

CITY OF ST. CLAIR SHORES
POLICE AND FIRE RETIREMENT SYSTEM
64TH ANNUAL ACTUARIAL VALUATION REPORT
JUNE 30, 2013



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December 20, 2013

The Retirement Board
City of St. Clair Shores Police and
Fire Retirement System
27600 Jefferson Circle Drive
St. Clair Shores, Michigan 48081-9971

Dear Board Members:

The results of the June 30, 2013 annual actuarial valuation of the City of St. Clair Shores Police and Fire Retirement System, which is based upon Act 345 of the Public Acts of 1937, as amended are presented in this report. The purpose of the valuation was to measure the System's funding progress, provide actuarial information in connection with applicable Governmental Accounting Standards Board Statements and to determine the employer contribution for the 2014-2015 fiscal year. This report should not be relied upon for any other purpose. This report may be distributed to parties other than the System only in its entirety and only with the permission of the Board.

The valuation was based upon information, furnished by the City, concerning Retirement System benefits, financial transactions, and individual active members, terminated members, retirees and beneficiaries. Data was checked for internal and year to year consistency, but was not otherwise audited, by us. As a result, we are unable to assume responsibility for the accuracy or completeness of the data provided.

Future actuarial measurements may differ significantly from those presented in this report due to such factors as experience differing from that anticipated by actuarial assumptions, changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements.

To the best of our knowledge, this report is complete and accurate and the valuation was conducted in accordance with standards of practice prescribed by the Actuarial Standards Board and in compliance with the applicable state statutes.

Curt Powell and Randall J. Dziubek are independent of the plan sponsor and are Members of the American Academy of Actuaries (MAAA) who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. It is our opinion that the actuarial assumptions used for the valuation produce results which are reasonable.

Respectfully submitted,



Curt Powell, EA, MAAA



Randall J. Dziubek, ASA, EA, MAAA

CP/RD:bd

SECTION A
VALUATION RESULTS

FUNDING OBJECTIVE

The funding objective of the Retirement System is to establish and receive contributions, expressed as percents of active member payroll, which will remain approximately level from year to year and will not have to be increased for future generations of citizens.

CONTRIBUTION RATES

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, 2014 are shown on page A-2.

The Board of Trustees of the City of St. Clair Shores Police and Fire 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	Contributions Expressed as Percents of Annual Pay	
	For Fiscal Year Beginning July 1,	
	2014	2013
NORMAL COST		
Age and service pensions	16.77%	16.79%
Death before retirement pensions	0.38%	0.39%
Disability pensions	0.90%	0.90%
Total	18.05%	18.08%
MEMBERS' CONTRIBUTIONS		
Gross contributions*	4.31%	4.32%
Less prospective refunds	0.25%	0.26%
Available for pensions	4.06%	4.06%
CITY'S NORMAL COST	13.99%	14.02%
UNFUNDED ACTUARIAL ACCRUED LIABILITIES#	33.26%	28.79%
ASSETS IN EXCESS OF ACCRUED LIABILITIES#	NONE	NONE
TOTAL CITY CONTRIBUTIONS@ - %	47.25%	42.81%
- \$	\$5,024,799	\$4,417,956

* *Weighted average.*

Unfunded accrued liabilities were amortized as a level percent of payroll over a period of 26 years. Assets in excess of accrued liabilities were amortized as a level percent of payroll over a period of 10 years and applied as a credit to the computed normal cost contribution.

@ *All fiscal year calculations are based on the valuation payroll of \$9,955,027 for the period July 1, 2012– June 30, 2013, assumed to increase at a rate of 4.5% each year. No adjustments have been made to reflect agreements which may limit pay increases over the next year. To the extent that actual pays are less (greater) than projected, application of the rate shown will produce dollar contributions less than (greater than) the amount illustrated above. Any shortfall (excess) will manifest as an increase (decrease) in future contribution rates.*

DERIVATION OF EXPERIENCE GAIN (LOSS)

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is hoped 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	\$ 51,370,347
(2) Total normal cost	1,771,745
(3) Actual contributions for pensions	3,659,381
(4) Interest accrual	3,781,990
(5) Expected UAAL* before changes	53,264,701
(6) Change from amendments	0
(7) Change in asset smoothing methodology	0
(8) Change from assumption and actuarial cost method revisions	0
(9) Expected UAAL* after changes	53,264,701
(10) Actual UAAL*	59,629,409
(11) Gain (loss) (9) - (10)	(6,364,708)
(12) Gain (loss) as percent of actuarial accrued liabilities at start of year (\$145,517,428)	(4.4)%

* *Unfunded actuarial accrued liabilities.*

<u>Valuation Date</u>	<u>Experience Gain (Loss) as % of Beginning Accrued Liability</u>
6-30-04	(10.9) %
6-30-05	(8.5)
6-30-06	0.2
6-30-07	2.6
6-30-08	(3.0)
6-30-09	(7.5)
6-30-10	(1.0)
6-30-11	(6.4)
6-30-12	(8.0)
6-30-13	(4.4)

SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS

	June 30, 2013	June 30, 2012
A. Present valuation assets		
1. Net assets from System financial statements*	\$ 89,417,393	\$ 85,307,426
2. Market value adjustment	(859,676)	8,839,655
3. Valuation assets	88,557,717	94,147,081
 B. Actuarial present value of expected future employer contributions		
1. For normal costs	12,869,634	12,659,777
2. For unfunded actuarial accrued liability	59,629,409	51,370,347
3. Total	72,499,043	64,030,124
 C. Actuarial present value of expected future member contributions		
	4,405,781	4,346,947
 D. Total present and expected future resources	\$165,462,541	\$162,524,152

ACTUARIAL PRESENT VALUE OF EXPECTED FUTURE BENEFIT PAYMENTS

A. To retired members and beneficiaries	\$ 98,403,589	\$ 97,569,177
B. To vested terminated members	509,242	472,952
C. To present active members		
1. Allocated to service rendered prior to valuation date	49,274,295	47,475,299
2. Allocated to service likely to be rendered after valuation date	17,275,415	17,006,724
3. Total	66,549,710	64,482,023
 D. Funding Reserve	0	0
 E. Total actuarial present value of expected future benefit payments	\$165,462,541	\$162,524,152

* *Market value.*

In financing the actuarial accrued liabilities, the valuation assets of \$88,557,717 were distributed as shown below.

Reserves for	Present Valuation Assets Applied to			Totals
	Member Actuarial Accrued Liability	Retired Life Actuarial Liabilities	Contingency Reserve	
Employees' Contributions	\$ 4,785,901			\$ 4,785,901
Employer Contributions	(15,295,997)	\$13,012,869		-2,283,128
Retired Benefit Payments		85,390,720		85,390,720
Excess Earnings Reserve	664,224			664,224
Totals	\$ (9,845,872)	\$98,403,589	none	\$88,557,717

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

	Retired Lives	Active Members	Total
Computed Actuarial Accrued Liabilities	\$98,403,589	\$49,783,537	\$148,187,126
Applied Assets	98,403,589	(9,845,872)	88,557,717
Unfunded Actuarial Accrued Liabilities	\$ none	\$59,629,409	\$ 59,629,409

COMPARATIVE SCHEDULE

Valuation Date	Actuarial Accrued Liabilities & Reserves	Accrued Assets	% Funded	Unfunded Actuarial Accrued Liabilities & Reserves			City's Contrib. Rate@
				Dollars	Amortiz. Period	% of Payroll	
12/31/88	\$ 42,791,079	\$ 44,217,586	103.3 %	\$ (1,426,507)	27	- %	15.82 %
12/31/89	43,625,707	46,915,197	107.5	(3,289,490)	26	-	15.08 #
12/31/90	48,040,951	50,278,560	104.7	(2,237,609)	25	-	16.48 #
12/31/91	48,748,361	52,659,040	108.0	(3,910,679)	24	-	17.01 #
06/30/93	55,877,762	59,442,762	106.4	(3,565,000)	23	-	16.19 *#
06/30/94	57,929,114	63,101,209	108.9	(5,172,095)	22	-	15.05 #
06/30/95	61,692,487	66,621,054	108.0	(4,928,567)	21	-	15.71 *
06/30/96	66,563,082	71,692,536	107.7	(5,129,454)	20	-	16.51 #
06/30/97	69,290,760	79,687,515	115.0	(10,396,755)	19	-	12.61
06/30/98	74,132,345	91,138,639	122.9	(17,006,294)	10	-	0.00 *#
06/30/99	77,538,939	101,745,561	131.2	(24,206,622)	10	-	0.00 #
06/30/00	81,816,157	110,243,719	134.7	(28,427,562)	10	-	0.00 #
06/30/01	86,607,994	113,344,804	130.9	(26,736,810)	10	-	0.00 #
06/30/02	90,182,317	108,832,118	120.7	(18,649,801)	10	-	0.00 #
06/30/03	93,967,332	101,683,192	108.2	(7,715,860)	10	-	8.73 #
06/30/04	98,335,479	94,640,250	96.2	3,695,229	25	38	20.45 *
06/30/05	104,248,328	90,853,624	87.2	13,394,704	25	130	25.88 *
06/30/06	107,602,157	93,730,948	87.1	13,871,209	25	130	25.84
06/30/07	111,001,598	99,906,347	90.0	11,095,251	25	104	24.30 #
06/30/08	117,284,024	105,559,450	90.0	11,724,574	25	109	24.90 #
06/30/09	125,940,115	103,972,349	82.6	21,967,766	30	191	29.52 *
06/30/10	129,441,265	102,981,697	79.6	26,459,568	29	248	30.57 #
06/30/11	139,365,119	101,229,663	72.6	38,135,456	28	337	31.73 #
06/30/12	145,517,428	94,147,081	64.7	51,370,347	27	532	42.81
06/30/13	148,187,126	88,557,717	59.8	59,629,409	26	599	47.25

* Revised actuarial assumptions and/or methods.

