City of Madision Heights Policemen and Firemen Other Postemployment Benefits

Actuarial Valuation Report

As of June 30, 2018

Table of Contents

Section	Page Number	
	--	Cover Letter
		Executive Summary
	1	Executive Summary
A		**Valuation Results**
	1	Development of the Actuarially Determined Contribution
	2	Determination of Unfunded Actuarial Accrued Liability
	3-4	Comments
B		**Retiree Premium Rate Development**
	1-2	Retiree Premium Rate Development
C		**Summary of Benefit Provisions and Valuation Data**
	1-3	Summary of Benefits
	4	Active Members by Attained Age and Years of Service
	5	Retired Members by Attained Age
D		**Actuarial Cost Methods and Actuarial Assumptions**
	1	Valuation Methods
	2-5	Actuarial Assumptions
	6	Required Supplementary Information
	7	Schedule of Funding Progress
	8	Miscellaneous and Technical Assumptions
Appendix	1-2	Glossary

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March 1, 2019

Ms. Melissa Marsh
Deputy City Manager
City of Madison Heights
300 West 13 Mile Road
Madison Heights, Michigan 48071

Dear Ms. Marsh:

Submitted in this report are the results of an Actuarial Valuation of the benefit values for Policemen and Firemen associated with the employer financed retiree health care provided by the City of Madison Heights. The date of the valuation was June 30, 2018.

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

The purpose of the valuation is to measure the Plan's financial status and to determine the Actuarially Determined Contribution for the fiscal years beginning July 1, 2019 and July 1, 2020. 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.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section D of this report. This report does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

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.

The findings in this report are based on data and other information through June 30, 2018. The valuation was based upon information furnished by the City concerning Plan benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City.

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 signing actuaries are independent of the plan sponsor.

Brad Lee Armstrong and Jamal J. Adora 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.

To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the plan 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.

Respectfully submitted,

Brad Lee Armstrong, ASA, EA, FCA, MAAA

Jamal J. Adora, ASA, MAAA

BLA/JJA:sc

C2601

Executive Summary

Executive Summary

Actuarially Determined Contribution

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. The report dated August 17, 2018 complies with the actuarial requirements of GASB Statements No. 74 and No. 75 beginning with the fiscal year ending June 30, 2018. As such, there will no longer be an "Annual Required Contribution" calculated in the valuation reports. Therefore, we have determined the "Actuarially Determined Contribution" for subsequent years.

We have calculated the Actuarially Determined Contribution (ADC) for the fiscal years beginning July 1, 2019 and July 1, 2020 under the interest rate assumption of 6.50%. Below is a summary of the results.

The Actuarially Determined Contribution (ADC) for the fiscal year beginning July 1, 2019 was determined to be $3,572,263. The expected employer portion of the claims and premium amounts paid is estimated to be $2,509,268 for the fiscal year beginning July 1, 2019. These amounts reflect the employer portion of the retiree only premium rates and the implicit subsidy for retirees and covered spouses.

For additional details, please see Section A of the report.

Liabilities and Assets

The present value of all benefits expected to be paid to current plan members as of June 30, 2018 is $60,654,754. The actuarial accrued liability, which is the portion of the above amounts attributable to service accrued by plan members as of June 30, 2018 is $58,077,885. The assets currently set aside for GASB OPEB purposes as of June 30, 2018 are $18,473,169.

Assumption & Method Changes

The mortality projection scale and wage inflation assumptions were reviewed and subsequently changed in conjunction with the June 30, 2018 Actuarial Valuation Report for the City of Madison Heights Policemen and Firemen Retirement System. For consistency across plans, the mortality table used has been updated to the RP-2014 mortality table projected from 2006 to 2018 using the MP-2018 improvement scale and the wage inflation assumption has been lowered to 3.50% for the June 30, 2018 OPEB valuation.

Annual premium increases, or health care trend rates, were reset to assume a 9.00% increase in 2019 grading down to the ultimate trend rate of 3.50% in 2034. The ultimate trend rate was lowered from 4.00% to 3.50% for the June 30, 2018 valuation. The load applied to all health care liabilities to approximate the cost for future excise tax was lowered from 7.00% to 4.00% for the June 30, 2018 valuation.

