GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

CITY OF SOUTHFIELD EMPLOYEES RETIREMENT SYSTEM

FORTY-NINTH ACTUARIAL VALUATION REPORT
AS OF JUNE 30, 2014

CONTENTS

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January 6, 2015

Board of Trustees
City of Southfield Employees Retirement System
Southfield, Michigan

Dear Trustees:

The results of the June 30, 2014 Annual Actuarial Valuation of the City of Southfield Employees Retirement System are presented in this report.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board.

The purpose of the valuation is to measure the System's funding progress, to determine the employer contribution rate for the fiscal year ending June 30, 2016, and to determine the actuarial information for Governmental Accounting Standards Board (GASB) Statement No. 27. A separate report was issued to provide actuarial information for GASB Statement No. 67.

The valuation was based upon information furnished by the City, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by the City.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

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. The signing actuaries are independent of the plan sponsor.

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

Respectfully submitted,

Randall J. Dziubek, ASA, EA, MAAA

David L. Hoffman

RJD/DLH:sc
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SECTION A

VALUATION RESULTS

FUNDING OBJECTIVE

The funding objective of the Retirement System is to establish and receive contributions which, expressed as percents of active member payroll, will remain approximately level from year-to-year and will accumulate sufficient assets over each member's working lifetime to finance promised benefits 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:

- 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

- 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).

The computed City contribution rate for the 2015/2016 fiscal year is 21.20% of covered payroll. The details of this contribution rate are shown on page A-5.

The City contribution rate of 21.20% is sufficient to finance the employer normal cost and to amortize the unfunded actuarial accrued liability (full funding credit) as a level percent-of-payroll over a period of 26 years.

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

SUMMARY OF CURRENT ASSET INFORMATION FURNISHED FOR VALUATION

Balance Sheet as of June 30, 2014

Reported Assets - Market Value		Reserves for*	
Cash & equivalents	$ 44,445	Employees' contributions	$ 4,226,066
Receivables and accruals	132,425	Employer contributions	29,143,876
Other short-term investments	267,892	Retired benefit payments	84,658,985
Government bonds	7,443,073	Market value of assets	118,028,927
Corporate bonds	6,935,014		
Other fixed income funds	0		
Equities	88,384,406		
Real estate	16,204,867		
Other assets	1,817,677		
Payable - security lending	(1,966,181)		
Payable - due to brokers	(795,390)		
Payable - due to primary gov	(439,301)		
Total Current Assets	**$ 118,028,927**	**Total Reserves**	**$118,028,927**

* *These reserve amounts were not supplied by the City. We have set the Employees' 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 a balancing item to allow the sum of the three reserves to equal the market value of assets submitted for the valuation.*

Revenues and Expenditures

	Total
Market Value - July 1, 2013	$ 104,265,371
Revenues	
Employees' contributions	717,449
Employer contributions	3,108,024
Net investment income	19,725,174
Total	23,550,647
Expenditures	
Benefit payments (pension only)	9,787,091
Refund of member contributions	0
Health insurance premiums	0
Total	9,787,091
Market Value - June 30, 2014	$118,028,927
Investment return (net)/mean assets (market value basis)	19.48%

DEVELOPMENT OF FUNDING VALUE OF SYSTEM ASSETS
JUNE 30, 2014

Year Ended June 30:	2014	2015	2016	2017	2018
A. Funding Value Beginning of Year	$ 94,231,591				
B. Market Value End of Year	118,028,927				
C. Market Value Beginning of Year	104,265,371				
D. Non-Investment Net Cash Flow (Contributions less benefit payments)	(5,961,618)				
E. Investment Income					
E1. Market Total: B - C - D	19,725,174				
E2. Assumed Rate (i)	8.00%				
E3. Amount for Immediate Recognition: i x (A + D / 2)	7,300,063				
E4. Amount for Phased-In Recognition: E1 - E3	12,425,111				
F. Phased-In Recognition of Investment Income					
F1. Current Year: 0.20 x E4	$ 2,485,022				
F2. First Prior Year	1,863,636	$2,485,022			
F3. Second Prior Year	(1,554,993)	1,863,636	$ 2,485,022		
F4. Third Prior Year	3,269,404	(1,554,993)	1,863,636	$2,485,022	
F5. Fourth Prior Year	705,408	3,269,405	(1,554,993)	1,863,634	$2,485,023
F6. Total Recognized Investment Gain	$6,768,477	$6,063,070	$ 2,793,665	$ 4,348,656	$2,485,023
G. Funding Value End of Year: A + D + E3 + F6	**102,338,513**				
H. Difference Between Market & Funding Value	15,690,414				
I. Recognized Rate of Return - Funding Value	**15.42%**				
J. Recognized Rate of Return - Market Value	**19.48%**				
K. Ratio of Funding to Market Value of Assets	**86.71%**				

The Funding Value of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) 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 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 recognized and assumed rates of retirement income are exactly equal for 4 consecutive years, the Funding Value will become equal to Market Value.

VALUATION ASSETS AND UNFUNDED ACTUARIAL ACCRUED LIABILITY
JUNE 30, 2014

In financing the actuarial accrued liabilities, the valuation assets of $102,338,513 were distributed as follows:

	Present Assets Applied to			
Reserves for	**Active & Inactive Member Accrued Liabilities**	**Retired Life Liabilities**	**Contingency Reserve**	**Total**
Employees' Contributions	$ 4,226,066	$	$	$ 4,226,066
Employer Contributions	13,453,462			13,453,462
Retired Benefit Payments		84,658,985		84,658,985
Pension Total	$17,679,528	$84,658,985	none	$102,338,513

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

	Retired Lives*	**Active and Inactive Members**	**Total**
Computed Actuarial Accrued Liabilities	$84,658,985	$54,632,103	$139,291,088
Applied Assets	84,658,985	17,679,528	102,338,513
Unfunded Actuarial Accrued Liabilities	**$ none**	**$ 36,952,575**	**$ 36,952,575**

* *Represents actuarial accrued liability for all benefits for retirees who retired after 7/1/82 and ad-hoc COLA for retirees who retired prior to 7/1/82. Base retirement benefits for the "pre-82" retirees were funded through annuity purchases.*

CONTRIBUTIONS TO PROVIDE BENEFITS FOR THE 2015/2016 FISCAL YEAR

	Contributions Expressed as % of Active Member Payroll					
Contributions for	**Union**	**PSS**	**Public Safety Tech.**	**Total Without Non Union**	**Non Union**	**Total [2]**
Pension						
Normal cost						
Age & Service	7.83 %	7.36 %	7.36 %	7.78 %	7.75 %	7.78 %
Disability	0.47	0.45	0.52	0.47	0.47	0.47
Death-before-retirement	0.23	0.23	0.19	0.23	0.20	0.22
Refunds of member contributions	0.66	0.60	0.56	0.65	0.62	0.65
Total	9.19	8.64	8.63	9.13	9.04	9.12
Member contributions (average)	5.11	5.00	5.00	5.10	5.00	5.08
Employer Normal Cost	4.08	3.64	3.63	4.03	4.04	4.04
Full funding credit [1]						0.00
Unfunded actuarial accrued liabilities [1]						17.16
Employer Pension Total						21.20 %

[1] *Amortized as a level percent-of-payroll over a period of 26 years.*
[2] *Starting with the June 30, 2013 valuation, the Career Center contribution rate will no longer be shown separately.*

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 in a timely manner.

