and only with the permission of the Board or the City. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the Plan's funding progress and to determine the Actuarially Determined Contribution for the fiscal year ending June 30, 2024. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different. This report does not include actuarial information needed to satisfy reporting requirements under Governmental Accounting Standards Board Statements No. 74 or No. 75.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

Results presented in this report are developed using the actuarial assumptions and methods disclosed in this report. 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 or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report does not include a robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of the investment and other significant risks that may have a material effect on the plan's financial condition.

The findings in this report are based on information furnished by the City concerning retiree health care benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City.

This report was prepared using assumptions adopted by the Board. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice. Additional information about the actuarial assumptions is included in the section of this report entitled Actuarial Cost Methods and Assumptions.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report has been prepared by actuaries who have substantial experience valuing public retiree health programs. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the City of Ann Arbor Retiree Health Benefits Plan & Trust as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

James D. Anderson, Richard C. Koch Jr. and Francois Pieterse are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Gabriel, Roeder, Smith & Company will be pleased to answer any questions pertaining to the valuation.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

James D. Anderson, FSA, EA, FCA, MAAA

Richard C. Koch Jr., ASA, EA, MAAA

Francois Pieterse, ASA, FCA, MAAA

JDA/RCK/FP:rmn

EXECUTIVE SUMMARY

Executive Summary

Actuarially Determined Contribution and OPEB Cost

We have calculated the Actuarially Determined Contribution for the fiscal year ending June 30, 2024, using an interest rate assumption of 6.70%. Below is a summary of the results.

Fiscal Year Ending	Actuarially Determined Contribution	Estimated Claims Paid for Retirees
June 30, 2024	$7,085,771	$15,537,707

Liabilities and Assets – As of June 30, 2022

1. Present Value of Future Benefit Payments	$295,306,380
2. Actuarial Accrued Liability	282,282,173
3. Plan Assets	234,208,254
4. Unfunded Actuarial Accrued Liability (2) – (3)	48,073,919
5. Funded Ratio (3)/(2)	83.0%

The Present Value of Future Benefit Payments (PVFB) is the present value of all benefits projected to be paid from the plan for past and future service to current members. The Actuarial Accrued Liability is the portion of the PVFB allocated to past service by the Plan's funding method (see the section titled "Actuarial Cost Method and Actuarial Assumptions").

SECTION A

VALUATION RESULTS

Summary of Key Actuarial Valuation Results

Valuation Date	June 30, 2022	June 30, 2021
Summary of Member Data		
Number of Members Included in Valuation		
Active Traditional Plan Members	237	284
Active RHRA Plan Members	474	423
Inactive Plan Members and Beneficiaries Receiving Benefits	1,084	1,048
Total	1,795	1,755
Summary of Assets		
Market Value	$226,358,005	$244,344,934
Market Value Rate of Return	-7.60%	25.62%
Funding Value	$234,208,254	$219,502,064
Funding Value Rate of Return	6.42%	9.84%
Summary of Liabilities		
Total Actuarial Accrued Liability	$282,282,173	$290,085,703
Unfunded Actuarial Liability (UAL)	$48,073,919	$ 70,583,639
Funded Ratio	82.97%	75.67%
Employer Actuarially Determined Contribution (ADC)		
Employer Normal Cost Amount	$ 2,181,959	$ 2,538,335
Amortization of Unfunded Accrued Liability (Active)	832,045	1,404,579
Amortization of Unfunded Accrued Liability (Inactive)	3,838,242	5,146,288
Interest	233,525	314,467
Total Preliminary ADC	$ 7,085,771	$ 9,403,669
Prior Fiscal Year Budgeted Contribution[(1)]	$ 14,457,246	$ 13,001,479
Prior Fiscal Year Budgeted Contribution Increased by 2%	$ 14,746,391	$ 13,261,509
Final Estimated Employer Contribution	$ 14,746,391	$ 13,261,509
Actual Versus Calculated Employer Contribution		
Calculated Employer Contribution[(2)] for Fiscal Year Ending	$ 13,001,479	$ 11,663,630
Actual Employer Contribution for Fiscal Year Ending	13,797,260	15,625,495
Amortization Period (years)	18	20

(1) *Provided by the City.*
(2) *Contribution calculated in the valuation two years prior to the fiscal year.*

Development of the Actuarially Determined Contributions for the Other Postemployment Benefits Fiscal Year Ending June 30, 2024

Contributions for	General	General RHRA	Police	Police RHRA	Fire	Fire RHRA	Total
1. Total Normal Cost of Benefits:	$ 1,027,216	$ 413,964	$ 252,935	$ 104,681	$ 314,369	$ 68,794	$ 2,181,959
2. Member Contributions	0	0	0	0	0	0	0
3. Employer Normal Cost (1. - 2.)	1,027,216	413,964	252,935	104,681	314,369	68,794	2,181,959
4. Payment for Active Unfunded Actuarial Liabilities (UAL)	535,398	0	156,160	0	140,487	0	832,045
5. Payment for Inactive UAL	2,192,354	0	1,022,575	0	623,313	0	3,838,242
6. Interest	127,970	14,108	48,791	3,568	36,744	2,344	233,525
7. Preliminary Actuarially Determined Contribution (ADC) (3. + 4. + 5. + 6.)	**$ 3,882,938**	**$ 428,072**	**$ 1,480,461**	**$ 108,249**	**$ 1,114,913**	**$ 71,138**	**$ 7,085,771**
8. Projected Fiscal Year Payroll	$ 12,685,852	$ 29,522,185	$ 2,829,836	$ 8,456,983	$ 3,525,849	$ 4,337,653	$ 61,358,358
9. Preliminary ADC as a Percent of Projected Payroll	**30.61 %**	**1.45 %**	**52.32 %**	**1.28 %**	**31.62 %**	**1.64 %**	**11.55 %**
10. Prior Fiscal Year Budgeted Contribution[(1)]							**$ 14,457,246**
11. Prior Fiscal Year Budgeted Contribution with 2% Increase							**$ 14,746,391**
12. Estimated City Contribution (Greater of 7. & 11.)							**$ 14,746,391**