Retirement System amended.

@ Excluding contributions for Health Insurance and Medicare premiums after valuation date 12-31-86.

The ratio of Valuation Assets to Actuarial Accrued Liabilities 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%.

The Ratio of Unfunded Actuarial Accrued Liabilities to Valuation Payroll is another relative index of condition. Actuarial unfunded liabilities represent debt, while active member payroll represents the system's capacity to collect contributions to pay toward debt. The lower the ratio, the greater the financial strength and vice-versa.

COMMENTS

ACTUARIAL EXPERIENCE: The System encountered less favorable actuarial experience than expected for the valuation year resulting in an experience loss of \$6,364,708. The contribution rate increased this valuation from 42.81 percent of pay to 47.25. The loss was primarily attributable to recognized investment income that was less than assumed.

The Actuarial Standards of Practice with regard to the mortality assumption has recently 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.

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 in the aggregate a reasonable representation of the past and anticipated future experience of the System.

SECTION B
VALUATION DATA

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS

(JUNE 30, 2013)

SERVICE RETIREMENT

Eligibility - Fire AR4, Police AR4, Police, and Police Command and Fire hired before 1/1/2010: 25 or more years of service regardless of age or age 60 with 10 years of service. Fire hired after 1/1/2010: age 50 with 25 years of service or age 60 with 10 years of service.

Annual Amount - Fire AR4, Police AR4, Police hired before 1/1/2011, Police Command hired before 4/22/2011, and Fire hired before 1/1/2010: 2.8% of FAC times first 25 years of service plus 1% of FAC times years of service over 25. Police hired after 1/1/2011, Police Command hired after 4/22/2011, and Fire hired after 1/1/2010: 2.25% of FAC times first 25 years of service plus 1% of FAC times years of service over 25. Maximum benefit equals 75% for Police hired before 1/1/2011 and Police Command hired before 4/22/2011 and 70% for Fire AR4, Police AR4, Police hired after 1/1/2011, Police Command hired after 4/22/2011, and Fire. Maximum benefit for Fire AR4 and Police AR4 cannot exceed base pay as of termination date.

Final Average Compensation: Highest 3 years out of last 10.

DEFERRED RETIREMENT

Eligibility - 10 or more years of service, payable to member or eligible surviving spouse.

Annual Amount - Computed as service retirement but based upon service, FAC and benefit in effect at termination. Benefit begins at date retirement would have occurred had member remained in employment. Benefit to eligible surviving spouse actuarially reduced in accordance with an Option I election.

DEATH AFTER RETIREMENT SURVIVOR'S PENSION

Eligibility - Payable to a surviving spouse, if any, upon the death of a retired member who is receiving a regular straight life pension.

Annual Amount - Spouse's pension equals 60% of the regular straight life pension the deceased retirant was receiving.

NON-DUTY DEATH-IN-SERVICE SURVIVOR'S PENSIONS

Eligibility - Payable to a surviving spouse, if any, upon the death of a member with 10 or more years of service.

Annual Amount - Accrued straight life pension actuarially reduced in accordance with an Option I election.

DUTY DEATH-IN-SERVICE SURVIVOR'S PENSIONS

Eligibility - Payable upon the expiration of worker's compensation to the survivors of a member who died in the line of duty.

Annual Amount - Same amount that was paid by worker's compensation.

NON-DUTY DISABILITY

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

Annual Amount - To age 55: 1.5% of FAC times years of service. At age 55: Computed like Service Retirement Pension.

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS - (CONCLUDED)
(JUNE 30, 2013)

DUTY DISABILITY

Eligibility - Payable upon the total and permanent disability of a member in the line of duty.

Annual Amount - To Age 55: 50% of FAC. At Age 55: Computed like Service Retirement Pension with service credit from date of disability to age 55.

MEMBER CONTRIBUTIONS

Annual Amount - Fire AR4, Police AR4, and Fire hired after 1/1/2010: 5% of compensation. Police: 4% of compensation. Police Command: 6% of compensation. Fire hired before 1/1/2010: Contribution depends upon years of service:

<u>Years of Service</u>	<u>Fire Hired Before 1/1/2010</u>
Under 5	2%
5-9	3
10-14	4
15+	5

ANNUITY WITHDRAWAL

Police hired after 1/1/2011, Police Command hired after 4/22/2011, and Fire hired after 1/1/2010: Available with reduction in monthly pension.

All Others: Available without reduction in monthly pension.

POST RETIREMENT INCREASE (Compounded)

All Fire (effective 7/1/94),
Police (effective 7/1/95),
Police Command (effective 7/1/96),
Police AR4 (effective 7/1/96)

5% cost-of-living increases at age 60 or 5 years after retirement, whichever occurs first, second increase of 5% five years after the first increase.

