City of Ann Arbor
Retiree Health Benefits Plan & Trust
Annual Actuarial Valuation
as of June 30, 2019

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December 23, 2019

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

Submitted in this report are the results of an Actuarial Valuation of the assets and liabilities associated with the employer financed retiree health benefits provided by the City of Ann Arbor. The date of the valuation was June 30, 2019 effective for the fiscal year July 1, 2020 to June 30, 2021. This valuation updates the report originally delivered November 12, 2019 to incorporate information provided by the City in accordance with its Funding Policy.

This report was prepared at the request of the City of Ann Arbor and is intended for use by the City of Ann Arbor and those designated or approved by the City. This report may be provided to parties other than the City of Ann Arbor only in its entirety and only with the permission of 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 30,2021. 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 satisfy Governmental Accounting Standards Board (GASB) Statements No. 74 or No. 75. A report satisfying GASB Statements No. 74 and No. 75 is provided separately.

The findings in this report are based on data and other information through June 30, 2019. 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

The valuation was based upon information furnished by the City of Ann Arbor concerning retiree health 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 of Ann Arbor.

This report has been prepared by actuaries who have substantial experience valuing public employee retiree health plans. 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, Mark Buis, and Francois Pieterse are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

James D. Anderson

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

Mark Buis

Mark Buis, FSA, EA, FCA, MAAA

Pieterse

Francois Pieterse, ASA, ACA, MAAA

JDA/MB/FP:sc

EXECUTIVE SUMMARY

Executive Summary

Actuarially Determined Contribution and OPEB Cost

Please note that beginning with the fiscal year ending June 30, 2017, GASB Statement No. 43 was replaced by GASB Statement No. 74. Also, beginning with the fiscal year ending June 30, 2018, GASB Statement No. 45 was replaced by GASB Statement No. 75. A separate GASB report is required to comply with the actuarial requirements of GASB Statements No. 74 and No. 75. As such, there is not an "Annual Required Contribution" calculated in this valuation report. Therefore, we have determined the "Actuarially Determined Contribution".

We have calculated the Actuarially Determined Contribution for the fiscal year ending June 30, 2021, using an interest rate assumption of 7.00%. Below is a summary of the results.

Fiscal Year Ending	Actuarially Determined Contribution	Estimated Claims Paid for Retirees
June 30, 2021	$11,663,630	$15,007,815

Under the City's Funding Policy, the estimated Funding Plan Contribution for the fiscal year ending June 30, 2021 is $16,878,287.

Liabilities and Assets – As of June 30, 2019

1. Present Value of Future Benefit Payments	$299,954,598
2. Actuarial Accrued Liability	282,357,823
3. Plan Assets	186,568,711
4. Unfunded Actuarial Accrued Liability (2) – (3)	95,789,112
5. Funded Ratio (3)/(2)	66.1%

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, 2019	June 30, 2018*
Summary of Member Data		
Number of Members Included in Valuation		
Active Traditional Plan Members	343	376
Active RHRA Plan Members	368	319
Inactive Plan Members and Beneficiaries Receiving Benefits	1,052	1,052
Total	1,763	1,747
Summary of Assets		
Market Value	$186,331,562	$171,807,353
Market Value Rate of Return	6.83%	
Funding Value	$186,568,711	$171,807,353
Funding Value Rate of Return	6.97%	
Summary of Liabilities		
Total Actuarial Accrued Liability	$282,357,823	$283,969,579
Unfunded Actuarial Liability (UAL)	$95,789,112	$112,162,226
Funded Ratio	66.08%	60.50%
Employer Actuarially Determined Contribution (ADC)		
Employer Normal Cost Amount	$2,922,028	$2,822,213
Amortization of Unfunded Accrued Liability (Active)	1,989,370	2,068,041
Amortization of Unfunded Accrued Liability (Inactive)	6,350,909	6,796,027
Interest	401,323	443,106
Total Preliminary ADC	$11,663,630	$12,129,387
Prior Fiscal Year Budgeted Contribution Increased by 2%	$16,878,287	$16,547,340
Final Estimated Employer Contribution	$16,878,287	$16,547,340
Amortization Period (years)	24	26

