

CITY OF SOUTHFIELD
FIRE AND POLICE RETIREMENT SYSTEM
61ST ACTUARIAL VALUATION REPORT
AS OF JUNE 30, 2013

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January 10, 2014

The Retirement Board
City of Southfield
Fire and Police Retirement System
Southfield, Michigan

Dear Board Members:

The results of the **61st Annual Actuarial Valuation** of the City of Southfield Fire and Police Retirement System are presented in this report. The purpose of the valuation was to measure the System's funding progress and to determine the employer contribution rate for the ensuing fiscal year.

The valuation was based upon information, furnished by the City, concerning Retirement System benefits, financial transactions, individual active members, terminated members, retirees and beneficiaries. Data was checked for internal and year-to-year consistency, but was not otherwise audited. This information is summarized in Section C.

The date of the valuation was **June 30, 2013**.

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 and 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; and changes in plan provisions or applicable law. This report does not contain an analysis of the potential range of such future measurements.

Your attention is directed to valuation results, comments, conclusions, and recommendations contained in Section A.


To the best of our knowledge, this report is complete and accurate and was conducted in accordance with standards of practice prescribed by the Actuarial Standards Board and in compliance with the provisions of Act 345, as amended. The signing actuaries are independent of the plan sponsor.

Randall J. Dziubek is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,



Randall J. Dziubek, ASA, EA, MAAA



David L. Hoffman

RJD/DLH: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 accumulate sufficient assets during each member's period of active service to finance benefits payable throughout retirement.

CONTRIBUTION RATES

The Retirement System is supported by member contributions, City 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 present value of benefits allocated to the current year by the actuarial cost method described in Section C (the normal cost); and
- (2) Finance over a period of future years the actuarial present value of benefits not covered by valuation assets and anticipated future normal costs (unfunded actuarial accrued liability).

Computed contribution rates for the fiscal year beginning July 1, 2014 are shown on page A-2.

PUBLIC ACT 728 CERTIFICATION

The Board of Trustees of the City of Southfield Fire and Police 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.

**CONTRIBUTIONS TO PROVIDE BENEFITS
FISCAL YEAR BEGINNING JULY 1, 2014**

Contributions for	Contributions Expressed as % 's of Active Member Payroll
<i>Normal Cost of Benefits:</i>	
Age & service	18.02%
Disability	1.66
Death before retirement	0.19
Refunds of member contributions	0.09
Expenses	1.50
Total	21.46
<i>Member Contributions (weighted avg.)</i>	2.46
<i>Employer Normal Cost</i>	19.00
<i>Unfunded Actuarial Accrued Liabilities*</i>	12.68
Computed Employer Rate	31.68%

* *Unfunded Actuarial Accrued Liabilities were amortized over a closed period of 24 years as a level percent of payroll.*

DETERMINING EMPLOYER DOLLAR CONTRIBUTIONS

For any period of time, the percent-of-payroll contribution rate needs to be converted to dollars and then contributed to the Retirement System. The established procedure is to contribute bi-weekly, as follows:

- (a) Bi-weekly covered payroll for all active members.
- (b) Employer contribution rate.
- (c) Gross contribution dollars: (a) x (b).

The projected employer dollar contribution based on the payroll information provided for the valuation, adjusted to reflect assumed payroll increases between the valuation date and the fiscal year for which the contributions are being determined, is \$6,448,502.

In financing the actuarial accrued liabilities, the valuation assets of \$183,550,213 were distributed as shown below. Please see pages B-13 and B-14 for information concerning the development of valuation assets.

Reserves for	Present Valuation Assets Applied to			Totals
	Member Accrued Liabilities	Retired Life Liabilities	Contingency Reserve	
Employees' Contributions	\$ 11,738,530	\$ -	\$0	\$ 11,738,530
Employer Contributions	46,806,862	0	0	46,806,862
Retired Benefit Payments	<u>0</u>	<u>122,796,805</u>	<u>0</u>	<u>122,796,805</u>
Pension Total	\$ 58,545,392	\$ 122,796,805	\$0	\$ 181,342,197
Retiree Health Insurance Fund				0
Reserves for Inflation Equity				<u>2,208,016</u>
Grand Total				\$ 183,550,213

Pension Assets were applied against actuarial accrued liabilities in determining Unfunded Actuarial Accrued Liabilities as follows:

	Retired Lives	Active Members*	Totals
Computed Actuarial Accrued Liabilities	\$ 122,796,805	\$ 97,890,733	\$220,687,538
Applied Assets	<u>122,796,805</u>	<u>58,545,392</u>	<u>181,342,197</u>
Unfunded Actuarial Accrued Liabilities	\$ none	\$ 39,345,341	\$ 39,345,341

* Includes terminated members who are vested.

**DERIVATION OF EXPERIENCE GAIN (LOSS)
YEAR ENDED JUNE 30, 2013**

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	\$ 37,587,880
(2) Total normal cost from last valuation	4,063,120
(3) Actual employer and employee contributions	5,638,175
(4) Interest Accrual: $[(1) + ((2) - (3)) / 2] \times 7.75\%$	<u>2,852,027</u>
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	38,864,852
(6) Change due to benefit changes	1,941,236
(7) Change due to revised actuarial assumptions / methods	<u>0</u>
(8) Expected UAAL after changes: (5) + (6) + (7)	40,806,088
(9) Actual UAAL at end of year	<u>39,345,341</u>
(10) Gain (Loss): (8) - (9)	\$ 1,460,747
(11) Gain (Loss) as percent of actuarial accrued liabilities at start of year (\$211,803,567)	0.7%

* *Unfunded Actuarial Accrued Liabilities.*

Valuation Date	Experience Gain (Loss)
June 30,	as % of Beginning
June 30,	Accrued Liability
2009	(4.3)%
2010	(7.7)%
2011	(6.8)%
2012	(6.7)%
2013	0.7 %

SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS
PENSION ONLY
JUNE 30, 2013

Present Resources and Expected Future Resources

A. <i>Present valuation assets:</i>	
1. Market value of assets	\$ 179,167,100
2. Reserve for inflation equity	2,208,016
3. Actuarial adjustment	<u>2,175,097</u>
4. Valuation assets	183,550,213
B. <i>Actuarial present value of expected future contributions:</i>	
1. For normal costs	28,239,079
2. For unfunded actuarial accrued liability	<u>39,345,341</u>
3. Total	67,584,420
C. Total Present and Expected Future Resources	<u><u>\$ 251,134,633</u></u>

Actuarial Present Value of Expected Future Benefit Payments

A. <i>To retirees and beneficiaries:</i>	
1. Current benefits	\$ 122,796,805
2. Reserve for inflation equity	<u>2,208,016</u>
3. Total	125,004,821
B. <i>To vested terminated members</i>	817,171
C. <i>To present active members:</i>	
1. Allocated to service rendered prior to valuation date - actuarial accrued liability	97,073,562
2. Allocated to service likely to be rendered after valuation date	<u>28,239,079</u>
3. Total	125,312,641
D. Total Actuarial Present Value of Expected Future Benefit Payments	<u><u>\$ 251,134,633</u></u>