Fire (effective 7/1/00),
Police (effective 7/1/01)

5% cost-of-living increases at age 60 or 5 years after retirement, whichever occurs first, second increase of 5% five years after the first increase. A third increase of 5% five years after the second increase.

Police Command (effective 7/1/00),
Police AR4 (effective 7/1/00),
Fire AR4 (effective 7/1/00)

2.5% cost-of-living increases at age 60 or 3 years after retirement, whichever occurs first, second increase of 5% two years after the first increase. A third increase of 2.5% two years after the second increase. A fourth increase of 5% three years after the third increase.

Fire AR4,
Police AR4, and Police Command
(effective 3/19/07),
Police (effective 4/7/08)
Fire (effective 7/1/08)

2.5% cost-of-living increases at age 60 or 3 years after retirement, whichever occurs first, second increase of 2.5% two years after the first increase. A third increase of 2.5% two years after the second increase. A fourth increase of 2.5% three years after the third increase. A fifth increase of 2.5% two years after the fourth increase. A sixth increase of 2.5% three years after the fifth increase.

**SUMMARY OF CURRENT ASSET INFORMATION FURNISHED
FOR VALUATION**

BALANCE SHEET

Current Assets		Reserves for	
Cash & Equivalents	\$ 2,978,593	Employees' Contributions	\$ 4,785,901
Receivables & Accruals	920,078	Employer Contributions	(1,423,452)
Bonds	24,026,485	Retired Benefit Payments	85,390,720
Common Stocks	0	Excess Earnings Reserve	664,224
Other Equities (ADR & Closed End Funds)	62,288,951		
Foreign Stocks	0		
Stock Mutual	0		
Real Estate	0		
Mortgages	0		
Other Assets (Securities lending)	0		
Amount due to Broker	(796,714)		
Total Current Assets	89,417,393	Total Reserves	89,417,393
Market Adjustment*	(859,676)	Market Adjustment*	(859,676)
Total Valuation Assets	\$88,557,717	Total Valuation Assets	\$88,557,717

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

REVENUES AND EXPENDITURES

	2013
Balance July 1, 2012	\$94,147,081
Revenues	
Employees' Contributions	459,923
Employer Contributions	3,199,458
Medicare Reimbursement#	218,822
Recognized Net Investment Income for Valuation Purposes	296,067
Expenditures	
Benefit Payments	9,171,636
Medicare Payments#	218,822
Refund of Member Contributions	373,176
Balance June 30	\$ 88,557,717

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.

DEVELOPMENT OF FUNDING VALUE OF ASSETS

Year Ended June 30:	2012	2013	2014	2015	2016	2017
A. Funding Value Beginning of Year	\$ 101,229,663	\$94,147,081				
B. Market Value End of Year	85,307,426	89,417,393				
C. Market Value Beginning of Year	93,797,305	85,307,426				
D. Non-Investment Net Cash Flow	(7,228,592)	(5,885,589)				
E. Investment Income						
E1. Market Total: B - C - D	(1,261,287)	9,995,556				
E2. Amount for Immediate Recognition (7.5%)	7,321,153	6,840,321				
E3. Amount for Phased-In Recognition: E1-E2	(8,582,440)	3,155,235				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.20 x E3	(1,716,488)	631,047				
F2. First Prior Year	1,592,212	(1,716,488)	\$ 631,047			
F3. Second Prior Year	300,526	1,592,212	(1,716,488)	\$ 631,047		
F4. Third Prior Year	(7,351,393)	300,526	1,592,212	(1,716,488)	\$ 631,047	
F5. Fourth Prior Year	0	(7,351,393)	300,526	1,592,214	(1,716,488)	\$ 631,047
F6. Total Recognized Investment Gain(Loss)	(7,175,143)	(6,544,096)	807,297	506,773	(1,085,441)	631,047
G. Funding Value End of Year: A + D + E2 + F5	94,147,081	88,557,717				
H. Difference between Market & Funding Value	(8,839,655)	859,676				
I. Recognized Rate of Return - Funding Value	0.15%	0.32%				
J. Recognized Rate of Return - Market Value	(1.40%)	12.14%				

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased-in over a closed 5-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 5 consecutive years, the Funding Value will become equal to Market Value.

**RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS
COMPARATIVE STATEMENT**

Year Ended	Added		Removed		No.	End of Year		Present Value of Pensions	No. Active Per Retired	Pensions as a % of Pay
	No.	Annual	No.	Annual		Annual Pensions				
		Pensions*		Pensions		Dollars	Average			
12/31/84	12	\$ 286,902	3	\$ 83,030	60	\$ 974,945	\$16,249	\$ 11,050,459	2.4	17.8 %
12/31/85	3	55,979	2	26,901	61	1,004,023	16,459	11,091,803	2.4	17.7
12/31/86	10	249,692	2	33,540	69	1,220,175	17,684	13,596,631	2.0	22.9
12/31/87	9	266,349	1	3,000	77	1,483,524	19,267	16,630,723	1.8	25.3
12/31/88	10	289,473	1	11,510	86	1,761,487	20,482	19,739,811	1.6	30.0
12/31/89	10	280,390	2	28,664	94	2,013,213	21,417	22,414,969	1.4	37.1
12/31/90	13	317,193	2	39,083	105	2,291,323	21,822	25,575,508	1.3	35.5
12/31/91	9	227,823	3	41,903	111	2,477,243	22,318	27,476,856	1.2	41.8
06/30/93	19	645,713	4	63,001	126	3,059,955	24,285	34,013,466	1.0	50.7
06/30/94	5	240,063			131	3,300,018	25,191	36,004,097	1.0	52.1
06/30/95	12	310,528	6	72,195	137	3,538,351	25,827	38,275,321	0.9	50.8
06/30/96	5	218,810	2	60,982	140	3,696,179	26,401	41,070,046	0.9	51.9
06/30/97	8	263,580	3	39,650	145	3,908,161	26,953	42,664,623	0.9	50.7
06/30/98	3	113,305	4	57,891	144	3,963,575	27,525	43,132,825	0.9	49.0
06/30/99	5	184,089	3	73,575	146	4,074,089	27,905	43,562,686	0.9	48.3
06/30/00	8	210,945	6	63,777	148	4,221,257	28,522	45,621,123	1.0	46.0
06/30/01	11	561,909	1	31,905	158	4,751,261	30,071	51,576,330	0.9	50.8
06/30/02	7	382,191	1	25,921	164	5,107,531	31,143	55,538,402	0.9	53.4
06/30/03	11	542,341	6	125,964	169	5,523,908	32,686	60,372,325	0.8	58.8
06/30/04	5	270,095	4	62,801	170	5,731,202	33,713	62,257,626	0.8	59.2
06/30/05	3	208,628	4	74,027	169	5,865,803	34,709	63,269,802	0.8	56.9
06/30/06	1	159,216	1	23,281	169	6,001,738	35,513	63,705,139	0.8	56.2
06/30/07	9	457,887	4	173,043	174	6,286,582	36,130	66,195,952	0.8	58.8
06/30/08	11	541,013	10	205,207	175	6,622,388	37,842	70,074,164	0.7	61.3
06/30/09	2	70,988	2	62,270	175	6,631,106	37,892	69,744,638	0.8	57.6
06/30/10	14	903,334	8	194,140	181	7,340,300	40,554	74,174,079	0.7	68.9
06/30/11	3	189,988	2	54,426	182	7,475,862	41,076	76,305,408	0.7	66.1
06/30/12	23	1,587,008	5	59,572	200	9,003,298	45,016	97,569,177	0.6	93.2
06/30/13	8	370,387	6	171,451	202	9,202,234	45,556	98,403,589	0.6	92.4

* Includes cost-of-living increases for ongoing retirees.

RETIRANTS AND BENEFICIARIES JUNE 30, 2013
TABULATED BY TYPE OF PENSIONS BEING PAID

<u>Type of Pensions Being Paid</u>	<u>No.</u>	<u>Annual Pensions</u>
Age and Service Pensions		
Regular pensions - benefit terminating at death of retiree	34	\$ 1,370,577
Regular pension - automatic benefit to spouse of deceased retiree	116	6,870,045
Option I pension - joint and survivor benefit	2	60,515
Survivor beneficiary of deceased retiree	32	599,646
Other - benefit being paid to an ex-spouse	<u>10</u>	<u>126,489</u>
Total Age and Service Pensions	194	9,027,272
Casualty Pensions		
Duty disability	4	71,350
Non-duty death pension to widow	<u>4</u>	<u>103,612</u>
Total Casualty Pensions	8	174,962
Total Pensions Being Paid	202	\$9,202,234

RETIRANTS AND BENEFICIARIES JUNE 30, 2013
TABULATED BY ATTAINED AGE

Attained Age	Retirants		Beneficiaries		Other *		Totals	
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions
40 - 44			1	\$ 43,829	1	\$17,851	2	\$ 61,680
45 - 49	8	\$ 571,328	1	35,878			9	607,206
50 - 54	19	1,535,700			1	8,463	20	1,544,163
55 - 59	19	1,541,857					19	1,541,857
60 - 64	26	1,591,450	3	96,008	3	60,239	32	1,747,697
65 - 69	22	1,101,956	1	14,913	3	19,527	26	1,136,396
70 - 74	27	1,031,897	6	119,914	2	20,409	35	1,172,220
75 - 79	18	570,035	13	219,417			31	789,452
80 - 84	8	243,024	7	117,146			15	360,170
85 - 89	6	113,346	4	56,154			10	169,500
90 - 94	3	71,893					3	71,893
Totals	156	\$8,372,486	36	\$703,259	10	\$126,489	202	\$9,202,234

* Other – Benefits being paid to an ex-spouse.

