

April 9, 2017

The Retirement Board  
City of Marine City Employees Retirement System  
Marine City, Michigan

Dear Board Members:

*The purpose of the annual actuarial valuation* of the City of Marine City Employees Retirement System as of June 30, 2016, 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, 2017.

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 Marine City. 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, 2016. 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 Marine City  
Employees Retirement System***

*Actuarial Valuation as of June 30, 2016*

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***Section One:***  
***Valuation Summary***



### **Purpose of Valuation**

The purpose of the annual actuarial valuation of the City of Marine City Employees Retirement System as of June 30, 2016 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, 2019.

### **Liabilities and Funded Condition of Retirement System**

Accrued liabilities of the Retirement System as of June 30, 2016, were computed to be \$6,950,695. The funding value of assets was \$5,299,897. The ratio of the funding value of assets to accrued liabilities was 76.2%.

### **Funding Value of Assets**

A smoothed market value of assets was used for the June 30, 2016 valuation. This method credits the assumed rate to the funding value of assets and spreads the difference between the actual and assumed return over 4 years.

### **City's Computed City Contribution**

The City's normal cost contribution was computed to be \$32,617. The unfunded accrued liabilities were amortized as a level dollar amount over 16 years. The amortization of the unfunded accrued liabilities was \$171,511. The total contribution for FY 2017/2018 was computed to be \$204,128 less member's contributions of \$14,452, results in the City's total contribution of \$189,645.

**Benefit Provision Changes**

There were no benefit changes during the year.

**Assumption and Method Changes**

There were no significant changes in assumptions and methods during the year.

**Participant Data**

	<u>06/30/2016</u>	<u>06/30/2015</u>
Active Members	5	6
Active Member Payroll	\$289,641	\$318,492
Retirees and Beneficiaries	24	24
Annual Pensions	\$458,395	\$458,395
Vested Inactive Members	4	4
Deferred Annual Pensions	\$109,196	\$105,148

**Financial Data**

	<u>06/30/2016</u>	<u>06/30/2015</u>
Funding Value of Assets	\$5,299,897	\$5,338,366
Market Value of Assets	4,847,088	5,361,769



***Section Two:***

***Actuarial Calculations –  
Funding***



**Computed Contribution for Fiscal Year 2017/2018**

Accrued liabilities exceeded accrued assets as of June 30, 2016. The unfunded actuarial accrued liability was amortized as a level dollar amount, over a closed period of 16 years. The 16 year amortization period is a one year decrease from the prior valuation. This amortization payment was added to the normal cost contribution.

<b>Normal Cost</b>	
Regular Retirement	\$25,473
Pre-retirement Death	1,175
Disability	2,187
Termination Benefits	<u>3,782</u>
<b>Total Normal Cost</b>	<b>32,617</b>
Unfunded Actuarial Accrued Liability	<b>171,511</b>
<b>Total Computed Contribution</b>	<b>204,128</b>
Member portion	14,482
<b>City portion</b>	<b>\$189,645</b>



**Unfunded Actuarial Accrued Liability**

	<u>June 30, 2016</u>	<u>June 30, 2015</u>
Actuarial accrued liability	\$6,950,695	\$6,967,270
Assets allocated to funding	<u>5,299,897</u>	<u>5,338,366</u>
Unfunded actuarial accrued Liability	\$1,650,798	\$1,628,904

**Recommended City Contributions**

Valuation Date June 30,	Fiscal Year	Computed City Contributions	
		Estimated Dollar Contrib.	Actual Dollar Contrib.
1996	97/98	\$88,652	\$97,430
1997	98/99	81,304	83,597
1998	99/00	52,176	52,432
1999(a)	00/01	46,273	43,795
2000(a)	01/02	39,852	40,921
2001	02/03	54,415	50,414
2002	03/04	66,463	58,921
2003	04/05	153,022	161,159
2004#	05/06	159,563	164,557
2005	06/07	187,759	172,895
2006	07/08	177,626	155,056
2007	08/09	171,139	138,971
2008	09/10	136,676	95,469
2009	10/11	149,956	97,480
2010(a)	11/12	157,716	110,871
2011	12/13	168,317	171,849
2012	13/14	190,302	190,302
2013	14/15	164,043	164,043
2014	15/16	158,748	158,748
2015	16/17	188,938	
<b>2016</b>	<b>17/18</b>	<b>189,645</b>	

#After changes in benefit provisions

(a) After changes in assumptions and methods.

