

**CITY OF ST. CLAIR SHORES EMPLOYEES RETIREMENT SYSTEM**  
**63<sup>RD</sup> ACTUARIAL VALUATION REPORT**  
**AS OF JUNE 30, 2015**

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December 17, 2015

The Retirement Board  
City of St. Clair Shores  
Employees Retirement System  
St. Clair Shores, Michigan

Dear Board Members:

The results of the June 30, 2015 Annual Actuarial Valuation of the City of St. Clair Shores Employees Retirement System are presented in this report.

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

The purposes of the valuation are to measure the System's funding progress as of June 30, 2015, and to determine the employer contribution rate for the fiscal year ending June 30, 2017. 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 findings in this report are based on data and other information through June 30, 2015. 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 Plan Administrator, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by Plan Administrator.

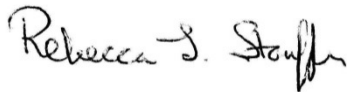
In addition, this report was prepared using certain assumptions approved by the Board as described in the section of this report entitled Valuation Methods and Assumptions.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the City of St. Clair Shores Employees Retirement System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation report with the Board of Trustees and answer any questions pertaining to the valuation. Rebecca L. Stouffer and Mark Buis are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,



Rebecca L. Stouffer, ASA, MAAA



Mark Buis, FSA, FCA, EA, MAAA

RLS/MB:rmn

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## **SECTION A**

### **VALUATION RESULTS**

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## **Funding Objective**

The funding objective of the Retirement System is to establish and receive sufficient contributions to cover benefits payable without passing the cost on to future generations of citizens.

## **Contributions**

The Retirement System is supported by member contributions, City's contributions and investment income from Retirement System assets.

Contributions which satisfy the funding objective are determined by the annual actuarial valuation and are sufficient to:

- (1) cover the actuarial costs allocated to the current year by the actuarial cost methods described in Section C (the normal cost); and
- (2) finance over a period of future years the actuarial cost not covered by present assets and anticipated future normal costs (unfunded actuarial accrued liability).

Contribution requirements for the fiscal year beginning July 1, 2016 are shown on page A-2.

The Board of Trustees of the City of St. Clair Shores Employees Retirement System confirms that the System provides for payment of the required employer contribution as described in Section 20m of Michigan Public Act No. 728.

## City's Computed Contributions

Contributions for	For Fiscal Year Beginning July 1,	
	2016	2015
NORMAL COST		
Age and service pensions	\$ 465,058	\$ 503,130
Death before retirement pensions	16,701	17,985
Disability pensions	29,120	30,898
Total	510,879	552,013
MEMBERS' CONTRIBUTIONS		
Gross contributions	37,256	40,582
Less prospective refunds	4,711	5,073
Available for pensions	32,545	35,509
CITY'S NORMAL COST	478,334	516,504
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES#	\$2,075,870	\$1,946,317
TOTAL CITY CONTRIBUTIONS *	\$2,554,204	\$2,462,821
ESTIMATED CONTRIBUTION AS A % OF PAYROLL ^	66.8%	59.3%

\* Contribution amounts for prior fiscal years are shown on page A-7.

# Unfunded actuarial accrued liabilities were financed as a level dollar amount over a period of 19 years for the fiscal year beginning July 1, 2015. For the fiscal year beginning July 1, 2016 unfunded actuarial accrued liabilities were financed as a level dollar amount over a period of 18 years.

^ The estimated contribution as a percentage of payroll for the fiscal year beginning July 1, 2016 is based on projected payroll of \$3,822,174 and is for informational purposes only. The City makes contributions on the dollar basis noted above. To the extent that actual payroll is different, the actual percentage will vary.

## Determination of Unfunded Actuarial Accrued Liability

	June 30,	
	2015	2014
A. Accrued Liability		
1. For retirees and beneficiaries	\$ 42,352,046	\$ 42,211,131
2. For vested terminated members	2,061,820	1,682,982
3. For present active members		
a. Value of expected future benefit payments	18,635,823	17,873,448
b. Value of future normal costs	3,058,477	3,437,584
c. Active member accrued liability: (a) - (b)	15,577,346	14,435,864
4. Total accrued liability	59,991,212	58,329,977
B. Present Assets (Funding Value)	39,768,186	38,900,248
C. Unfunded Accrued Liability: (A.4) - (B)	20,223,026	19,429,729
D. Funding Ratio: (B) / (A.4)	66.3%	66.7%



