

City of Southgate Retiree Health Care Plan

Actuarial Valuation Report

as of June 30, 2021



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May 31, 2022

Mr. David Angileri, Finance Director
City of Southgate
Retiree Health Care Plan
14400 Dix-Toledo Road
Southgate, Michigan 48195

Dear Mr. Angileri:

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 Southgate. The date of the valuation was June 30, 2021.

This report was prepared at the request of the City of Southgate and is intended for use by the City of Southgate and those designated or approved by the City of Southgate. This report may be provided to parties other than the City of Southgate only in its entirety and only with the permission of the City of Southgate. 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 Contributions for the fiscal years ending June 30, 2023 and June 30, 2024. This report should not be relied on for any purpose other than the purposes described herein. Determinations of the liability 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) Statement No. 74 or No. 75.

The findings in this report are based on data and other information through June 30, 2021. 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 Southgate, concerning Retiree Health benefits, financial transactions, plan provisions and active members, retirees and beneficiaries. We checked for internal and year-to-year consistency with the last valuation, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City of Southgate.

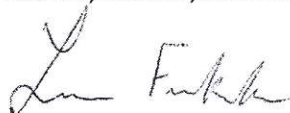
This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled. We are relying on the GRS actuaries and Internal Software, Training, and Processes Team who developed and maintain the model.

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 Southgate 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.

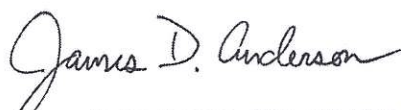
The signing actuaries are independent of the plan sponsor.

Laura Frankowiak and James D. Anderson 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.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Laura Frankowiak, ASA, FCA, MAAA



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

LF/JDA:dj

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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. It is our understanding that the City of Southgate is required to comply with both GASB Statements No. 74 and No. 75 and, as such, requires GASB Statements No. 74 and No. 75 reporting information at the completion of each fiscal year.

We have calculated the Actuarially Determined Contribution for the fiscal years ending June 30, 2023 and June 30, 2024, under an interest rate assumption of 3.50%. Below is a summary of the results. The Actuarially Determined Contributions and estimated premiums shown below include an adjustment for any implicit rate subsidy.

For additional details please see the section titled "Valuation Results."

Fiscal Year Ending	Actuarially Determined Contribution	Estimated Premiums Paid for Retirees
June 30, 2023	\$5,529,978	\$2,539,607
June 30, 2024	5,535,668	2,662,326

Liabilities and Assets – as of June 30, 2021

1. Present Value of Future Benefit Payments	\$82,470,255
2. Actuarial Accrued Liability	69,729,173
3. Plan Assets	6,630,238
4. Unfunded Actuarial Accrued Liability (2) – (3)	63,098,935
5. Funded Ratio (3)/(2)	9.5%

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 section titled "Actuarial Cost Method and Actuarial Assumptions").



SECTION A

VALUATION RESULTS

City of Southgate Retiree Health Care Plan Results by Group as of June 30, 2021

Other Postemployment Benefit (OPEB) Group	Municipal	Police/Fire	Total
A. Present Value of Future Benefits			
i) Retirees and Beneficiaries	\$14,056,876	\$33,036,304	\$47,093,180
ii) Vested Terminated Members	251,440	0	251,440
iii) Active Members	<u>11,581,948</u>	<u>23,543,687</u>	<u>35,125,635</u>
Total Present Value of Future Benefits	25,890,264	56,579,991	82,470,255
B. Present Value of Future Normal Costs	1,865,307	10,875,775	12,741,082
C. Actuarial Accrued Liability (A.-B.)	24,024,957	45,704,216	69,729,173
D. Actuarial Value of Assets	3,506,433	3,123,805	6,630,238
E. Unfunded Actuarial Accrued Liability (C.-D.)	20,518,524	42,580,411	63,098,935
F. Funded Ratio (D./C.)	14.6%	6.8%	9.5%
G. Fiscal Year Ending June 30, 2023			
i) Employer Normal Cost	\$ 276,926	\$ 898,913	\$ 1,175,839
ii) Amortization of UAAL*	<u>1,725,920</u>	<u>2,628,219</u>	<u>4,354,139</u>
Actuarially Determined Contribution	\$ 2,002,846	\$ 3,527,132	\$ 5,529,978
H. Fiscal Year Ending June 30, 2024			
Actuarially Determined Contribution	\$ 1,993,275	\$ 3,542,393	\$ 5,535,668

* The Unfunded Actuarial Accrued Liabilities (UAAL) were amortized as a level dollar amount for Municipal over a closed period of 16 years and as a level dollar amount for Police/Fire over a closed period of 25 years for the fiscal year ending June 30, 2023 and decreasing by 1 each year thereafter.