Section A

Valuation Results

Development of the Actuarially Determined Contribution for the Other Postemployment Benefits As of July 1, 2019

Contributions for	Development of the Actuarially Determined Contribution for Fiscal Years Beginning July 1, 2019 and July 1, 2020
Normal Cost	
Normal Retirement	$ 348,463
Early Retirement	0
Termination Benefits	0
Death-in-Service	3,833
Disability	20,559
Life Insurance	1,045
Total Normal Cost	$ 373,900
Annual Active Member Contribution	$ 0
Employer Normal Cost	$ 373,900
Amortization of Unfunded Actuarial Accrued Liabilities (Amortized over 22 years)	$3,198,363
Actuarially Determined Contribution (ADC)	**$3,572,263**
Projected Payroll for the Fiscal Year Beginning July 1, 2019	$3,484,626
Actuarially Determined Contribution (ADC) as a Percentage of Projected Payroll	**102.51%**
Actuarially Determined Contribution (ADC) for the Fiscal Year beginning July 1, 2020	**$3,575,366**
Projected Payroll for the Fiscal Year Beginning July 1, 2020	$3,513,550
Actuarially Determined Contribution (ADC) as a Percentage of Projected Payroll	**101.76%**

The assumptions used to calculate the liabilities shown above include a 6.5% investment return rate.

The unfunded actuarial accrued liabilities were amortized as a level dollar amount over 22 years.

The ADC for the year beginning July 1, 2018 was $4,338,351 or 110.47% of payroll.

Determination of Unfunded Actuarial Accrued Liability as of June 30, 2018

A. Present Value of Future Benefits	
1. Retirees and Beneficiaries	$47,888,659
2. Vested Terminated Members	0
3. Active Members	12,766,095
Total Present Value of Future Benefits	$60,654,754
B. Present Value of Future Employer Normal Costs	2,576,869
C. Present Value of Future Contributions from Current Active Members	0
D. Actuarial Accrued Liability (A.-B.-C.)	58,077,885
E. Market Value of Assets	18,473,169
F. Unfunded Actuarial Accrued Liability (D.-E.)	$39,604,716
G. Funded Ratio (E./D.)	31.8%

The assumptions used to calculate the liabilities shown above include a 6.5% investment return rate.

The funded ratio measurement shown above is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the City's benefit obligations.

The Unfunded Actuarial Accrued Liability as of June 30, 2016 was $47,477,982 and the funded ratio was 21.9%.

Comments

Comment A: The Actuarially Determined Contribution (ADC) has decreased from the last valuation resulting from actuarial gains. Factors contributing to these gains include, but are not limited to:

- Favorable claims and premium experience
- Higher than expected asset return (6.5% expected vs. 10.4% actual in FY17 & 8.6% actual in FY18)
- Updating the mortality assumption to the RP-2014 mortality table projected from 2006 to 2018 using the MP-2018 improvement scale

Partially offsetting these factors were losses due to:

- Partial ADC contributions in FY17 & FY18
- Resetting of health care trend cost rates (9.00% in 2019, grading to 3.50% in 2034)

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 ADC. Lower assumed returns will result in a higher ADC. Since the City has established a trend of contributing a greater percentage of the prior ADCs for several years, we have calculated the liability and the resulting ADC using an assumed long term rate of investment return of 6.5% beginning with the June 30, 2014 valuation. This assumes continuation of the trend for the City toward contributing 100% of the ADC during fiscal years 2019, 2020, and 2021.

Comment C: Several actuarial assumptions were updated since the last valuation. The mortality projection scale and wage inflation assumptions were reviewed and subsequently changed in conjunction with the June 30, 2018 Actuarial Valuation Report for the City of Madison Heights Policemen and Firemen Retirement System. For consistency across plans, the mortality table used has been updated to the RP-2014 mortality table projected from 2006 to 2018 using the MP-2018 improvement scale and the wage inflation assumption has been lowered to 3.50% for the June 30, 2018 OPEB valuation.

In addition, the healthcare inflation assumption was updated, as was the excise tax load (see Comment G).

Overall, the impact of these assumption changes was a slight decrease in liabilities and the ADC. See section D for a further discussion of the actuarial assumptions used.