## Development of Funding Value of Assets

Year Ended June 30:	2014	2015*	2016	2017	2018
A. Funding Value Beginning of Year	\$37,291,564	\$39,619,309			
B. Market Value End of Year	40,457,640	39,230,459			
C. Market Value Beginning of Year	36,475,015	41,176,701			
D. Non-Investment Net Cash Flow	(2,038,775)	(2,153,674)			
E. Investment Income					
E1. Market Total: B - C - D	6,021,400	207,432			
E2. Amount for Immediate Recognition (8.0%)	2,901,774	3,083,398			
E3. Amount for Phased-In Recognition: E1-E2	3,119,626	(2,875,966)			
F. Phased-In Recognition of Investment Income					
F1. Current Year: 0.25 x E3	779,907	(718,992)			
F2. First Prior Year	59,436	779,907	(\$718,992)		
F3. Second Prior Year	(901,200)	59,436	779,907	(\$718,992)	
F4. Third Prior Year	807,542	(901,198)	59,435	779,905	(\$718,990)
F5. Total Recognized Investment Gain (Loss)	745,685	(780,847)	120,350	60,913	\$(718,990)
G. Funding Value End of Year: A + D + E2 + F5	38,900,248	39,768,186			
H. Difference between Market & Funding Value	1,557,392	(537,727)			
I. Recognized Rate of Return - Funding Value	10.06%	5.97%			
J. Recognized Rate of Return - Market Value	16.98%	0.52%			

The Funding Value of Assets recognizes assumed investment income (line E.2) fully each year. Differences between actual and assumed investment income (line E.3) are phased-in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is unbiased with respect to Market Value. At any time it may be either greater or less than Market Value. If actual and assumed rates of investment income are exactly equal for 3 consecutive years, the Funding Value will become equal to Market Value.

\* Beginning of year Market Value and Funding Value were adjusted to include the Excess Earnings Reserve (EER).

## Derivation of Experience Gain (Loss)

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is expected that gains and losses will cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) is shown below, along with a year-by-year comparative schedule.

(1) UAAL* at start of year	\$ 19,429,729
(2) Total normal cost	557,086
(3) Actual contributions for pensions	2,550,791
(4) Interest accrual ((1) + 1/2 [(2)-(3)]) x 8.00%	1,474,630
(5) Expected UAAL* before changes (1) + (2) - (3) + (4)	18,910,654
(6) Change from benefit improvements	0
(7) Change in actuarial assumptions	0
(8) Expected UAAL* before changes (5) + (6) + (7)	18,910,654
(9) Actual UAAL*	20,223,026
(10) Gain (loss) (8) - (9)	(1,312,372)
(11) Gain (loss) as percent of actuarial accrued liabilities at start of year (\$58,329,977)	(2.3%)

\* *Unfunded actuarial accrued liabilities.*

<b>Valuation Date</b>	<b>Experience Gain (Loss) as % of Beginning Accrued Liability</b>
6-30-08	(2.0) %
6-30-09	2.3
6-30-10	(7.1)
6-30-11	(6.1)
6-30-12	(4.1)
6-30-13	(0.4)
6-30-14	0.8
6-30-15	(2.3)

In financing the actuarial accrued liabilities, the valuation assets of \$40,085,784 were distributed as shown below:

<b>Reserves for</b>	<b>Present Valuation Assets Applied to</b>			<b>Totals</b>
	<b>Member Actuarial Accrued Liability</b>	<b>Retired Life Actuarial Liabilities</b>	<b>Contingency Reserve</b>	
Employees' Contributions	\$ 558,632			\$ 558,632
Employer Contributions	(3,142,492)	\$30,059,223		26,916,731
Retired Benefit Payments		12,292,823		12,292,823
Undistributed Income				0
<b>Totals</b>	<b>\$ (2,583,860)</b>	<b>\$42,352,046</b>	<b>\$ none</b>	<b>\$39,768,186</b>

Assets were applied against actuarial accrued liabilities in determining unfunded actuarial accrued liabilities as follows:

	<b>Retired Lives</b>	<b>Active Members</b>	<b>Total</b>
Computed Actuarial Accrued Liabilities	\$42,352,046	\$17,639,166	\$59,991,212
Applied Assets	42,352,046	(2,583,860)	39,768,186
Unfunded Actuarial Accrued Liabilities	\$ none	\$20,223,026	\$20,223,026

## Comparative Schedule

Valuation Date	Actuarial Accrued Liabilities & Reserves	Accrued Assets	Percent Funded	Unfunded Actuarial Accrued Liabilities & Reserves		City's Contribution Rate@
				Dollars	Amortization Period	
06/30/06	\$52,481,690	\$42,222,117	80.5 %	\$ 10,259,573	19 yrs.	26.62 %*#
06/30/07	53,868,304	44,702,803	83.0	9,165,501	18	26.21 *
06/30/08	55,873,969	45,610,111	81.6	10,263,858	25	\$1,866,531 #
06/30/09	54,466,034	43,364,264	79.6	11,101,770	24	1,812,824 #
06/30/10	55,767,178	41,130,494	73.8	14,636,684	23	2,090,393 *
06/30/11	56,714,374	38,612,848	68.1	18,101,526	22	2,379,350
06/30/12	56,805,539	36,435,503	64.1	20,370,036	21	2,561,038
06/30/13	57,648,592	37,291,564	64.7	20,357,028	20	2,512,506
06/30/14	58,329,977	38,900,248	66.7	19,429,729	19	2,462,821
06/30/15	59,991,212	39,768,186	66.3	20,223,026	18	2,554,204 #

@ Beginning with the June 30, 2008 valuation, level dollar financing was used. Prior valuations used level percent of payroll.