** Prior year results were calculated by the City's prior actuary.*

Development of the Actuarially Determined Contribution
for the Other Post-Employment Benefits
Fiscal Year Ending June 30, 2021

Contributions for	General	General RHRA	Police	Police RHRA	Fire	Fire RHRA	Total
1. Total Normal Cost of Benefits:	$ 1,383,282	$ 318,157	$ 595,787	$ 86,201	$ 498,722	$ 39,879	$ 2,922,028
2. Member Contributions	0	0	0	0	0	0	0
3. Employer Normal Cost (1. - 2.)	1,383,282	318,157	595,787	86,201	498,722	39,879	2,922,028
4. Payment for Active Unfunded Actuarial Liabilities (UAL)	1,157,356	0	479,007	0	353,007	0	1,989,370
5. Payment for Inactive UAL	3,680,079	0	1,673,730	0	997,100	0	6,350,909
6. Interest	221,671	11,337	97,941	3,072	65,881	1,421	401,323
7. Preliminary Actuarially Determined Contribution (ADC) (3. + 4. + 5. + 6.)	**$ 6,442,388**	**$ 329,494**	**$ 2,846,465**	**$ 89,273**	**$ 1,914,710**	**$ 41,300**	**$ 11,663,630**
8. Projected Fiscal Year Payroll	$ 16,399,302	$ 22,568,110	$ 6,128,527	$ 6,114,602	$ 5,313,908	$ 2,681,833	$ 59,206,282
9. Preliminary ADC as a Percent of Projected Payroll	**39.28 %**	**1.46 %**	**46.45 %**	**1.46 %**	**36.03 %**	**1.54 %**	**19.70 %**
10. Prior Fiscal Year Budgeted Contribution^							**$ 16,547,340**
11. Prior Fiscal Year Budgeted Contribution with 2% Increase							**$ 16,878,287**
12. Estimated City Contribution (Greater of 7. & 11.)							**$ 16,878,287**

^ Provided by the City.

Unfunded actuarial accrued liabilities were amortized as a level dollar amount over a period of 24 years for fiscal year ending June 30, 2021. 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, 2019

	June 30, 2019			
	General	Police	Fire	Total
A. Accrued Liability				
1. For retirees and beneficiaries	$ 123,875,732	$ 56,339,671	$ 33,563,550	$ 213,778,953
2. For vested terminated members	0	0	0	0
3. For present active members				
a. Value of expected future benefit payments	51,058,551	19,715,517	15,401,577	86,175,645
b. Value of future normal costs	10,917,863	3,288,744	3,390,168	17,596,775
c. Active member accrued liability: (a) - (b)	40,140,688	16,426,773	12,011,409	68,578,870
4. Total accrued liability	164,016,420	72,766,444	45,574,959	282,357,823
B. Present Assets (Funding Value)*	108,457,887	48,042,006	30,068,818	186,568,711
C. Unfunded Accrued Liability: (A.4) - (B)	55,558,533	24,724,438	15,506,141	95,789,112
D. Funding Ratio: (B) / (A.4)	66.1%	66.0%	66.0%	66.1%