The recommended and current procedure is: (1) ***at the end of each payroll period, multiply the active member payroll for the period by the employer contribution percent***; and (2) ***contribute the dollar amount so determined***.

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 $3,055,773.

DERIVATION OF EXPERIENCE GAIN (LOSS)
YEAR ENDED JUNE 30, 2014

Actual experience will never (except by coincidence) coincide exactly with assumed experience. Gains and losses often 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	$ 44,151,214
(2) Total normal cost from last valuation (employer + member)	1,228,501
(3) Actual contributions (employer + member)	3,825,473
(4) Interest accrual: [(1) + 1/2 [(2) - (3)]] x 8%	3,428,218
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	44,982,460
(6) Change from revised assumptions/methods	0
(7) Change from revised plan provisions	(169,041)
(8) Expected UAAL after changes: (5) + (6) + (7)	44,813,419
(9) Actual UAAL at end of year	36,952,575
(10) Gain (loss): (8) - (9)	7,860,844
(11) Gain (loss) as percent of actuarial accrued liabilities at start of year ($138,382,805 pension)	5.7%

* *Unfunded actuarial accrued liabilities (full funding credit if in brackets).*

Valuation Date June 30	Experience Gain (Loss) as % of Beginning Accrued Liability Pension
2005	(3.67) %
2006	(4.78)
2007	(0.48)
2008	(1.24)
2009	(3.02)
2010	(5.22)
2011	(0.46)
2012	(4.87)
2013	1.01
2014	5.68

SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS
JUNE 30, 2014

Present Resources and Expected Future Resources

	June 30, 2014	June 30, 2013
A. Actuarial value of System assets:		
1. Net assets from System financial statement	$118,028,927	$ 104,265,371
2. Market value adjustment	(15,690,414)	(10,033,780)
3. Actual valuation assets	102,338,513	94,231,591
B. Present value of expected future contributions:		
1. For normal costs	3,886,182	4,341,266
2. For unfunded actuarial accrued liabilities	36,952,575	44,151,214
3. Totals	40,838,757	48,492,480
C. Present value of expected future member contributions	4,887,744	5,012,084
D. Total Present and Expected Future Resources	**$148,065,014**	**$147,736,155**

Actuarial Present Value of Expected Future Benefit Payments

A. To retirees and beneficiaries	$ 84,658,985	$ 82,736,203
B. To vested terminated members	2,730,003	2,396,594
C. To present active members:		
1. Allocated to service rendered prior to valuation date	51,902,100	53,250,008
2. Allocated to service likely to be rendered after valuation date	8,773,926	9,353,350
3. Totals	60,676,026	62,603,358
D. Total Actuarial Present Value of Expected Future Payments	**$148,065,014**	**$147,736,155**

COMMENTS AND RECOMMENDATION

SYSTEM EXPERIENCE

Overall, fund experience was more favorable than assumed during the year ending June 30, 2014, producing an experience gain of approximately $7.9 million. This was primarily due to greater than assumed investment returns and, to a lesser degree, lower than assumed pay increases.

As of June 30, 2014, the funded ratio of the Retirement System is 73.5% based on the funding value of assets.

The market rate of return was 19.48% this year, which was significantly higher than the assumed rate of 8.0%. The valuation employs a smoothing mechanism which recognizes investment gains and losses over a 5-year period. Essentially, 20% of this year's gain is recognized in this year's funding value of assets. The recognized portion of gains and losses from the prior 4 years was then combined with the recognized portion of the gain from this year (see page A-3). The rate of return on the System's funding value of assets was 15.42%. In the absence of offsetting unfavorable experience, contribution rates are expected to trend downward over the next 4 years due to recognition of investment gains.

SYSTEM CHANGES

The Public Safety Technicians increased member contributions for all employees to 5.0% as a salary reduction under 414 (h). The impact of this change reduced employer contributions (for the entire plan) by approximately 0.16%.

ASSUMPTION/METHOD CHANGES

None.

COMPUTED EMPLOYER CONTRIBUTIONS
COMPARATIVE STATEMENT

Valuation Date	Active Members					Retirees & Beneficiaries				Annual Contributions as Payroll Percents		
			Valuation Payroll		%		Annual Benefits			Employer		
June 30	No.	Ratio to Retired	$ Millions	Average	Incr.	No.	$ Millions	% of Payroll	Member	Pension	Health	Total
1994	387	3.6	$ 13.30	$34,343	3.3%	107	$ 0.84	6.3%	3.52%	3.85%	1.64%	9.01%
1995*	370	3.1	13.10	35,304	2.7	119	0.99	7.6	0.97	5.40	1.54	7.91
1996#	369	2.8	13.30	36,069	2.2	130	1.13	8.5	1.01	3.05	1.39	5.45
1997	401	3.0	14.50	36,240	0.5	135	1.18	8.1	1.02	0.98	1.30	3.30
1998#	399	2.8	15.10	37,895	4.6	136	1.17	7.8	1.03	0.00	1.10	2.13
1999*	381	2.6	15.10	39,753	4.9	142	1.37	9.1	1.01	0.00	0.70	1.71
2000	412	2.7	16.80	40,675	2.3	150	1.81	10.8	0.84	0.00	0.56	1.40
2001	433	2.7	18.10	41,910	3.0	158	1.95	10.8	0.84	0.00	0.54	1.38
2002*	446	2.6	19.30	43,342	3.4	171	2.35	12.2	0.02	1.31	**	1.33
2003#*	454	2.6	20.30	44,774	3.3	173	2.58	12.7	0.02	6.78	**	6.80
2004*	464	2.5	21.40	46,086	2.9	183	3.03	14.2	0.00	13.03	**	13.03
2005*	428	2.0	19.90	46,495	0.9	209	4.00	20.1	0.00	14.56	**	14.56
2006*#	421	1.9	19.90	47,255	1.6	220	4.56	22.9	2.83	13.41	**	16.24
2007@	390	1.7	19.60	50,226	6.3	232	5.25	26.8	2.84	14.04	**	16.88
2008^	376	1.5	19.20	51,055	1.7	248	5.75	30.0	3.02	14.08	**	17.10
2009*	363	1.4	18.70	51,643	1.2	259	6.16	32.8	3.08	15.76	**	18.84
2010#	341	1.2	17.80	52,217	1.1	279	6.96	39.1	3.08	17.49	**	20.57
2011#*	325	1.1	16.83	51,783	(0.8)	290	7.61	45.2	4.96	16.98	**	21.94
2012	297	1.0	15.35	51,690	(0.2)	310	8.50	55.3	4.95	21.40	**	26.35
2013*	272	0.9	14.05	51,670	0.0	312	8.89	63.2	4.98	23.39	**	28.37
2014*	262	0.8	13.46	51,357	(0.6)	317	9.21	68.4	5.08	21.20	**	26.28

* *Retirement System amended in 1993, 1995, 1999, 2002, 2003, 2004, 2005, 2006, 2009, 2011, 2012, 2013, and 2014.*
\# *Revised actuarial assumptions/methods in 1996, 1998, 2003, 2006, 2010, and 2011.*
** *Health contributions now part of the actuarial valuation of the VEBA.*
@ *Union member valuation pay includes retroactive pay increases.*
^ *Reflects blended contribution rate due to mid-year benefit change.*