(1) *Provided by the City.*

Unfunded actuarial accrued liabilities were amortized as a level dollar amount over a period of 18 years for fiscal year ending June 30, 2024. The amortization period decreases by two each year thereafter until a 15-year rolling amortization is reached. Once the Plan reaches 100% funded status, the amortization period will be set at 1 year.

Determination of Unfunded Actuarial Accrued Liability as of June 30, 2022

	June 30, 2022			
	General	Police	Fire	Total
A. Accrued Liability				
1. For retirees and beneficiaries	$ 130,956,455	$ 61,081,720	$ 37,232,524	$ 229,270,699
2. For vested terminated members	0	0	0	0
3. For present active members				
a. Value of expected future benefit payments	43,207,756	11,796,820	11,031,105	66,035,681
b. Value of future normal costs	8,899,795	1,825,571	2,298,841	13,024,207
c. Active member accrued liability: (a) - (b)	34,307,961	9,971,249	8,732,264	53,011,474
4. Total accrued liability	165,264,416	71,052,969	45,964,788	282,282,173
B. Present Assets (Funding Value)[(1)]	137,186,110	58,919,585	38,102,559	234,208,254
C. Unfunded Accrued Liability: (A.4) - (B)	28,078,306	12,133,384	7,862,229	48,073,919
D. Funding Ratio: (B) / (A.4)	83.0%	82.9%	82.9%	83.0%

(1) *It was assumed that RHRA plans were fully funded. Remaining assets were allocated to each group based on non-RHRA total accrued liability.*

Development of Funding Value of Retiree Health Benefits Plan Assets
June 30, 2022

Valuation Date June 30:	2021	2022	2023	2024	2025	2026
A. Funding Value Beginning of Year (BOY)	$198,913,673	$219,502,064				
B. Market Value End of Year (EOY)	244,344,934	226,358,005				
C. Market Value BOY	193,649,479	244,344,934				
D. Non-Investment Net Cash Flow	966,814	603,827				
E. Investment Income						
1) Market Total: B-C-D	49,728,641	(18,590,756)				
2) Interest Rate	6.9%	6.8%	6.7%			
3) Amount for Immediate Recognition (E2 x (A + 0.5 x D))	13,758,399	14,946,670				
4) Amount for Phased-In Recognition E1 - E3	35,970,242	(33,537,426)				
F. Phased-In Recognition of Investment Income						
1) Current Year: 0.20 x E4	7,194,048	(6,707,485)				
2) First Prior Year	(1,271,583)	7,194,048	$ (6,707,485)			
3) Second Prior Year	(59,287)	(1,271,583)	7,194,048	$ (6,707,485)		
4) Third Prior Year	0	(59,287)	(1,271,583)	7,194,048	$ (6,707,485)	
5) Fourth Prior Year	0	0	(59,288)	(1,271,583)	7,194,050	$ (6,707,486)
6) Total Recognized Investment Gain	5,863,178	(844,307)	(844,308)	(785,020)	486,565	(6,707,486)
G. Funding Value EOY: A + D + E3 + F6	219,502,064	234,208,254				
H. Difference Between Market Value and Funding Value	$24,842,870	(7,850,249)				
I. Net Funding Value Rate of Return	9.84%	6.42%				
J. Net Market Value Rate of Return	25.62%	-7.60%				
K. Funding Value / Market Value	89.8%	103.5%				

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased-in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is ***unbiased*** with respect to Market Value. At any time, it may be either greater or less than Market Value.

Comments

Comment A: The computed contribution decreased from $9.4 million in the June 30, 2021 valuation to $7.1 million in the June 30, 2022 valuation. The primary reason for the decrease was favorable premium experience relative to expectations, which more than made up for a small asset loss on an actuarial value asset basis.

Comment B: One of the key assumptions used in any valuation of the cost of postemployment benefits is the rate of return on Plan assets. Higher assumed investment returns will result in a lower Actuarially Determined Contribution. Lower returns will tend to increase the computed Actuarially Determined Contribution. Based on information from the plan sponsor, we have calculated the liability and the resulting Actuarially Determined Contribution using an assumed long-term rate of investment return of 6.70%.

Comment C: This valuation reflects a change in the investment return assumption from 6.80% to 6.70% as adopted by the Retirement Board. Therefore, all calculated liabilities in the June 30, 2022 valuation were based on the new 6.70% interest rate. This resulted in a $3.1 million increase in the actuarial accrued liability and a $0.3 million increase in the Actuarially Determined Contribution. Note that development of the smoothed actuarial value of assets on page A-4 of this report employs a rate of 6.80%, since the new 6.70% rate is not effective until the end of the period. Said another way, the fund expected 6.80% investment return during the period July 1, 2021 through June 30, 2022 and 6.70% thereafter. This is the prevalent approach used in public sector pension and VEBA asset smoothing.