* *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, 2019

Valuation Date June 30:		2019	2020	2021	2022	2023
A.	Funding Value Beginning of Year (BOY)	$171,807,353				
B.	Market Value End of Year (EOY)	186,331,562				
C.	Market Value BOY	171,807,353				
D.	Non-Investment Net Cash Flow	2,699,643				
E.	Investment Income					
1)	Market Total: B-C-D	11,824,566				
2)	Amount for Immediate Recognition (7.0% x (A + 0.5 x D))	12,121,002				
3)	Amount for Phased-In Recognition E1 - E2	(296,436)				
F.	Phased-In Recognition of Investment Income					
1)	Current Year: 0.20 x E3	(59,287)				
2)	First Prior Year	0	$ (59,287)			
3)	Second Prior Year	0	0	$ (59,287)		
4)	Third Prior Year	0	0	0	$ (59,287)	
5)	Fourth Prior Year	0	0	0	0	$ (59,288)
6)	Total Recognized Investment Gain	(59,287)	(59,287)	(59,287)	(59,287)	(59,288)
G.	Funding Value EOY: A + D + E2 + F6	186,568,711				
H.	Difference Between Market Value and Funding Value	(237,149)				
I.	Net Funding Value Rate of Return	6.97%				
J.	Net Market Value Rate of Return	6.83%				
K.	Funding Value / Market Value	100.1%				

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 $12.1 million in the June 30, 2018 valuation to $11.7 million in the June 30, 2019 valuation. Primary reasons for the decrease include changes in actuarial system software as well as revised health care trend rates and unfavorable claims experience.

Comment B: One of the key assumptions used in any valuation of the cost of post-employment 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 7.00%.

Comment C: Amortization Method is the policy used to fund the unfunded actuarially accrued liability (UAAL). The current policy computes contribution amounts using a closed 24-year period beginning with the fiscal year ending June 30, 2021 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 D: The "Cadillac" tax is a 40% excise tax paid by the coverage provider (employer and/or insurer) on the value of health plan costs in excess of certain thresholds, effective in 2022. The initial thresholds are $10,200 for single coverage or $27,500 for family coverage. Many plans are below the thresholds today, but are likely to exceed them in the next decade. The thresholds will be indexed at CPI-U, which is lower than the medical inflation rates affecting the cost of the plans. There is considerable uncertainty about how the tax would be applied, and considerable latitude in grouping of participants for tax purposes. Combining early retiree and Medicare eligible retiree costs is allowed and can keep plans under the thresholds for a longer period of time. For this valuation, no load has been applied to health care liabilities for future retirees or for current retirees to reflect expected future excise tax liability due to projected "Cadillac Plan" status, based on the current plan provisions and assumptions. We have not identified any other specific provision of health care reform that would be expected to have a significant impact on the measured obligation. As additional guidance on the legislation is issued, we will review and monitor the impact.

Comments

Comment E: Michigan Public Act 202 of 2017 created new reporting and other requirements for local units of government. As such, we can work with the City to document Plan procedures and facilitate compliance. The information needed to satisfy PA 202 reporting requirements will be provided at a later date.

Comment F: Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets (which is set equal to the market value for purposes of this valuation). 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.

Comment G: Consistent with valuations prior to June 30, 2018 and beginning with the June 30, 2019 valuation, a 5-year smoothed market value of assets was used for calculating the actuarially determined contribution.

SECTION B

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 July 2016 to June 2019 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 (7/2016 – 6/2019) 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	$ 556.74	$ 768.38	$ 504.96	$ 696.91
50	724.94	893.06	657.51	809.99
55	953.94	1,041.56	865.21	944.69
60	1,232.07	1,213.16	1,117.47	1,100.32

For Those Eligible for Medicare				
	Current Retirees		Future Retirees	
Age	**Male**	**Female**	**Male**	**Female**
65	$ 608.36	$ 573.81	$ 523.64	$ 493.90
70	662.73	641.29	570.44	551.98
75	711.78	694.54	612.66	597.82

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 C

SUMMARY OF BENEFIT PROVISIONS

Retiree Health Benefits Plan & Trust
Summary of Benefits as of June 30, 2019

Regular Retirement:

Eligibility – *AFSCME*: Age 50 with 25 years of service or age 60 with 5 years of service (10 years of service for members hired on/after 8/29/2011).

Police Service Specialists: Age 50 with 25 years of service or age 60 with 5 years of service (10 years of service for members hired on/after 1/1/2012).