Comment D: For the fiscal year ending June 30, 2020 and June 30, 2021, the estimated claims and/or premiums paid by the employer on behalf of retirees (including the effect of the implicit rate subsidy) is $2,509,268 and $2,684,013, respectively.

Comment E: The contribution rates shown include amortization of the unfunded actuarial accrued liability over 22 years beginning July 1, 2019. A shorter amortization period would result in a higher ADC.

Comment F: The retiree health plan is closed to new entrants; therefore, the unfunded actuarial accrued liability is amortized as a level dollar amount.

Comments (Concluded)

Comment G: Excise Tax on High-Cost Employer Health Plans (aka Cadillac Tax) Effective 1/1/2022. 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. 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 Plan it is intended that, for purposes of the test, the pre and post Medicare members will be blended. The Plan Sponsor will need to decide whether to reduce benefits to avoid the tax, or how the additional cost will be allocated between the employer and the members. The excise tax is projected to be between 5%-10% of premiums. A 4.0% load was applied to all health care liabilities to approximate the cost for future excise tax.

Comment H: The Michigan State Treasurer has established uniform actuarial assumptions as required by Public Act 202 (PA 202) of 2017 for use with the annual Form 5572 (Retirement System Annual Report). The use of the uniform assumptions for reporting will be required for the 2019 fiscal year (note that the Department of Treasury is encouraging early adoption).

The current valuation assumptions and/or methods used by the Plan match or fall in the range of uniform assumptions established by the Treasurer for PA 202 reporting purposes, **with the exception of healthcare trend**. Therefore, the results in the valuation would most likely not be suitable for the reporting requirements for the 2019 fiscal year. We can either:

- Perform calculations based on a different set of assumptions consistent with the Treasurer's established uniform assumptions for PA 202 reporting purposes.
- Discuss with the Board the suitability of using the Treasurer's established assumptions for funding purposes if policymakers wish to consider that change.

Additionally, PA 202 requires submitting a funding improvement plan to the State Treasurer if the OPEB Plan's funded status is less than 40%. Under current assumptions the plan is 31.8% funded. We would be happy to provide actuarial services to help establish a plan funding policy in connection with PA 202.

Fees associated with these reporting requirements would be based on the complexity of the assignment.

SECTION B

RETIREE PREMIUM RATE DEVELOPMENT

Retiree Premium Rate Development

Initial premium rates were developed for the two classes of retirees (pre-65 and post-65). The rates were calculated by using actual paid claims and exposure data for the period of January 2016 to September 2018, adjusted for catastrophic claims, plus the load for administration, network access fees, and stop loss premiums. The Self-insured Medical and prescription drug data were provided by the City of Madison Heights. The Medical data was analyzed for the pre-65 and post-65 participants separately since Medicare is available for the post-65 participants and has a significant impact on the claim experience. Furthermore, since the prescription drug claims and the medical claims exhibit different trends and claim payment patterns, we analyzed these claims separately as well. There are very few post-65 members that are using the self-insured program since most have chosen the Medicare Advantage program, therefore since the self-insured data is not credible for this portion of the benefit program we used strictly the MA rates.

The benefit options available to future retirees are different than current retirees. We have developed separate premium rates for future retirees in order to reflect the benefit differences.

Age graded and sex distinct premiums are utilized by this valuation. The premiums 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 utilization and cost at that age.

Retiree Premium Rate Development (Concluded)

The combined monthly one-person medical and drug premiums at select ages are shown below:

Future Retirees

For Those Not Eligible for Medicare

Age	Male	Female
45	$ 503.27	$ 694.58
50	655.31	807.28
55	862.32	941.52
60	1,113.73	1,096.64

For Those Eligible for Medicare

Age	Male	Female
65	$ 580.94	$ 547.94
70	632.85	612.38
75	679.70	663.23

Current Retirees

For Those Not Eligible for Medicare

Age	Male	Female
45	$ 542.92	$ 749.31
50	706.95	870.89
55	930.26	1,015.71
60	1,201.49	1,183.05

For Those Eligible for Medicare

Age	Male	Female
65	$ 886.92	$ 836.54
70	966.17	934.92
75	1,037.69	1,012.56

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, MAAA

SECTION C

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

City of Madison Heights Policemen and Firemen
Other Postemployment Benefits
Summary of Benefits as of June 30, 2018

Plan Participants

Employees of the City of Madison Heights Policemen and Firemen Retiree Health Care Plan are eligible to receive retiree health care benefits.