ACTUARIAL ACCRUED LIABILITIES AND VALUATION ASSETS COMPARATIVE STATEMENT (EXCLUDING HEALTH INSURANCE)

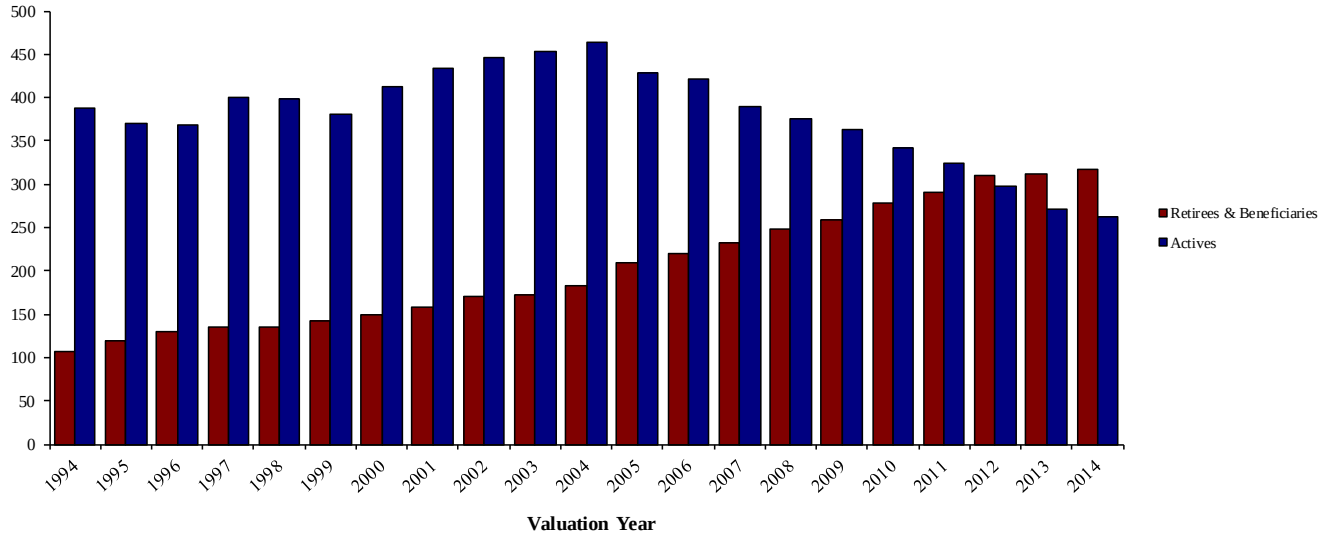
Valuation Date June 30	Actuarial Accrued Liability (AAL)	Valuation Assets	Unfunded Actuarial Accrued Liability(UAAL)	Ratio of Present Assets to AAL	Ratio of UAAL to Valuation Payroll
1994	$ 31,086,817	$ 38,949,398	$ (7,862,581)	125.3%	-
1995*	33,438,557	42,264,824	(8,826,267)	126.4	-
1996#	36,050,638	47,783,717	(11,733,079)	132.5	-
1997	38,802,443	55,364,751	(16,562,308)	142.7	-
1998#	38,965,113	65,858,898	(26,893,785)	169.0	-
1999*	51,591,096	76,331,784	(24,740,688)	147.9	-
2000	57,336,233	84,841,744	(27,505,511)	148.0	-
2001	62,544,823	90,496,433	(27,951,610)	144.7	-
2002*	69,974,666	90,612,387	(20,637,721)	129.5	-
2003#*	80,951,012	90,504,421	(9,553,409)	111.8	-
2004*	96,624,389	91,135,221	5,489,168	94.3	25.7%
2005*	102,530,307	91,997,445	10,532,862	89.7	52.9
2006*#	115,954,378	91,650,440	24,303,938	79.0	122.2
2007	121,719,792	96,080,024	25,639,768	78.9	130.9
2008	127,770,829	99,525,002	28,245,827	77.9	147.1
2009*	127,271,637	97,988,621	29,283,016	77.0	156.2
2010#	132,949,733	96,159,875	36,789,858	72.3	206.6
2011#*	133,961,485	97,303,073	36,658,412	72.6	217.8
2012	137,687,797	93,600,010	44,087,787	68.0	287.2
2013*	138,382,805	94,231,591	44,151,214	68.1	314.1
2014*	139,291,088	102,338,513	36,952,575	73.5	274.6

** Retirement System amended.*
 # Revised actuarial assumptions and methods.

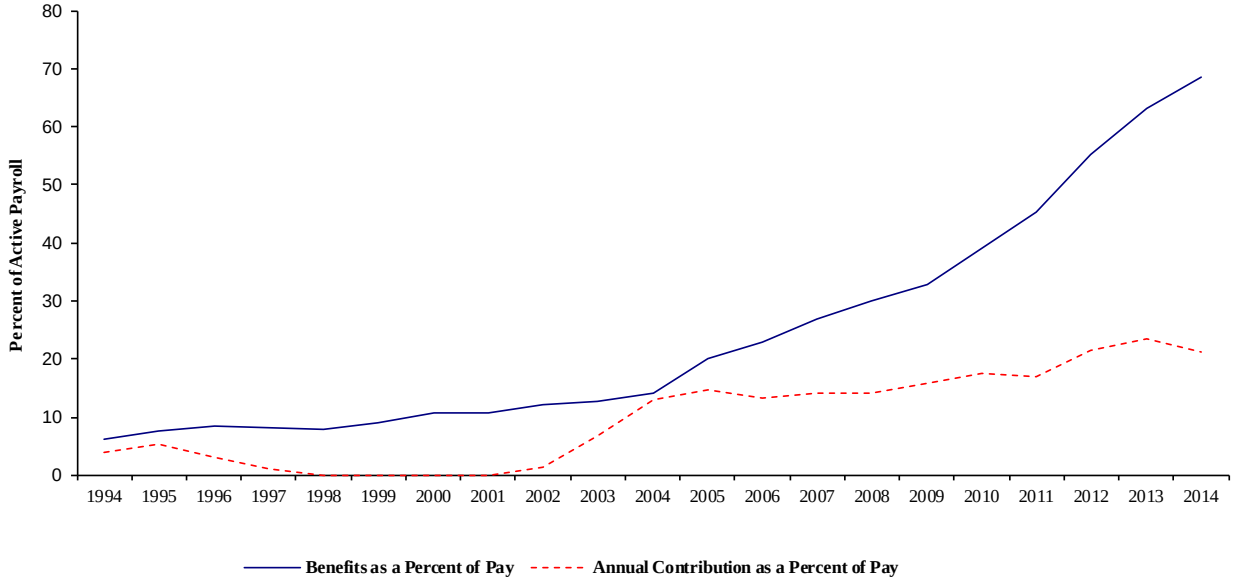
The Ratio of Valuation Assets to AAL is a traditional measure of a System's funding progress. Except in years when the System is amended or actuarial assumptions are revised, this ratio can be expected to gradually trend toward 100%.

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, or vice-versa.