COMPARATIVE SCHEDULES

Active Members in Valuation

Year Ended	Active Members	Valuation Payroll	Average			
			Pay	% Incr.	Age	Service
12/31/89	136	\$ 5,422,991	\$39,875	(7.0) %	40.5 yrs	14.8 yrs
12/31/90	138	6,460,094	46,812	17.4	39.5	13.5
12/31/91	132	5,927,498	44,905	(4.1)	40.0	13.9
06/30/93	130	6,029,505	46,381	3.3	38.1	12.1
06/30/94	130	6,335,138	48,732	5.1	38.0	12.0
06/30/95	126	6,970,235	55,319	13.5	38.0	12.1
06/30/96	132	7,115,881	53,908	(2.6)	37.6	11.6
06/30/97	135	7,715,637	57,153	6.0	37.8	11.3
06/30/98	135	8,088,601	59,916	4.8	38.4	11.9
06/30/99	138	8,426,850	61,064	1.9	38.5	12.0
06/30/00	141	9,169,906	65,035	6.5	38.8	12.1
06/30/01	139	9,353,854	67,294	3.5	38.4	11.5
06/30/02	143	9,566,435	66,898	(0.6)	37.8	11.0
06/30/03	133	9,387,845	70,585	5.5	38.2	11.4
06/30/04	130	9,687,275	74,518	5.6	38.9	12.1
06/30/05	129	10,307,055	79,900	7.2	39.4	12.7
06/30/06	134	10,675,665	79,669	(0.3)	39.7	13.0
06/30/07	134	10,684,097	79,732	0.1	40.0	13.5
06/30/08	127	10,802,446	85,059	6.7	40.5	14.1
06/30/09	134	11,507,841	85,879	1.0	40.7	14.4
06/30/10	128	10,654,588	83,239	(3.1)	40.2	14.1
06/30/11	130	11,313,370	87,026	4.5	40.5	14.5
06/30/12	129	9,660,548	74,888	(13.9)	38.1	12.3
06/30/13	130	9,955,027	76,577	2.3	38.4	12.5

Active Members Added to and Removed from Rolls

Year Ended	Number Added During Year		Terminations During Year										Active Members End of Year
	A	E	Normal Retirement		Disability Retirement		Died in Service		Withdrawal				
			A	E	A	E	A	E	Vested	Other	Total		
06/30/06	6	1	1	2.4	0	0.3	0	0.2	0	0	0	1.8	134
06/30/07	4	4	4	2.4	0	0.3	0	0.2	0	0	0	1.9	134
06/30/08	1	8	5	2.1	0	0.3	1	0.2	0	2	2	1.9	127
06/30/09	7	0	0	2.8	0	0.3	0	0.2	0	0	0	1.6	134
06/30/10	5	11	9	5.8	0	0.3	0	0.1	1	1	2	1.8	128
06/30/11	4	2	2	2.0	0	0.3	0	0.1	0	0	0	2.0	130
06/30/12	20	21	20	3.6	0	0.3	0	0.1	0	1	1	1.9	129
06/30/13	6	5	3	1.7	0	0.2	1	0.1	0	1	1	2.8	130

A represents actual number.

E represents expected number.

ACTIVE MEMBERS JUNE 30, 2013
BY AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	1							1	\$ 36,560
25-29	25	1						26	1,485,312
30-34	11	7	1					19	1,210,845
35-39	2	2	19					23	1,778,982
40-44		1	3	21	3			28	2,468,759
45-49			2	3	14			19	1,670,549
50-54			1	3	7	2		13	1,194,087
55-59					1			1	109,933
Totals	39	11	26	27	25	2		130	\$9,955,027

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

Age: 38.4 years.

Service: 12.5 years.

Annual Pay: \$76,577.

INACTIVE VESTED MEMBERS JUNE 30, 2013
TABULATED BY ATTAINED AGE

Attained Age	No.	Estimated Deferred Annual Pensions
48	1	\$ 43,468
Totals	1	\$ 43,468

Average Age Now: 48.7 years.

SECTION C

VALUATION METHODS AND ASSUMPTIONS

ACTUARIAL COST METHOD

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an individual entry-age normal cost method having the following characteristics:

- The annual normal costs for each individual active member, payable from the date of employment to the date of retirement, are sufficient to accumulate the value of the portion of the member's benefit at the time of retirement, death or disability.
- Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.
- The normal cost is based on the benefit provisions applicable for new hires within each employee group.

Unfunded actuarial accrued liabilities were amortized by level (principal and interest combined) percent-of-payroll contributions over a period of 26 years and added to the computed normal cost contribution. Assets in excess of actuarial accrued liabilities were amortized by level (principal & interest combined) percent-of-payroll contributions over a period of 10 years and applied as a credit to the computed normal cost contribution.