Normal Retirement Benefits

Eligibility conditions for retiree health care benefits under a normal retirement are as follows:

Police Patrol hired before July 1, 2009: Any age with 25 years of service.
Police Patrol hired on or after July 1, 2009: For all eligible full-time employees, no retiree health insurance shall be provided. In lieu of health insurance, the employee shall receive a health care savings plan (HCSP) into which the city will contribute $100 per month and the employee shall contribute 8% of base salary. Upon termination of employment with the city, for any reason, the employee contribution portion of the HCSP shall be available for use on a tax-free basis for any medically related expense as permitted under IRS regulations. The employer contribution portion shall be available to the employee after a 7-year vesting period.

Department Heads hired before September 28, 2009: Any age with 25 years of service.
Department Heads hired on or after September 28, 2009: No retiree health insurance will be provided to any full-time employee. In lieu of health insurance, the employee shall receive a health care savings plan into which the City will contribute $100 per month and the employee will contribute 8% of their base salary. Upon termination of employment with the city, for any reason, the employee contribution portion of the HCSP shall be available for use on a tax-free basis for any medically related expense as permitted under IRS regulations. The employer contribution portion shall be available to the employee after a 7-year vesting period.

Firemen hired before July 1, 2009: Any age with 25 years of service.
Firemen hired on or after July 1, 2009: For all eligible full-time employees, no retiree Health Insurance shall be provided. In lieu of health insurance, the employee shall receive a health care savings plan (HCSP) into which the city will contribute $100 per month and the employee shall contribute 5% of base salary. Upon termination of employment with the city, for any reason, the employee contribution portion of the HCSP shall be available for use on a tax-free basis for any medically related expense as permitted under IRS regulations. The employer contribution portion shall be available to the employee after a 7-year vesting period.

City of Madison Heights Policemen and Firemen
Other Postemployment Benefits
Summary of Benefits as of June 30, 2018

Police Command hired before July 1, 2009: Any age with 25 years of service.
Police Command hired on or after July 1, 2009: For all eligible full-time employees, no retiree Health Insurance shall be provided. In lieu of health insurance, the employee shall receive a health care savings plan (HCSP) into which the city will contribute $100 per month and the employee shall contribute 5% of base salary. Upon termination of employment with the city, for any reason, the employee contribution portion of the HCSP shall be available for use on a tax-free basis for any medically related expense as permitted under IRS regulations. The employer contribution portion shall be available to the employee after a 7-year vesting period.

Deferred Retirement Benefits

City of Madison Heights Policemen and Firemen Retiree Health Care Plan does not provide deferred retiree health care coverage for members terminating employment with less than 25 years of service.

Duty Disability Retirement Benefits

Eligibility conditions for retiree health care benefits under a duty disability retirement are as follows:

All Members: No age or service restrictions. Benefits commence immediately.

Non-Duty Disability Retirement Benefits

City of Madison Heights Policemen and Firemen Retiree Health Care Plan does not provide retiree health care coverage for members retiring under non-duty disability retirement if less than 25 years of service.

Duty Death-in-Service Retirement Benefits

Eligibility conditions for retiree health care benefits under a duty death retirement are as follows:

All Members: No age or service restrictions. Benefits commence immediately.

Non-Duty Death-in-Service Retirement Benefits

Eligibility conditions for retiree health care benefits under a non-duty death retirement are as follows:

All Members: 25 years of service. Benefit commences immediately.

City of Madison Heights Policemen and Firemen
Other Postemployment Benefits
Summary of Benefits as of June 30, 2018

Benefits for Retired Employees

All Members

Member: City pays 100% of the premiums for base plan.
Spouse: City pays 100% of premiums for a retiree's spouse at time of retirement. Coverage continues to surviving spouses of deceased retirees. (Limited to spouse at time of retirement.)

If retiree obtains employment from an employer who provides medical coverage, the member, spouse and eligible dependent are not covered by City's coverage where applicable for duration of employment.

Non-Medicare and Medicare-Eligible Provisions

Policemen and Firemen retirees who were hired on or before April 1986 are not required to enroll in Medicare Part A once eligible.