The long-term rate of investment return used in this valuation is 3.50%.



Comments

Comment A: As a matter of course, liabilities and the resulting Actuarially Determined Contributions will change from one valuation to the next. The net impact for the 2021 valuation was an overall decrease in total liability and a decrease in the resulting Actuarially Determined Contributions for all groups. Factors contributing to the decreases in liability and Actuarially Determined Contributions include, but are not limited to:

- More favorable premiums than projected.

Partially offsetting these factors were increases due to:

- Assumption changes:
 - Resetting the health care cost trend assumption; and
 - Updating the Police/Fire mortality tables and other demographic assumptions to be consistent with a recent experience study for that group.

The impact of the various changes in assumptions noted above increased the liability by approximately \$3.2 million.

Comment B: One of the key assumptions used in any valuation of the cost of postemployment benefits is the rate of return on the assets that will be used to pay plan benefits. Higher assumed investment returns will result in a lower Actuarially Determined Contribution. Lower returns will tend to increase the Actuarially Determined Contribution. We have calculated the liability and the resulting Actuarially Determined Contribution using an assumed annual rate of investment return of 3.50%. The investment return assumption should not exceed reasonable market expectations.

Comment C: The plan sponsor is required by GASB to perform actuarial valuations at least biennially unless there are significant changes in the OPEB.

Comment D: The Retiree Health Care Plan is closed to new members. Because of the closure of the Plan, payments of the unfunded accrued liability have been calculated as level dollar amounts for all groups.

Comment E: The contribution rates shown include amortization of the unfunded actuarial accrued liability over a closed 16-year period for Municipal and a closed 25-year period for Police/Fire beginning with the fiscal year ending June 30, 2023.

Comment F: The GASB issued Statement Nos. 74 and 75 for OPEB valuations similar to the GASB pension standards. It is our understanding that the City is required to comply with both GASB Statements No. 74 and No. 75 for each future fiscal year ending June 30. The basis for the June 30, 2022 and June 30, 2023 GASB Statement Nos. 74 and 75 reports is expected to be this valuation (as of June 30, 2021), where roll-forward techniques will be applied.



Comments

Comment G: This report reflects the recent and still-developing impact of COVID-19, which is likely to influence demographic, economic, and healthcare experience, at least in the short term, through the valuation date, June 30, 2021. We will continue to monitor these developments and their impact on the Retiree Health Care Plan. Actual experience will be reflected in each subsequent funding valuation, as experience emerges.

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 purposes is required for each future fiscal year ending June 30. Consistent with past practice, GRS plans to provide the City with the necessary PA 202 uniform assumption information as part of the June 30, 2022 and June 30, 2023 GASB Statement Nos. 74 and 75 report.

Comment I: Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the market 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;
- A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the Plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit); and
- The measure is inappropriate for assessing the need for or the amount of future employer contributions.

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 6/1/2021 BCBS and BCN pre-65, 1/1/2022 BCBS Medicare Advantage Post-65 and 1/1/2022 BCN Medicare Advantage Post-65 fully-insured medical rates provided by the City of Southgate were utilized to determine the appropriate premium rates. The pre-65 fully-insured medical premiums are blended rates based on the combined experience of active and pre-65 retired members; therefore, there is an implicit employer subsidy for the non-Medicare eligible retirees since the average costs of providing health care benefits to retirees under age 65 is higher than the average cost of providing health care benefits to active employees. The true per capita cost for the pre-65 retirees is developed by adjusting the demographic differences between the active employees and retirees to reflect this implicit rate subsidy for the retirees. For the post-65 retirees, the fully-insured premium rates included both medical and Rx and are used as the basis of the initial per capita cost without adjustments since the rate reflects the demographics of the post-65 retiree group.

Several of the post-65 suffixes are Medicare Advantage programs. In a Medicare Advantage Program, the liability is based on the difference between the present value of future claims minus the present value of future reimbursements from CMS. CMS' reimbursement is based on a very competitive bid process and has resulted in recent Medicare Advantage premiums trending at low rates of increase. Previously, a margin has been added to Medicare Advantage rates to recognize that increases in CMS reimbursements may lag behind the trends for health care costs. For the near term, we believe this margin is no longer necessary and we will monitor the Medicare Advantage environment and revisit the need for an additional margin at the time of the next valuation.

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

The combined monthly one-person medical and drug premiums at select ages are shown below. Note that we assumed that everyone with medical coverage had the same members covered under the drug plan.