The valuation assets used for funding purposes is derived as follows: prior year valuation assets are increased by contribution and expected investment income and reduced by refunds, benefit payments and expenses. To this amount is added 20% of the difference between expected and actual investment income for each of the previous five years. Five-year smoothing was used for the first time in 2009. Previously, four-year smoothing was used. Some prior bases remain on a four-year recognition pattern during the phase-in period.

Excess Earnings Reserve. An amount equal to the market value of the Excess Earnings 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 people information furnished, 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.

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.

From time-to-time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations).

VALUATION ASSUMPTIONS

The rate of investment return was 7.5% (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 3.0%. Economic experience during the last 5 years has been as follows:

	Year Ending					5-Year
	6/30/13	6/30/12	6/30/11	6/30/10	6/30/09	Average
1) Nominal rate of return#	0.3%	0.2%	2.1%	1.9%	2.1%	1.3%
2) Increase in CPI	1.8	1.7	3.6	1.1	(1.4)	1.4%
3) Average salary increase*	4.4	(2.0)	6.1	3.1	1.9	2.7%
4) Real return:						
- investment purposes	(1.5)	(1.6)	(1.5)	0.8	3.5	(0.1)%
- funding purposes	(4.1)	2.2	(4.0)	(1.2)	0.2	(1.4)%
- assumption	3.0	3.0	3.0	3.0	3.0	3.0%

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.

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.

SAMPLE SALARY ADJUSTMENT FACTORS USED TO PROJECT CURRENT SALARIES

Sample Ages	Percent Increase in Salary	
	During Next Year	
	Base	Promotion & Seniority
20	4.5 %	3.0 %
25	4.5	3.0
30	4.5	2.6
35	4.5	1.1
40	4.5	0.2
45	4.5	0.2
50	4.5	0.2
55	4.5	0.1
60	4.5	0.0

If the number of active members remains constant, then the total active member payroll will increase 4.5% annually, the base portion of the individual salary increase assumptions. The base salary increase assumption of 4.5% was first used for the June 30, 1999 valuation.

The mortality table used was the RP2000 table projected to 2008. Mortality rates are set forward 10 years for disabled members. This table was first used for the June 30, 2009 valuation. Sample values follow:

Sample Ages	Single Life Retirement Values			
	Present Value of		Future Life	
	\$1 Monthly for Life		Expectancy (Years)	
	Men	Women	Men	Women
45	\$149.29	\$151.48	36.35	38.80
50	143.36	146.18	31.61	34.01
55	135.40	139.10	26.94	29.30
60	125.26	130.06	22.45	24.75
65	113.08	119.19	18.25	20.48
70	99.21	106.71	14.43	16.57
75	83.54	92.73	10.98	13.03
80	67.04	77.45	8.02	9.90

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. For purposes of the valuation, we assume that 75% of deaths in service are duty related and 25% of deaths in service are non-duty related. No margin for future mortality improvement has been applied.

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

Retirement Ages	All Others	Fire Hired After 1/1/2010
	Percent of Active Members Retiring within Next Year	Percent of Active Members Retiring within Next Year
45	30 %	%
46	30	
47	30	
48	30	
49	30	
50	30	50
51	30	30
52	40	40
53	40	40
54	40	40
55	40	40
56	50	50
57	50	50
58	50	50
59	50	50
60	100	100

A member is eligible for retirement after 25 or more years of service, or after attaining age 60 with 10 years of service. Fire members hired after 1/1/2010 are eligible for retirement after attaining age 50 with 25 years of service, or after attaining age 60 with 10 years of service.

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	Years of Service	% of Active Members Separating within Next Year
ALL	0	10.00 %
	1	7.00
	2	5.00
	3	4.00
	4	3.50
25	5 & Over	3.50
30		2.90
35		1.50
40		0.60
45		0.50
50		0.50
55		0.50
60		0.50

Rates of disability were as follows:

Sample Ages	% of Active Members Becoming Disabled within Next Year	
	Men	Women
20	0.08%	0.10%
25	0.08%	0.10%
30	0.08%	0.10%
35	0.08%	0.10%
40	0.20%	0.36%
45	0.27%	0.41%
50	0.49%	0.57%
55	0.89%	0.77%
60	1.41%	1.02%

For purposes of the valuation we assume that 75% of disabilities are duty related and 25% of disabilities are non-duty related.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

JUNE 30, 2013

Marriage Assumption:	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.
Pay Increase Timing:	Middle of the valuation year.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	All decrements the first 5 years of service. Only mortality operates during retirement eligibility.
Service Credit Accruals:	It is assumed that members accrue one year of service credit per year.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
Normal Form of Benefit:	A 60% automatic joint and survivor payment is the assumed normal form of benefit for married people.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.

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

Funding Value of Assets. The value of assets derived by spreading the capital value changes (unrealized and realized gains 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.

SECTION D

CERTAIN DISCLOSURES REQUIRED BY STATEMENT NO. 25 AND NO. 27 OF THE GOVERNMENTAL ACCOUNTING STANDARDS BOARD

This information is presented in draft form for review by the System's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the System's financial statements.