All other retirees are required to enroll in Medicare once eligible.

Life Insurance Coverage

City pays for $10,000 life insurance coverage for retirees.

This is a brief summary of the City of Madison Heights Policemen and Firemen Other Postemployment Benefit provisions. In the event that any description contained herein differs from the actual eligibility or benefit, the appropriate employee contract or governing document will prevail.

Active Members as of June 30, 2018
by Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date						Totals	
	0-4	5-9	10-14	15-19	20-24	25+	No.	Valuation Payroll
30-34			1				1	$ 99,246
35-39								
40-44				5	2		7	703,351
45-49				10	6	1	17	1,675,918
50-54				2	3	1	6	574,445
55-59				2	1		3	308,717
Totals			**1**	**19**	**12**	**2**	**34**	**$3,361,677**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	47.2	years
Service:	19.5	years
Annual Pay:	$98,873	

Retired Members as of June 30, 2018
by Attained Age

Police/Fire Retirees

Attained Age	Number of Retirees		
	Male	Female	Totals
Under 55	17	1	18
55-59	19	2	21
60-64	19	3	22
65 & Over	42	10	52
Totals	**97**	**16**	**113**

SECTION D

ACTUARIAL COST METHODS 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 was 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;

(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. The Unfunded Actuarial Accrued Liabilities were determined using the funding value of assets and actuarial accrued liability calculated as of the valuation date and projected 12 months to the beginning of the fiscal year. The UAAL amortization payment is the amount required to fully amortize the UAAL over a 22-year period beginning on the first day of the fiscal year for which the contributions in this report have been calculated. Level dollar amortization has been used.

The following amortization factors were used in developing the Actuarially Determined Contribution for the fiscal years shown:

	Fiscal Year Beginning July 1,	
	2019	**2020**
Years Remaining	22	21
Amortization Factor	11.90615	11.64790

Actuarial Assumptions

***Rate of Investment Return*. 6.5% per year**, compounded annually, net of expenses. This assumption is used to equate the value of payments due at different points in time.

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 benefit amounts will be based.

	% Increase in Salary at Sample Ages		
Sample Ages	**Merit & Seniority**	**Base (Economic)**	**Increase Next Year**
20	3.00%	3.50%	6.50%
25	3.00%	3.50%	6.50%
30	2.60%	3.50%	6.10%
35	1.10%	3.50%	4.60%
40	0.20%	3.50%	3.70%
45	0.20%	3.50%	3.70%
50	0.20%	3.50%	3.70%
55	0.10%	3.50%	3.60%
60	0.00%	3.50%	3.50%
Ref	33		

The mortality table used to measure post-retirement mortality is the RP-2014 Healthy Annuitant Mortality for males and females projected to 2018, with MP-2018 Mortality Improvement Scale. The corresponding Disability and Employee tables were used to measure Disabled mortality and Pre-Retirement mortality, respectively. Mortality rates include some margin for future mortality improvements. The mortality table was last updated for the June 30, 2016 actuarial valuation. The mortality projected scale was last updated for the June 30, 2018 valuation.

Sample Attained	**Probability of Dying Next Year**		**Future Life Expectancy (years)**	
Ages	**Men**	**Women**	**Men**	**Women**
45	0.29 %	0.22 %	36.33	39.02
50	0.42	0.28	31.90	34.46
55	0.59	0.39	27.63	29.97
60	0.83	0.59	23.50	25.60
65	1.19	0.86	19.52	21.40
70	1.75	1.32	15.74	17.40
75	2.79	2.17	12.24	13.67
80	4.70	3.71	9.12	10.32
Ref	#2135		#2136	

Actuarial Assumptions (Continued)

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

Hired before July 1, 2009

Retirement Ages	Percent of Eligible Active Members Retiring within Next Year: Police	Percent of Eligible Active Members Retiring within Next Year: Fire & Dept. Heads
45	40 %	20 %
46	40	20
47	40	20
48	40	20
49	40	20
50	40	20
51	35	15
52	20	10
53	15	10
54	15	10
55	15	10
56	15	10
57	15	10
58	15	10
59	25	20
60*	100	100
Ref	46	47

* *If a member reaches age 60 and has not attained 25 years of service, that member was assumed to continue working until reaching 25 years.*

Actuarial Assumptions (Continued)

Rates of separation from active membership are used to estimate the number of employees at each age that are expected to terminate employment before qualifying for retirement benefits. The withdrawal rates do not apply to members eligible to retire, and do not include separation on account of death or disability.

