

September 28, 2018

The Retirement Board
City of Marysville General City Employees Retirement System
Marysville, Michigan

Dear Board Members:

The purpose of the annual actuarial valuation of the City of Marysville General City Employees Retirement System as of June 30, 2018, is to:


- Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement System,
- Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement System, and
- Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2018 and July 1, 2019.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. Data concerning active members, retirees, beneficiaries and assets was provided by the City of Marysville. This data has been reviewed for reasonableness, but no attempt has been made to audit such information. The valuation was based on the provisions of the Retirement System as amended through June 30, 2018. The actuarial assumptions used in this valuation represent reasonable expectations of future experience under the System. This valuation has been prepared under the supervision of a Member of the American Academy of Actuaries who meets the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



Denise M. Jones



Sandra W. Rodwan, M.A.A.A.

City of Marysville
General Employees Retirement System

Actuarial Valuation as of June 30, 2018

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Section One:
Valuation Summary



Purpose of Valuation

The purpose of the annual actuarial valuation of the City of Marysville General City Employees Retirement System as of June 30, 2018 is to:

- ❖ Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the retirement system,
- ❖ Compare accrued assets with accrued liabilities to assess the funded condition of the retirement system, and
- ❖ Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2018 and July 1, 2019.

Liabilities and Funded Condition of Retirement System

Accrued liabilities of the Retirement System as of June 30, 2018 were computed to be \$26,305,228. The funding value of assets was \$17,682,351. The ratio of the funding value of assets to accrued liabilities was 67.22%.

Funding Value of Assets

A smoothed market value of assets was used for the June 30, 2018 valuation. This method credits the assumed rate to the funding value of assets and spreads the difference between the actual and assumed return over 5 years.

City's Computed City Contribution Rate

The City's normal cost contribution rate was computed to be 5.31% of active member payroll (13.31% total normal cost less 8.00% member contributions). The unfunded accrued liabilities were amortized as a level percent of payroll over 26 years. The amortization of the unfunded accrued liabilities was 21.63% of member payroll. The City's total contribution for FY 18/19 and FY 19/20 was therefore computed to be 26.94% of member payroll.

Benefit Provision Changes

There were no benefit changes during the year.

Assumption and Method Changes

There were no assumption or method changes.

Participant Data

	<u>06/30/2018</u>	<u>06/30/2017</u>
Active Members	38	37
Active Member Payroll	\$2,286,480	\$2,201,882
Retirees and Beneficiaries	52	52
Annual Pensions	\$1,636,865	\$1,607,253
Vested Inactive Members	9	10
Deferred Annual Pensions	\$139,861	\$150,900

Financial Data

	<u>06/30/2018</u>	<u>06/30/2017</u>
Funding Value of Assets	\$17,682,351	\$17,470,657
Market Value of Assets	\$16,357,874	\$15,501,114



Section Two:

***Actuarial Calculations –
Funding***



Unfunded Actuarial Accrued Liability

Actuarial accrued liability	\$26,305,228	\$26,286,823
Assets allocated to funding	<u>17,682,351</u>	<u>17,470,657</u>
Unfunded actuarial accrued Liability	\$8,622,877	\$8,816,166

Recommended City Contributions

Valuation Date June 30,	Fiscal Year	Computed City Contributions	
		% of Payroll	Dollar Amount
2000	00/01		\$0
2001	01/02		30,650
2002	02/03		153,461
2003	03/04		365,510
2004	04/05	16.01%	366,690
2005	05/06	18.69	402,441
2006	06/07	18.95	431,758
2007	07/08	16.05	340,030
2008(a)	08/09	19.76	443,123
2009(a)	09/10	21.79	497,771
2010	10/11	19.11	407,469
2011	11/12	22.30	425,214
2012	12/13	20.02	373,304
2013	13/14	24.82	453,888
2014(a)	14/15	23.44	460,017
2015	15/16	20.78	436,383
2016	16/17	23.09	480,183
2017(a)	17/18	27.90	614,325
2018	18/19	26.94	615,978
2018	19/20	26.94	640,617

(a) After changes in assumptions and methods.

Note: Results prior to 2004 are based on reports provided by previous actuarial firm.