**COMPUTED EMPLOYER CONTRIBUTIONS
COMPARATIVE STATEMENT**

Valuation Date	Active Members					Retirees and Beneficiaries			Fiscal Year Beginning July 1	Employer Contributions as Payroll Percents		
	No.	Active Per Retired	Valuation \$ Millions	Payroll Average	% Incr.	No.	Annual Benefits \$ Millions	% of Pay		Pension	Health	Total
1993	260	2.7	\$ 13.7	\$52,529	3.2%	95	\$ 2.7	19.8%	1994	17.41%	10.10%	27.51%
1994	257	2.3	13.9	54,275	3.3	114	3.3	23.9	1995	17.37	10.08	27.45
1995	250	1.8	14.4	57,738	6.4	136	4.2	29.2	1996	17.66	10.15	27.81
1996	256	1.7	15.6	60,886	5.5	153	4.9	31.7	1997	17.91	9.80	27.71
1997 *	264	1.6	15.9	60,278	(1.0)	159	5.2	32.6	1998	15.25	8.95	24.20
1998	265	1.6	16.6	62,535	3.7	164	5.4	32.7	1999	13.27	8.42	21.69
1999 #	263	1.5	16.9	64,603	3.3	173	5.7	33.4	2000	12.85	8.24	21.09
2000 *#	262	1.4	17.9	68,153	5.5	189	7.0	39.2	2001	13.86	8.56	22.42
2001	261	1.3	18.4	70,360	3.2	197	7.3	39.6	2002	14.20	8.63	22.83
2002	262	1.3	19.1	72,961	3.7	198	7.2	37.7	2003	15.39	N/A	15.39
2003 *#	259	1.3	19.6	75,556	3.6	204	7.5	38.3	2004	17.55	N/A	17.55
2004 *#	263	1.3	20.4	77,698	2.8	209	7.6	37.2	2005	17.57	N/A	17.57
2005 *#	257	1.1	19.6	76,107	(2.0)	233	8.8	44.7	2006	16.55	N/A	16.55
2006	253	1.0	19.8	78,366	3.0	247	9.3	47.0	2007	16.30	N/A	16.30
2007	256	1.0	20.1	78,705	0.4	252	9.5	47.2	2008	13.54	N/A	13.54
2008	253	1.0	21.2	83,623	6.2	257	9.7	45.9	2009	13.32	N/A	13.32
2009	250	0.9	20.9	83,669	0.1	264	10.2	48.9	2010	15.94	N/A	15.94
2010	245	0.9	20.7	84,416	0.9	276	10.8	52.1	2011	20.95	N/A	20.95
2011 *#	235	0.8	19.7	83,733	(0.8)	287	11.3	57.2	2012	26.68	N/A	26.68
2012 *	225	0.8	19.0	84,270	0.6	295	11.7	61.5	2013	30.41	N/A	30.41
2013 *#	222	0.7	18.8	84,772	0.6	301	11.9	63.4	2014	31.68	N/A	31.68

* Revised actuarial assumptions or methods.

Retirement System amended.

**ACTUARIAL ACCRUED LIABILITIES & VALUATION ASSETS
COMPARATIVE STATEMENT**

Valuation Date June 30	Actuarial Accrued Liability (AAL) (\$ Millions)	Valuation Assets (\$ Millions)	Unfunded Actuarial Liability (UAAL) (\$ Millions)	Ratio of Present Assets to AAL	Ratio of UAAL to Valuation Payroll
1994	\$ 93.0	\$ 109.1	\$ (16.1)	117.3%	- %
1995	100.0	115.9	(15.9)	116.0	-
1996	107.8	123.8	(16.0)	114.8	-
1997 *	114.4	139.0	(24.6)	121.5	-
1998	119.6	157.1	(37.5)	131.4	-
1999 #	128.0	175.9	(47.9)	137.4	-
2000 *#	141.4	184.4	(43.0)	130.4	-
2001	146.4	186.6	(40.2)	127.5	-
2002	150.8	183.6	(32.8)	121.8	-
2003 *#	164.3	177.3	(13.0)	107.9	-
2004 *#	170.2	177.4	(7.2)	104.2	-
2005 *#	172.3	178.0	(5.7)	103.3	-
2006	178.2	184.0	(5.8)	103.3	-
2007	183.7	197.0	(13.3)	107.2	-
2008	194.2	208.8	(14.6)	107.5	-
2009	195.5	202.6	(7.1)	103.6	-
2010	200.1	192.2	7.9	96.1	38.2
2011 *#	206.4	183.0	23.4	88.7	118.9
2012 *	211.8	174.2	37.6	82.3	198.2
2013 *	220.7	181.3	39.4	82.2	209.1

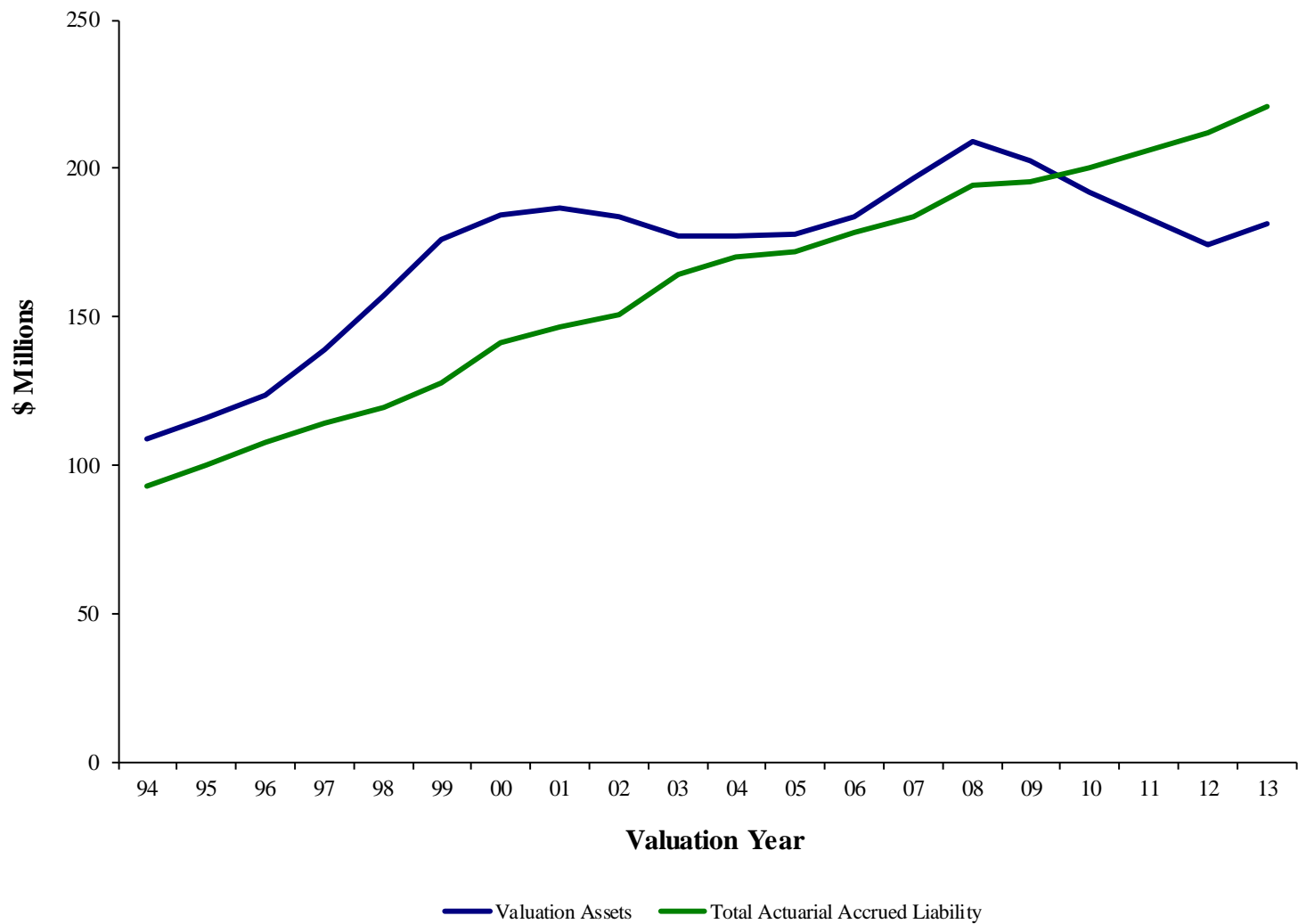
* Revised actuarial assumptions or methods.

Retirement System amended.