\* Retirement System amended.

# Revised actuarial assumptions and/or methods.

**Percent Funded is the Ratio of Valuation Assets to Actuarial Accrued Liabilities.** This is a traditional measure of a system's funding progress. Except in years when the system is amended or actuarial assumptions are revised, this ratio can be expected to increase gradually toward 100%.

## Comments

**ACTUARIAL EXPERIENCE:** Retirement System experience during the year ended June 30, 2015 was less favorable than expected, resulting in a loss of \$1,312,372. The loss was primarily attributable to recognized investment income that was less than assumed.

As of June 30, 2015, there are \$0.5 million of unrecognized investment losses that will be gradually recognized over the next three years. Recognition of these losses will put upward pressure on required contributions over the next several years.

The Actuarial Standards of Practice with regard to the mortality assumption has been revised. ASOP No. 35 Disclosure Section 4.1.1 now states *“The disclosure of the mortality assumption should contain sufficient detail to permit another qualified actuary to understand the provision made for future mortality improvement. If the actuary assumes zero mortality improvement after the measurement date, the actuary should state that no provision was made for future mortality improvement.”*

The membership size in this group is not sufficiently large to determine if there is a margin for mortality improvements. However, based upon our experience with a broad cross section of public sector plans similar in nature to this plan, it is our opinion that there is no provision for future mortality improvement in the current mortality assumption.

We recommend that prior to the next actuarial valuation consideration be given to performing an Experience Study to review the mortality assumption as well as all other key actuarial assumptions.

**LOOKING AHEAD:** The current investment return assumption is 8.0%. Due to the closed nature of the System, increasing liquidity needs and lower interest rates on fixed income investments, it may be difficult to achieve this return over the long-term. Additionally, new guidance regarding the selection of economic assumptions has been provided by Actuarial Standards of Practice (ASOP) No. 27. The new standards tighten the range of reasonable assumptions that the actuary is allowed to use with regard to the investment return assumption. We recommend that consideration be given to lowering this assumption to 7.50% - 7.75% effective with the June 30, 2016 valuation.

## Comments (Concluded)

**ACTUARIAL ASSUMPTIONS AND/OR METHODS:** There is a change to the actuarial method of the handling of the excess earnings reserve fund, and the potential benefits paid from that reserve. The excess earnings reserve is now included in the development of the Funding Value of Assets. An amount equal to the market value of the Excess Earnings Reserve Fund is added to the liabilities to assure proper allocation of assets to liabilities. This change follows recent changes to Actuarial Standards of Practice regarding Measuring Pension Obligations and Determining Pension Plan Costs or Contributions and has no material impact on valuation results.

**CERTIFICATION:** To the best of our knowledge and belief the valuation is complete and accurate and was made in accordance with generally recognized actuarial methods. The actuarial assumptions summarized in Section C are individually and in the aggregate, a reasonable representation of the past and anticipated future experience of the System.

### **OTHER OBSERVATIONS:**

#### **General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status**

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 8.0% on the actuarial value of assets), it is expected that:

- 1) Employer normal cost dollar amounts will eventually decrease as active payroll declines due to the closed nature of the plan,
- 2) Amortization payment dollar amounts will remain level over the next 18 years,
- 3) The unfunded actuarial accrued liability will be fully amortized after 18 years, and
- 4) The funded status of the plan will increase gradually towards a 100% funded ratio.

#### **Limitations of Funded Status Measurements**

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regards to any funded status measurements presented in this report:

- 1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
- 2) The measurement is inappropriate for assessing the need for or the amount of future employer contributions.
- 3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.
- 4) The funding level of the plan on a Market Value basis is 65.4%, as of June 30, 2015.

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**SECTION B**  
VALUATION DATA

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## **Brief Summary of Benefit Provisions (June 30, 2015)**

### **Regular Retirement (No reduction factor for age)**

*Eligibility* - Age 50 with 25 years of service, or age 60 with 10 or more years of service.

*Annual Amount* – **AFSCME, Court Non-Union, Court Clerical, and PEA:** Total service multiplied by 2.5% of average final compensation with a maximum of 80% of average final compensation.

**Dispatchers:** Total service multiplied by 2.5% of average final compensation with a maximum of 75% of average final compensation.

**AR4:** Total service multiplied by 2.5% of average final compensation with a maximum of 62.5% of average final compensation. Maximum benefit for AR4 members cannot exceed base pay as of termination date.

*Type of Average Final Compensation* - Highest 5 non-consecutive years out of last 10. Court Clerical and Dispatchers – Highest 5 consecutive years out of last 10.

### **Deferred Retirement (Vested Benefit)**

*Eligibility* - 10 years of service, benefit begins at age 60.