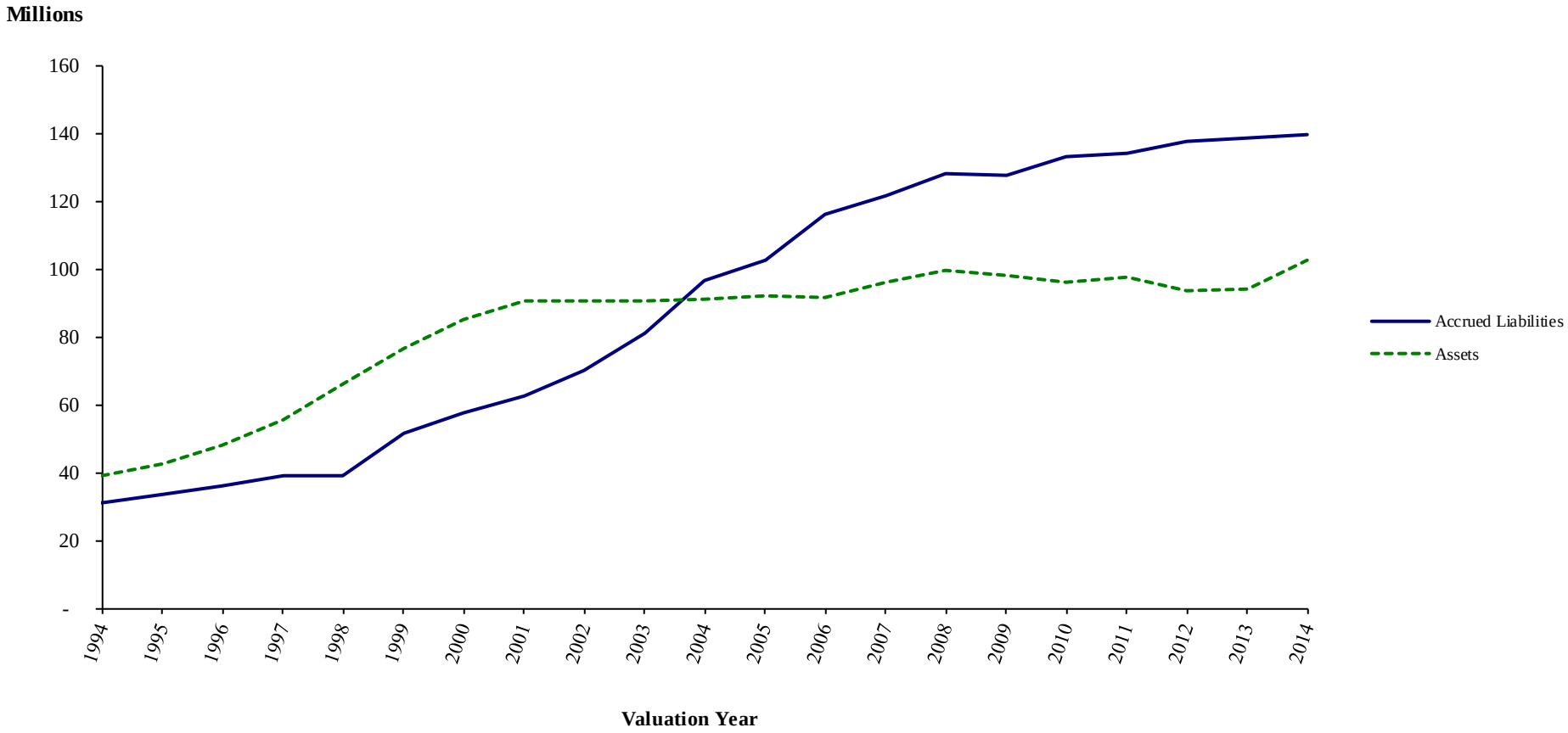
Active and Retired Members



Benefits and Employer Contributions as a Percent-of-Payroll



ASSETS AND ACCRUED LIABILITIES
(EXCLUDING HEALTH INSURANCE)



SECTION B

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

SUMMARY OF BENEFIT PROVISIONS EVALUATED
JUNE 30, 2014
TIER I MEMBERS

Regular Retirement (no reduction factor for age)

Eligibility - Sum of age and service equals 82, or age 65 with 5 or more years of service.

Annual Amount - Total service times 2.5% of FAC.

Type of Final Average Compensation - Highest 3 consecutive years out of last 5.

Normal Form of Payment - Ten-year certain and life.

Early Retirement (age reduction factor used)

Eligibility - Age 57 with 20 or more years of service or age 60 with 10 years of service.

Annual Amount - Computed as regular retirement, but reduced 1/2 of 1% for each month by which retirement date precedes attainment of age 62 with 20 or more years of service or age 65 with 10 or more years of service.

Deferred Retirement (vested benefits)

Eligibility - 10 or more years of service. Reduced benefit may begin at age 60 with 10 or more years of service. Full benefit eligibility at age 57 with 25 or more years of credited service; or 62 with 20 to 25 years of credited service; or 65 with 10 to 20 years of credited service, or sum of frozen years of credited service plus age equals 82 points.

Annual Amount - Computed as regular retirement but based upon service and final average compensation and benefit levels in place at termination of covered employment.

Duty Disability

Eligibility - No service requirement.

Annual Amount - Computed as a regular retirement with additional service credit granted from date of disability to age 60 if under age 60. Worker's Compensation payments are offset.

SUMMARY OF BENEFIT PROVISIONS EVALUATED
JUNE 30, 2014
TIER I MEMBERS
(CONTINUED)

Non-Duty Disability Retirement

Eligibility - 10 years of service.

Annual Amount - Computed as regular retirement but based upon service and final average compensation at commencement of disability.

Death-In-Service

Eligibility - 10 years of service.

Annual Amount - Computed as regular retirement but based upon service and final average compensation on the day before death.

Member Contributions

AFSCME: 5.41%, made as a salary reduction under 414(h).
All Others: 5.00%, made as a salary reduction under 414(h).

Refund of Member Contributions

Public Safety Technicians - Member receives a refund of account balance as of 6/30/95 (with interest) upon commencement of Normal Retirement, Early Retirement, Disability Retirement, Death-in-Service or Deferred Retirement benefits.

Others - Member receives a refund of account balance as of 6/30/2009 (with interest) upon commencement of Normal Retirement, Early Retirement, Disability Retirement, Death-in-Service or Deferred Retirement benefits. (The recently added member contribution requirements of 5% or 5.41% are excluded from this refund provision.)

SUMMARY OF BENEFIT PROVISIONS EVALUATED
JUNE 30, 2014
TIER I MEMBERS
(CONCLUDED)

Covered Compensation

Items of compensation recognized for Retirement System purposes include: base salary, longevity pay, pay in lieu of holiday and/or vacation time for the current year, lump sum vacation payoff at retirement up to 400 hours maximum, and residency bonus. Items of compensation not recognized for retirement purposes are overtime pay, expense allowances, and lump sum payments at retirement in consideration of unused sick leave.

Tier I Members Definition

Tier I members are defined as:

PST members hired prior to February 2, 2009;
PSS members hired prior to March 2, 2009;
AFSCME 329 members hired prior to April 23, 2007;
AFSCME 3636 members hired prior to March 6, 2007;
TPOAM members hired prior to April 9, 2007; and
All other covered employees hired prior to June 1, 2005.

SUMMARY OF BENEFIT PROVISIONS EVALUATED
JUNE 30, 2014
TIER II MEMBERS

Regular Retirement (no reduction factor for age)

Eligibility - Age 57 with 25 years of service, age 62 with 20 years of service, or age 65 with 10 or more years of service.

Annual Amount - Total service times 2.0% of FAC. Maximum benefit is 70% of FAC.