Municipal

For Those Not Eligible for Medicare (Pre-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
40	\$ 276.36	\$ 449.06	\$ 309.99	\$ 503.71
50	447.97	551.85	502.48	619.01
60	761.34	749.66	853.99	840.89
64	925.81	873.72	1,038.48	980.04

For Those Eligible for Medicare (Post-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
65	\$ 417.47	\$ 393.76	\$ 380.66	\$ 359.04
75	488.44	476.61	445.37	434.59
85	516.49	522.58	470.95	476.50

Police/Fire

For Those Not Eligible for Medicare (Pre-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
40	\$ 324.86	\$ 527.87	\$ 493.41	\$ 801.76
50	526.59	648.71	799.81	985.29
60	894.97	881.23	1,359.32	1,338.46
64	1,088.30	1,027.06	1,652.97	1,559.95

For Those Eligible for Medicare (Post-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
65	\$ 437.92	\$ 413.05	\$ 474.94	\$ 447.96
75	512.36	499.95	555.68	542.22
85	541.79	548.18	587.59	594.52

We have not "age graded" the dental premium rates or the vision premium rates for this valuation, since dental and vision claims do not vary significantly by age. The monthly per member dental premium used in this valuation is \$35.66 for Police and Fire retirees, \$30.00 for their spouses, \$35.66 for Municipal retirees and \$33.36 for their spouses.



Retiree Premium Rate Development

Health Care Cost 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 below 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.

Year After Valuation	Health Care Trend Inflation Rates			
	Medical/Drug Pre-65	Medical/Drug Post-65	Medicare Part B	Dental
1	7.50%	6.25%	14.55%	3.50%
2	7.25	6.00	5.00	3.50
3	6.75	5.75	5.00	3.50
4	6.50	5.50	5.00	3.50
5	6.00	5.25	5.00	3.50
6	5.75	5.00	5.00	3.50
7	5.25	4.75	4.75	3.50
8	5.00	4.50	4.50	3.50
9	4.50	4.25	4.25	3.50
10	4.25	4.00	4.00	3.50
11	3.75	3.75	3.75	3.50
12	3.50	3.50	3.50	3.50
13	3.50	3.50	3.50	3.50
14	3.50	3.50	3.50	3.50
15	3.50	3.50	3.50	3.50
16 +	3.50	3.50	3.50	3.50

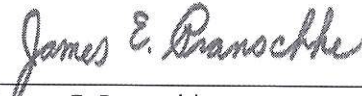
Retiree Premium Rate Development

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, FSA, FCA, MAAA

SECTION C

SUMMARY OF BENEFITS

Summary of the Benefit Provisions for the Retiree Health Care Plan

Municipal Employees Hired Prior to July 1, 2008

Group Name: Municipal

Leaving Employment as a Result of	Eligibility for Pension Benefit	Eligibility for Retiree Health Benefit (if different from pension benefit)	When do retiree health benefits commence?	Coverage Provided by Employer			Retiree Share of Cost for*			
				Retiree	Spouse	Retiree Health Care Provider(s)	Type of Insurance	Retiree	Spouse (while Retiree is alive)	Spouse (after Retiree's death until re-marriage)
Normal Retirement (unreduced pension benefits)	Age 50 with 25 or more years of service	Same as pension	Immediately	Medical	Medical	BCBS, BCN	Fully-insured	5%	5%	5%
	Age 60 with 10 or more years of service Sum of age plus years of service equals 80 or more			Prescription Dental Life Insurance	Prescription Dental	BCBS, BCN Delta Dental	Fully-insured	5% Amount over \$500 Not Eligible ¹	5% Amount over \$500 Not Eligible	5% Amount over \$500 Not Eligible
Deferred Vested Termination	10 or more years of service	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible
Non-Duty Disability	10 or more years of service	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible
Duty Disability	No age or service requirements Must be in receipt of worker's compensation	Same as pension	Immediately	Medical Prescription Dental Life Insurance	Medical Prescription Dental	BCBS, BCN BCBS, BCN Delta Dental	Fully-insured Fully-insured Fully-insured	5% 5% Amount over \$500 Not Eligible ¹	5% 5% Amount over \$500 Not Eligible	5% 5% Amount over \$500 Not Eligible
Non-Duty Death-in-Service	15 or more years of service Age 60 with 10 or more years of service	Not Eligible	Not Eligible		Not Eligible	Not Eligible	Not Eligible	Not Eligible		Not Eligible
Duty Death-in-Service	No age or service requirements Must be in receipt of worker's compensation	Not Eligible	Not Eligible		Not Eligible	Not Eligible	Not Eligible	Not Eligible		Not Eligible

¹ For certain existing retirees, the City pays for \$15,000 of life insurance coverage for retirees. Retiree life insurance is no longer provided for those retiring after July 1, 2013.

² For those retiring after January 1, 2019, until age 65 (or when they start Medicare). Those retired previously have no cost share. The 5% cost share is capped at \$2,500 annually (20% and \$8,000 cap if retiree elects the CS12 PPO plan).