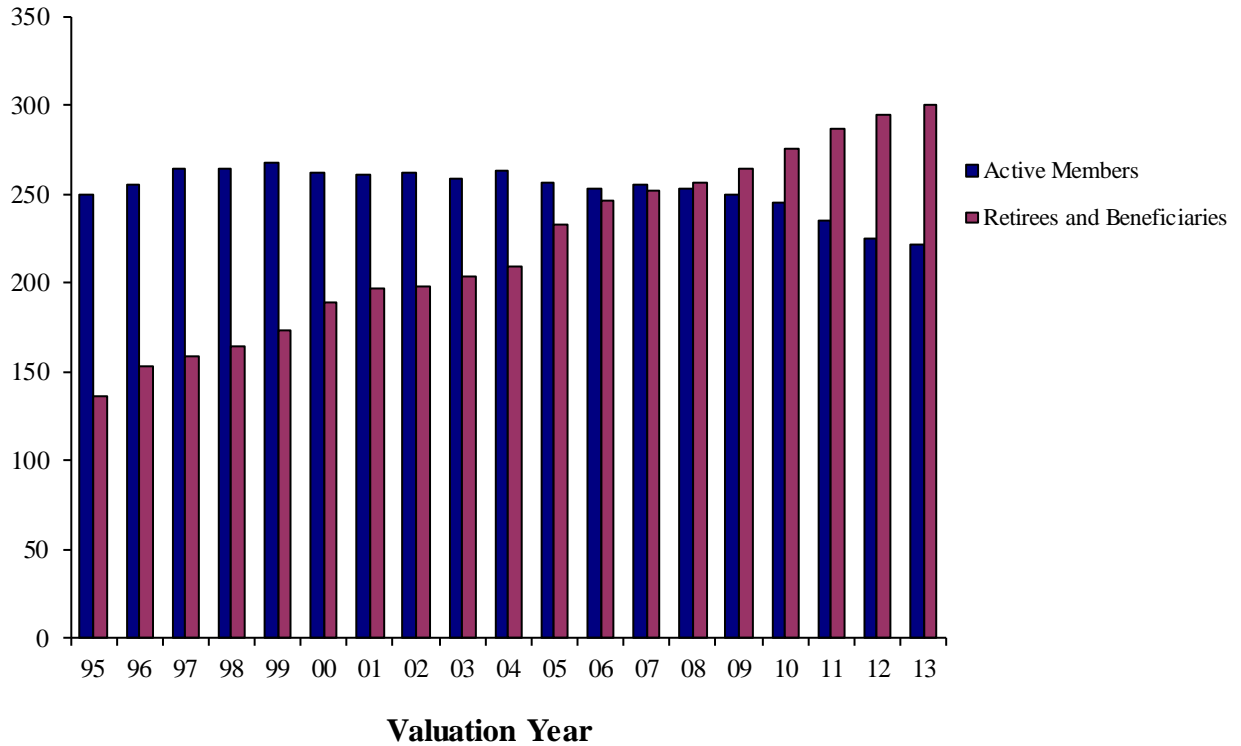
The Ratio of Valuation Assets to AAL is a traditional measure of a System's funding progress. Except in years when the system is amended or actuarial assumptions are revised, this ratio can be expected to gradually tend toward 100%.

The Ratio of UAAL to Valuation Payroll is another relative index of condition. Unfunded actuarial accrued 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.

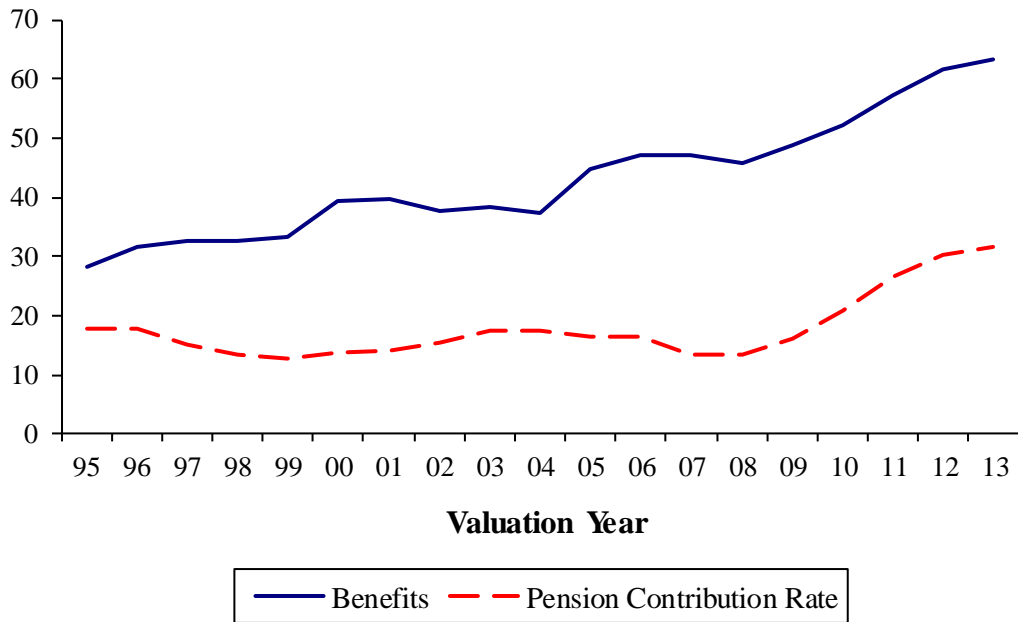
ASSETS AND ACCRUED LIABILITIES



ACTIVE AND RETIRED MEMBERS



BENEFITS AND PENSION CONTRIBUTION RATES AS A PERCENT-OF-PAYROLL



COMMENTS

RETIREMENT SYSTEM EXPERIENCE

Overall, fund experience was slightly more favorable than assumed during the year ending June 30, 2013, producing an experience gain of approximately \$1.5 million. Gains of \$1.9 million were generated by greater than assumed investment returns on the **funding value** of assets. These gains were offset by \$0.4 million of losses attributable to demographic (membership) experience.

Under the asset valuation method, gains and losses are spread over a 5-year period (4-year period for gains and losses before June 30, 2012). The net result of this year's **Market Value** gain and carryover gains and losses from prior years is a net gain of \$1.9 million (noted above) and a recognized rate of return of 8.9%.

The Market Value rate of return during the fiscal year ending June 30, 2013 was 10.54% for the pension only fund value (excluding assets attributable to RIE) which is more than the assumed rate of 7.75%. This investment gain was recognized in this valuation along with the recognition of the deferred portion of the investment gain that occurred during the year ending June 30, 2011.

As of June 30, 2013, the Funding Value of assets is approximately \$2.2 million greater than the Market Value. Recognition of investment losses from prior years will continue to put upward pressure on contribution rates in the future. However, the investment gains/losses scheduled to be recognized as of June 30, 2014 are in aggregate a gain of about \$3 million which will put downward pressure on contribution rates in the next actuarial valuation.

ASSUMPTION AND BENEFIT CHANGES

For the June 30, 2013 valuation, the following benefit changes were adopted:

- Changes in some member contribution rates along with requiring an actuarial reduction for annuity withdrawal.
- Police Patrol Officers who are not currently in the DROP (Deferred Retirement Option Program) are no longer eligible to enter the DROP. Changes were made to the assumed retirement rates for these members (see page C-5). For this valuation, it was assumed that with the removal of the DROP, future Police retirees will on average retire earlier. Future retirement experience will be monitored carefully and retirement rates will be adjusted in the future if warranted.
- New Police Patrol Officers hired after February 2, 2013 have a benefit multiplier of 2.5%, reduced from 2.8%. They also have an Average Final Compensation based on 5 years of consecutive pay out of the last 10 years, adjusted from 3 years of consecutive pay.

In aggregate, the plan changes described above resulted in a moderate increase to the calculated required contribution. This is due to the assumption that Police Patrol members will on average retire earlier with the absence of the DROP. If future experience is not consistent with this assumption, future assumptions and resulting required contributions will be adjusted accordingly.

SECTION B

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

**BRIEF SUMMARY OF ACT 345 BENEFIT CONDITIONS
(JUNE 30, 2013)**

Eligibility	Amount
SERVICE RETIREMENT	
20 or more years of service regardless of age.	Straight life pension equals 2.8% of 3-year AFC times years of service up to 25 years.
DEFERRED RETIREMENT	
10 or more years of service.	Computed as service retirement but based upon service, AFC and plan provisions in effect at termination. Benefit begins at date retirement would have occurred had member remained in employment.
DEFERRED RETIREMENT OPTION PLAN (DROP)	
20 or more years of service regardless of age (Closed to Police Patrol Officers as of 2/22/2013).	Computed as a service retirement but based on service, AFC and plan provisions at the time of DROP election. Monthly pension benefits and annuity withdrawal account value at DROP date accumulate in hypothetical accounts and accrue interest at a rate of 4% from date of DROP election to date of retirement. At retirement the hypothetical accounts may be paid out by any distribution alternatives available under the Premium Member Annuity Withdrawal Plan and the monthly benefit (previously computed) is paid to the member in the form of a straight life pension (with survivor benefit option, if applicable).
DEATH AFTER RETIREMENT SURVIVOR'S PENSION	
Payable to surviving spouse, if any, upon the death of a retired member who was receiving a straight life pension which was effective July 1, 1975 or later. Includes disability pensions effective July 1, 1985. Includes members who DROP effective July 1, 1999.	Spouse's pension equals 60% of the straight life pension the deceased retiree was receiving. Must be married to spouse at time of retirement for spouse to be eligible for survivor benefits.
NON-DUTY DEATH-IN-SERVICE SURVIVOR'S PENSION	
Payable to a surviving spouse, if any, upon the death of a Police or Fire member with 10 or more years of service.	Accrued straight life pension actuarially reduced in accordance with an Option I election.
DUTY DEATH-IN-SERVICE SURVIVOR'S PENSION	
Payable to the surviving spouse and eligible children of a member who died in the line of duty.	Straight life pension, calculated with a minimum of 25 years of service, actuarially reduced in accordance with Option I election. Workers' Compensation offset.