History of Assets and Accrued Liabilities

Valuation Date June 30,	Valuation Assets	Actuarial Accrued Liabilities	Funded Ratio	Unfunded Actuarial Accrued Liabilities
1993	\$7,861,280	\$7,184,653	109.42%	\$(676,627)
1994	8,639,945	7,960,198	108.54	(679,747)
1995	9,146,510	10,078,549	90.75	932,029
1996	10,048,696	10,971,000	91.59	922,304
1997	11,808,717	11,754,168	100.46	(54,549)
1998	13,686,707	12,734,370	107.48	(952,337)
1999	15,648,850	14,034,351	111.50	(1,614,499)
2000	16,941,119	15,032,094	112.70	(1,909,025)
2001	17,335,570	16,242,162	106.73	(1,093,408)
2002	17,040,860	16,746,879	101.76	(293,981)
2003	16,803,758	17,831,503	94.24	1,027,745
2004	17,172,124	18,776,905	91.45	1,604,781
2005	17,857,731	19,593,933	91.14	1,736,202
2006	18,783,632	20,814,117	90.24	2,030,485
2007	20,043,092	21,644,008	92.60	1,600,916
2008(a)	20,291,835	23,682,028	85.68	3,390,193
2009(a)	19,981,016	24,475,812	81.64	4,494,796
2010	19,685,258	22,872,797	86.06	3,187,539
2011	19,385,974	23,661,130	81.93	4,275,156
2012	18,672,826	22,895,219	81.55	4,222,393
2013	17,805,313	23,461,641	75.89	5,656,328
2014(a)	18,238,440	25,272,742	72.17	7,034,302
2015	18,366,503	24,567,768	74.76	6,201,265
2016	17,718,804	24,589,791	72.06	6,870,987
2017(a)	17,470,657	26,286,823	66.46	8,816,166
2018	17,682,351	26,305,228	67.22	8,622,877

(a) After changes in assumptions and methods.

Results shown throughout this report, for years prior to 2004, were prepared by the previous actuarial firm.

Comments

Comment 1: The City’s computed contribution for the fiscal year beginning July 1, 2018 has been computed to be 26.94% of active member payroll, or \$615,978 for FY 18/19 and \$640,617 for FY 19/20.

Comment 2: During the year ended June 30, 2018, the recognized rate of the return on the smoothed funding value of assets was less than assumed. The funding value of assets includes carry-forwards of gains and losses from the 4 prior fiscal years. The recognized rate of return on the funding value of assets was 3.87% vs. 7.50%.

Section Three:

***Retirement System
Benefit Provisions***



Benefit Provision Summary

Regular Retirement

Eligibility:

General: Age 60 with 5 or more years of service or age 55 and 25 years of service.

516M: If hired before 7/1/84, attainment of age 60 and 5 years of service.

If hired after 7/1/84, age 62 and 5 years of service; or age 55 and 25 years of service regardless of date of hire.

Final Average Compensation (FAC): Average of highest 3 of the final 5 years of employment.

Annual Benefit:

Straight life pension equals 2.25% of FAC times years of service.

Minimum Benefit: \$99.96 plus 1% of FAC times years of service plus the actuarial equivalent of the participant's accumulated contributions at retirement.

Deferred Retirement

Eligibility:

5 or more years of credited service.

Annual Benefit:

General: Computed as service retirement at age 60 but based upon credited service, FAC and benefit provisions in effect at termination.

516M: If hired before 7/1/84, attainment of age 60 and 5 years of service. If hired after 7/1/84, age 62 and 5 years of service; or age 55 and 25 years of service regardless of date of hire.

Duty Disability Retirement

Eligibility:

Payable upon the total and permanent disability in the line of duty of a member who has not reached their normal retirement date. The participant must also be paid worker's compensation on account of the disability.

Annual Benefit:

Computed as a regular retirement based on credited service at the date of disability.

A minimum of 50% of FAC applies if the disability occurs prior to age 60 (age 62 for member of 516M who were hired after July 1, 1984).

Non-Duty Disability

Eligibility:

Payable upon the total and permanent disability of a member with 5 or more years of service

Annual Benefit:

Same as Service Retirement Pension based on credited service at date of disability.

Duty Death in Service Survivors Pension

Eligibility:

All participants.

Annual Benefit:

Refund of participant's accumulated contributions, plus 1/3 of final compensation payable to surviving spouse until death or remarriage. Unmarried children under 18 receive equal shares of final compensation subject to a maximum of 1/3 of final compensation, until earlier of marriage, death, or attainment of age 18. If no benefits are payable to a spouse or dependent children, a dependent mother or father shall each be paid 1/6 of final compensation not to exceed \$600.00 annually. These amounts are offset by any amount payable due to worker's compensation.