*Note: Results prior to 2013 are based on reports provided by previous actuarial firm.*

**History of Assets and Accrued Liabilities**

<b>Valuation Date June 30,</b>	<b>Valuation Assets</b>	<b>Actuarial Accrued Liabilities</b>	<b>Funded Ratio</b>	<b>Unfunded Actuarial Accrued Liabilities</b>
2002	\$5,464	\$4,854	112.6%	\$(610)
2003	5,397	5,901	91.4	505
2004	5,384	5,952	90.5	568
2005	5,575	6,358	87.7	784
2006	5,911	6,536	90.4	625
2007	6,395	6,868	93.1	473
2008	6,649	6,907	96.3	258
2009	6,624	7,326	90.4	702
2010	6,257	7,309	85.6	1,052
2011	6,001	7,326	81.9	1,324
2012	5,739	7,240	79.3	1,501
2013	5,740	7,053	81.4	1,313
2014	5,841	7,156	81.6	1,315
2015	5,338	6,967	76.6	1,629
<b>2016</b>	<b>5,300</b>	<b>6,951</b>	<b>76.2</b>	<b>1,651</b>

Results shown throughout this report, for years prior to 2013, were prepared by the previous actuarial firm.

**Comments**

**Comment 1:** The City’s computed contribution for the fiscal year beginning July 1, 2017 has been computed to be \$189,645.

**Comment 2:** The overall experience of the Retirement System during the year ended June 30, 2016 was slightly less favorable than assumed experience based on the long-term assumptions. The funded ratio decreased slightly to 76.2% from 76.6%.



***Section Three:***

***Retirement System  
Benefit Provisions***



## **Benefit Provision Summary**

### ***Regular Retirement***

*Eligibility:*

Age 55 with 25 or more years of service or age 60 and 10 or more years of service.

*Final Average Compensation (FAC):* Average of best 5 consecutive years out of the last 10. Compensation excludes lump sums.

*Annual Benefit:*

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

*Mandatory Retirement:*

Age 70½ (age 75 with employer's consent). No benefit accrues after age 70½. Upon retirement after age 70½ the amount payable is the actuarial equivalent of the benefit payable at age 70½.

The Retirement System is closed to new hires.

### ***Deferred Retirement***

*Eligibility:*

10 or more years of credited service.

*Annual Benefit:*

Computed as regular retirement at age 60 but based upon credited service, FAC and benefit provisions in effect at termination. An employee may withdraw the employee contributions which will result in the monthly retirement benefit being reduced.

### ***Disability Retirement***

*Eligibility:*

Total and permanent disability after 10 or more years of service. If duty related, the 10 year service requirement is waived.

*Annual Benefit:*

Computed as a regular retirement based on credited service at the date of disability. Benefits may be reduced for earnings from gainful employment and/or Worker's Compensation or Unemployment Compensation payments attributable to City employment.

***Death in Service Survivors Pension***

***Eligibility:***

10 or more years of service. Payable to any named beneficiary (if no named beneficiary, benefit is payable to spouse, if any).

***Annual Benefit:***

Computed as a regular retirement benefit but actuarially reduced to reflect the election of a 100% joint and survivor benefit. In lieu of a monthly benefit the beneficiary may elect to receive a lump sum equal to the actuarial equivalent of the monthly benefit.

***Member Contributions***

5% of pay.