Type of Final Average Compensation - Highest 5 consecutive years out of last 10.

Normal Form of Payment - Ten-year certain and life.

Early Retirement (age reduction factor used)

Eligibility - Age 57 with 20 or more years of service or age 60 with 10 years of service.

Annual Amount - Computed as regular retirement, but reduced 1/2 of 1% for each month by which retirement date precedes attainment of age 62 with 20 or more years of service or age 65 with 10 or more years of service.

Deferred Retirement (vested benefits)

Eligibility - 10 or more years of service. Reduced benefit may begin at age 60 with 10 or more years of service. Full benefit eligibility at age 57 with 25 or more years of credited service; or 62 with 20 to 25 years of credited service; or 65 with 10 to 20 years of credited service.

Annual Amount - Computed as regular retirement but based upon service and final average compensation and benefit levels in place at termination of covered employment.

Duty Disability

Eligibility - No service requirement.

Annual Amount - Computed as a regular retirement with additional service credit granted from date of disability to age 60 if under age 60. Worker's Compensation payments are offset.

SUMMARY OF BENEFIT PROVISIONS EVALUATED
JUNE 30, 2014
TIER II MEMBERS
(CONTINUED)

Non-Duty Disability Retirement

Eligibility - 10 years of service.

Annual Amount - Computed as regular retirement but based upon service and final average compensation at commencement of disability.

Death-In-Service

Eligibility - 10 years of service.

Annual Amount - Computed as regular retirement but based upon service and final average compensation on the day before death.

Member Contributions

AFSCME: 5.41%, made as a salary reduction under 414(h).
All Others: 5.00%, made as a salary reduction under 414(h).

Refund of Member Contributions

None.

Covered Compensation

Items of compensation recognized for Retirement System purposes include: base salary, longevity pay, pay in lieu of holiday and/or vacation time for the current year, lump sum vacation payoff at retirement up to 100 hours maximum, and residency bonus. Items of compensation not recognized for retirement purposes are overtime pay, expense allowances, and lump sum payments at retirement in consideration of unused sick leave.

SUMMARY OF BENEFIT PROVISIONS EVALUATED
JUNE 30, 2014
TIER II MEMBERS
(CONCLUDED)

Tier II Members Definition

Tier II members are defined as:

PST members hired on or after February 2, 2009;
PSS members hired on or after March 2, 2009;
AFSCME 329 members hired on or after April 23, 2007;
AFSCME 3636 members hired on or after March 6, 2007;
TPOAM members hired on or after April 9, 2007; and
All other covered employees hired on or after June 1, 2005.

RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS
COMPARATIVE STATEMENT

Year Ended June 30	Added to Rolls		Removed from Rolls		Rolls End of Year		Average Pension
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions	
1994	11	$ 154,826	1	$ 2,598	107	$ 839,809	$ 7,849
1995	12	150,786			119	990,595	8,324
1996	12	161,284	1	22,994	130	1,128,885	8,684
1997	5	49,333			135	1,178,218	8,728
1998	6	43,438	5	47,638	136	1,174,018	8,632
1999	13	244,846	7	45,153	142	1,373,711	9,674
2000	13	526,417	5	31,253	150	1,805,227	12,035
2001	8	148,596			158	1,953,823	12,366
2002	20	466,138	7	70,436	171	2,349,525	13,740
2003	13	349,624	11	121,044	173	2,578,105	14,902
2004	15	474,390	5	24,631	183	3,027,864	16,546
2005	33	1,051,230	7	77,869	209	4,001,225	19,145
2006	15	627,079	4	64,773	220	4,563,532	20,743
2007	21	776,448	9	93,812	232	5,246,168	22,613
2008	22	608,934	6	101,357	248	5,753,745	23,201
2009	20	540,900	9	136,703	259	6,157,942	23,776
2010	22	823,801	2	21,467	279	6,960,276	24,947
2011	20	748,778	9	101,215	290	7,607,839	26,234
2012	26	956,865	6	68,128	310	8,496,576	27,408
2013	20	612,810	18	224,308	312	8,885,078	28,478
2014	13	462,366	8	140,283	317	9,207,161	29,045

RETIREES AND BENEFICIARIES JUNE 30, 2014
TABULATED BY ATTAINED AGES

Attained Ages	Age and Service		Casualty		Totals	
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions
40 - 44			1	$ 21,879	1	$ 21,879
50 - 54	3	$ 195,921			3	195,921
55 - 59	29	1,211,473	2	37,717	31	1,249,190
60 - 64	54	2,006,316	4	95,447	58	2,101,763
65 - 69	66	2,300,078	2	17,563	68	2,317,641
70 - 74	50	1,431,826	7	273,474	57	1,705,300
75 - 79	31	740,225	2	35,653	33	775,878
80 - 84	28	433,105	1	7,448	29	440,553
85 - 89	22	270,393	1	9,853	23	280,246
90 - 94	12	109,505	1	6,501	13	116,006
95 - 99	1	2,784			1	2,784
Totals	**296**	**$ 8,701,626**	**21**	**$ 505,535**	**317**	**$ 9,207,161**

Average Age at Retirement: 61.2 years

Average Age Now: 71.4 years

INACTIVE VESTED MEMBERS JUNE 30, 2014
TABULATED BY ATTAINED AGE

Attained Age	No.	Estimated Annual Pensions
30 - 34	1	$ 13,092
40 - 44	5	93,804
45 - 49	3	44,236
50 - 54	18	312,942
55 - 59	10	150,744
60 - 64	2	24,059
Totals	**39**	**$ 638,877**

Average Age at Termination: 43.4 years

Average Age Now: 52.1 years

ACTIVE MEMBERS JUNE 30, 2014
TABULATED BY VALUATION DIVISIONS

Valuation Division	No.	Annual Payroll	Average Age	Average Service
Union Members				
Tier I	185	$ 9,378,973	52.2 years	17.1 years
Tier II	6	233,140	54.4	3.4
Public Safety Supervisors				
Tier I	5	282,441	49.8	17.1
Tier II	0	0	0.0	0.0
Non-Union Members				
Tier I	35	2,123,901	51.2	18.8
Tier II	17	770,591	42.7	4.0
Public Safety Technicians				
Tier I	13	621,205	48.2	17.8
Tier II	1	45,396	29.0	5.3
Totals	**262**	**$ 13,455,647**	**51.2**	**16.2**