**REQUIRED SUPPLEMENTARY INFORMATION
REQUIRED BY GASB STATEMENT NO. 25 AND NO. 27**

Schedule of Funding Progress

Actuarial Valuation Date	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability (AAL) -- Entry Age	(3) Unfunded AAL (UAAL) (2-1)	(4) Funded Ratio (1/2)	(5) Covered Payroll	(6) UAAL as of % of Covered Payroll ((2-1)/5)
2004 *	\$ 94,640,250	\$ 98,335,479	\$ 3,695,229	96.2	\$ 9,687,275	38%
2005 *	90,853,624	104,248,328	13,394,704	87.2	10,307,055	130
2006	93,730,948	107,602,157	13,871,209	87.1	10,675,665	130
2007 #	99,906,347	111,001,598	11,095,251	90.0	10,684,097	104
2008 #	105,559,450	117,284,024	11,724,574	90.0	10,802,446	109
2009 *	103,972,349	125,940,115	21,967,766	82.6	11,507,841	191
2010 #	102,981,697	129,441,265	26,459,568	79.6	10,654,588	248
2011 #	101,229,663	139,365,119	38,135,456	72.6	11,313,370	337
2012	94,147,081	145,517,428	51,370,347	64.7	9,660,548	532
2013	88,557,717	148,187,126	59,629,409	59.8	9,955,027	599

Schedule of Employer Contributions

Fiscal Year Ended 6/30	Valuation Year Ended 6/30	Contribution Rates as Percents of Valuation Payroll**	Computed Dollar Contribution Based on Projected Valuation Payroll	Actual Required Contribution Based on Actual Payroll	Percentage Contributed
2006	2004 *	20.45 %	\$ 2,116,262	\$ 2,195,707	100%
2007	2005 *	25.88	2,849,530	2,828,715	100%
2008	2006	25.84	2,946,876	3,009,786	100%
2009	2007 #	24.30	2,773,438	2,799,831	100%
2010	2008 #	24.90	2,873,399	2,894,223	100%
2011	2009 *	29.52	3,628,981	3,452,136	95%
2012	2010 #	30.57	3,479,418	3,134,333	*** 90%
2013	2011 #	31.73	3,834,745	3,199,458	83%
2014	2012	42.81	4,417,956	-	-
2015	2013	47.25	5,024,799	-	-

Retirement System amended.

* Revised actuarial assumptions and/or methods.

*** Includes Funding Reserve transfer of \$1,081,26 (Formerly included in FY 2010).

**REQUIRED SUPPLEMENTARY INFORMATION
REQUIRED BY GASB STATEMENT NO. 25 AND NO. 27**

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

Valuation date	June 30, 2013
Actuarial cost method	Entry Age
Amortization method	Level percent open
Remaining amortization period	10 years if overfunded 26 years if underfunded
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return	7.5
Projected salary increases*	4.5% - 7.5%
*Includes inflation at	4.5
Cost-of-living adjustments (Compounded)	
All Fire (effective 7/1/94), Police (effective 7/1/95), Police Command (effective 7/1/96), Police AR4 (effective 7/1/96)	5% cost-of-living increases at age 60 or 5 years after retirement, second increase of 5% five years after the first increase.
Fire (effective 7/1/00), Police (effective 7/1/01)	5% cost-of-living increases at age 60 or 5 years after retirement, second increase of 5% five years after the first increase. A third increase of 5% five years after the second increase.
Police Command (effective 7/1/00), Police AR4 (effective 7/1/00), Fire AR4 (effective 7/1/00)	2.5% cost-of-living increases at age 60 or 3 years after retirement, second increase of 5% two years after the first increase. A third increase of 2.5% two years after the second increase. A fourth increase of 5% three years after the third increase.
Fire AR4, Police AR4, and Police Command (effective 3/19/07), Police (effective 4/7/08), Fire (effective 7/1/08)	2.5% cost-of-living increases at age 60 or 3 years after retirement, second increase of 5% two years after the first increase. A third increase of 2.5% two years after the second increase. A fourth increase of 2.5% three years after the third increase. A fifth increase of 2.5% two years after the fourth increase. A sixth increase of 2.5% three years after the fifth increase.

**REQUIRED SUPPLEMENTARY INFORMATION
REQUIRED BY GASB STATEMENT NO. 25 AND NO. 27**

Membership of the plan consisted of the following at June 30, 2013, the date of the latest actuarial valuation:

Retirees and beneficiaries receiving benefits	202
Terminated plan members entitled to but not yet receiving benefits	1
Active plan members	<u>130</u>
Total	333

December 20, 2013

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

Re: 63rd Annual Actuarial Valuation

Dear Board Members:

Please find enclosed twenty-five copies of the Sixty-Fourth Annual Actuarial Valuation report for the St. Clair Shores Police and Fire Retirement System.

Sincerely,



Curtis Powell, EA, MAAA

CP:bd
Enclosures