BRIEF SUMMARY OF ACT 345 BENEFIT CONDITIONS
(CONTINUED)
(JUNE 30, 2013)

Eligibility	Amount
NON-DUTY DISABILITY	
Payable upon the total and permanent disability of a member with 5 or more years of service.	To age 55: 1.5% of AFC times years of service. At age 55: 2.0% of AFC times years of service.
DUTY DISABILITY	
Payable upon the total and permanent disability of a member in the line of duty...	
Police:	To age 55: 100% of base salary at time of retirement, minimum 85% of active base. At age 55: Frozen at age 55 rate.
...who is unable to perform any occupation	
...who is unable to perform own occupation	To age 55: 60% of base salary at time of retirement, minimum 51% of active base. At age 55: Frozen at age 55 rate.
Fire:	To age 55: Either 1) 80% of base salary for the first 5 years, then 60% of base salary, or, 2) 60% of base salary with 51% minimum. At age 55: Frozen at age 55 rate.
POST-RETIREMENT INCREASES	
An ad-hoc increase was granted during the year ended June 30, 2000.	
MEMBER CONTRIBUTIONS	
Fire Chief	0.00% of pay.
Fire and Police Patrol Officers	3.00% of pay, non-refundable.
Police Command, Police Chief, and Deputy Chiefs	5.00% of pay.
	Police Command members, the Police Chief, Deputy Chiefs, and the Fire Chief are eligible for annuity withdrawal with no reduction upon retirement.
	Fire and Police Patrol members are eligible for annuity withdrawal with no reduction upon retirement for contributions made prior to September 16, 2011 and March 15, 2013 respectively. Fire and Police Patrol member contributions made after these dates are subject to an actuarial reduction upon retirement for annuity withdrawal. Fire and Police Patrol members in the DROP no longer contribute.

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

Eligibility	Amount
INTEREST ON MEMBER ACCOUNTS	
Active or Former members who have not DROPPed.	Interest at the rate of 2% per annum is paid on member contributions from date of hire to the earlier of DROP date or retirement date.
DROPPed members.	Interest at the rate of 4% per annum is paid on DROP account and annuity withdrawal account from DROP date to retirement date. Fire contributions made while in the DROP prior to September 16, 2011 accumulate at the market rate minus 30 basis points per annum.
ITEMS INCLUDED IN AFC	
All members. Police and Police Command.	Overtime, longevity, pay in lieu of holiday time. Education pay, annual excess (over 1,200 hrs) sick leave, paid compensatory time, and early report time.
Deputy Chiefs.	Up to 900 hours of unused sick leave.
NEW HIRE BENEFITS	
Fire and Police Patrol Officers	New hires are subject to alternate benefit provisions including a benefit multiplier of 2.5%, AFC based on 5 years of consecutive pay out of the last 10 years, and 5% member contributions that are not refunded at retirement/termination in addition to the annuity payable.

SUMMARY OF DROP PROVISIONS

Effective Date

July 1, 1999.

Eligibility

A member of the Southfield Fire and Police Retirement System who has satisfied the minimum requirements for a normal service retirement under the FPRS. This eligibility is currently 20 years of service. The DROP is closed to Police Patrol Officers as of 2/22/2013.

Election of DROP

A member satisfying DROP eligibility conditions would be permitted to either:

- 1) Retire; or
- 2) Continue working and retire at a future date with a pension based on credited service and average final compensation (AFC) at date of termination of employment; or
- 3) Irrevocably elect to participate in the DROP and retire at a date no more than 5 years in the future with a pension based on AFC and service at date of election to participate in the DROP.

DROP Credits

The account of a participating member is credited with:

- The pension payments the member would have been paid if the member had retired on the date of DROP election, and
- Interest credits at the rate of 4% per annum. Additional contributions by Fire (5%) accumulate at market rate – 30 basis points per annum.

Retirement from DROP

Upon termination of employment the frozen monthly pension begins and the member can elect any of the distribution alternatives available under the Premium Member Annuity Withdrawal Plan for the DROP account.

SUMMARY OF DROP PROVISIONS (CONCLUDED)

Disability or Death during DROP Participation

Benefits payable to a member (or surviving spouse) if death or disability occurs during the DROP participation period will be computed in the same manner as if the member had retired from the DROP plan the day prior to the death or disability.

Covered Payroll

The payroll of DROP participants will be included in the covered compensation upon which regular City contributions are based. However, member contributions will cease upon election of DROP.

Revocation of DROP Election

Under certain, limited circumstances, members who become disabled in the line of duty, or who die in the line of duty, may revoke the DROP election and be treated as if they never participated in the DROP plan.

SUMMARY OF RESERVE FOR INFLATION EQUITY (RIE) PROVISIONS

Effective Date

October 25, 1999 for Fire and July 1, 2000 for Police Command.

Coverage of Program

All members retiring after July 1, 1999 for Fire and July 1, 2000 for Police Command.

Accumulation Formula

Each year, beginning July 1, 1999 for Fire and July 1, 2000 for Police Command, funds will be credited to the RIE fund in accordance with the following formula: 55% of the 5-year average of the funding value rate of return over a threshold of 8.0% as of June 30, not to exceed 3.0%, multiplied by the System assets of retired member and members who have elected to participate in the Deferred Retirement Option Plan (DROP), who will be eligible to receive distributions from the RIE program either now or in the future. (This Accumulation Formula can be found on page B-15 of this report.) The RIE receives 7.75% interest each year.

Point Accumulation

Each covered member shall accumulate points in accordance with the following formula:

- a) One point for each full year of service, not to exceed 25, plus
- b) Two points for each full year since retirement.

Eligibility for Distribution

A covered member will be eligible for an immediate distribution on the later of (a), (b), or (c) below:

- a) The first July 1st, which is at least five years after the member's retirement, defined as the later of the date that a member either separated from service or began to receive a pension.
- b) The year after the member's pension has lost 15% of its original purchasing power, defined as a 15% increase in the Consumer Price Index for All Urban Consumers (CPI-U), U. S. city average, all items 1982-1984 = 100.
- c) The member's accumulation of 35 points.

Distributable Reserve

No more than 35% of the funds in the RIE fund shall be distributed in any given year.

SUMMARY OF RESERVE FOR INFLATION EQUITY (RIE) PROVISIONS

Individual Distributions

Each benefit recipient's share will be computed by dividing the benefit recipient's total points by the total points of all eligible benefit recipients and multiplying the result by the Distribution Reserve. The maximum amount payable to any benefit recipient is the amount which would restore 85% of the member's original purchasing power. A surviving spouse of a member will receive 60% of the amount which would have been payable to the member had the member survived.

Distribution Date

Distributions of RIE Program benefit checks shall be determined by the Southfield Fire and Police Retirement Board for years in which sufficient funds are available for distribution.

RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS
COMPARATIVE SCHEDULE

Year Ended June 30	Added to Rolls		Removed from Rolls		Rolls End of Year		Average Pensions	Actuarial Present Value of Pensions
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions		
1994	20	\$ 637,436	1	\$ 13,518	114	\$ 3,334,532	\$29,250	\$ 37,414,044
1995	26	954,666	4	73,428	136	4,215,770	30,998	47,282,686
1996	19	756,821	2	36,832	153	4,935,759	32,260	55,158,195
1997	6	247,403			159	5,183,162	32,599	56,844,217
1998	8	300,514	3	62,127	164	5,421,549	33,058	58,999,887
1999	13	344,928	4	83,908	173	5,682,569	32,847	61,095,749
2000	19	1,391,574 *	3	82,421	189	6,991,722	36,993	73,774,229
2001	9	325,140	1	43,199	197	7,273,663	36,922	76,214,081
2002	7	159,227	6	233,271	198	7,199,619	36,362	74,620,482
2003	6	291,862			204	7,491,481	36,723	76,980,093
2004	11	334,099	6	220,863	209	7,604,717	36,386	77,198,240
2005	30	1,387,608	6	241,514	233	8,750,811	37,557	91,796,051
2006	16	653,409	2	83,928	247	9,320,292	37,734	97,367,873
2007	5	187,442			252	9,507,734	37,729	98,106,085
2008	10	369,849	5	156,481	257	9,721,102	37,825	102,542,904
2009	12	657,359	5	140,338	264	10,238,123	38,781	106,846,499
2010	15	651,237	3	112,260	276	10,777,100	39,047	112,131,334
2011	16	626,106	5	146,013	287	11,257,193	39,224	117,349,975
2012	13	628,673	5	218,358	295	11,667,508	39,551	120,894,365
2013	8	384,217	2	114,181	301	11,937,544	39,660	122,796,805

* Additions to annual pensions include post-retirement increases of \$8,422.

RETIREES AND BENEFICIARIES JUNE 30, 2013
TABULATED BY TYPE OF BENEFIT BEING PAID

Pension Benefits		
Type of Benefit	No.	Annual Amount
Age and Service Pensions		
Regular Pension - terminating at death	65	\$ 2,077,323
- auto. 60% to spouse	187	8,654,976
Option I - 100% Joint and Survivor	3	118,904
Option II - 50% Joint and Survivor	1	38,252
Survivor Beneficiary	<u>33</u>	<u>789,187</u>
Age and Service Totals	289	\$ 11,678,642
Casualty Pensions		
Duty Disability	9	213,346
Non-Duty Disability	2	12,512
Non-Duty Death-Survivor Benefit	<u>1</u>	<u>33,044</u>
Casualty totals	12	\$ 258,902
Total Pensions	301	\$ 11,937,544

RETIREES AND BENEFICIARIES JUNE 30, 2013
TABULATED BY ATTAINED AGE AND TYPE OF RETIREMENT

Attained Age	Age & Service		Casualty		Totals	
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions
40 - 44	4	\$ 142,930			4	\$ 142,930
45 - 49	14	598,872	1	\$ 7,528	15	606,400
50 - 54	18	760,766	3	78,659	21	839,425
55 - 59	49	2,323,164	1	26,916	50	2,350,080
60 - 64	47	2,054,587	1	4,984	48	2,059,571
65 - 69	72	2,681,707	1	11,934	73	2,693,641
70 - 74	49	1,695,361	3	89,690	52	1,785,051
75 - 79	17	633,705	1	10,580	18	644,285
80 - 84	9	357,428	1	28,611	10	386,039
85 - 89	10	430,122			10	430,122
Totals	289	\$11,678,642	12	\$258,902	301	\$11,937,544

Average Age at Retirement: 51.1 years

Average Age Now: 65.3 years

ACTIVE MEMBERS IN PENSION VALUATION - COMPARATIVE STATEMENT

Year Ended June 30	Number Added During Year		Terminations During Year										End of Year	Valuation Payroll	Averages			
	A	E	Normal Retirement		Disabled		Died-in- Service		Withdrawals			Annual Pay			Age	Service		
			A	E	A	E	A	E	Vested	Other	Total	A					E	\$
1999	7	9	7	12.1	0	0.4	0	0.4	0	2	2	6.9	263	\$16,990,518	\$64,603	3.3 %	39.7 yrs.	12.5 yrs.
2000	14	15	14	10.4	0	0.4	0	0.3	0	1	1	6.3	262	17,855,988	68,153	5.5	39.4	12.3
2001	8	9	6	16.9	1	0.4	0	0.4	1	1	2	5.7	261	18,363,960	70,360	3.2	39.9	12.8
2002	5	4	1	17.3	1	0.5	0	0.4	1	1	2	4.6	262	19,115,679	72,961	3.7	40.6	13.5
2003	3	6	6	20.8	0	0.6	0	0.4	0	0	0	4.4	259	19,568,895	75,556	3.6	41.3	14.1
2004	8	4	3	22.2	0	0.6	1	0.4	0	0	0	4.1	263	20,434,525	77,698	2.8	41.7	14.5
2005	19	25	25	22.2	0	0.7	0	0.5	0	0	0	3.6	257	19,559,486	76,107	(2.0)	40.2	12.8
2006	13	17	12	7.3	3	0.7	0	0.3	1	1	2	3.8	253	19,826,520	78,366	3.0	40.0	12.6
2007	9	6	4	7.1	0	0.7	0	0.3	0	2	2	4.0	256	20,148,421	78,705	0.4	40.4	13.1
2008	3	6	6	7.1	0	0.7	0	0.3	0	0	0	3.9	253	21,156,661	83,623	6.2	41.0	13.6
2009	8	11	10	8.7	1	0.7	0	0.4	0	0	0	3.4	250	20,917,249	83,669	0.1	41.0	13.6
2010	7	12	10	8.8	0	0.7	0	0.4	0	2	2	3.3	245	20,681,885	84,416	0.9	41.3	13.6
2011	0	10	9	7.4	0	0.6	0	0.3	0	1	1	2.9	235	19,677,191	83,733	(0.8)	42.0	14.3
2012	0	10	10	6.1	0	0.7	0	0.1	0	0	0	1.3	225	18,960,852	84,270	0.6	42.7	14.9
2013	6	9	<u>7</u>	<u>6.6</u>	<u>0</u>	<u>0.6</u>	<u>0</u>	<u>0.1</u>	2	0	2	<u>1.0</u>	222	18,819,454	84,772	0.6	43.2	15.3
5 Yr. Totals			46	37.6	1	3.3	0	1.3			5	11.9						
10 Yr. Totals			96	103.5	4	6.7	1	3.1			9	31.3						

A = actual
E = expected

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

Attained Age	Years of Service to Valuation Date							No.	Valuation Payroll
	0-4	5-9	10-14	15-19	20-24	25-29	30 plus		
25-29	5	1						6	\$ 404,415
30-34	7	26	1					34	2,520,913
35-39	5	11	13	4				33	2,582,654
40-44	1	6	11	13	7			38	3,028,506
45-49		2	7	27	20	2		58	5,289,010
50-54			2	17	8	12		39	3,743,402
55-59		1		2	5	5		13	1,149,152
60					1			1	101,402
Totals	18	47	34	63	41	19	0	222	\$18,819,454

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

Group Averages:

Age: 43.2 years.
Service: 15.3 years.
Annual Pay: \$84,772.

ACTUARIAL VALUE OF ASSETS

Actuarial Value of Assets		Reserve for (1)	
Cash & Short-Term	\$ 6,919,498	Employee's Contributions	\$ 11,738,530
		Employers Contribution	46,839,781
Bonds - Government	25,523,185	Retired Benefit Payments	122,796,805
- Corporate	29,918,148	Funding Value Adjustment	2,175,097
		Actuarial Value of Assets	\$183,550,213
Common Stock	91,276,993		
Real Estate	27,737,292	Funding Value of Pension Assets (2)	\$181,342,197
		Funding Value of Health Assets (3)	-
Funding Value Adjustment	2,175,097	Reserve for Inflation Equity	2,208,016
Actuarial Value of Assets	\$183,550,213	Actuarial Value of Assets	\$183,550,213

- (1) Note that these reserve amounts were not supplied by staff. We have set the Employee's Contributions Reserve to the sum of the employee contributions submitted for each individual in the valuation. The Retired Benefit Payments Reserve has been set equal to the liability for retired members. The Employer Contribution Reserve is the balancing item.
- (2) The funding value of pension assets includes \$3,703,681 of retiree account balances to be disbursed (\$660,406 of outstanding employee contributions and \$3,043,275 of outstanding DROP account balances).
- (3) The Retiree Health Insurance Fund has been exhausted.

Market value of assets was reported to be \$181,375,116.