Non-Duty Death in Service Survivors Pension

Eligibility:

Elective Beneficiary Survivor Retirement Allowance: Attainment of age 55 and 5 years of service, or completion of 5 years of service if deferred retirement is elected.

Automatic Survivor Retirement Allowance to Spouse: Attainment of age 55 and 5 years of service.

Annual Benefit:

Same as Service Retirement Pension based on credited service at date of death if the deceased participant had elected a 100% joint and survivor form of payment.

Member Contributions

8% of pay.

Cost of Living

An annual cost of living supplement is payable and is determined by multiplying each .4(as a unit) change in the Consumer Price Index (CPI-W 1967=100) by one cent (\$.01) and multiplying that product by 2080. For retirements on or after July 1, 1995, the annual cost of living adjustment will be the rate of inflation measured by the Consumer Price Index (CPI-U). General benefit group members and members of group 516M who retire on or after 7/1/2011, the annual cost of living adjustment shall not exceed 2% of the base benefit amount and shall commence after the first three full years of retirement and shall cease after 23 full years of retirement. Members hired after June 30, 2011 are not eligible for the post-retirement cost of living supplement.

Section Four:

***Actuarial Assumptions
And Methods***



Actuarial Assumptions

Economic Assumptions

- (i) Interest Rate 7.50% (net of expenses)
- (ii) Salary Increases 4.0%

Sample Annual Rates of Salary Increase

Age	
20	4.0%
25	4.0
30	4.0
35	4.0
40	4.0
45	4.0
50	4.0
55	4.0
60	4.0
65	4.0

Demographic Assumptions

(i) Mortality

RP2000 Combined Healthy
Mortality Table Projected to 2014

Sample Ages	Future Life Expectancy (Years)	
	Men	Women
50	32.2	34.4
55	27.5	29.6
60	23.0	25.1
65	18.8	20.8
70	14.9	16.9
75	11.3	13.3
80	8.3	10.1

(ii) Disability

Sample Ages	Disability Rates Per 1,000 Members	
	Male	Female
25	.2	.1
30	.5	.4
35	.8	.7
40	1.1	1.0
45	1.9	1.7
50	2.7	2.3
55	4.7	3.5
60	6.7	4.6

(iii) Termination of employment

Service related rates for first 5 years of employment. Age related rates after first 5 years of employment.

Sample Ages	Years of Service	Percent Terminating
All	0	20.00%
	1	15.00
	2	10.00
	3	8.00
	4	7.00
20	5 and over	6.00
25		6.00
30		5.50
35		4.40
40		1.85
45		1.25
50		1.25
55		1.25
60		1.25
65		1.25

(iv) Retirement Rates

Retirement assumed at earliest age participant becomes eligible for normal retirement.

Actuarial Method Used for the Valuation

Normal Cost. Normal cost and the allocation of actuarial present values between service rendered before and after the valuation date were determined using an individual entry age actuarial cost method having the following characteristics:

- ❖ The annual normal costs for each individual active member, payable from date of hire to date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement;
- ❖ Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Financing of Unfunded Actuarial Accrued Liability. The excess of actuarial accrued liability over actuarial accrued assets was amortized as a level percent of payroll over a period of 26 years.



Section Five:
Valuation Data



Asset Summary

Statement of Assets

As of June 30, 2018, the market value of assets was reported to be \$16,357,874.

Reconciliation of the Reported Market Value of Assets

a. Market Value as of July 1, 2017	\$15,501,114
b. Additions	
(i) Member Contributions	184,393
(ii) Employer Contributions	1,027,450
(iii) Investment Income	1,408,118
(iv) Other	<u> -</u>
(v) Total Additions	2,619,961
c. Deductions	
(i) Pensions	1,646,537
(ii) Refund of member contributions	-
(iii) Investment Expense	95,544
(iv) Administrative Expenses	21,120
(v) Miscellaneous	<u> -</u>
(vi) Total Deductions	1,763,201
 Market Value as of June 30, 2018	 \$16,357,874