ACTIVE MEMBERS ADDED TO AND REMOVED FROM ROLLS

Year Ended June 30	Number Added During Year	Terminations During Year										Active Members End of Year
		Normal Retirement		Disabled		Died-In-Service		Withdrawal				
								Vested	Other	Total		
		A	E	A	E	A	E	A	A	A	E	
1990	51	6	5.5	0	1.5	1	1.3	3	25 *	28	20.5	401
1991	28	2	6.9	1	1.5	0	1.4	0	21 *	21	22.4	405
1992	25	11	10.6	0	1.2	0	1.1	2	8	10	19.7	409
1993	14	7	9.8	1	1.2	0	1.1	1	17	18	18.0	397
1994	24	8	13.5	1	1.1	4	1.1	2	19	21	15.6	387
1995	2	12	11.3	0	1.2	0	1.0	0	9	9	15.2	370
1996	33	9	11.0	1	1.2	1	1.0	2	19	21	12.1	369
1997	56	5	10.8	1	1.2	0	1.0	4	14	18	13.8	401
1998	24	5	9.0	0	1.3	0	1.1	4	17	21	17.4	399
1999	26	12	10.5	1	1.4	2	1.1	4	25	29	16.5	381
2000	64	7	11.7	1	1.0	1	0.9	2	22	24	14.5	412
2001	44	7	7.9	0	1.0	1	1.0	4	11	15	20.4	433
2002	42	8	8.7	2	1.0	1	1.0	3	15	18	21.6	446
2003	24	4	11.3	0	1.0	1	1.1	4	7	11	21.4	454
2004	31	11	11.5	1	0.8	0	1.1	1	8	9	13.8	464
2005	10	29	14.5	0	0.8	2	1.2	2	13	15	24.7	428
2006	11	11	11.9	0	0.9	0	1.1	1	6	7	20.9	421
2007	4	18	12.9	0	1.0	2	1.1	5	10	15	15.9	390
2008	11	16	12.7	0	0.9	1	1.1	1	7	8	15.7	376
2009	7	13	12.0	2	0.9	0	1.1	2	3	5	14.1	363
2010	2	19	12.9	0	1.0	1	1.2	1	3	4	12.8	341
2011	4	18	13.0	0	1.1	0	1.3	1	1	2	10.7	325
2012	1	23	13.3	1	0.9	0	0.4	1	4	5	6.7	297
2013	2	19	12.3	0	0.8	0	0.3	6	2	8	5.4	272
2014	10	7	11.6	2	0.8	1	0.3	5	5	10	4.5	262
5-Year Totals	19	86	63.1	3	4.6	2	3.5	14	15	29	40.1	
10-Year Totals	62	173	127.1	5	9.1	7	9.1	25	54	79	131.4	

A = actual
E = expected
** Includes people reported on leave of absence.*

ACTIVE MEMBERS AT YEAR END

Year	Number	Valuation Payroll $ Millions	Averages			
			Age Years	Service Years	Pay	% Inc.
1990	401	$ 11.7	43.0	9.2	$ 29,101	2.1%
1991	405	12.8	43.8	9.8	31,520	8.3
1992	409	13.3	43.8	10.0	32,513	3.2
1993	397	13.2	44.1	10.6	33,235	2.2
1994	387	13.3	44.4	11.0	34,343	3.3
1995	370	13.1	45	11.8	35,304	2.8
1996	369	13.3	45.1	11.7	36,069	2.2
1997	401	14.5	45.0	11.3	36,240	0.5
1998	399	15.1	45.7	11.8	37,895	4.6
1999	381	15.1	46.2	12.3	39,753	4.9
2000	412	16.8	46.0	11.6	40,675	2.3
2001	433	18.1	46.1	11.5	41,910	3.0
2002	446	19.3	46.2	11.5	43,342	3.4
2003	454	20.3	46.8	11.9	44,774	3.3
2004	464	21.4	47.3	12.1	46,086	2.9
2005	428	19.9	47.5	12.2	46,495	0.9
2006	421	19.9	48	12.5	47,255	1.6
2007 (1)	390	19.6	48.3	12.9	50,226	6.3
2008 (2)	376	19.2	48.6	13.4	51,055	1.7
2009	363	18.7	49.2	13.8	51,643	1.2
2010	341	17.8	49.5	14.4	52,217	1.1
2011	325	16.8	50.0	14.8	51,783	(0.8)
2012	297	15.4	50.1	15.4	51,690	(0.2)
2013	272	14.1	50.7	15.8	51,670	0.0
2014	262	13.5	51.2	16.2	51,357	(0.6)

(1) Union member valuation pay includes retroactive pay increases.

(2) Pay for Public Safety Supervisors and Public Safety Technicians includes load for expected contract increases.

ACTIVE MEMBERS JUNE 30, 2014
BY ATTAINED 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	2							2	$ 55,114
25-29	1	1						2	78,073
30-34	1	3	1					5	183,632
35-39	3	3	12	6				24	1,144,399
40-44	1	2	16	8	3			30	1,606,941
45-49	1	6	21	9	7	1		45	2,286,866
50-54	1	2	12	10	13	8		46	2,427,143
55-59	1	2	14	12	9	12	3	53	2,858,635
60-64	3	3	18	11	8	3		46	2,276,395
65-69	1	1	1	1	1	3		8	485,110
70-74					1			1	53,339
Totals	**15**	**23**	**95**	**57**	**42**	**27**	**3**	**262**	**$ 13,455,647**

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

Age: 51.2 years

Service: 16.2 years

Annual Pay: $ 51,357

SECTION C

SUMMARY OF VALUATION METHODS AND ASSUMPTIONS

ACTUARIAL COST METHOD

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 cost for each individual active member, payable from the date of employment to the date of retirement, is 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; and

- the normal cost is based on the benefit provisions applicable for Tier II members.

Financing of Unfunded Actuarial Accrued Liabilities. The Unfunded Actuarial Accrued Liability (UAAL) was determined using the funding value of assets and actuarial accrued liability calculated as of the valuation date. The UAAL amortization payment (one component of the contribution requirement), is the level percent of pay required to fully amortize the UAAL over a 26 year period beginning on the valuation date. This UAAL payment does not reflect any payments expected to be made between the valuation date and the date contributions determined by this report are scheduled to begin.

Funding Value of Assets. The Funding Value of Assets used for funding purposes is derived as follows: prior year Funding Value of 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 5 years.

ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION

The actuary calculates the contribution requirements and benefit values of the System by applying actuarial assumptions to the benefit provisions and member information furnished, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experience 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, retirees and beneficiaries,
- rates of withdrawal of active members (without entitlement to a retirement benefit),
- rates of disability among members, and
- the age patterns of actual retirements.

In 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 System 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). New assumptions pursuant to the Experience Study dated July 27, 2011 were adopted for the June 30, 2011 valuation.

The rate of investment return was 8.0% per year, compounded annually (net of administrative and investment expenses). 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 rate of return (the net return in excess of the wage inflation rate) was 4.5%. Economic experience during the last 5 years is shown in the table below:

	Year Ending June 30					5-Year
	2014	2013	2012	2011	2010	Average
1) Nominal recognized rate	15.4%	7.3%	2.2%	6.0%	2.2%	6.6%
2) Increase in CPI	2.1	1.8	1.7	3.6	1.1	2.0
3) Average salary increase	(0.6)	0.0	(0.2)	(0.8)	1.1	(0.1)
4) Real return as measured by						
- CPI: (1)-(2)						4.6
- Wage inflation: (1)-(3)						6.7

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 net of expenses, A is the beginning of year asset value and B is the end of year asset value.

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 an Individual Member		
Sample Ages	Merit & Seniority	Base (Economic)	Increase Next Year
20	6.0%	3.5%	9.5%
25	5.0	3.5	8.5
30	2.8	3.5	6.3
35	1.5	3.5	5.0
40	0.8	3.5	4.3
45	0.8	3.5	4.3
50	0.5	3.5	4.0
55	0.5	3.5	4.0
60	0.0	3.5	3.5
65	0.0	3.5	3.5

If the number of active members remains constant, then the total active member payroll will increase 3.5% annually, the base portion of the individual salary increase assumptions. This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities.

The mortality table was RP-2000 mortality table projected to 2015 with a 1 year set-forward for males.