REVENUES AND EXPENDITURES

	Reserve for			Totals
	Pension	Inflation Equity	Health	
Actuarial Value 6/30/2012	\$ 174,215,687	\$ 2,180,059	\$ 1,242,528	\$ 177,638,274
Revenues				
Employee Contributions	530,856	0	0	530,856
Employer Contributions	5,107,319	0	0	5,107,319
Income (net of investment expenses)	15,114,911	163,695	21,226	15,299,832
Total Revenues	\$ 20,753,086	\$ 163,695	\$ 21,226	\$ 20,938,007
Expenditures				
Benefit Payments	13,223,320	135,738	0	13,359,058
Refund of Member Contributions	(235)	0	0	(235)
Health Insurance Premiums	0	0	1,263,754	1,263,754
Expenses Paid from System	403,491	0	0	403,491
Total Expenditures	\$ 13,626,576	\$ 135,738	\$ 1,263,754	\$ 15,026,068
Actuarial Value 6/30/2013	\$ 181,342,197	\$ 2,208,016	\$ 0	\$ 183,550,213
Nominal Rate of Return*				8.9%

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

DERIVATION OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS ¹

Beginning of Year Value	June 30, 2013	June 30, 2014	June 30, 2015	June 30, 2016	June 30, 2017
(1) Market Value	\$ 169,694,799				
(2) Funding Value	174,215,687				
(3) Non Investment Cash Flow	(7,988,401)				
(4) Assumed Interest Rate	7.75%				
Expected Income	13,192,165				
(5) Actual Income	17,460,702				
(6) Gain/(Loss)	<u>\$ 4,268,537</u>				
(7) Recognized Income ²					
(a) Expected	\$ 13,192,165				
(b) 0.20 * Gain/(Loss)	853,707				
(c) Base from 1 year ago	(3,937,955)	\$ 853,707			
(d) Base from 2 years ago	6,223,939	(3,937,955)	\$ 853,707		
(e) Base from 3 years ago	(1,216,945)	6,223,940	(3,937,955)	\$ 853,707	
(f) Base from 4 years ago	<u>0</u>	<u>0</u>	<u>0</u>	<u>(3,937,957)</u>	<u>\$ 853,709</u>
(g) Total Income Recognized	\$ 15,114,911	\$ 3,139,692	\$ (3,084,248)	\$ (3,084,250)	\$ 853,709
End of Year Values					
(8) Market Value	\$ 179,167,100				
(9) Funding Value (2) + (3) + (7)(f)	\$ 181,342,197				
(10) Funding Value as a Percent of Market Value	101.21%				
(11) Rate of Return on Funding Value During Year	8.88%				
(12) Rate of Return on Market Value During Year	10.54%				

¹ Beginning June 30, 2012, all values exclude assets and activity associated with retiree health assets and RIE assets.

² Beginning June 30, 2012, the valuation asset method changed from 4-year asset smoothing to 5-year asset smoothing.

The funding value in (9) is applied to the financing of actuarial accrued liabilities. The funding value is intended to give recognition to long-term changes in asset values while minimizing the effect of short-term fluctuations in the capital markets. After the initial year, the funding value treats realized and unrealized capital gains and losses in the same manner. The market adjustment is allocated between pension and health assets in proportion to the allocated assets before the adjustment.

DERIVATION OF RESERVE FOR INFLATION EQUITY

	7/1/2011	7/1/2012	7/1/2013
Rate of investment return:			
1. Actual return on funding value of assets:			
(a) from prior year	0.29%	0.29%	8.88%
(b) from 1 year ago	0.54%	0.29%	0.29%
(c) from 2 years ago	2.12%	0.54%	0.29%
(d) from 3 years ago	9.35%	2.12%	0.54%
(e) from 4 years ago	12.86%	9.35%	2.12%
(f) 5-year average	5.03%	2.52%	2.42%
2. Threshold	8.00%	8.00%	8.00%
3. Fifty-five percent of excess, if any, of 1(f) over 2, but not more than 3.0%	0.00%	0.00%	0.00%
4. Actuarial present value of pensions #:			
(a) For current DROP members	\$18,565,926	\$25,843,481	\$29,031,400
(b) For retirees since RIE inception*	49,673,933	51,182,488	52,304,493
(c) Total	68,239,859	77,025,969	81,335,893
5. Dollars available for allocation	0	0	0
6. Reserve Balance - start of year	2,012,095	2,110,677	2,180,059
Disbursements from reserve during year	55,216	90,682	135,738
Current year addition	0	0	0
Interest	153,798	160,064	163,695
Reserve Balance - end of year	2,110,677	2,180,059	2,208,016
# <i>Included Participants</i>			
<i>DROP</i>			
- <i>Fire</i>	7	8	11
- <i>Police Command</i>	11	16	17
<i>Retirees</i>			
- <i>Fire</i>	58	59	61
- <i>Police Command</i>	30	32	33

* July 1, 1999 for Fire, July 1, 2000 for Police Command.

SECTION C

SUMMARY OF ACTUARIAL COST METHODS AND ASSUMPTIONS

ACTUARIAL COST METHODS

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

- 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 member's benefit at the time of retirement;
- each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded actuarial accrued liabilities (the portion of total liabilities not covered by present assets or expected future normal cost contributions) were amortized by level percent-of-payroll contributions. Interest on the full funding credit was used to offset normal cost contributions.

The funding value of 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, starting with June 30, 2012. Prior to June 30, 2012, 25% of the difference between expected and actual investment income for each of the previous four years was added.

ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION

The actuary calculates the contribution requirements and benefit values of the Fund by applying actuarial assumptions to the benefit provisions and people information furnished, using the actuarial cost methods 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 Fund
- patterns of pay increases to members
- rates of mortality among members, retirees and beneficiaries
- rates of withdrawal of active members (without entitlement to a retirement benefit)
- rates of disability among members
- the age patterns of actual retirement
- rate of increase in the cost of retiree health insurance

In making a valuation, the actuary calculates the monetary effect of each assumption 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 Fund will not coincide exactly with assumed experience, regardless of the accuracy of the assumptions, or the skill of the actuary and the precision of the many calculations made. 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).

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.

Salary Increase Assumptions for Individual Members			
Years of Service	Merit & Seniority	Base (Economic)	Increase Next Year
1 to 3	5.00%	4.00%	9.00%
4	2.50%	4.00%	6.50%
5	1.50%	4.00%	5.50%
6	0.50%	4.00%	4.50%
7	0.30%	4.00%	4.30%
8	0.20%	4.00%	4.20%
9 & Up	0.00%	4.00%	4.00%

If the number of active members remains constant, then the total active member payroll will increase 4.00% annually, the base portion of the individual salary increase assumptions. This increasing payroll was recognized in amortizing Unfunded Actuarial accrued Liabilities.

The assumed nominal rate of investment return was 7.75% a year compounded annually. This assumption is used to make money payable at one point in time equal in value to a different amount of money payable at another point in time. *The assumed real return* for funding purposes is the rate of return in excess of wage inflation: 3.75%.

The mortality table was the RP-2000 Mortality Table projected to 2015.

Sample Ages	Value at Retirement of \$1 Monthly for Life		Future Life Expectancy (Years)		Percent Dying Next Year	
	Men	Women	Men	Women	Men	Women
45	\$146.44	\$148.05	37.05	39.19	0.1239%	0.0882%
50	141.12	143.16	32.29	34.38	0.1628%	0.1296%
55	133.84	136.54	27.59	29.64	0.2718%	0.2409%
60	124.45	128.10	23.05	25.08	0.5297%	0.4689%
65	113.02	117.87	18.79	20.80	1.0309%	0.9003%
70	99.78	106.04	14.89	16.86	1.7702%	1.5529%
75	84.40	92.62	11.34	13.29	3.0622%	2.4916%
80	67.83	77.64	8.25	10.09	5.5360%	4.1291%

This assumption is used to measure the probabilities of each benefit payment being made after retirement. These rates reflect a margin for expected mortality improvement equal to 2 years of expected mortality improvement under Projection Scale AA.

50% of these rates are used to measure the probabilities of members dying before retirement. 50% of the pre-retirement deaths are assumed to be duty related and 50% are assumed to non-duty related.