Comment D: Amortization Method is the policy used to fund the Unfunded Actuarially Accrued Liability (UAAL). The current policy computes contribution amounts using a closed 18-year period beginning with the fiscal year ending June 30, 2024 decreasing by 2 each year until a 15-year rolling amortization period is reached. Per the City of Ann Arbor's Other Postemployment Benefits (OPEB) Funding Policy, payments of the UAAL have been calculated as level dollar amounts.

Comment E: This report was prepared during the recent and still-developing COVID-19 pandemic, which is likely to influence demographic, health care and economic experience, at least in the short term. Results in this report are developed based on available data without adjustment. We will continue to monitor these developments and their impact on the Retiree Health Benefits Plan. Actual experience will be reflected in each subsequent report, as experience emerges.

Comments

Comment F: Under Public Act 202 of the State of Michigan, Michigan municipalities are required to report liabilities under uniform assumption guidelines. While the current guidelines are only for reporting purposes (and not funding), governments may be encouraged to use the uniform assumptions for funding. The uniform assumptions include the following:

- Investment return no higher than 6.85%;
- Assumed wage inflation no lower than 3.0%[(1)];
- Mortality assumption that uses a version of the PUB-2010 table with generational mortality improvements using scale MP-2020[(1)];
- Amortization period no longer than 17 years for Pension Plans and 27 years for Retiree Health Plans; and
- Non-Medicare inflation: Initial rate of 7.25% decreasing 0.25% per year to a 4.50% long-term rate. Medicare: Initial rate of 5.50% decreasing 0.25% per year to a 4.50% long-term rate.

(1) *Or based on an actuarial experience study performed in the last 5 years.*

The information needed to satisfy PA 202 reporting requirements are provided in the appendix of this report.

PA 202 also requires an actuarial audit be performed every 8 years. GRS will work with the Board and Staff to ensure compliance.

Comment G: Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regards to any funded status measurements presented in this report:

- The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations; and
- The measurement is inappropriate for assessing the need for or the amount of future employer contributions.

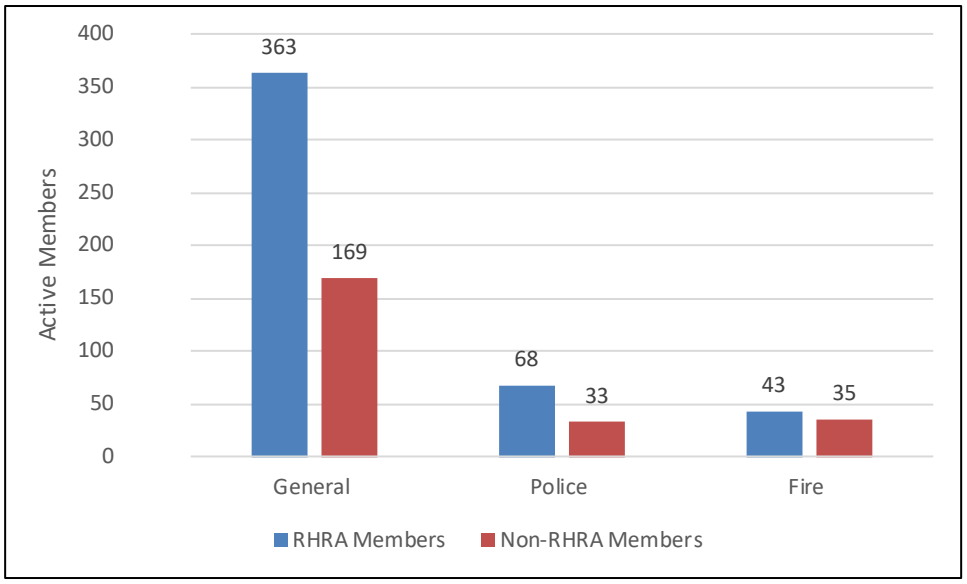
SECTION B

SUMMARY OF VALUATION DATA

Members Included in June 30, 2022 Valuation

Active Members

Valuation Divisions	No.	Group Totals		
		Annual Payroll	Average Age (Years)	Average Service (Years)
General Members	169	$14,536,234	52.1	18.8
General RHRA Members	363	24,865,421	42.5	4.4
Police Members	33	4,156,343	49.6	23.4
Police RHRA Members	68	6,380,023	35.5	5.6
Fire Members	35	4,058,722	49.6	21.5
Fire RHRA Members	43	3,281,941	33.5	4.4
Total Active Members	711	$57,278,684		



Retired Members with Coverage[(1)]

Valuation Divisions	No.	Average Age (Years)	Number of Spouses Covered
General Members	693	70.5	322
Police Members	226	66.5	146
Fire Members	165	70.9	99
Total Retired Members	1,084		567

(1) *Includes 130 retirees with life insurance coverage only.*

There are no inactive vested members eligible for retiree health care.