Sample Ages	Value at Retirement: $1 Monthly for Life		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	$136.67	$139.78	31.3	34.4
55	129.36	133.53	26.7	29.6
60	119.98	125.50	22.2	25.1
65	108.65	115.70	18.0	20.8
70	95.46	104.31	14.2	16.9
75	80.15	91.31	10.7	13.3
80	63.89	76.72	7.7	10.1

This assumption is used to measure the probabilities of each benefit payment being made after retirement. We estimate that there is no margin for future mortality improvement.

Fifty percent of these rates are used to measure the probabilities of members dying before retirement.

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

Retirement Ages	Percents of Active Members Retiring Within Next Year		
	Normal Retirement	Early Retirement	Rule of 82
50			20%
51			20
52			20
53			20
54			20
55			20
56			20
57	20%	5%	20
58	20	5	20
59	20	10	20
60	20	5	20
61	20	5	20
62	35	25	35
63	15	10	15
64	15	10	15
65	15	100	15
66	40		40
67	40		40
68	40		40
69	40		40
70	100		100

Tier I members: Assumed to be eligible for normal retirement when the sum of their age and service is at least 82, or age 65 with 5 or more years of service. A member was assumed to be eligible for early retirement after attaining age 57 with 20 or more years of service or age 60 with 10 or more years of service.

Tier II members: Assumed to be eligible for normal retirement at age 57 with 25 or more years of service, age 62 with 20 or more years of service, or age 65 with 10 or more years of service. A member was assumed to be eligible for early retirement after attaining age 57 with 20 or more years of service or age 60 with 10 or more 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 Separating
ALL	0	20.00%
	1	15.00
	2	10.00
	3	5.00
	4	5.00
	5	5.00
	6	5.00
	7	3.00
	8	2.50
	9	2.00
	10 & Over	
20		9.00
25		9.00
30		5.45
35		4.60
40		2.95
45		1.45
50		0.95
55		0.95
60		0.95
65		0.95

Rates of disability were as follows:

Sample Ages	% of Active Becoming Disabled
20	0.04%
25	0.04
30	0.04
35	0.05
40	0.12
45	0.23
50	0.38
55	0.67
60	1.78
65	0.00

Expense Load. None.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Marriage Assumption:	100% of members are assumed to be married for purposes of valuing death-in-service benefits.
Pay Increase Timing:	Beginning of the fiscal 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.
Benefit Service:	Exact fractional service as of the valuation date is used to determine the amount of benefit payable.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Other:	Disability and withdrawal decrements do not operate after member reaches retirement eligibility. All decrements operate during the first 10 years of service.
Miscellaneous Adjustment Factors:	A load of 1.0% is used to approximate the value of the lump sum vacation payoff for the Tier II members. For Tier I members, a 3% load is used.
Actuarial Equivalence Basis for Optional Forms of Payment:	7.0% interest with a 90%/10% unisex blend of the 1971 Group Annuity Mortality Table set back 0 years and the 1971 Group Annuity Mortality Table set back 5 years.

SECTION D

GASB STATEMENT NO. 27

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.

The information on the following pages should be used for Employer Reporting under GASB Statement No. 27. Information to be used for plan reporting is now issued in a separate report in accordance with GASB Statement No. 67.

GASB STATEMENT NO. 27
REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) -- Entry-Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll ($ millions) (c)	UAAL as a % of Covered Payroll ((b-a)/c)
2005 ##	$ 91,997,445	$ 102,530,307	$ 10,532,862	89.7%	$19.9	52.9%
2006 ##	91,650,440	115,954,378	24,303,938	79.0	19.9	122.2
2007	96,080,024	121,719,792	25,639,768	78.9	19.6	130.9
2008	99,525,002	127,770,829	28,245,827	77.9	19.2	147.1
2009 ##	97,988,621	127,271,637	29,283,016	77.0	18.7	156.2
2010 ##	96,159,875	132,949,733	36,789,858	72.3	17.8	206.6
2011 ##	97,303,073	133,961,485	36,658,412	72.6	16.8	217.8
2012	93,600,010	137,687,797	44,087,787	68.0	15.4	287.2
2013 ##	94,231,591	138,382,805	44,151,214	68.1	14.1	314.1
2014 ##	102,338,513	139,291,088	36,952,575	73.5	13.5	274.6

Revised actuarial assumptions, methods, and/or benefit changes.

GASB STATEMENT NO. 27
REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Employer Contributions

Valuation Year Ended June 30	Fiscal Year Ended June 30	Contribution Rate as % of Valuation Payroll	Computed Dollar Contribution Based on Valuation Payroll	Annual Required Contribution Based on Actual Payroll*	% Contributed
2005**	2007	14.56 %	$ 2,852,011	$ 2,962,888	100%
2006**	2008	13.41	2,574,275	2,697,591	100
2007	2009	14.04	2,631,991	2,809,926	100
2008	2010	14.08#	2,507,100	2,689,560	100
2009**	2011	15.76	2,652,324	2,804,144	100
2010**	2012	17.49	2,685,056	2,660,847	100
2011**	2013	16.98	2,386,403	2,498,235	100
2012	2014	21.40	2,879,508	3,108,024	100
2013**	2015	23.39			
2014**	2016	21.20			

* *Since it was reported to the actuary that the City's practice is to contribute the percent-of-payroll employer contribution rate shown in the actuarial valuation report, the annual required contributions shown in the Schedule of Employer Contributions are the actual contributions made by the City in the fiscal year.*

** *After assumption, method, and/or benefit changes.*

\# *Reflects blending of contribution rates due to mid-year benefit change.*

GASB STATEMENT NO. 27
REQUIRED SUPPLEMENTARY INFORMATION

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

Valuation Date	June 30, 2014
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level percent
Remaining Amortization Period	26 years, closed
Asset Valuation Method	5-year smoothed market
Actuarial Assumption:	
Investment rate of return	8.00%
Projected salary increases*	3.5% - 9.5%
* Includes wage inflation at	3.50%
Post - Retirement Benefit Increases	Ad-hoc as provided by ordinance

Membership of the plan consisted of the following at June 30, 2014, the date of the latest actuarial valuation:

Retirees and Beneficiaries receiving benefits	317
Terminated plan members entitled to but not yet receiving benefits	39
Active plan members	262
Total	618

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 Employees 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 as least:

> ***Normal Cost*** (the current value of benefits likely to be paid on account of members' 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:

B = C + I – E

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

Contributions received on behalf of the group

. . . plus . . .