The rates of retirement used to measure the probability of eligible members retiring during the next year who are eligible for the DROP were as follows:

Years of Service	% Retiring During the Next Year
20	10.0 %
21	3.0
22	3.0
23	3.0
24	3.0
25	20.0
26	10.0
27	10.0
28	25.0
29	25.0
30	50.0
31	50.0
32	50.0
33	50.0
34	50.0
35 & Up	100.0

A member is eligible for retirement after completing 20 or more years of service.

Active members in the DROP are assumed to follow the retirement rates above. However, they are assumed to retire at a rate of 100% in the fifth year following DROP.

Members retiring during the next year who are not eligible for the DROP were as follows:

Years of Service	% Retiring During the Next Year
20	15.0 %
21	15.0
22	15.0
23	15.0
24	15.0
25	50.0
26	50.0
27	50.0
28	50.0
29	50.0
30 & Up	100.0

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 the Next Year
ALL	0	8.00%
	1	5.00%
	2	3.00%
	3	2.00%
	4	2.00%
20	5 & Over	1.00%
25		1.00%
30		0.90%
35		0.65%
40		0.50%
45		0.35%
50		0.25%
55		0.20%
60		0.20%
65		0.20%
70		0.20%

Rates of disability were as follows:

Sample Ages	% of Active Members Becoming Disabled Within the Next Year	
	Men	Women
20	0.11%	0.05%
25	0.14%	0.08%
30	0.15%	0.12%
35	0.22%	0.20%
40	0.32%	0.29%
45	0.49%	0.43%
50	0.79%	0.68%
55	1.38%	1.16%
60	2.30%	1.67%

In addition, 25% of the disabilities are assumed to be non-duty related and 75% are assumed to be duty related; of the 75% assumed to be duty disability, half were assumed to be covered under the own occupation provisions.

Expense Load. Normal cost for pensions was loaded by 1.5% of active payroll to cover administrative expenses.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

JUNE 30, 2013

Marriage Assumption:	100% are assumed to be married for purposes of death-in-service benefits and 84% are assumed to be married for deaths after retirement. 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 experience, without adjustment for multiple decrement table effects.
Decrement Operation:	Only withdrawal operates 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.

SECTION D

PRESENT VALUE OF ACCUMULATED PLAN BENEFITS FOR GASB STATEMENT NO. 25

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

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Valuation Date:	June 30, 2013
Actuarial Cost Method:	Individual Entry-Age
Amortization Method:	Level percent-of-payroll
Amortization Period:	24 years (closed)
Asset Valuation Method:	5-year smoothed market, starting June 30, 2012 4-year smoothed market, prior to June 30, 2012
Actuarial Assumptions:	
Investment rate of return	7.75%
Projected salary increases*	4.00% - 9.00%
* Includes wage inflation at	4.00%
Cost-of-living adjustments	None

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

Retirees and beneficiaries receiving benefits	301
Terminated plan members entitled to but not yet receiving benefits	3
Active plan members	<u>222</u>
Total members	526

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability-EA	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a Percent of Covered Payroll
6/30/2004 *#	\$177,394,292	\$ 170,172,021	\$ (7,222,271)	104.2%	\$20,434,525	-%
6/30/2005 *#	177,979,627	172,267,696	(5,711,931)	103.3	19,559,486	-
6/30/2006	184,039,453	178,180,047	(5,859,406)	103.3	19,826,520	-
6/30/2007	197,002,656	183,687,112	(13,315,544)	107.2	20,148,421	-
6/30/2008	208,821,838	194,212,785	(14,609,053)	107.5	21,156,661	-
6/30/2009	202,566,067	195,460,165	(7,105,902)	103.6	20,917,249	-
6/30/2010	192,160,601	200,058,754	7,898,153	96.1	20,681,885	38.2%
6/30/2011 *#	182,973,491	206,368,685	23,395,194	88.7	19,677,191	118.9%
6/30/2012 *	174,215,687	211,803,567	37,587,880	82.3	18,960,852	198.2%
6/30/2013 *#	181,342,197	220,687,538	39,345,341	82.2	18,819,454	209.1%

* Revised actuarial assumptions or methods.

Retirement System amended.

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending	Actuarial Valuation Date	Contribution Rates as a % of Valuation Payroll	Computed Dollar Contribution Based on Projected Payroll
6/30/2006 *#	6/30/2004	17.57%	\$3,733,960
6/30/2007 *#	6/30/2005	16.55	3,518,095
6/30/2008	6/30/2006	16.30	3,512,256
6/30/2009	6/30/2007	13.54	2,964,912
6/30/2010	6/30/2008	13.32	3,062,693
6/30/2011	6/30/2009	15.94	3,623,640
6/30/2012	6/30/2010	20.95	4,708,974
6/30/2013 *#	6/30/2011	26.68	5,678,264
6/30/2014 *	6/30/2012	30.41	6,236,500
6/30/2015 *#	6/30/2013	31.68	6,448,502

* Revised actuarial assumptions or methods.
Retirement System amended.

SECTION E

OPERATION OF THE RETIREMENT SYSTEM

BASIC FINANCIAL OBJECTIVE AND OPERATION OF THE RETIREMENT SYSTEM

Benefit Promises Made Which Must Be Paid For. A retirement program is an orderly means of handing out, keeping track of, and financing contingent pension promises to a group of employees. As each member of the retirement program acquires a unit of service credit they are, in effect, handed an "IOU" which reads: "The Retirement System promises to pay you one unit of retirement benefits, payments in cash commencing when you retire."

The principal related financial question is: When shall the money required to cover the "IOU" be contributed? This year, when the benefit of the member's service is received? Or, some future year when the "IOU" becomes a cash demand?

The Constitution of the State of Michigan is directed to the question:

"Financial benefits arising on account of service rendered in each fiscal year shall be funded during that year and such funding shall not be used for financing unfunded accrued liabilities."

This Retirement System meets this constitutional requirement by having the following ***Financial Objective: 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 taxpayers.

Translated into actuarial terminology, a level percent-of-payroll contribution objective means that the contribution rate must be at least:

Normal Cost (the value of benefits likely to be paid which is assigned to service being rendered in the current year)

... plus ...

Interest on the Unfunded Actuarial Accrued Liability (the difference between the actuarial accrued liability and current System assets).

If contributions to the retirement program are less than the preceding amount, the difference, *plus investment earnings not realized thereon*, will have to be contributed at some later time, or, benefits will have to be reduced, to satisfy the fundamental fiscal equation under which all retirement programs must operate; that is:

$$\mathbf{B = C + I - E}$$

Benefit payments to any group of members and their beneficiaries cannot exceed the sum of:

Contributions received over time on behalf of the group

. . . plus . . .

Ivestment earnings on contributions received and not required for immediate payment of benefits