*Annual Amount* - Computed as regular retirement but based on average final compensation and service at time of termination.

### **Duty Disability Retirement**

*Eligibility* - No age or service requirement.

*Annual Amount* - Computed as regular retirement with a minimum benefit of 20% of average final compensation. Upon termination of worker's compensation or age 60, whichever occurs first, benefit is recomputed to include additional service credit for the period worker's compensation was paid.

### **Non-Duty Disability Retirement**

*Eligibility* - 10 or more years of service.

*Annual Amount* - Computed as regular retirement.

### **Death-in-Service Survivor Pension**

*Eligibility* - 10 years of service.

*Annual Amount* - Computed as regular retirement but actuarially reduced in accordance with a 100% joint and survivor election.



**Brief Summary of Benefit Provisions**  
**(June 30, 2015)**  
**- - concluded - -**

**Post-Retirement Cost-of-Living Adjustments**

Retirees effective 7/1/93 (Court Clerical effective 1/1/03): 5% cost-of-living increase at age 60 or five years after retirement, whichever is later, with a second increase of 5% five years after the first increase.

**Member Contributions**

AR4 and Court Non-Union:	None
AFSCME, Court Clerical, Dispatchers, and PEA:	1.0% of pay

**City's Contributions**

Actuarially determined amounts which are sufficient to at least cover the requirements of the funding objective stated on page A-1.

**New Hires**

The Plan is closed. No new hires will participate in this Retirement System.

# Summary of Current Asset Information Furnished for Valuation

## BALANCE SHEET

Current Assets		Reserves for	
Cash & Equivalents	\$ 2,796,172	Employees' Contributions	\$ 558,632
Receivables & Accruals	657,059	Employer Contributions	25,225,111
Bonds	4,772,260	Retired Benefit Payments	12,292,823
Common Stocks	8,303,946	Excess Earnings Reserve	1,153,893
ADR	4,002,222		
Foreign Stocks	2,225,416		
Real Estate	757,024		
Mortgages	0		
Foreign Gov. & Agencies	0		
Other Fixed Income	6,760,020		
Other Equities	9,478,447		
Other Assets (Securities lending)	624,844		
Accounts payable	(478,299)		
Amount due to Broker (Securities lending)	<u>(668,652)</u>		
Total Current Assets	\$39,230,459	Total Reserves	\$39,230,459
Market Adjustment*	<u>537,727</u>	Market Adjustment*	<u>537,727</u>
Total Valuation Assets**	<u><u>\$39,768,186</u></u>	Total Valuation Assets**	<u><u>\$39,768,186</u></u>

\* See page B-4 for derivation of the market adjustment.

\*\* Includes the Excess Earnings Reserve.

## REVENUES AND EXPENDITURES

	2015
Balance July 1, 2014 ##	\$38,900,248
Revenues	
Employees' contributions	38,285
Employer contributions	2,512,506
Medicare reimbursement#	271,783
Inclusion of Excess Earnings Reserve	1,153,893
Recognized investment income (valuation purposes)	1,867,719
Expenditures	
Benefit payments	4,701,589
Refund of member contributions	2,876
Medicare payments#	<u>271,783</u>
Balance June 30	<u><u>\$39,768,186</u></u>

# Medicare payments to retirees are paid monthly by the custodian from Retirement System assets. At the end of each quarter, these amounts are reimbursed to the System by the City.