Sample rates of separation from active employment are shown below:

Sample Ages	Years of Service	% of Active Members Separating within Next Year	
		Police	Fire & Dept. Heads
ALL	0	12.00 %	10.00 %
	1	9.00	7.00
	2	7.00	5.00
	3	5.00	4.00
	4	4.50	3.50
25	5 & Over	4.50	3.50
30		3.90	2.90
35		2.30	1.50
40		0.90	0.60
45		0.50	0.50
50		0.50	0.50
Ref		29 53	30 54

Actuarial Assumptions (Concluded)

Rates of disability among active members are used to estimate the incidence of member disability in future years. 50% of disabilities were assumed to be duty related and 50% of disabilities were assumed to be non-duty related.

Sample Ages	Percent Becoming Disabled within Next Year: Male	Percent Becoming Disabled within Next Year: Female
20	0.07 %	0.03 %
25	0.09	0.05
30	0.10	0.07
35	0.14	0.13
40	0.21	0.19
45	0.32	0.28
50	0.52	0.45
55	0.92	0.76
60	1.53	1.10
Ref	#33x1	#34x1

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

Year	Medical and Prescription Drugs
2019	9.00 %
2020	8.50
2021	8.00
2022	7.50
2023	7.00
2024	6.50
2025	6.00
2026	5.50
2027	5.25
2028	5.00
2029	4.75
2030	4.50
2031	4.25
2032	4.00
2033	3.75
2034 & Later	3.50

Supplementary Information

Valuation Date	June 30, 2018
Actuarial Cost Method	Individual Entry Age
Amortization Method	Level Dollar Closed
Remaining Amortization Periods	22 Years for FYE 2020 21 Years for FYE 2021
Asset Valuation Method	Market Value
Actuarial Assumptions:	
Discount Rate	6.5% Per Year
Projected Salary Increases	3.50%
Valuation Health Care Cost Trend Rate	9% in 2019, grading to 3.50% in 2034

Schedule of Funding Progress

Rounded to the Nearest $1,000

Actuarial Valuation Date June 30,	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b)-(a)	Funded Ratio (a)/(b)	Active Member Covered Payroll (c)	Unfunded AAL as a Percentage of Active Member Covered Payroll ((b-a)/c)
2008	$ 2,716	$33,574	$30,858	8.1 %	$6,476	476.5 %
2010	4,805	35,554	30,749	13.5	7,250	424.1
2012	7,245	47,596	40,351	15.2	5,058	797.7
2014	11,575	45,928	34,353	25.2	4,744	724.1
2016	13,301	60,779	47,478	21.9	4,148	1,144.6
2018	**18,473**	**58,078**	**39,605**	**31.8**	**3,362**	**1,178.1**

Miscellaneous and Technical Assumptions

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.

Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

Marriage Assumption: 70% of males and 70% 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 for active member valuation purposes.

Medicare Coverage: Assumed to be available for all covered employees on attainment of age 65.

Election Percentage: It was assumed that 100% of eligible retirees will elect to receive retiree health care benefits through the City. Of those assumed to elect coverage, 85% were assumed to elect two-person coverage, if eligible. For those that elect two-person coverage, it was assumed that coverage would continue to the spouse upon death of the retiree, if eligible.

For active employees who have opted-out of the City's active health care plan, it was assumed they would elect retiree health care coverage upon retiring.

Excise Tax: All costs were increased by 4% to reflect the projected excise tax from the Affordable Care Act.

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.

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.

Actuarially Determined Contribution (ADC) - The ADC is the normal cost plus the portion of the unfunded actuarial accrued liability to be amortized in the current period. The ADC 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.

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.

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.

Glossary (Concluded)

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 Employee Benefits (OPEB) - OPEB are postemployment benefits other than pensions. OPEB generally takes the form of health insurance and dental, vision, prescription drugs or other healthcare benefits.

Reserve Account - An account used to indicate that funds have been set aside for a specific purpose and is 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 accrued liability."

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