Other Provisions

Those who choose to opt-out of retiree health care receive no incentive from the City.

If a member retires and receives a pension, but does not meet the retiree health care provisions stated above, the retiree may not purchase retiree health care through the City.

Retirees pay for Medicare Part A and/or Part B premiums with no reimbursement from the City. Retirees who are Medicare eligible are provided either a Medicare Advantage Plan or complementary coverage by the City.

Retiree Health Savings Account set up for employees hired after July 1, 2008. These new employees will not receive Health or Dental Insurance at retirement.



Summary of the Benefit Provisions for the Retiree Health Care Plan Police/Fire Hired Prior to July 1, 2016

Group Name: Police and Fire

Leaving Employment as a Result of	Eligibility for Pension Benefit	Eligibility for Retiree Health Benefit (if different from pension benefit)	When do retiree health benefits commence?	Coverage Provided by Employer			Retiree Share of Cost for**			
				Retiree	Spouse/Dependent*	Retiree Health Care Provider(s)	Type of Insurance	Retiree	Spouse (while retiree is alive)	Spouse (after retiree's death until re-marriage)
Normal Retirement (Unreduced pension benefits)	Age 50 with 25 or more years of service Age 60 regardless of service	Age 50 with 25 or more years of service Age 60 with 10 or more years of service	Immediately	Medical Prescription Dental Life Insurance	Medical Prescription Dental Life Insurance	BCBS, BCN BCBS, BCN Delta Dental	Fully-insured Fully-insured Fully-insured	5% 5% Amount over \$500 Not Eligible ^a	5% 5% Amount over \$500 Not Eligible ^a	5% 5% Amount over \$500 Not Eligible ^a
Deferred Vested Termination	10 or more years of service	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible
Non-Duty Disability	Payable upon total and permanent disability of a member with 5 or more years of service	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible
Duty Disability	Payable upon total and permanent disability of a member in the line of duty	Same as pension	Immediately	Medical Prescription Dental Life Insurance	Medical Prescription Dental Life Insurance	BCBS, BCN BCBS, BCN Delta Dental	Fully-insured Fully-insured Fully-insured	5% 5% Not Eligible ^a Not Eligible ^a	5% 5% Not Eligible ^a Not Eligible ^a	5% 5% Not Eligible ^a Not Eligible ^a
Non-Duty Death-in-Service	Payable to a surviving spouse, if any, upon the death of a member with 10 or more years of service	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible
Duty Death-in-Service	Payable upon the expiration of worker's compensation to the survivors of a member who died in the line of duty	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible

* Dependents under the age of 19 or dependents up to the age of 25 if a full time college student and covered under HAP insurance.

^a For certain retirees, the City pays for \$10,000 of life insurance coverage for retirees and \$10,000 of life insurance coverage for spouses. beneficiary retiree only. Retiree life insurance for spouses is no longer provided for those retiring after July 1, 2013. Retiree life insurance is no longer provided for those retiring after July 1, 2013.

**For those retiring after January 1, 2020 from a division other than Police Command, until age 65 (or when they start Medicaid). Those retired previously have no cost share. The 5% cost share is capped at \$2,500 annually (20% and \$8,000 cap if retiree elects the CB12 PRO plan).

Other Provisions

Those who choose to opt-out of retiree health care receive no incentive from the City.

If a member retires and receives a pension, but does not meet the retiree health care provisions stated above, the retiree may not purchase retiree health care through the City.

Members who retire after January 1, 2014 are required to enroll in Medicare Parts A and B; the retiree is responsible for premiums. The City will provide Supplemental Coverage.

Members hired after July 1, 2016 are not eligible for retiree health insurance.



SECTION D

SUMMARY OF PARTICIPANT DATA

**City of Southgate – Total
Eligible Active Members as of June 30, 2021
by Age and Years of Service**

Age	Years of Service to Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.
20-24								
25-29		2						2
30-34		3	2					5
35-39		5	6	3				14
40-44		1	3	4	6			14
45-49			1	6	8	2		17
50-54			1	5	11	1		18
55-59				2	3		1	6
60-64				1	1			2
65 & Over								
Totals		11	13	21	29	3	1	78

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

Age: 45.0 years
Service: 17.6 years

**City of Southgate - Municipal
Eligible Active Members as of June 30, 2021
by Age and Years of Service**

Age	Years of Service to Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.
20-24								
25-29								
30-34								
35-39				2				2
40-44				2	4			6
45-49				3	2			5
50-54			1	3	9	1		14
55-59				2	3		1	6
60-64				1	1			2
65 & Over								
Totals			1	13	19	1	1	35