## Excludes the Excess Earnings Reserve.

## Retiree and Beneficiary Comparative Schedule

Year Ended June 30	Added to Rolls		Removed from Rolls		Rolls End of Year				% Incr. in Annual Pensions	Average Pension	Expected Removals	
	No.	Pensions	No.	Pensions	No.	Active Per Retired	Annual Pensions				No.	\$
							Dollars	% of Pay*				
1986	12	\$ 108,953	3	\$ 13,146	100	1.7	\$ 783,161	17.6 %	13.9 %	\$ 7,832	2.4	\$ 14,047
1987	20	189,357	2	7,351	118	1.4	965,167	22.8	23.2	8,179	2.7	15,948
1988	12	93,213	5	25,351	125	1.3	1,033,029	24.3	7.0	8,264	3.0	18,804
1989	13	120,242	5	38,817	133	1.2	1,114,454	24.4	7.9	8,379	3.3	21,399
1990	10	121,449	3	25,967	140	1.2	1,209,936	24.7	7.6	8,642	3.5	23,721
1991	12	115,340	6	23,695	146	1.1	1,301,581	26.8	7.6	8,915	3.8	26,564
1992	4	52,214	2	12,910	148	1.1	1,340,885	26.1	3.0	9,060	4.0	29,661
1993	8	76,157	7	37,863	149	1.1	1,379,179	25.8	2.9	9,256	4.3	32,537
1994	13	182,612	1	8,297	161	1.0	1,553,494	26.6	12.6	9,649	4.6	35,545
1995	11	221,649	6	43,953	166	0.9	1,731,190	30.8	11.4	10,429	5.2	41,238
1996	13	251,022	6	69,322	173	1.1	1,912,890	33.3	10.5	11,057	5.5	45,700
1997	11	162,889	8	78,664	176	0.9	1,997,115	31.6	4.4	11,347	5.7	48,811
1998	9	187,510	6	43,223	179	0.9	2,141,402	32.8	7.2	11,963	6.2	53,260
1999	16	289,747	12	163,410	183	0.9	2,267,739	32.0	5.9	12,392	5.6	49,841
2000	6	163,121	8	66,733	181	1.0	2,364,127	31.3	4.3	13,061	5.8	52,574
2001	8	147,094	5	38,062	184	0.9	2,473,159	33.8	4.6	13,441	5.9	56,028
2002	9	190,085	11	88,107	182	0.9	2,575,137	32.7	4.1	14,149	6.0	57,982
2003	8	233,641	4	30,096	186	0.8	2,778,682	37.9	7.9	14,939	6.0	61,381
2004	15	454,673	10	96,771	191	0.8	3,136,584	45.0	12.9	16,422	6.5	66,604
2005	14	440,795	10	51,437	195	0.7	3,525,942	54.0	12.4	18,082	6.7	70,640
2006	6	230,143	9	128,414	192	0.7	3,627,671	53.5	2.9	18,894	7.2	84,343
2007	14	271,387	8	69,238	198	0.6	3,829,820	58.4	5.6	19,343	7.3	89,201
2008	6	108,961	5	19,817	199	0.6	3,918,964	59.0	2.3	19,693	7.6	96,874
2009	5	101,229	6	90,820	198	0.6	3,929,373	58.4	0.3	19,845	7.2	90,602
2010	12	206,333	6	72,949	204	0.5	4,062,757	63.8	3.4	19,915	7.7	98,271
2011	12	225,699	6	98,440	210	0.5	4,190,016	71.4	3.1	19,952	8.4	107,628
2012	8	190,569	5	85,405	213	0.4	4,295,180	81.0	2.5	20,165	9.0	114,822
2013	18	444,226	14	195,321	217	0.4	4,544,085	98.8	5.8	20,940	9.6	123,626
2014	7	176,718	10	118,734	214	0.4	4,602,069	99.8	1.3	21,505	9.4	129,877
2015	7	154,294	11	113,586	210	0.3	4,642,777	108.4	0.9	22,108	9.4	135,332

\* Pay used for this purpose is the payroll for the now closed group of active members.

**Retiree and Beneficiary Data June 30, 2015**  
**Tabulated by Type of Pensions Being Paid**

<b>Type of Pensions Being Paid</b>	<b>No.</b>	<b>Annual Pensions</b>
Age and Service Pensions		
Regular pension - benefit		
Terminating at death of retirant	77	\$1,714,886
Option A pension - joint and survivor benefit	65	1,600,942
Option B pension - modified joint and survivor benefit	27	751,640
Survivor beneficiary of deceased age and service retiree	23	300,923
Other - benefit being paid to an ex-spouse	<u>7</u>	<u>72,746</u>
Total age and service pensions	199	\$4,441,137
Casualty Pensions		
Duty disability		
Regular pension	2	35,190
Non-Duty Disability pensions		
Regular pension	4	72,041
Option A pension		
Option B pension	1	10,617
Survivor beneficiary of deceased	1	1,296
Non-duty disability retiree	<u>1</u>	<u>5,133</u>
Total	9	124,277
Non-duty death - spouse	2	77,363
Total casualty pensions	<u>11</u>	<u>201,640</u>
Total Pensions Being Paid	210	\$4,642,777

**Retiree and Beneficiary Data June 30, 2015**  
**Tabulated by Age**

Attained Age	No.	Annual Pensions
45 - 49	1	\$ 5,133
50 - 54	3	71,662
55 - 59	12	349,941
60 - 64	41	1,193,709
65	11	239,823
66	8	286,500
67	11	271,477
68	8	209,050
69	4	152,634
70	13	374,633
71	3	39,060
72	6	76,437
73	4	85,018
74	4	100,002
75	4	104,653
76	4	92,881
77	6	111,626
78	1	11,434
79	5	103,704
80	5	68,983
81	2	15,295
82	7	74,479
83	8	114,967
84	4	104,091
85	5	68,813
86	7	91,254
87	2	17,079
88	3	28,481
89	3	35,535
90	4	46,597
91	2	20,513
92	3	15,714
93	2	28,154
94	2	23,950
96	1	6,647
100	1	2,848
<b>Totals</b>	<b>210</b>	<b>\$4,642,777</b>

Average Age at Retirement: 58.0 years.  
Average Age Now: 72.8 years.