Summary of Current Asset Information (Market Value)

Balance Sheet

Valuation Assets	
Cash, receivables, accruals and other short-term	$ 671,071
Equity securities	130,739,154
Debt securities	57,700,518
Infrastructure	3,658,088
Real Estate	29,575,565
Other - Cash and Cash Equivalents	4,261,468
Accounts payable	(247,859)
Funding value adjustment	7,850,249
Total Current Assets	$234,208,254

Revenues and Expenditures

	2021-2022	2020-2021
Balance - July 1	$244,344,934	$193,649,479
Revenues		
Member contributions	0	0
Employer contributions	13,797,260	15,625,495
Recognized investment income	(18,590,756)	49,728,641
Total	(4,793,496)	65,354,136
Expenditures		
Benefit payments/Refunds	13,036,696	14,516,628
Administrative expenses	156,737	142,053
Total	13,193,433	14,658,681
Balance - June 30	$226,358,005	$244,344,934
Net investment income/mean assets	-7.6%	25.6%

SECTION C

RETIREE PREMIUM RATE DEVELOPMENT

Retiree Premium Rate Development

Background

We understand that currently, eligible City retirees (and eligible spouses) receive benefits from a number of health care plans, including medical coverage through the self-insured Blue Cross Blue Shield (BCBS) plans and prescription drug coverage through the self-insured Express Scripts plans.

Rate Development

For the self-insured medical plans, initial per capita costs were developed separately for pre-65 and post-65 retirees using medical and prescription drug claims experience from January 2019 to December 2021 from BCBS and Express Scripts in conjunction with exposure data for the active and retired members of the health care program. These medical and prescription drug claims were projected on a paid claim basis to the valuation date, adjusted for large claims, and loaded for administrative and stop-loss expenses.

The initial medical and drug premium rates used in the valuation are a weighted average cost of the 3-year experience period (1/2019 – 12/2021) to smooth out any large year-to-year fluctuations.

Most retiree plans are closed to future retirees. The plans that remain open include suffixes 0050, 0051, 0053, 0055, 0056, 0057, 0058, 0063, 0064, 0065, 0066, 0068, 0074, 0075, 0076, 0077, 0078, 0079, 0080, 0081, and 0082. Depending on age (pre-65 or post-65) and active group membership, future retirees will be placed into one of these suffixes. We have developed separate premium rates for these future retirees in order to reflect the benefit differences.

Age graded and sex distinct premiums are utilized by this valuation. The initial costs developed by the preceding process are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process "distributes" the average premium over all age/sex combinations and assigns a unique premium for each combination. The age/sex specific premiums more accurately reflect the health care costs in the retired population over the projection period.

Retiree Premium Rate Development

The tables below show the resulting combined medical and prescription drug one-person monthly premiums at select ages. The premium (or per capita costs) rates shown below were used in this valuation of the Plan and reflect the use of age grading.

For Those Not Eligible for Medicare				
	Current Retirees		Future Retirees	
Age	Male	Female	Male	Female
45	$ 486.96	$ 672.06	$ 444.30	$ 613.19
50	634.07	781.12	578.52	712.69
55	834.37	911.01	761.27	831.20
60	1,077.63	1,061.10	983.23	968.14

For Those Eligible for Medicare				
	Current Retirees		Future Retirees	
Age	Male	Female	Male	Female
65	$ 680.92	$ 642.24	$ 584.85	$ 551.63
70	741.77	717.78	637.11	616.50
75	796.67	777.38	684.27	667.70

Health Care Trend Assumption

The health care cost trend rate is the rate of change in per capita health care claims over time as a result of factors such as medical inflation, utilization of health care services, plan design, and technological improvements. It is a crucial economic assumption that is required for measuring retiree health care benefit obligations.

Retiree health care valuations use a health care cost trend assumption (trend vector) that changes over the years. The trend vector used in this valuation begins with a near-term trend assumption and declines over time to an ultimate trend rate. The near-term rates reflect the increases in the current cost of health care goods and services. The process of trending down to a lower ultimate trend relies on the theory that premium levels will moderate over the long term, otherwise the healthcare sector would eventually consume the entire GDP. It is on this basis that projected premium rate increases continue to exceed wage inflation for the next twelve years, but by less each year until leveling off at an ultimate rate, assumed to be 3.50% in this valuation; see the table on the following page for further details regarding the trend vector used in this valuation.

While experience is often the best starting point for future costs, GRS does not rely on a group's experience in setting the near-term trend assumptions since trends vary significantly from year to year and are not credible for most groups. Therefore, professional judgment, trends from GRS' book of business and industry benchmarks (e.g., trend reports from various Pharmacy Benefit Management (PBM) organizations and national healthcare benefit consulting firms) are used in conjunction with a group's historical experience to establish the trend assumptions.

Retiree Premium Rate Development

Year Beginning July 1,	Medical and Prescription Drugs	
	Non-Medicare (Pre-65)	Medicare (Post-65)
2023	7.50 %	6.25 %
2024	7.25	6.00
2025	6.75	5.75
2026	6.50	5.50
2027	6.00	5.25
2028	5.75	5.00
2029	5.25	4.75
2030	5.00	4.50
2031	4.50	4.25
2032	4.25	4.00
2033	3.75	3.75
2034 & Later	3.50	3.50

Actuarial Disclosures

The premium rates used in this valuation were developed using proprietary Excel models which, in James E. Pranschke's professional judgment, provide initial projected costs which are consistent with the purposes of the valuation. We performed tests to ensure that the models, in their entirety, reasonably represent that which is intended to be modeled.

Aging factors used in the premium development models were developed based on information and data from a 2013 study commissioned by the Society of Actuaries entitled "Health Care Costs – From Birth to Death."

James E. Pranschke is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to certify the per capita retiree health care rates shown above.

James E. Pranschke

James E. Pranschke, FSA, FCA, MAAA

SECTION D

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods

Actuarial Cost Method – Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and

(ii) Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded actuarial accrued liabilities (full funding credit of assets exceed liabilities) are amortized by level dollar contributions.