Police Professional Assistants: Age 50 with 25 years of service or age 60 with 5 years of service (10 years of service for members hired on/after 7/2/2012).

Non-Union: Age 50 with 25 years of service or age 60 with 5 years of service (10 years of service for members hired on/after 7/1/2011).

Teamsters: Age 50 with 25 years of service or age 60 with 5 years of service (10 years of service for members hired on/after 7/2/2012).

Police: 25 years of service or age 55 with 5 years of service (10 years of service for members hired on/after 1/1/2012).

Deputy Police Chiefs: 25 years of service or age 55 with 5 years of service (10 years of service for members hired on/after 7/2/2012).

Fire: 25 years of service or age 55 with 5 years of service (10 years of service for members hired on/after 7/1/2012).

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 - *AFSCME hired before 8/29/2011, Police Service Specialists hired before 1/1/2012, Police Professional Assistants hired before 7/2/2012, Non-Union hired before 7/1/2011, Teamsters hired before 7/2/2012, Police hired before 1/1/2012, Deputy Police Chiefs hired before 7/2/2012, and Fire hired before 7/1/2012*: 5 years of service.

AFSCME hired on/after 8/29/2011, Police Service Specialists hired on/after 1/1/2012, Police Professional Assistants hired on/after 7/2/2012, Non-Union hired on/after 7/1/2011, Teamsters hired on/after 7/2/2012, Police hired on/after 1/1/2012, Deputy Police Chiefs hired on/after 7/2/2012, and Fire hired on/after 7/1/2012: 10 years of service.

Retiree Health Benefits Plan & Trust
Summary of Benefits as of June 30, 2019
(Concluded)

Duty Death Before Retirement:

Eligibility - No age or service requirements.

Non-Duty Death Before Retirement:

Eligibility - *AFSCME hired before 8/29/2011, Police Service Specialists hired before 1/1/2012, Police Professional Assistants hired before 7/2/2012, Non-Union hired before 7/1/2011, Teamsters hired before 7/2/2012, Police hired before 1/1/2012, Deputy Police Chiefs hired before 7/2/2012, and Fire hired before 7/1/2012*: 5 years of service.

AFSCME hired on/after 8/29/2011, Police Service Specialists hired on/after 1/1/2012, Police Professional Assistants hired on/after 7/2/2012, Non-Union hired on/after 7/1/2011, Teamsters hired on/after 7/2/2012, Police hired on/after 1/1/2012, Deputy Police Chiefs hired on/after 7/2/2012, and Fire hired on/after 7/1/2012: 10 years of service.

Retiree Health Care Benefits:

Coverage - *AFSCME hired before 8/29/2011, Police Service Specialists hired before 1/1/2012, Police Professional Assistants hired before 7/2/2012, Non-Union hired before 7/1/2011, Teamsters hired before 7/2/2012, Police hired before 1/1/2012, Deputy Police Chiefs hired before 7/2/2012, and Fire hired before 7/1/2012*: 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.

Members hired after the effective dates above are not eligible for City paid retiree health care coverage. For these members, the City contributes $2,500 or $3,500/year into a notional account during each year of active service. A retirement eligible participant can then draw on these funds after retirement in order to pay for insurance premiums or claims as needed

Employee Group	Effective Date $2,500 per Year	Effective Date $3,500 per Year
AAPOA	1/1/2012	1/1/2017
AFSCME	8/29/2011	
CSS/PSS	1/1/2012	1/1/2018
DEPCHIEFS	7/2/2012	
FIRE	7/1/2012	1/1/2017
NON-UNION	7/1/2011	1/1/2018
POLICEPRO	7/2/2012	1/1/2018
TEAMSTERS	7/2/2012	1/1/2018

Life Insurance Benefits:

Coverage - $10,000 lump sum death benefit for all retirees in receipt of a City pension.