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

Age: 50.1 years
Service: 20.7 years

City of Southgate - Police/Fire
Eligible Active Members as of June 30, 2021
by Age and Years of Service

Age	Years of Service to Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.
20-24								
25-29		2						2
30-34		3	2					5
35-39		5	6	1				12
40-44		1	3	2	2			8
45-49			1	3	6	2		12
50-54				2	2			4
55-59								
60-64								
65 & Over								
Totals		11	12	8	10	2		43

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

Age: 40.8 years
Service: 15.0 years

City of Southgate

Total Inactive Members as of June 30, 2021

by Age

Count of Retiree and Beneficiary Contracts[^]

	Opt-Out/ Ineligible	One-Person Coverage	Two-Person Coverage*	Total
Male	3	43	66	112
Female	4	38	18	60
Total	7	81	84	172

[^] Contract counts based on reported medical coverage only.

* Includes family coverage.

Age	Current Retirees		
	Number of Those Covered [^]		
	Municipal	Police/Fire	Total
0-44			
45-49	0	4	4
50-54	3	9	12
55-59	7	12	19
60-64	8	12	20
65-69	16	7	23
70-74	17	16	33
75-79	11	16	27
80-84	8	11	19
85-89	3	0	3
90-94	0	3	3
95 +	2	0	2
Totals	75	90	165

[^] Contract counts based on reported medical coverage only.

There is one terminated member eligible for deferred plan benefits. In addition, there is one retiree from the Police/Fire group who is currently working in an active capacity. We have assumed both members will begin receiving retiree healthcare benefits at age 55. These two individuals are not included in the counts above.

SECTION E

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Actuarial Methods for City of Southgate as of June 30, 2021

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; 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 (UAAL) (full funding credit if assets exceed liabilities) were amortized as a level dollar amount since the divisions are closed to new hires. The UAAL was determined using the actuarial value of assets and actuarial accrued liability calculated as of the valuation date and projected to the beginning of the fiscal year at the assumed rate of investment return.

Actuarial Value of Assets. The Actuarial Value of Assets is set equal to the reported market value of assets.

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

Level Dollar	Fiscal Year Ending June 30,	
	2023	2024
Municipal		
Amortization Period (years)	16	15
Level Dollar	12.3046	11.7178
Police/Fire		
Amortization Period (years)	25	24
Level Dollar	16.7683	16.3378

Actuarial Assumptions for City of Southgate (Municipal) as of June 30, 2021

All assumptions are expectations of future experience, not market measures. The rationale for the rates of merit and longevity salary increase, base wage inflation, rates of mortality, normal retirement rates, early retirement rates, rates of separation from active membership, disability rates, and marriage assumption used in this valuation is included in the MERS five-year experience study for the period January 1, 2014 to December 31, 2018, issued February 14, 2020. These assumptions were first used in the June 30, 2019 OPEB Funding Valuation.

The rate of investment return was 3.50%, compounded annually net after investment expenses.

Rates of price inflation are not specifically used for this valuation. However, a rate of price inflation of 2.50% would be consistent with other assumptions in this report.

The rates of salary increase used for individual members are in accordance with the following table:

Percentage Increase in Salary at Sample Years of Service							
Sample Years of Service	Base (Wage Inflation)	Merit and Longevity	Total Percentage Increase in Pay	Sample Years of Service	Base (Wage Inflation)	Merit and Longevity	Total Percentage Increase in Pay
0	3.00 %	6.70 %	9.70 %	21	3.00 %	0.60 %	3.60 %
1	3.00	4.60	7.60	22	3.00	0.50	3.50
2	3.00	3.20	6.20	23	3.00	0.40	3.40
3	3.00	2.70	5.70	24	3.00	0.40	3.40
4	3.00	2.30	5.30	25	3.00	0.40	3.40
5	3.00	1.90	4.90	26	3.00	0.30	3.30
6	3.00	1.70	4.70	27	3.00	0.30	3.30
7	3.00	1.30	4.30	28	3.00	0.30	3.30
8	3.00	1.20	4.20	29	3.00	0.30	3.30
9	3.00	1.20	4.20	30	3.00	0.20	3.20
10	3.00	1.10	4.10	31	3.00	0.20	3.20
11	3.00	1.10	4.10	32	3.00	0.20	3.20
12	3.00	0.90	3.90	33	3.00	0.20	3.20
13	3.00	0.90	3.90	34	3.00	0.20	3.20
14	3.00	0.80	3.80	35	3.00	0.10	3.10
15	3.00	0.70	3.70	36	3.00	0.10	3.10
16	3.00	0.70	3.70	37	3.00	0.10	3.10
17	3.00	0.60	3.60	38	3.00	0.10	3.10
18	3.00	0.60	3.60	39	3.00	0.10	3.10
19	3.00	0.60	3.60	40 and Over	3.00	0.00	3.00
20	3.00	0.60	3.60				