## Comparative Schedules Active Members in Valuation

Valuation Date June 30	Active Members	Valuation Payroll	Average			
			Age	Service	Pay	% Inc.
1991	159	\$4,858,321	46.0 yrs.	13.0 yrs.	\$30,555	5.0 %
1992	162	5,139,022	46.1	13.8	31,722	3.8
1993	166	5,353,229	45.8	13.7	32,248	1.7
1994	160	5,838,352	45.5	13.5	36,490	13.2
1995	157	5,623,083	44.7	13.4	35,816	(1.8)
1996	156	5,752,354	44.8	13.0	36,874	2.9
1997	163	6,311,705	44.5	12.2	38,722	5.0
1998	162	6,520,030	44.7	12.2	40,247	3.9
1999	167	7,090,025	44.4	11.1	42,455	5.5
2000	173	7,543,720	44.5	11.2	43,605	2.7
2001	169	7,316,759	45.1	11.5	43,294	(0.7)
2002	169	7,868,956	45.8	11.5	46,562	7.5
2003	154	7,324,919	46.6	11.4	47,564	2.2
2004	145	6,969,930	46.7	11.1	48,068	1.1
2005	134	6,532,301	47.0	10.7	48,749	1.4
2006	134	6,783,425	47.5	10.6	50,623	3.8
2007	124	6,557,936	47.2	11.4	52,887	4.5
2008	121	6,647,356	47.5	12.1	54,937	3.9
2009	117	6,726,665	48.3	12.8	57,493	4.7
2010	109	6,371,328	48.8	13.6	58,453	1.7
2011	98	5,865,873	49.0	14.6	59,856	2.4
2012	92	5,299,757	49.5	15.2	57,606	(3.8)
2013	78	4,599,115	48.8	15.6	58,963	2.4
2014	75	4,611,639	49.4	16.4	61,489	4.3
2015	67	4,282,301	49.8	17.1	63,915	3.9

### Active Members Added to and Removed from Rolls

Year Ended	Number Added During Year		Terminations During Year										Active Members End of Year
			Normal Retirement		Disability Retirement		Died-in-Service		Withdrawal				
	A	E	A	E	A	E	A	E	A	A	A	E	
06/30/11	0	0	6	9.1	0	0.3	0	0.2	3	2	5	2.4	98
06/30/12	1	0	4	7.6	0	0.4	0	0.2	3	0	3	2.0	92
06/30/13	0	0	11	9.0	0	0.3	1	0.2	1	1	2	1.8	78
06/30/14	0	0	3	4.8	0	0.3	0	0.2	0	0	0	1.6	75
06/30/15	0	0	4	5.9	0	0.3	0	0.2	3	1	4	1.4	67

*A* represents actual number.

*E* represents expected number.

**Active Members June 30, 2015  
By Age and Years of Service**

Age	Years of Service to Valuation Date							No.	Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up		Salary	Average
30-34		1	2					3	\$ 158,755	\$52,918
35-39		3	3	1				7	443,604	63,372
40-44		1	3	5	1			10	553,588	55,359
45-49		1	1	6				8	508,609	63,576
50-54		1	2	6	4			13	849,698	65,361
55-59		1	1	10	2	2	3	19	1,250,444	65,813
60			1	1	1			3	193,075	64,358
62				1				1	105,630	105,630
64				1				1	72,374	72,374
65+				2				2	146,524	73,262
<b>Totals</b>		<b>8</b>	<b>13</b>	<b>33</b>	<b>8</b>	<b>2</b>	<b>3</b>	<b>67</b>	<b>\$4,282,301</b>	<b>\$63,915</b>

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

Age: 49.8 years

Service: 17.1 years

Annual Pay: \$63,915

# Inactive Vested Members June 30, 2015

## Tabulated by Age

<b>Age</b>	<b>No.</b>	<b>Estimated Deferred Annual Pensions</b>
42	1	\$ 6,691
45	2	82,912
46	1	12,215
47	1	12,983
48	2	25,999
49	1	28,594
50	2	42,410
51	4	42,011
53	2	20,946
56	3	42,647
58	2	28,664
59	1	18,489
<b>Totals</b>	<b>22</b>	<b>\$364,561</b>

Average Age Now: 51.6 years.



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## **SECTION C**

### VALUATION METHODS AND ASSUMPTIONS

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## Actuarial Cost Method

The actuarial cost method is the procedure for allocating the actuarial present value of benefits and expenses to time periods. The method used for your valuation is known as the *individual entry-age actuarial cost method*, and has the following characteristics:

- The annual normal costs for each individual active member is sufficient to accumulate the value of the member's pension at the time of retirement.
- Each annual normal cost is a constant percentage of the member's year-by-year projected pensionable compensation.

The unfunded actuarial accrued liability was financed as a level dollar of member payroll over a period of 18 years.

The valuation assets used for funding purposes is derived as follows: prior year valuation assets are increased by contribution and expected investment income (net of expenses) and reduced by refunds and benefit payments. To this amount is added 25% of the difference between expected and actual investment income for each of the previous four years.

**Excess Earning Reserve:** An amount equal to the market value of the Excess Earning Reserve is added to the liabilities to assure proper allocation of assets to liabilities.