Actuarial Value of Assets. The Actuarial Value of Assets are developed using a 5-year smoothed asset valuation method.

The Plan is funded by Employer Contributions in accordance with the funding policy adopted by the Retirement Board, based on Actuarially Determined Contributions (ADC), which require contributions be sufficient to pay the Normal Costs of active plan members, Plan expenses, and amortize the Unfunded Actuarial Accrued Liability over a declining period. The current amortization period is 18 years as of the June 30, 2022 valuation decreasing by 2 years annually until the amortization period reaches 15 years. Once the plan hits 100% funded status, the amortization period will be set at 1 year.

The retirement rates, rates of merit and seniority salary increase, rates of separation from active membership and disability rates used in this valuation are based on the five-year experience study for the period July 1, 2013 through June 30, 2018 performed by the City's prior actuary. All assumptions are expectations of future experience, not market measures.

Actuarial Assumptions Used for the Valuation

Investment Return (net of investment expenses):

Investment Return	6.70%
Wage Inflation	3.50%
Price Inflation	2.50%
Spread Between Investment Return and Wage Inflation	3.20%

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.

	% Increase in Salary at Sample Ages						
Sample	Merit and Seniority			Base	Increase Next Year		
Ages	General	Police	Fire	(Economic)	General	Police	Fire
20	4.00%	7.50%	7.29%	3.50%	7.50%	11.00%	10.79%
25	3.58%	6.60%	6.52%	3.50%	7.08%	10.10%	10.02%
30	2.82%	4.74%	4.86%	3.50%	6.32%	8.24%	8.36%
35	2.14%	3.36%	3.44%	3.50%	5.64%	6.86%	6.94%
40	1.84%	2.70%	2.70%	3.50%	5.34%	6.20%	6.20%
45	1.47%	2.38%	2.38%	3.50%	4.97%	5.88%	5.88%
50	0.98%	2.18%	2.18%	3.50%	4.48%	5.68%	5.68%
55	0.68%	2.04%	2.04%	3.50%	4.18%	5.54%	5.54%
60	0.50%	1.80%	1.90%	3.50%	4.00%	5.30%	5.40%

Rates of separation from active membership were as shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

		% of Active Members Separating within Next Year			
Sample	Years of	General			
Ages	Service	Males	Females	Police	Fire
	1	6.00%	16.00%	6.00%	4.50%
	2	4.80%	13.00%	6.00%	4.00%
	3	4.00%	11.00%	4.00%	3.60%
	4	3.20%	8.00%	3.00%	3.60%
	5	2.50%	6.00%	2.50%	3.60%
25	6 & Over	3.20%	4.50%	2.40%	1.40%
30		3.20%	4.50%	2.40%	1.10%
35		3.25%	3.50%	1.75%	0.90%
40		3.25%	3.50%	0.74%	1.00%
45		3.25%	3.50%	0.48%	0.90%
50		3.25%	3.50%	0.48%	0.50%
55		3.25%	3.50%	0.48%	0.50%
60		3.25%	3.50%	0.48%	0.50%
65		3.25%	3.50%	0.48%	0.50%

Actuarial Assumptions Used for the Valuation (Continued)

The mortality tables used are as follows:

- **Healthy Pre-Retirement:** The RP-2014 Employee Generational Mortality Tables, extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale, resulting in a base year of 2006 with future mortality improvements assumed each year using scale MP-2017.

- **Healthy Post-Retirement:** The RP-2014 Healthy Annuitant Generational Mortality Tables, extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale, resulting in a base year of 2006 with future mortality improvements assumed each year using scale MP-2017.

- **Disability Retirement:** The RP-2014 Disabled Mortality Table, extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale, resulting in a base year of 2006 with future mortality improvements assumed each year using scale MP-2017.

Sample Attained Ages	Healthy Pre-Retirement Future Life Expectancy (Years)[1]		Healthy Post-Retirement Future Life Expectancy (Years)[1]		Disabled Retirement Future Life Expectancy (Years)[1]	
	Men	Women	Men	Women	Men	Women
55	31.43	35.63	29.93	32.31	21.58	25.31
60	26.49	30.61	25.36	27.53	18.50	21.72
65	21.83	25.71	21.01	22.97	15.59	18.27
70	17.51	20.93	16.92	18.65	12.81	14.89
75	13.54	16.35	13.14	14.60	10.17	11.71
80	9.96	12.03	9.76	10.95	7.77	8.94

[1] *Based on retirements in 2022. Retirements in future years will reflect improvements in life expectancy.*

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement.

Actuarial Assumptions Used for the Valuation (Concluded)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Retirement	General		Police		Fire		Retirement		
Ages	Normal	Early	Normal	Early	Normal	Early	Service	Police	Fire
50	25%	10%		10%		10%	25	50%	25%
51	25%	10%		10%		10%	26	50%	25%
52	25%	10%		10%		10%	27	50%	25%
53	25%	10%		10%		10%	28	50%	25%
54	25%	10%		10%		10%	29	50%	25%
55	25%	10%	50%		25%		30	50%	25%
56	25%	10%	50%		25%		31	50%	25%
57	25%	10%	50%		25%		32	50%	25%
58	25%	10%	50%		25%		33	50%	25%
59	25%	10%	50%		25%		34	50%	25%
60	30%		100%		100%		35	100%	100%
61	30%								
62	30%								
63	30%								
64	30%								
65	60%								
66	40%								
67	40%								
68	40%								
69	40%								
70	100%								

Rates of disability among active members.