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*Section Four:*

***Actuarial Assumptions  
And Methods***



**Actuarial Assumptions**

**Economic Assumptions**

- (i) Interest Rate 7.25% (net of expenses)
- (ii) Salary Increases 3.75%

**Sample Annual Rates of Salary Increase**

<b>Age</b>	<b>Base</b>	<b>Merit and Longevity</b>	<b>Total</b>
20	3.75%	3.99%	7.74%
25	3.75	3.25	7.00
30	3.75	2.79	6.54
35	3.75	2.47	6.22
40	3.75	2.22	5.97
45	3.75	1.75	5.50
50	3.75	1.18	4.93
55	3.75	0.69	4.44
60	3.75	0.17	3.92



**Demographic Assumptions**

(i) Mortality

RP 2000 Projected to 2010.

Sample Ages	Actuarial Present Value of \$1 Monthly for Life		Future Life Expectancy (Years)	
	Male	Female	Male	Female
55	\$139.34	\$143.00	27.17	29.44
60	128.79	133.55	22.66	24.89
65	116.19	122.25	18.44	20.61
70	101.87	109.34	14.60	16.69
75	85.69	94.94	11.12	13.15
80	68.68	79.22	8.13	10.00

(ii) Disability

Sample Ages	Percent Becoming Disabled Within Next Year
20	0.05%
25	0.07
30	0.08
35	0.10
40	0.16
45	0.24
50	0.39
55	0.69
60	1.15
65	1.15

(iii) Termination of employment

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

<b>Sample Ages</b>	<b>Years of Service</b>	<b>Percent Terminating</b>
All	0	30.00%
	1	20.00
	2	15.00
	3	10.00
	4	7.00
25	5 and over	6.00
30		5.50
35		4.40
40		1.85
45		1.25
50		1.25
55		1.25
60		1.25

(iv) Retirement Rates

<b>Retirement Ages</b>	<b>Percents of Active Members Retiring Within Next Year</b>
55	30.00%
56	25.00
57	20.00
58	15.00
59	20.00
60	20.00
61	40.00
62	70.00
63	50.00
64	50.00
65	80.00
66	70.00
67	60.00
68	60.00
69	70.00
70	100.00

### **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.

**Financing of Unfunded Actuarial Accrued Liability.** The excess of actuarial accrued liability over actuarial accrued assets was amortized as a level dollar amount over a period of 16 years, a one year decrease from last year.



***Section Five:***  
***Valuation Data***



**Asset Summary****Statement of Assets**

As of June 30, 2016, the market value of assets was reported to be \$4,847,088.

**Reconciliation of the Reported Market Value of Assets**

a. Market Value as of July 1, 2015	\$5,361,769
b. Income	
(i) Member Contributions	15,249
(ii) Employer Contributions	158,748
(iii) Investment Income (Net of Expenses)	<u>(180,052)</u>
(iv) Total Income	(6,055)
c. Disbursements to Members	
(i) Benefits	506,981
(ii) Administrative Expenses	<u>1,645</u>
(iii) Total Disbursement	508,626
 Market Value as of June 30, 2016	 \$4,847,088

**Funding Value of Assets – June 30,**

	<b>2015</b>	<b>2016</b>
A. Funding Value Beginning of Year	\$5,840,592	\$5,338,366
B. Market Value End of Year	5,361,769	4,847,088
C. Market Value Beginning of Year	6,092,591	5,351,769
D. Non-Investment Net Cash Flow	(846,538)	(334,629)
E. Investment Income		
E1. Market Total B-C-D	115,716	(180,052)
E2. Amount for Immediate Recognition 7.25%	392,756	374,901
E3. Amount for Phased-In Recognition: E1-E2	(277,040)	(554,953)
F. Phased-In Recognition of Investment Income		
F1. Current Year: 0.25 x E3	(69,260)	(138,738)
F2. First Prior Year	101,925	(69,260)
F3. Second Prior Year	27,331	101,925
F4. Third Prior Year	(108,440)	27,331
F5. Total Phased-In Amount	(48,444)	(78,742)
G. Funding Value End of Year: A+D+E2+F6+H	5,338,366	5,299,897
H. Difference Between Market and Gross Funding Value	\$23,403	\$(452,809)
I. Nominal Rate of Return	7.28%	7.31%

## Participant Summary

### Retirees and Beneficiaries Included in the Valuation

There were 24 retirees and beneficiaries included in the valuation, with annual pensions totaling \$458,395. There were no removals or additions during the year.