Funding Value of Assets – June 30,

	2017	2018
A. Funding Value Beginning of Year	\$17,718,804	17,470,657
B. Market Value End of Year	15,501,114	16,357,874
C. Market Value Beginning of Year	15,156,689	15,501,114
D. Non-Investment Net Cash Flow	(981,374)	(455,814)
E. Investment Income		
E1. Market Total B-C-D	1,325,799	1,312,574
E2. Amount for Immediate Recognition	1,333,952	1,293,206
E3. Amount for Phased-In Recognition: E1-E2	(8,153)	19,368
F. Phased-In Recognition of Investment Income		
F1. Current Year: 0.20 x E3	(1,631)	3,874
F2. First Prior Year	(477,031)	(1,631)
F3. Second Prior Year	(381,019)	(477,031)
F4. Third Prior Year	230,109	(381,019)
F5. Fourth Prior Year	28,846	230,109
F6. Total Phased-In Amount	(600,726)	(625,698)
G. Funding Value End of Year: A+D+E2+F6	17,470,657	17,682,351
H. Difference Between Market and Gross Funding Value	\$(1,969,543)	\$(1,324,477)

Participant Summary

Retirees and Beneficiaries Included in the Valuation

There were 52 retirees and beneficiaries and one alternate payee included in the valuation, with annual pensions totaling \$1,636,865. No new retirees were added during the year and two were removed.

History of Pensions Being Paid

Valuation Date June 30	No.	Annual Pensions	% of Active Payroll	Average Pension	Discounted Value of Pensions	
					Total	Average
2002	36	\$450,604	20.0%	\$12,517	\$6,929,988	\$192,500
2003	37	523,678	22.8	14,153	7,906,473	213,688
2004	41	871,035	38.0	21,245	10,220,287	249,275
2005	42	961,685	44.7	22,897	11,282,237	268,625
2006	44	1,068,671	46.9	24,288	12,485,634	283,764
2007	47	1,171,703	55.3	24,930	13,913,214	296,026
2008	49	1,266,059	56.5	25,838	15,457,374	315,457
2009*	51	1,352,628	59.2	26,522	16,146,347	316,595
2010*	48	1,311,823	61.5	27,330	15,435,245	321,568
2011*	52	1,478,846	77.6	28,439	17,925,663	344,724
2012*	52	1,569,216	84.2	30,177	17,800,400	342,315
2013*	51	1,519,409	83.1	29,792	17,716,343	340,699
2014*	51	1,581,783	80.6	31,015	18,423,476	361,245
2015*	51	1,556,279	74.1	30,515	17,568,496	337,856
2016*	52	1,602,759	77.1	30,822	18,166,748	349,361
2017*	52	1,607,253	73.0	30,909	18,748,919	360,556
2018*	52	1,636,865	71.6	31,478	18,890,153	363,272

*Includes one alternate payee with an annual pension of \$9,125.

**Retired Members and
Survivors
as of June 30, 2018
(Including Alternate Payee)**

Attained Age	No.	Annual Pensions
58	2	\$70,220
60-64	12	365,054
65-69	11	410,884
70-74	8	278,665
75-79	8	262,273
80	1	25,291
81	2	45,762
82	2	41,903
84	1	28,625
88	1	21,266
93	1	38,168
94	1	29,867
95	1	13,806
96	1	5,079
Totals	52	\$ 1,636,865

Active Member Summary

Active Members - June 30, 2018
Age and Service Distribution

Attained Age	Service							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	No.	Payroll
25-29	4							4	\$206,342
30-34	3							3	130,776
35-39	1	1	2					4	226,650
40-44	1	1		1	2			5	332,236
45-49	2		2	5				9	558,204
50-54	1		1	1	1		1	5	309,369
55-59			2	2		1		5	295,896
60-64	2					1		3	227,007
Totals	14	2	7	9	3	2	1	38	\$2,286,480

Group Averages

Age: 45.2 years
Service: 12.1 years
Annual Pay: \$60,170

Active Members – Three-Year Summary

	2018	2017	2016
Active Members	38	37	36
Valuation Payroll	\$2,286,480	\$2,201,882	\$2,079,155
Average Compensation	\$60,170	\$59,510	\$57,757
Average Age (yrs.)	45.2	45.2	44.9
Average Service (yrs.)	12.1	12.3	11.6

Vested Inactive Members

There were nine vested terminated members eligible for estimated deferred pensions totaling \$139,861.

Inactive Members - June 30, 2018

Attained Age	No.	Estimated Annual Benefit
42	1	\$ 16,893
43	1	21,180
45	1	12,406
50	1	14,843
51	1	21,435
52	1	10,456
53	1	4,781
58	2	<u>37,866</u>
Totals	9	\$ 139,861