Actuarial Assumptions for City of Southgate (Municipal) as of June 30, 2021

The rates of mortality used for individual members are based upon the sex distinct Pub-2010 tables, as published by the Society of Actuaries, and include a margin for future mortality improvements projected using a fully generational improvement scale. The tables used were as follows:

- **Healthy Pre-Retirement Mortality:** Sex distinct Pub-2010 General Employees table without adjustment. The base year is 2010 and future mortality improvements are assumed each year using scale MP-2019, as published by the Society of Actuaries. Ninety percent (90%) of active member deaths are assumed to be non-duty deaths and 10% of the deaths are assumed to be duty related.
- **Healthy Post-Retirement Mortality:** Sex distinct Pub-2010 General Healthy Retiree tables scaled by a factor of 106%. The base year is 2010 and future mortality improvements are assumed each year using scale MP-2019, as published by the Society of Actuaries.
- **Disability Retirement Mortality:** Sex distinct PubNS-2010 Disabled tables without adjustment. The base year is 2010 and future mortality improvements are assumed each year using scale MP-2019, as published by the Society of Actuaries.

Note that the Pub-2010 tables do not include rates at all ages. For purposes of selecting mortality rates that are not otherwise published, we use the corresponding Employee or Healthy Retiree rates as applicable.

The life expectancies and mortality rates projected for employees are shown below for selected ages, based on retirements in 2021. Retirements in future years will reflect improvements in life expectancy:

Age	Expected Years of Life Remaining		Mortality Rates	
	Male	Female	Male	Female
55	33.73	35.97	0.21%	0.13%
60	28.76	30.88	0.33	0.20
65	23.94	25.88	0.47	0.29
70	19.21	20.97	0.66	0.44
75	14.58	16.17	0.99	0.73
80	10.05	11.52	1.58	1.24
85	6.93	8.07	7.96	5.91
90	4.83	5.60	13.77	10.98

Actuarial Assumptions for City of Southgate (Municipal) as of June 30, 2021

The life expectancies and mortality rates projected for non-disabled retirees are shown below for selected ages, based on retirements in 2021. Retirements in future years will reflect improvements in life expectancy:

Age	Expected Years of Life Remaining		Mortality Rates	
	Male	Female	Male	Female
55	30.18	33.07	0.44%	0.32%
60	25.49	28.22	0.68	0.43
65	21.02	23.51	0.98	0.63
70	16.79	18.98	1.51	1.01
75	12.88	14.74	2.56	1.81
80	9.44	10.95	4.62	3.33
85	6.64	7.77	8.44	6.27
90	4.60	5.35	14.59	11.64

The life expectancies and mortality rates projected for disabled retirees are shown below for selected ages, based on retirements in 2021. Retirements in future years will reflect improvements in life expectancy:

Age	Expected Years of Life Remaining		Mortality Rates	
	Male	Female	Male	Female
55	22.62	25.33	2.06%	1.82%
60	19.53	22.16	2.60	2.08
65	16.66	18.96	3.07	2.18
70	13.86	15.62	3.64	2.58
75	11.10	12.34	4.70	3.63
80	8.54	9.42	6.70	5.62
85	6.35	7.06	10.03	8.89
90	4.60	5.29	15.25	13.06

Actuarial Assumptions for City of Southgate (Municipal) as of June 30, 2021

Retirement Rates

A schedule of retirement rates is used to measure the probability of eligible members retiring during the next year. Certain retirement service amounts (normal retirement) or age (early reduced pension retirement) may not apply, depending on the benefit age of first eligibility.

Normal Retirement – Unreduced Pension Benefit Service Based Retirement Rates

Sample Years of Service	Percent of Eligible Active Members Retiring within Next Year	Sample Years of Service	Percent of Eligible Active Members Retiring within Next Year
Under 5	15.00 %	23	26.00 %
5	15.00	24	30.00
6	15.00	25	34.00
7	15.00	26	25.00
8	15.00	27	25.00
9	15.00	28	25.00
10	20.00	29	25.00
11	20.00	30	25.00
12	20.00	31	28.00
13	20.00	32	28.00
14	20.00	33	28.00
15	20.00	34	28.00
16	20.00	35	25.00
17	20.00	36	25.00
18	20.00	37	25.00
19	20.00	38	25.00
20	20.00	39	25.00
21	22.00	40 and Over	25.00
22	24.00		

Rates of retirement are set to 100% beginning at age 85.