Sample	% Becoming Disabled within Next Year		
Ages	General	Police	Fire
20	0.06%	0.08%	0.02%
25	0.06%	0.08%	0.02%
30	0.06%	0.08%	0.02%
35	0.06%	0.08%	0.02%
40	0.11%	0.14%	0.03%
45	0.24%	0.32%	0.08%
50	0.42%	0.56%	0.14%
55	0.65%	0.86%	0.22%
60	0.86%	1.14%	0.29%
65	0.99%	1.32%	0.33%

For General members, 75% of the disabilities are assumed to be non-duty and 25% of the disabilities are assumed to be duty related. For Police/Fire members, 50% of the disabilities are assumed to be non-duty and 50% of the disabilities are assumed to be duty related.

Miscellaneous and Technical Assumptions

Data Assumptions:

- The membership data provided for the pension valuation was used as the basis for this valuation.
- If a 2-person contract was indicated in the health data and no beneficiary information was provided in the pension data, the beneficiary information from the health data was used if it was available. If no beneficiary information was available in either data set, then male spouses were assumed to be three years older than female spouses.
- If a 1-person contract was indicated in the health data and the primary record on the contract was the beneficiary of a member in the pension data, a 2-person contract was valued.
- Members who were provided in the health data but not the pension data were included in the valuation.

Decrement Operation: Disability and mortality decrements do not operate during the first 5 years of service. Disability also does not operate during normal retirement eligibility.

Decrement Relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Decrement Timing: Decrements of all types are assumed to occur mid-year.

Eligibility Testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

Health Care Coverage at Retirement: The table below shows the assumed portion of future retirees electing one-person or two-person/family coverage, or opting-out of coverage entirely.

		Two-Person/Family		
	One-Person	Electing	Continuing	Opt-Out
Male	15%	70%	100%	15%
Female	15%	70%	100%	15%

Marriage Assumption: 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.

Other Liability Adjustments: None.

SECTION E

SUMMARY OF BENEFIT PROVISIONS

Retiree Health Benefits Plan & Trust
Summary of Benefits as of June 30, 2022

Regular Retirement:

Union	5-Year Vesting	10-Year Vesting	Eligibility
Non-Union	Hired before July 1, 2011	Hired after July 1, 2011	Age 50 with 25 years of service or Age 60 and vested
American Federation of State, County, and Municipal Employees, AFL CIO (AFSCME)	Hired before August 29, 2011	Hired after August 29, 2011	Age 50 with 25 years of service or Age 60 and vested
Ann Arbor Police Officers Association (AAPOA)	Hired before January 1, 2012	Hired after January 1, 2012	25 years of service or Age 55 and vested
International Association of Fire Fighters (IAFF)	Hired before July 1, 2012	Hired after July 1, 2012	25 years of service or Age 55 and vested
Teamsters Fire Assistant Chief	Hired before January 1, 2016	Hired after January 1, 2016	25 years of service or Age 55 and vested
Teamsters Civilian Supervisiors	Hired before July 2, 2012	Hired after July 2, 2012	Age 50 with 25 years of service or Age 60 and vested
Teamsters Police Professional Assistants	Hired before July 2, 2012	Hired after July 2, 2012	Age 50 with 25 years of service or Age 60 and vested
Teamsters Police Deputy Chiefs	Hired before July 2, 2012	Hired after July 2, 2012	25 years of service or Age 55 and vested
Police Service Specialists	Hired before July 1, 2013	Hired after July 1, 2013	Age 50 with 25 years of service or Age 60 and vested
Command Officers Association of Michigan (COAM)	Hired before July 1, 2013	Hired after July 1, 2013	25 years of service or Age 55 and vested

Retiree Health Benefits Plan & Trust
Summary of Benefits as of June 30, 2022
(Continued)

Early Retirement:

Eligibility – *All Members:* Age 50 with 20 or more years of service.

Deferred Retirement (vested benefit):

Eligibility – Not eligible for retiree health care benefits.

Duty Disability Retirement:

Eligibility - No age or service requirement.

Non-Duty Disability Retirement:

Eligibility - Must be vested. Refer to table on page E-1.

Duty Death Before Retirement:

Eligibility - No age or service requirements.

Non-Duty Death Before Retirement:

Eligibility - Must be vested. Refer to table on page E-1.

Retiree Health Benefits Plan & Trust
Summary of Benefits as of June 30, 2022
(Concluded)

Retiree Health Care Benefits:

Coverage - For members with a 5-year vesting period (refer to the table on page E-1), the City of Ann Arbor will provide retiree health care coverage equivalent to the level of health care coverage the member was receiving on the date of retirement to eligible retirees. Retirees electing the high option will be required to pay for a portion of their health care coverage.

All other members not eligible for City paid retiree health care coverage. These members earn the amounts below per year for each year of active service. The City funds their account upon retirement.

Employee Group	Effective Date $2,500 per Year	Effective Date $3,500 per Year	Effective Date $4,000 per Year
AAPOA	1/1/2012	1/1/2017	
AFSCME	8/29/2011		
CSS/PSS	7/1/2013	1/1/2018	
DEPCHIEFS	7/2/2012	1/1/2019	
FIRE	7/1/2012	1/1/2017	1/1/2020
NON-UNION	7/1/2011	1/1/2018	
POLICEPRO/PPA	7/2/2012	1/1/2018	
TEAMSTERS	7/2/2012	1/1/2018	
COAM	7/1/2013	1/1/2018	
ASST FIRE CHIEF	7/1/2012	1/1/2019	

Life Insurance Benefits:

Coverage - $10,000 lump sum death benefit for all retirees (except those collecting a deferred benefit) in receipt of a City pension.