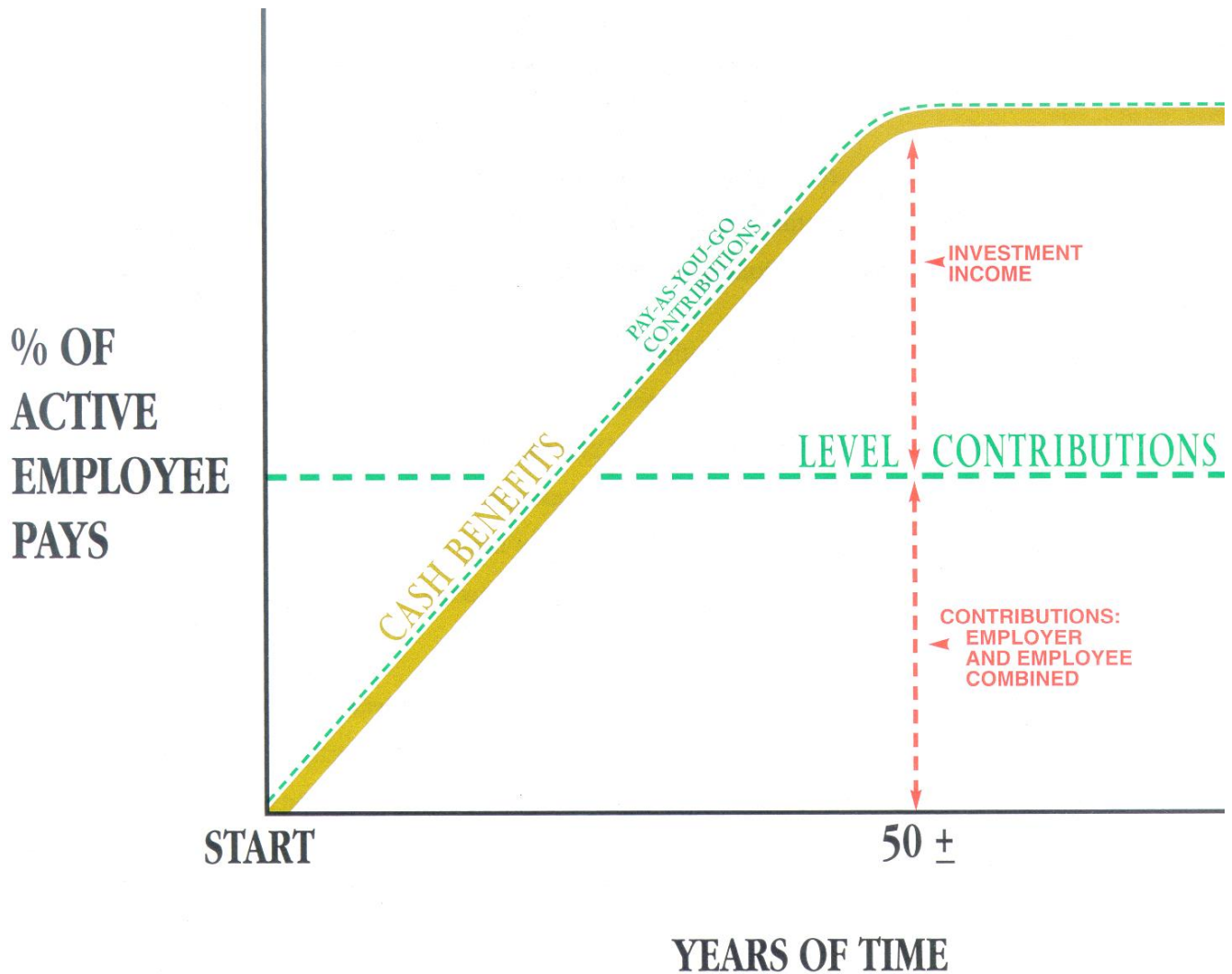
. . . minus . . .

Expenses incurred in operating the program.

There are retirement programs designed to defer the bulk of contributions far into the future. They are lured by artificially low present contributions, but the inevitable consequence is a relentlessly increasing contribution rate to a level greatly in excess of the level percent-of-payroll rate. ***This method of financing is prohibited in Michigan by the state constitution.***

A by-product of the level percent-of-payroll contribution objective is the accumulation of invested assets for varying periods of time. Invested assets are a by-product of level percent-of-payroll contributions, not the objective. Investment income becomes a major contributor to the retirement program, and the amount is directly related to the amount of past contributions and investment performance.

Computed Contribution Rate Needed to Finance Benefits. From a given schedule of benefits and from the data furnished, the actuary calculates the contribution rate ***by means of an actuarial valuation*** - the technique of assigning monetary values to the risks assumed in operating a retirement program.



CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

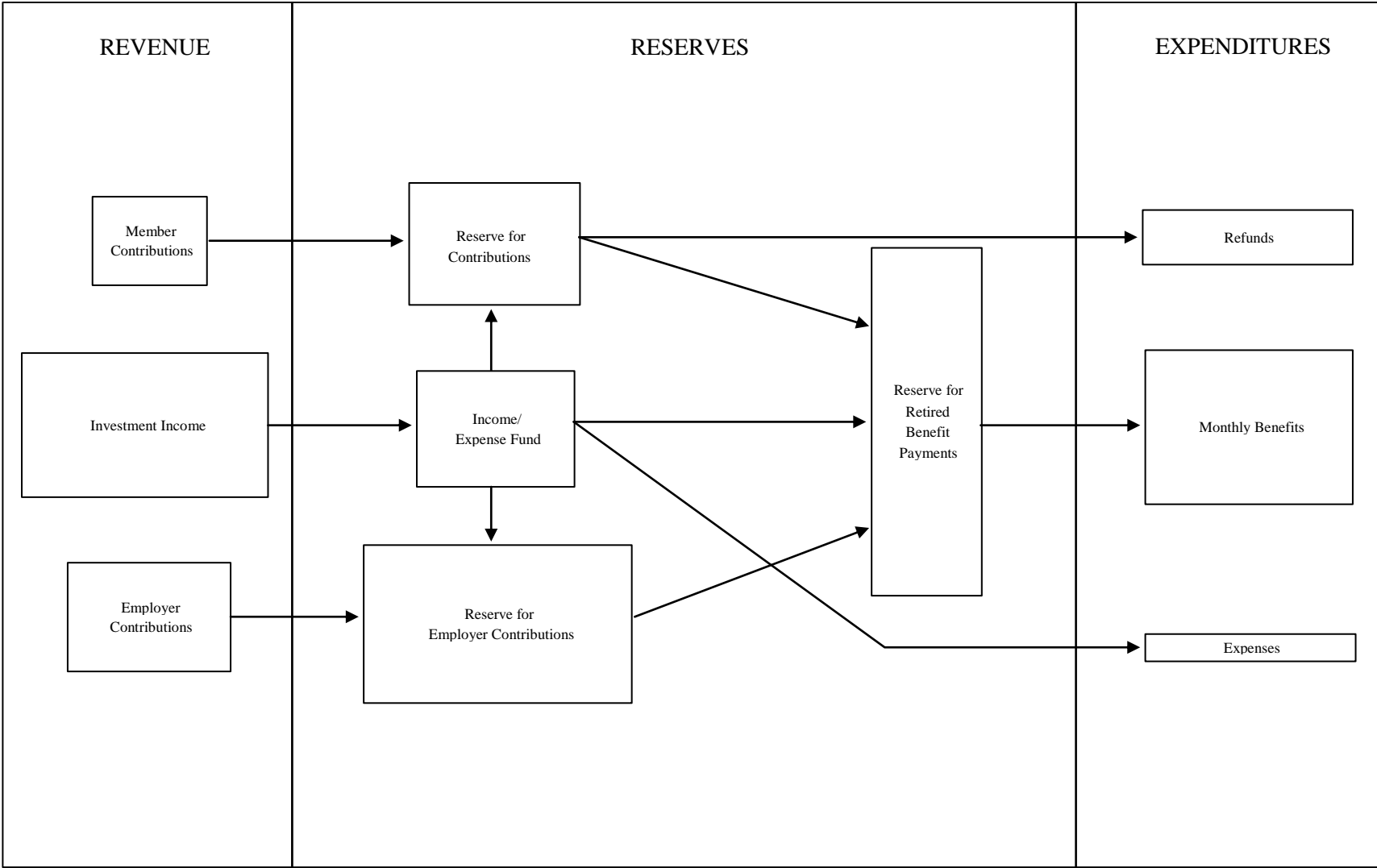
Economic Risk Areas

- Rates of investment return
- Rates of pay increase
- Changes in active member group size

Non-Economic Risk Areas

- Ages at actual retirement
- Rates of mortality
- Rates of withdrawal of active members (turnover)
- Rates of disability

FLOW OF MONEY THROUGH THE RETIREMENT SYSTEM



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.

DROP

Deferred Retirement Option Plan. This plan acts like an optional form of payment. It is selected by active members who wish to have their accrued retirement benefit frozen and paid into an account (monthly) that is available for cash withdrawal at the time of retirement.

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.

Plan Termination Liability

The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for the future service and salary. The termination liability will generally be less than the liabilities computed on a "going-concern" basis and is not normally determined in a routine actuarial valuation.

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. Generally based on book value plus a portion of unrealized appreciation or depreciation.

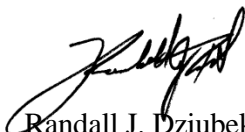
January 10, 2014

Ms. Megan Battersby
City of Southfield Fire & Police
Retirement System
26000 Evergreen Road
Southfield, Michigan 48037-2055

Dear Megan:

Enclosed are 30 copies of the report of the Sixty First annual actuarial valuation of the City of Southfield Fire and Police Retirement System. Please feel free to call with any questions.

Sincerely,



Randall J. Dziubek, ASA, EA, MAAA

RJD:bd
Enclosures

cc: David Hoffman, GRS