**Actuarial Assumptions for
City of Southgate (Municipal)
as of June 30, 2021**

**Early Retirement - Reduced Pension Benefit
Age Based Retirement Rates**

Retirement Ages	Percent of Eligible Active Members Retiring within Next Year
50	4.00 %
51	4.00
52	4.00
53	4.00
54	4.00
55	4.00
56	4.00
57	4.00
58	4.00
59	4.00

In the case a member's eligibility for early reduced pension retirement precedes eligibility for OPEB retirement, the percent of eligible active members retiring within the next year is as described in the table above or 3%, whichever is smaller.

Actuarial Assumptions for City of Southgate (Municipal) as of June 30, 2021

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 rates of separation from active membership do not apply to members eligible to retire, and do not include separation on account of death or disability. The assumed rates of separation applied in the current valuation are based on years of service and different rates apply to public safety and all other groups. Sample rates of separation from active employment are shown below:

Sample Years of Service	Percent of Active Members Withdrawing Within the Next Year	
	Public Safety	All Others
0	13.90 %	23.40 %
1	11.60	19.50
2	9.40	15.80
3	7.40	12.50
4	6.10	10.30
5	4.90	8.30
6	4.30	7.20
7	3.90	6.60
8	3.60	6.00
9	3.40	5.70
10	3.20	5.40
11	3.10	5.20
12	2.80	4.70
13	2.70	4.50
14	2.50	4.20
15	2.40	4.00
16	2.30	3.90
17	2.20	3.70
18	2.00	3.40
19	1.90	3.20
20	1.80	3.10
21	1.80	3.00
22	1.70	2.80
23	1.70	2.80
24	1.60	2.70
25 and Over	1.50	2.60

Actuarial Assumptions for City of Southgate (Municipal) as of June 30, 2021

Disability Rates

Disability rates are used in the valuation to estimate the incidence of member disability in future years. The assumed rates of disablement at various ages are shown below:

Sample Ages	Percent Becoming Disabled within the Next Year
20	0.02 %
25	0.02
30	0.02
35	0.05
40	0.08
45	0.20
50	0.29
55	0.38
60	0.39
65	0.39

80% of the disabilities are assumed to be non-duty and 20% of the disabilities are assumed to be duty related. For those plans which have adopted disability provision D-2, for pension benefit purposes, 40% of the disabilities are assumed to be non-duty and 60% are assumed to be duty related.

Actuarial Assumptions for City of Southgate (Police and Fire) as of June 30, 2021

Assumption Rationale for Police and Fire Members: Demographic assumptions were selected or affirmed for use in an experience study dated February 11, 2021 covering the five-year period ending June 30, 2019.

The rate of investment return was 3.50%, compounded annually net after investment expenses.

Rates of price inflation are not specifically used for this valuation. A rate of price inflation of 2.25% was assumed.

The rates of salary increase used for individual members are in accordance with the following table:

Sample Ages	% Increase in Salary at Sample Ages		
	Merit and Seniority	Base (Economic)	Increase Next Year
	Police/Fire	Police/Fire	Police/Fire
20	2.9%	3.0%	5.9%
25	2.3%	3.0%	5.3%
30	2.0%	3.0%	5.0%
35	1.8%	3.0%	4.8%
40	1.6%	3.0%	4.6%
45	1.3%	3.0%	4.3%
50	0.9%	3.0%	3.9%
55	0.5%	3.0%	3.5%
60	0.1%	3.0%	3.1%
Ref	458	0.03	

Actuarial Assumptions for City of Southgate (Police and Fire) as of June 30, 2021

The mortality rates utilized are based upon the Pub-2010 Amount-Weighted Safety tables, in conjunction with the MP-2020 Projection Scale on a fully generational basis. The tables used were as follows:

- **Pre-Retirement:** The Pub-2010 Amount-Weighted, Safety, Employee, Male and Female tables, with a base year of 2010 and future mortality improvements projected using scale MP-2020.
- **Healthy Post-Retirement:** The Pub-2010 Amount-Weighted, Safety, Healthy Retiree, Male and Female tables, with a base year of 2010 and future mortality improvements projected using scale MP-2020.
- **Disability Retirement:** The Pub-2010 Amount-Weighted, Safety, Disabled Retiree, Male and Female, with a base year of 2010 and future mortality improvements projected using scale MP-2020.

These tables were first used for the June 30, 2021 OPEB valuation.

Sample Attained Ages	Healthy Pre-Retirement		Healthy Post-Retirement		Disabled Retirement	
	Future Life Expectancy (Years)*		Future Life Expectancy (Years)*		Future Life Expectancy (Years)*	
	Male	Female	Male	Female	Male	Female
55	33.26	35.67	30.29	32.22	29.07	31.15
60	28.27	30.64	25.41	27.34	24.40	26.56
65	23.41	25.66	20.83	22.71	20.06	22.25
70	18.71	20.75	16.57	18.34	16.05	18.13
75	14.25	16.02	12.67	14.28	12.35	14.25
80	10.09	11.59	9.28	10.71	9.15	10.71

* Based on retirements in 2021. Retirements in future years will reflect projected improvements in life expectancy.