## **Actuarial Assumptions Used for the Valuation**

The contribution requirements and benefit values of the System are calculated by applying actuarial assumptions to the benefit provisions and demographic information furnished by the plan sponsor, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experiences are:

- long-term rates of investment return to be generated by the assets of the System
- patterns of pay increases to members
- rates of mortality among members, retirants and beneficiaries
- rates of withdrawal of active members (without entitlement to a retirement benefit)
- rates of disability among members
- the age patterns of actual retirements

The monetary effect of each assumption is calculated for as long as a present covered person survives - - - a period of time which can be as long as a century.

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Actual experience of the System will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate. The actuarial assumptions were based upon the results of an experience study for the City of St. Clair Shores Employees Retirement System, covering the period July 1, 2002 through June 30, 2007. A report dated September 23, 2008 presented the results of this experience study.

## Valuation Assumptions

*The rate of investment return* was 8.0% (net of expenses) a year, compounded annually. This assumption is used to make money payable at one point in time equal in value to an amount of money payable at another point in time. The assumed real rate of return (the net return in excess of the wage inflation rate) was 4.0%. Economic experience during the last 5 years has been as follows:

	Year Ending					5-Year
	6/30/15	6/30/14	6/30/13	6/30/12	6/30/11	Average
1) Nominal rate of return#	6.0 %	10.1 %	8.0 %	(0.1)%	(0.4)%	4.7%
2) Increase in CPI	0.1	2.1	1.8	1.7	3.6	1.9%
3) Average salary increase*	1.4	4.2	1.7	(3.7)	3.7	1.5%
4) Real return:						
- investment purposes	5.9	8.0	6.2	(1.8)	(4.0)	2.8%
- funding purposes	4.6	5.9	6.3	3.7	(4.1)	3.2%
- assumption	4.0	4.0	4.0	4.0	4.0	4.0%

# *The nominal rate of return was computed using the approximate formula:  $i = I$  divided by  $1/2 (A+B-I)$ , where  $I$  is realized investment income net of expenses,  $A$  is the beginning of year asset value and  $B$  is the end of year asset value.*

\* *Based on members who were active both at the beginning and end of the year.*

A price inflation of approximately 3.0% was assumed. This assumption is not explicitly utilized in the calculation of valuation results.

*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. Base wage growth was set to 2.5% for 2012-2019.

### Sample Salary Adjustment Factors Used to Project Salaries in Years 2020 and Beyond

Sample Ages	Percent Increase in Salary During Next Year	
	Base	Promotion & Seniority
20	4.0 %	3.7 %
25	4.0	3.2
30	4.0	2.7
35	4.0	2.2
40	4.0	1.4
45	4.0	0.7
50	4.0	0.2
55	4.0	0.0

**Mortality Table.** The mortality table used was the RP2000 table projected to 2008. This table was first used for the June 30, 2008 valuation. This table provides no margin for future mortality improvement. Sample values follow:

Sample Ages	Single Life Retirement Values			
	Present Value of \$1 Monthly for Life		Future Life Expectancy (Years)	
	Men	Women	Men	Women
50	\$136.86	\$139.34	31.61	34.01
55	129.71	133.01	26.94	29.30
60	120.48	124.83	22.45	24.75
65	109.24	114.86	18.25	20.48
70	96.28	103.27	14.43	16.57
75	81.46	90.15	10.98	13.03
80	65.68	75.64	8.02	9.90

This estimate is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. For disability purposes, the mortality is set forward ten years.

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

Retirement Ages	Percent of Active Members Retiring within Next Year
50	20 %
51	20
52	20
53	20
54	20
55	25
56	25
57	25
58	25
59	25
60	30
61	30
62	30
63	30
64	30
65	100

These rates were first used for the June 30, 2008 valuation.

*Rates of separation from active membership* are represented by the following table: (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.

<b>Sample Ages</b>	<b>Years of Service</b>	<b>% of Active Members Separating within Next Year</b>
ALL	0	15.00 %
	1	12.00
	2	10.00
	3	8.00
	4	6.00
25	5 & Over	5.00
30		5.00
35		4.50
40		3.00
45		2.60
50		1.50
55		1.50
60		1.50

The rates were first used for the June 30, 2008 valuation.

*Vested members* who terminate with a benefit worth less than 100% of their own accumulated contributions were assumed to forfeit their vested benefit.

*Rates of disability* are represented by the following table:

<b>Sample Ages</b>	<b>Percent Becoming Disabled within Next Year</b>
20	0.03%
25	0.05%
30	0.07%
35	0.13%
40	0.19%
45	0.28%
50	0.45%
55	0.76%
60	1.10%

These rates were first used for the June 30, 1986 valuation. For purposes of the valuation we assume that all disabilities are ordinary, as opposed to non-duty disabilities.