### History of Pensions Being Paid

Valuation Date June 30	No.	Annual Pensions	% of Active Payroll	Average Pension	Discounted Value of Pensions	
					Total	Average
1996	7	\$67,527	6.2%	\$9,647	\$676,514	\$96,645
1997	7	67,527	6.2	9,647	662,402	94,629
1998	7	67,527	5.2	9,647	647,894	92,556
1999	7	67,527	4.8	9,647	633,017	90,431
2000	9	106,286	7.9	11,810	1,041,980	115,776
2001	9	93,955	6.4	10,439	939,802	104,422
2002	9	93,955	6.4	10,439	912,721	101,413
2003	15	187,411	14.2	12,494	2,051,715	136,781
2004	18	233,952	17.1	12,997	2,527,123	140,396
2005	19	243,028	16.1	12,791	2,579,090	135,742
2006	18	229,364	15.2	12,742	2,431,838	135,102
2007	18	229,364	15.4	12,742	2,391,901	132,883
2008	18	229,364	17.7	12,742	2,350,972	130,610
2009	19	264,076	22.4	13,899	2,795,951	147,155
2010	21	339,918	36.5	16,187	3,727,005	177,476
2011	22	361,414	45.5	16,428	3,796,174	172,553
2012	23	383,081	59.1	16,656	4,004,970	174,129
2013	23	415,753	86.7	18,076	4,567,807	198,600
2014	24	463,436	122.0	19,310	5,083,204	211,800
2015	24	458,395	143.9	19,100	5,020,634	209,193
<b>2016</b>	<b>24</b>	<b>458,395</b>	<b>158.2</b>	<b>19,100</b>	<b>4,807,627</b>	<b>200,318</b>

Results shown throughout this report, for years prior to 2013, were prepared by the previous actuarial firm.



Retired Members - June 30, 2016

Age & Service Retirees			Disability Retirees	Survivor Beneficiaries	Totals	
Attained Age	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions
58	5	\$120,590			5	\$120,589
59	2	32,985			2	32,985
61	2	42,118			2	42,118
62	1	23,335			1	23,335
63	2	41,940			2	41,940
64	1	29,871			1	29,871
65	1	34,712			1	34,712
68	2	22,320			2	22,320
69	1	27,301			1	27,301
70	1	16,346			1	16,346
71	1	9,076			1	9,076
72	1	16,812			1	16,812
73	1	7,971			1	7,971
75				1	1	5,041
						5,041
83	1	16,106			1	16,106
87				1	1	11,871
						11,871
<b>Totals</b>	<b>22</b>	<b>\$ 441,483</b>		<b>2</b>	<b>24</b>	<b>\$ 458,395</b>

**Active Member Summary**

**Active Members - June 30, 2016  
Age and Service Distribution**

<b>Attained Age</b>					<b>Totals</b>	
	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>30-34</b>	<b>No.</b>	<b>Payroll</b>
40-44		1				\$78,166
45-49			1			70,066
50-54	1		1	1	3	141,409
Totals	1	1	2	1	5	\$ 289,641

**Group Averages:**

Age: 49.0 years  
 Service: 21.1 years  
 Annual Pay: \$57,928

**Active Members – Three-Year Summary**

	<b>2016</b>	<b>2015</b>	<b>2014</b>
Active Members	5	6	7
Valuation Payroll	\$289,641	\$318,492	\$379,897
Average Compensation	\$57,928	\$53,082	\$54,271
Average Age (yrs.)	49.0	48.6	48.5
Average Service (yrs.)	21.1	19.4	18.9

**Vested Inactive Members**

There were four vested terminated members eligible for estimated deferred pensions totaling \$109,196. In addition, one deferred benefit for an alternate payee pursuant to an EDRO was included in the liability.

**Inactive Members - June 30, 2016**

<b>Attained</b>		<b>Estimated</b>
<b>Age</b>	<b>No.</b>	<b>Annual</b>
<b>Benefit</b>		
48	1	\$11,655
52	1	18,492
54	2	79,049
	Total	\$109,196