SECTION D

SUMMARY OF VALUATION DATA

Members Included in June 30, 2019 Valuation

Active Members

Valuation Divisions	No.	Group Averages (Years)		
		Annual Payroll	Age	Service
General Members	228	$18,387,184	50.7	17.5
General RHRA Members	285	17,989,313	41.1	3.3
Police Members	61	6,904,056	48.1	21.7
Police RHRA Members	57	4,525,036	33.5	3.7
Fire Members	54	5,619,038	48.1	20.4
Fire RHRA Members	26	1,845,072	33.5	3.4
Total Active Members	711	$55,269,699		

Retired Members with Coverage^

Valuation Divisions	No.	Average Age	Number of Spouses Covered
General Members	676	69.2	316
Police Members	214	66.0	141
Fire Members	162	70.5	94
Total Retired Members	1,052		551

^ *Includes 155 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	$ 933,251
Equity securities	105,014,227
Debt securities	53,977,279
Real Estate	17,467,106
Other - Sundry, Notes, and Mortgages	9,034,992
Accounts payable	(95,293)
Funding value adjustment	237,149
Total Current Assets	$186,568,711

Revenues and Expenditures

	2018-2019	2017-2018
Balance - July 1	$171,807,353	$157,339,107
Revenues		
Member contributions	0	0
Employer contributions	15,987,768	17,723,985
Recognized investment income	11,824,566	11,114,377
Total	27,812,334	28,838,362
Expenditures		
Benefit payments/Refunds	13,171,225	14,272,653
Administrative expenses	116,900	97,463
Total	13,288,125	14,370,116
Balance - June 30	$186,331,562	$171,807,353
Net investment income/mean assets	6.8%	7.0%

SECTION E

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 24 years as of the June 30, 2019 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

The rate of net investment return was 7.00% a year, compounded annually net after investment expenses. Considering other assumptions used in the valuation, the 7.00% nominal rate translates to a net real return of 3.50% a year.

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)*		Healthy Post-Retirement Future Life Expectancy (Years)*		Disabled Retirement Future Life Expectancy (Years)*	
	Men	Women	Men	Women	Men	Women
55	31.16	35.41	29.64	32.04	21.23	24.97
60	26.24	30.40	25.09	27.29	18.21	21.44
65	21.61	25.51	20.78	22.75	15.35	18.04
70	17.32	20.75	16.72	18.44	12.62	14.67
75	13.36	16.18	12.95	14.40	9.99	11.51
80	9.80	11.87	9.60	10.78	7.61	8.77

* *Based on retirements in 2019. 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 (Continued)

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.

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.

Actuarial Assumptions Used for the Valuation (Concluded)

Health care trend rates used in the valuation were as shown below:

The cost of providing medical services has been increasing more rapidly than prices in general for many years. During the past 10 years, general inflation averaged about 2% to 3%, while health expenditures increased by an average of about 8% to 10% per year. If this trend is projected to continue for years to come, it implies that years from now virtually all our expenditures will be for health care. The seemingly more reasonable alternative is that in the not too distant future medical expense inflation will stabilize at a level at or near general inflation. It is on this basis that we project that retiree health care costs will continue to exceed general inflation in the near term, but by less each year until leveling off at an ultimate rate that factors in CPI Healthcare trends, the trend in wage increases and projected GDP factors.

Year Beginning July 1,	Medical and Prescription Drugs
2020	8.25 %
2021	7.50
2022	7.00
2023	6.50
2024	6.00
2025	5.50
2026	5.00
2027	4.50
2028	4.00
2029 & Later	3.50

Miscellaneous and Technical Assumptions

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.

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.

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

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.

Other Liability Adjustments: None.