SECTION F

PROJECTIONS

Projection Assumptions and Methods

For purposes of the funding projection, the following assumptions were used:

- 6.70% investment return on the Fair Value of Assets in all future years.
- 6.70% discount rate for determining liability.
- The Actuarial Value of Assets reflects the deferred gains and losses generated by the smoothing method. The current deferred amounts are recognized in the first four years of the projections.
- Actuarial assumptions and methods as described in Section D. All future demographic experience is assumed to be exactly realized.
- The actuarially determined contribution amount is determined as a level dollar amount and contributed each year.
- Projections assume a 0% increase in the total active member population. All new future members are expected to enter the plan upon date of hire, under applicable plan provisions.
- The projections are based on the combined impact of the Minimum Required Policy and the Funding Plan.

Projected Actuarial Results – Base
Assumes 6.70% Returns in Future Years

Year Ending June 30,	Employee Contributions	Employer Contributions	Total Contributions	Benefit Payments	Actuarial Value of Assets	Actuarial Accrued Liability	Funded Ratio	Unfunded Actuarial Accrued Liability	Actuarially Determined Contribution	Estimated Funding Plan Contribution
	(a)	(b)	(c)= (a) + (b)	(d)	(e)	(f)	(g) = (e) / (f)	(h) = (f) - (e)	(i)	(j)
2023	$ 0	$ 14,457,246	$ 14,457,246	$ 15,537,707	$ 247,672,063	$ 287,639,654	86.1%	$ 39,967,591	$ 6,379,687	$ 15,041,319
2024	0	14,746,391	14,746,391	16,668,431	261,127,944	292,016,595	89.4%	30,888,651	5,411,369	15,342,145
2025	0	15,041,319	15,041,319	17,650,920	275,953,435	295,506,315	93.4%	19,552,880	4,039,155	15,648,988
2026	0	15,342,145	15,342,145	18,594,398	283,812,323	298,128,966	95.2%	14,316,643	3,358,779	15,961,968
2027	0	15,648,988	15,648,988	19,560,885	298,210,236	299,813,687	99.5%	1,603,451	1,867,114	16,281,207
2028	0	15,961,968	15,961,968	20,509,591	313,012,360	300,529,697	104.2%	(12,482,663)	1,628,454	1,628,454
2029	0	16,281,207	16,281,207	21,339,138	328,373,373	300,356,484	109.3%	(28,016,889)	1,574,577	1,574,577
2030	0	1,628,454	1,628,454	22,030,093	328,996,446	299,395,276	109.9%	(29,601,170)	1,518,448	1,518,448
2031	0	1,574,577	1,574,577	22,653,752	329,061,978	297,669,432	110.5%	(31,392,546)	1,477,375	1,477,375
2032	0	1,518,448	1,518,448	23,088,136	328,637,834	295,321,011	111.3%	(33,316,823)	1,456,308	1,456,308
2033	0	1,477,375	1,477,375	23,430,933	327,796,990	292,418,517	112.1%	(35,378,473)	1,448,306	1,448,306
2034	0	1,456,308	1,456,308	23,636,307	326,670,673	289,087,528	113.0%	(37,583,145)	1,451,428	1,451,428
2035	0	1,448,306	1,448,306	23,656,733	325,441,808	285,503,984	114.0%	(39,937,824)	1,466,086	1,466,086
2036	0	1,451,428	1,451,428	23,610,582	324,182,255	281,731,264	115.1%	(42,450,991)	1,491,703	1,491,703
2037	0	1,466,086	1,466,086	23,431,723	323,038,686	277,905,772	116.2%	(45,132,914)	1,525,305	1,525,305
2038	0	1,491,703	1,491,703	23,203,507	322,081,010	274,086,309	117.5%	(47,994,701)	1,565,185	1,565,185
2039	0	1,525,305	1,525,305	22,980,158	321,324,801	270,276,502	118.9%	(51,048,299)	1,609,804	1,609,804
2040	0	1,565,185	1,565,185	22,653,389	320,896,892	266,590,369	120.4%	(54,306,523)	1,658,871	1,658,871
2041	0	1,609,804	1,609,804	22,191,898	320,963,393	263,180,331	122.0%	(57,783,062)	1,711,673	1,711,673
2042	0	1,658,871	1,658,871	21,782,177	321,508,513	260,015,976	123.6%	(61,492,537)	1,767,797	1,767,797

Section 1.3 of the City of Ann Arbor Other Postemployment Benefits (OPEB) Funding Policy states:
"The City of Ann Arbor will strive to achieve 100% funding of the City of Ann Arbor Retiree Health Care Benefits Plan. To the extent that 100% funding has been achieved, the City will continue to fund, at a minimum, the Normal Cost as defined by the outside actuary. To the extent that a fully funded plan has not been achieved, the City shall budget each fiscal year the higher of the ARC or the existing level of funding in the current budget year adjusted annually for the change in the General Fund budgeted revenues. In some years this may result in an excess contribution to the Voluntary Employee Benefits Trust (VEBA) Fund, which will serve to both pay down the unfunded actuarial accrued liability and reduce future city cost increases."