Investment earnings on plan assets

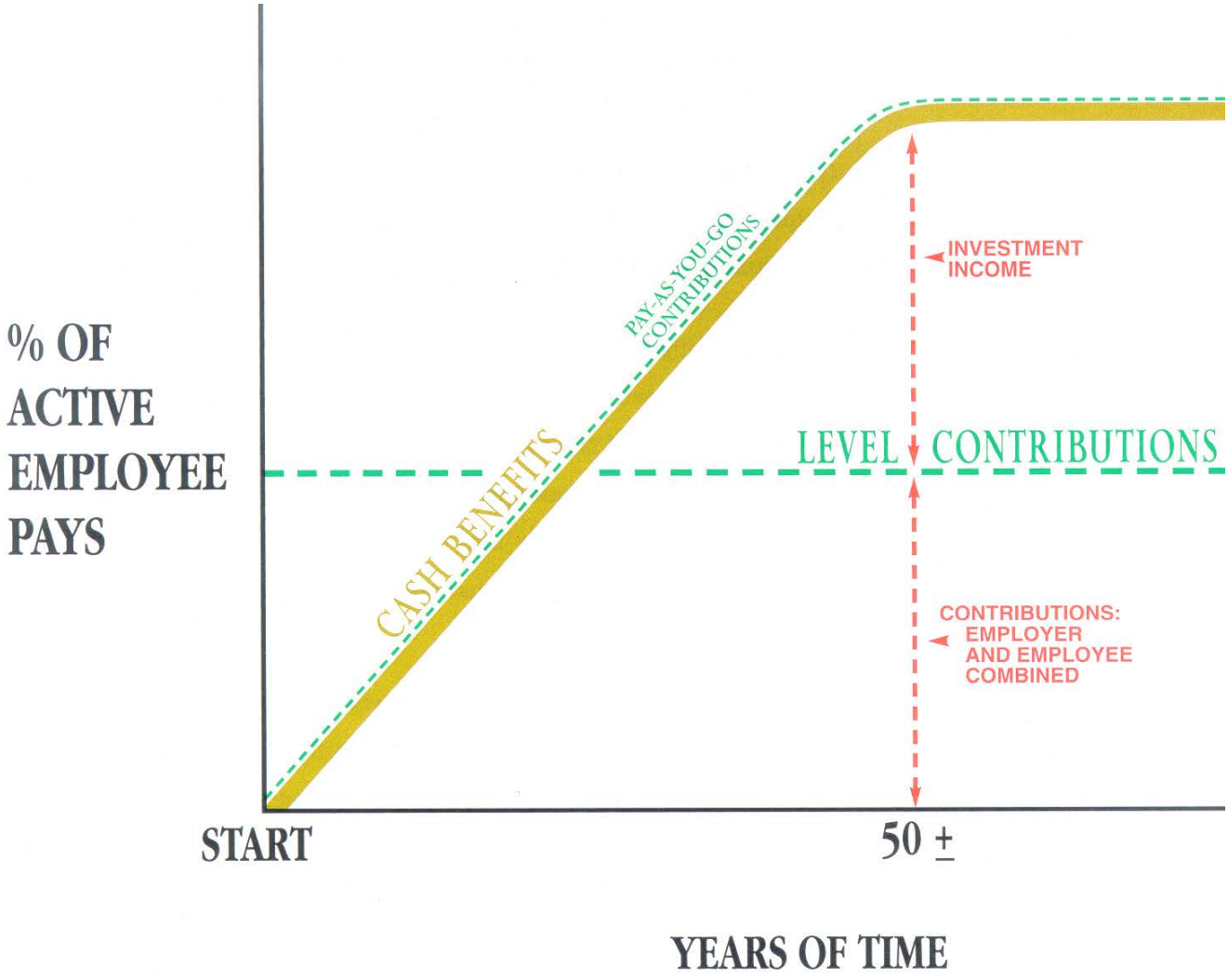
. . . minus . . .

Expenses incurred in operating the program.

There are retirement programs designed to defer the bulk of contributions far into the future. Lured by artificially low present contributions, the inevitable consequence of a relentlessly increasing contribution rate -- to a level which may be greatly in excess of the level percent-of-payroll rate -- is ignored. ***This method of financing is prohibited in Michigan by the State Constitution***.

A by-product of a 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 the third and largest contributor to the retirement program, and the amount is directly related to the amount of 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:

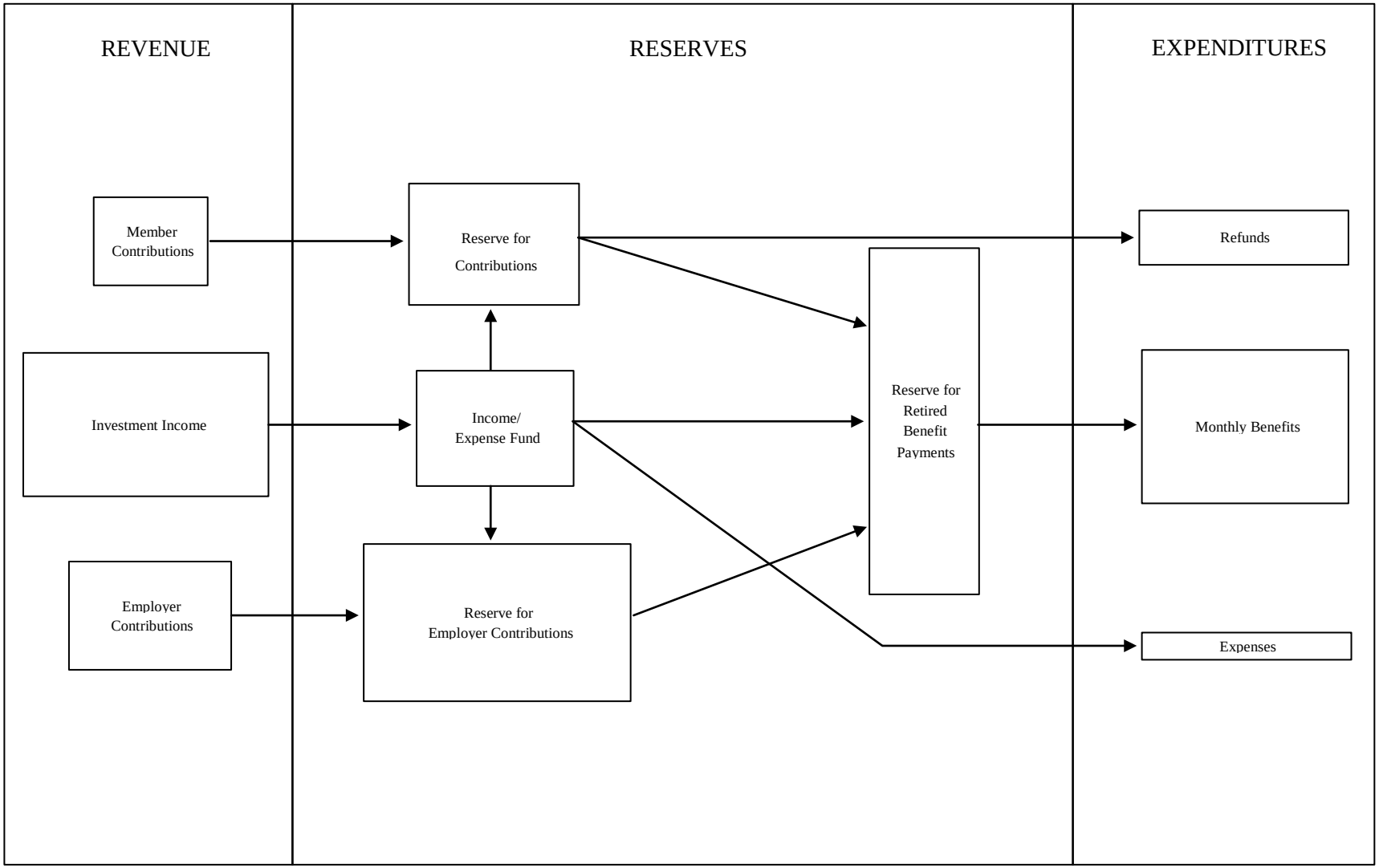
Economic Risk Areas

- 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 of 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.

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.

GLOSSARY

Plan Termination Liability **-** The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for 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.