95% of Pre-Retirement Deaths are assumed to be non-duty related and 5% are assumed to be duty related.

Actuarial Assumptions for City of Southgate (Police and Fire) as of June 30, 2021

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

Retirement Ages	Percent of Eligible Active Members Retiring within Next Year*
	Police/Fire
50	70%
51	20
52	20
53	20
54	20
55	10
56	10
57	10
58	10
59	10
60	100
Ref	3180

* A 30% rate is assumed for retirements occurring one year earlier than the stated age 50 with 25 years of service requirement.

A member is eligible for retirement at age 50 with 25 years of service or after attaining age 60.

Actuarial Assumptions for City of Southgate (Police and Fire) as of June 30, 2021

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.

Sample Ages	Service Index	Separating within Next Year	
		Police/Fire	
		Males	Females
ALL	0	12.50%	12.50%
	1	8.50	8.50
	2	5.00	5.00
	3	3.00	3.00
	4	2.50	2.50
25	5 & Over	1.62	1.62
30		1.40	1.40
35		0.83	0.83
40		0.32	0.32
45		0.18	0.18
50		0.18	0.18
55		0.18	0.18
60		0.18	0.18
65		0.18	0.18
Ref		146	146
		#237x1	#237x1

Actuarial Assumptions for City of Southgate (Police and Fire) as of June 30, 2021

Disability rates are used in the valuation to estimate the probability of members retiring with a disability benefit. The assumed rates of disablement at various ages are shown below:

Sample Ages	Percent Becoming Disabled within Next Year (Non Duty)	
	Police/Fire	
	Males	Females
20	0.06%	0.06%
25	0.07	0.07
30	0.10	0.10
35	0.13	0.13
40	0.19	0.19
45	0.29	0.29
50	0.48	0.48
55	0.82	0.82
Ref	#256x1.25	#256x1.25

10% of the disabilities are assumed to be non-duty and 90% of the disabilities are assumed to be duty related.

Miscellaneous and Technical Assumptions for the City of Southgate as of June 30, 2021

Administrative Expenses	No explicit assumption has been made for administrative expenses.
Decrement Operation	Disability and mortality decrements do not operate during the first five years of service. Disability also does not operate during retirement eligibility.
Decrement Timing	Decrement of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined using 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.
Marriage Assumption	Police and Fire: 100% of males and 100% of females are assumed to be married at time of decrement. Municipal: 80% of males and 80% of females are assumed to be married at time of decrement. Male spouses are assumed to be three years older than female spouses for active member valuation purposes (for both Police and Fire and Municipal).
Medicare Coverage	Assumed to be available for all future Municipal retirees and Police/Fire retirees on attainment of age 65. Disabled retirees were assumed to be eligible for Medicare coverage at age 65.
Life Insurance	Valued life insurance amounts as provided by the City in the data (current retirees only).
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.

	One-Person	Two-Person/Family		Opt-Out
		Electing	Continuing	
Municipal				
Male	40%	60%	100%	0%
Female	40%	60%	100%	0%
Police/Fire				
Male	20%	80%	100%	0%
Female	20%	80%	100%	0%

APPENDIX A

HISTORICAL FUNDED RATIO INFORMATION

Historical Funded Ratio

Municipal

Actuarial Valuation Date December 31	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded (Overfunded) AAL (b)-(a)	Funded Ratio (a)/(b)	Present Value of Future Benefits (c)
2017	\$ 2,739,101	\$ 31,191,427	\$ 28,452,326	8.8 %	\$36,685,381
2019	3,076,559	27,114,399	24,037,840	11.4 %	29,427,506
2021	3,506,433	24,024,957	20,518,524	14.6 %	25,890,264

¹ The Actuarial Value of Assets is set equal to the Market Value of Assets.

Police/Fire

Actuarial Valuation Date December 31	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded (Overfunded) AAL (b)-(a)	Funded Ratio (a)/(b)	Present Value of Future Benefits (c)
2017	\$ 1,733,405	\$ 51,756,200	\$ 50,022,795	3.4 %	\$71,997,279
2019	2,597,033	47,662,011	45,064,978	5.5 %	60,443,502
2021	3,123,805	45,704,216	42,580,411	6.8 %	56,579,991

¹ The Actuarial Value of Assets is set equal to the Market Value of Assets.



APPENDIX B

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.”

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 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.

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.

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.