For purposes of the projection, the increase in General Fund revenues is assumed to be 2% per year. Based on the City's funding policy and given that all actuarial assumptions are exactly realized, after reaching full-funding status all future actuarially determined contributions are projected to equal the normal cost contribution.

APPENDIX

State Reporting Assumptions
as of June 30, 2022

The Protecting Local Government Retirement and Benefits Act, Public Act 202 of 2017, was put into law effective December 20, 2017. One outcome of the law is the requirement for the local unit of government to provide select reporting disclosures to the State. Sec. 5(1) of the Act provides the State treasurer with the authority to annually establish uniform actuarial assumptions for purposes of developing the requisite disclosures. Below you will find information which may be used to assist the local unit of government with required reporting.

Uniform Assumptions, as applicable to the measurement and the required disclosures under uniform assumptions are denoted below. Additional discussion of PA 202 and uniform assumptions may be found on the State website in the uniform assumption memo dated December 17, 2021.

Uniform Assumption	PA 202	Valuation Assumption Used	Uniform Assumption Used
Investment Rate of Return Discount Rate[(1)]	Maximum of 6.85%	6.70%	6.70%
Salary Increase	Minimum of 3.00% or based on experience study within last 5 years	3.50% + Merit and longevity (based on experience study performed by the City's prior actuary)	3.50% + Merit and longevity (based on experience study performed by the City's prior actuary)
Mortality	Version of Pub-2010 tables with Generational mortality improvement using scale MP-2020 or based on experience study within last 5 years	A version of RP-2014 (based on experience study performed by the City's prior actuary)	A version of RP-2014 (based on experience study performed by the City's prior actuary)
Healthcare Inflation (for Medical and Drug)	Non-Medicare: Initial rate of 7.25% decreasing 0.25% per year to a 4.50% long-term rate Medicare: Initial rate of 5.50% decreasing 0.25% per year to a 4.50% long-term rate	Non-Medicare: Initial rate of 7.50% decreasing to a 3.50% long-term rate in year 12 Medicare: Initial rate of 6.25% decreasing to a 3.50% long-term rate in year 12	**Non-Medicare: Initial rate of 7.25% decreasing 0.25% per year to a 4.50% long-term rate** **Medicare: Initial rate of 5.50% decreasing 0.25% per year to a 4.50% long-term rate**
Amortization of the Unfunded Accrued Actuarial Liability: Period	Maximum Period of 27 Years	18 years	18 years
Method	Closed Plans: Level Dollar Open Plans: Level Dollar or Level Percent of Payroll	Level Dollar	Level Dollar
Type	Closed	Closed	Closed

(1) *A blended rate calculated using GASB Statement No. 75 methodology. For periods in which projected plan assets are sufficient to make projected benefit payments – maximum of 6.85%; for periods in which projected plan assets are NOT sufficient to make projected benefit payments – 2.16%.*

State Reporting
as of June 30, 2022

The following information has been prepared to provide some of the information necessary to complete the OPEB reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form 5572). The local unit of government is required to complete/develop all of the remaining reporting requirements necessary for Form 5572. Additional resources are available on the State website.

Line	Descriptive Information	
19	**Actuarial Assumptions**[1]	
20	Assumed Rate of Investment Return	6.70%
21	Enter discount rate	6.70%
22	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Dollar
23	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any	18
24	Is each division within the system closed to new employees?	No
25	Health care inflation assumption for the next year	7.50%
26	Health care inflation assumption - Long-Term Trend Rate	3.50%
27	**Uniform Assumptions**[2]	
28	Enter retirement health care system's actuarial value of assets using uniform assumptions	$ 234,208,254
29	Enter retirement health care system's actuarial accrued liabilities using uniform assumptions	$ 288,744,100
30	Funded ratio using uniform assumptions	81.1%
31	Actuarially Determined Contribution (ADC) using uniform assumptions	$ 7,664,877
32	All systems combined ADC/Governmental fund revenues	Auto[3]

(1) *Information on lines 28-32 is based on assumptions listed on the prior page.*
(2) *As of the June 30, 2022 actuarial valuation date.*
(3) *Automatically calculated by State of Michigan Form 5572.*

Glossary

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarially Determined Contribution. The Actuarially Determined Contribution is the normal cost plus the portion of the unfunded actuarial accrued liability to be amortized in the current period. The Actuarially Determined Contribution is an amount that is actuarially determined in accordance with the requirements so that, if paid on an ongoing basis, it would be expected to provide sufficient resources to fund both the normal cost for each year and the amortized unfunded liability.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Governmental Accounting Standards Board (GASB). GASB is the private, nonpartisan, nonprofit organization that works to create and improve the rules U.S. state and local governments follow when accounting for their finances and reporting them to the public.

Implicit Rate Subsidy. It is common practice for employers to allow retirees to continue in the employer's group health insurance plan (which also covers active employees), often charging the retiree some portion of the premium charged for active employees. Under the theory that retirees have higher utilization of services, the difference between the true cost of providing retiree coverage and what the retiree is being charged is known as the implicit rate subsidy.

Glossary

Medical Trend Rate (Health Care Inflation). The increase in the cost of providing health care benefits over time. Trend includes such elements as pure price inflation, changes in utilization, advances in medical technology, and cost shifting.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Other Postemployment Benefits (OPEB). OPEB are postemployment benefits other than pensions. OPEB generally takes the form of health insurance, dental, vision, prescription drugs, life insurance or other health care benefits.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded actuarial accrued liability."

Valuation Assets. The value of current plan assets recognized for valuation purposes.