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%

SECTION F

PROJECTIONS

Projection Assumptions and Methods

For purposes of the 5-year funding projection, the following assumptions were used:

- 7.0% investment return on the Fair Value of Assets in all future years.
- 7.0% 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 E. All future demographic experience is assumed to be exactly realized.
- The actuarially determined contribution rate 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 7.0% 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)
2020	$ 0	$ 16,547,340	$ 16,547,340	$ 15,007,815	$ 201,038,331	$ 289,867,735	69.4%	$ 88,829,404	$ 11,132,729	$ 17,215,853
2021	0	16,878,287	16,878,287	16,223,556	215,602,386	296,499,162	72.7%	80,896,776	10,537,453	17,560,170
2022	0	17,215,853	17,215,853	17,477,727	230,235,290	302,090,913	76.2%	71,855,623	9,838,335	17,911,373
2023	0	17,560,170	17,560,170	18,701,153	244,981,474	306,614,120	79.9%	61,632,646	9,021,314	18,269,600
2024	0	17,911,373	17,911,373	19,945,363	259,894,649	309,970,030	83.8%	50,075,381	7,808,288	18,634,992
2025	0	18,269,600	18,269,600	20,982,384	275,152,360	312,304,574	88.1%	37,152,214	6,210,644	19,007,692
2026	0	18,634,992	18,634,992	21,924,347	290,883,955	313,670,661	92.7%	22,786,706	4,477,177	19,387,846
2027	0	19,007,692	19,007,692	22,841,630	307,155,033	314,048,221	97.8%	6,893,188	2,590,514	19,775,603
2028	0	19,387,846	19,387,846	23,666,767	324,105,660	313,492,363	103.4%	(10,613,297)	1,744,766	1,744,766
2029	0	19,775,603	19,775,603	24,233,096	342,058,270	312,226,633	109.6%	(29,831,637)	1,688,458	1,688,458
2030	0	1,744,766	1,744,766	24,618,012	342,207,410	310,408,687	110.2%	(31,798,723)	1,631,220	1,631,220
2031	0	1,688,458	1,688,458	24,974,025	341,940,318	308,036,733	111.0%	(33,903,585)	1,592,669	1,592,669
2032	0	1,631,220	1,631,220	25,193,946	341,367,700	305,211,882	111.8%	(36,155,818)	1,574,101	1,574,101
2033	0	1,592,669	1,592,669	25,327,004	340,577,401	302,011,677	112.8%	(38,565,724)	1,568,399	1,568,399
2034	0	1,574,101	1,574,101	25,381,940	339,655,709	298,511,381	113.8%	(41,144,328)	1,575,110	1,575,110
2035	0	1,568,399	1,568,399	25,360,640	338,685,645	294,782,208	114.9%	(43,903,437)	1,594,206	1,594,206
2036	0	1,575,110	1,575,110	25,187,343	337,833,988	290,978,301	116.1%	(46,855,687)	1,623,943	1,623,943
2037	0	1,594,206	1,594,206	24,806,548	337,336,601	287,322,008	117.4%	(50,014,593)	1,661,533	1,661,533
2038	0	1,623,943	1,623,943	24,451,373	337,202,782	283,808,159	118.8%	(53,394,623)	1,705,675	1,705,675
2039	0	1,661,533	1,661,533	24,123,865	337,437,471	280,426,217	120.3%	(57,011,254)	1,754,822	1,754,822

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

GLOSSARY

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.

GRS Retirement Consulting

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December 23, 2019

Ms. Wendy Orcutt
Executive Director
City of Ann Arbor
532 S. Maple Road
Ann Arbor, Michigan 48103

Re: Post-Retirement Health Coverage June 30, 2019 Valuation

Dear Ms. Orcutt:

Enclosed are 20 copies of the Actuarial Valuation as of June 30, 2019 of the City of Ann Arbor Retiree Health Benefits Plan & Trust. This valuation updates the report originally delivered November 12, 2019 to incorporate information provided by the City in accordance with its Funding Policy. We would be pleased to meet with you and other interested parties to review the results of the valuation.

Your comments are welcome.

Sincerely,

James D. Anderson

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

JDA:sc
Enclosures