## **Miscellaneous and Technical Assumptions**

### **June 30, 2015**

<b>Marriage Assumption:</b>	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
<b>Pay Increase Timing:</b>	Beginning of the valuation year.
<b>Decrement Timing:</b>	Decrements of all types are assumed to occur mid-year.
<b>Eligibility Testing:</b>	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.
<b>Decrement Operation:</b>	All decrements the first 5 years of service. Only mortality operates during retirement eligibility.
<b>Service Credit Accruals:</b>	It is assumed that members accrue one year of service credit per year.
<b>Incidence of Contributions:</b>	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.
<b>Normal Form of Benefit:</b>	Straight life benefit terminating at death of retiree.
<b>Benefit Service:</b>	Exact fractional service is used to determine the amount of benefit payable.
<b>Payroll Adjustment:</b>	Members who did not work the entire plan year had pays adjusted to reasonably reflect a full year's pay.

## Glossary

**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."

**Accrued Service.** The service credited under the plan which was rendered before the date of the actuarial valuation.

**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.

**Experience Gain (Loss).** A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.



## Glossary – (Concluded)

**Funding Value of Assets.** The value of assets derived by spreading the capital value changes (unrealized and realized gain and losses) in equal dollar installments over four years. This treatment removes the timing of investment activities from the valuation process.

**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.

**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 accrued liability."

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

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## **SECTION D**

### FINANCIAL REPORTING

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NOTE: GASB Statements No. 67 and No. 68 are effective for Governmental Retirement Plans for the fiscal year beginning after June 15, 2013 (GASB Statement No. 67) and the fiscal year beginning after June 15, 2014 (GASB Statement No. 68). These statements replace GASB Statements No. 25 and No. 27.

## Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) -- Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b - a) / c)
2006 *#	\$42,222,117	\$52,481,690	\$10,259,573	80.5 %	\$6,783,425	151.2 %
2007 *	44,702,803	53,868,304	9,165,501	83.0	6,557,936	139.8
2008 #	45,610,111	55,873,969	10,263,858	81.6	6,647,356	154.4
2009 #	43,364,264	54,466,034	11,101,770	79.6	6,726,665	N/A
2010 *	41,130,494	55,767,178	14,636,684	73.8	6,371,328	N/A
2011	38,612,848	56,714,374	18,101,526	68.1	5,865,873	N/A
2012	36,435,503	56,805,539	20,370,036	64.1	5,299,757	N/A
2013	37,291,564	57,648,592	20,357,028	64.7	4,599,115	N/A
2014	38,900,248	58,329,977	19,429,729	66.7	4,611,639	N/A
2015 #	39,768,186	59,991,212	20,223,026	66.3	4,282,301	N/A

## Schedule of Employer Contributions

Fiscal Yr. Ended June 30	Val. Yr. Ended June 30	Contribution Rates as Percents of Valuation Payroll	Computed Dollar Contribution Based on Valuation	Annual Required Contribution Based on Actual Payroll
2008	2006 *#	26.62 %	\$ 1,915,169	\$ 1,835,943
2009	2007 *	26.21	1,822,990	1,823,179
2010	2008 #	N/A	1,866,531	1,866,531
2011	2009 #	N/A	1,812,824	1,808,157
2012	2010 *	N/A	2,090,393	2,095,060
2013	2011	N/A	2,379,350	2,379,350
2014	2012	N/A	2,561,038	2,561,038
2015	2013	N/A	2,512,506	2,512,506
2016	2014	N/A	2,462,821	-
2017	2015 #	N/A	2,554,204	-

\* Retirement System amended.

# Revised actuarial assumptions and/or methods.

## Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date:	June 30, 2015
Actuarial cost method:	Entry Age
Amortization method:	Level dollar
Remaining amortization period:	18 years (closed)
Asset valuation method:	4-year smoothed market

Actuarial assumptions:

Investment rate of return	8.0%
Projected salary increases*	4.0% - 7.7%
*Includes inflation at	4.0%*

Cost-of-living adjustments (Compounded)

Retirees (effective 7/1/93)	5% cost-of-living increases at age 60 or five years after retirement, whichever is later, with a second increase of 5% five years after the first increase.
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\* Wage inflation is assumed to be 2.5% for 2014-2019.

Membership of the plan consisted of the following at June 30, 2015, the date of the latest actuarial valuation:

Retirees and beneficiaries receiving benefits	210
Terminated plan members entitled to but not yet receiving benefits	22
Active plan members	67
Total	299

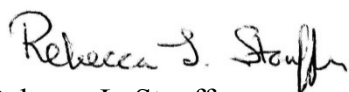
December 17, 2015

Secretary of the Retirement Board  
City of St. Clair Shores Employees  
Retirement System  
27600 Jefferson Circle Drive  
St. Clair Shores, Michigan 48081-9971

Dear Board Members:

Enclosed are twenty-five copies of the report of the 63rd Annual Actuarial Valuation for the City of St. Clair Shores Employees Retirement System.

Sincerely,



Rebecca L. Stouffer

RLS:rmn  
Enclosures