

**THE GENERAL RETIREMENT SYSTEM OF
THE CITY OF DETROIT
74TH ANNUAL ACTUARIAL VALUATION
JUNE 30, 2012**



OUTLINE OF CONTENTS

Section	Pages	Items
	1-2	Cover Letter
A		Retirement System Totals
	1	Computed employer contributions
	2-3	Actuarial accrued liabilities
	4	Comparative schedule of valuation results
	5-7	Comments
	8	Solvency tests
	9	Experience gain (loss)
	10-11	Asset information furnished for valuation
	12	Funding value of assets
	13	History of assets and accrued liabilities (graph)
	14-20	Member data included in valuation
	21-22	Summary of benefit provisions
B		Divisions Separately Experience Rated
	1	Member data included in valuation
	2	Assets included in valuation
	3	Actuarial accrued liabilities
	4	Member data - historical schedule
	5	Computed contributions - historical comparison
C		Financial Disclosures
	1-2	GASB Statement No. 25
D		Financial Principles
	1	Financing diagram
	2	Actuarial valuation process
	3-4	Financial objective
E		Appendix
	1-7	Summary of assumptions used in actuarial valuations
	8	Meaning of unfunded actuarial accrued liabilities
	9-10	Glossary

November 5, 2013

The Board of Trustees
The General Retirement System of the City of Detroit

Dear Board Members:

The results of the **74th Annual Actuarial Valuation** of the annuity and pension liabilities of the General Retirement System of the City of Detroit 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 valuations was to measure the System's funding progress, to determine contribution rates for the 2014 fiscal year in accordance with the established funding policy, and to determine actuarial information for Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27. The results of the valuation may not be applicable for other purposes. Four divisions are evaluated separately.

The date of the valuation was **June 30, 2012**.

We understand that the City of Detroit has filed for Chapter 9 bankruptcy. This report assumes that the plan sponsor will make all required contributions when due. This report does not evaluate the ability of the plan sponsor to make contributions when due.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: 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 (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.

The valuations were based upon records maintained and furnished by the Retirement System staff concerning active members, retirees and beneficiaries, and financial accounts as of the valuation date. Data was checked for year-to-year consistency, but was not otherwise audited by the actuary. We are not responsible for the completeness or accuracy of the data. The assumptions used in the valuations concerning future financial experience are summarized in the Appendix of this report.

Your attention is directed particularly to the comments on pages A-5 through A-7 and the contribution rates on page A-1.

This report has been prepared by actuaries who have substantial experience valuing public sector retirement systems. To the best of our knowledge, this report is complete and accurate and was made in accordance with Actuarial Standards of Practice promulgated by the Actuarial Standards Board. The actuarial assumptions used for the valuation are set by the Board. Different assumptions would produce different results. The actuarial assumptions are reasonable.

The signing actuaries are independent of the plan sponsor.

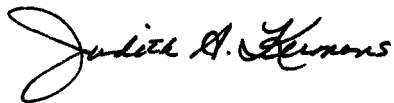
David T. Kausch and Judith A. Kermans are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

This report replaces our preliminary report dated April 5, 2013 and is based on updated asset information received in July 2013. Although the total amount of reported assets did not change, the allocation of assets between divisions did change. In addition, this report reflects the fact that the 1-year freeze on pension accruals included in the preliminary report has been repealed.

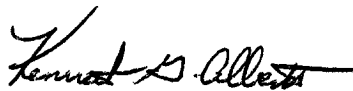
Respectfully submitted,



David T. Kausch, FSA, EA, MAAA



Judith A. Kermans, EA, MAAA



Kenneth G. Alberts

DTK:dj

SECTION A

RETIREMENT SYSTEM TOTALS

**SUMMARY OF COMPUTED EMPLOYER CONTRIBUTION RATES
2013-2014 FISCAL YEAR**

Contributions for	Contributions Expressed as a Percent of Payroll				
	General City@	D.O.T.	Water/ Sewage	Library	System Total
Normal Cost:					
Age & Service Pensions	7.65 %	6.83 %	7.30 %	7.45 %	7.43 %
Disability Pensions	1.33 %	0.88 %	1.31 %	1.27 %	1.27 %
Death-in-Service Pensions	0.28 %	0.28 %	0.31 %	0.25 %	0.29 %
Expenses*	2.80 %	2.80 %	2.80 %	2.80 %	2.80 %
Employer Normal Cost	12.06 %	10.79 %	11.72 %	11.77 %	11.79 %
Unfunded Actuarial Accrued Liabilities#	14.64 %	22.86 %	22.88 %	14.86 %	18.26 %
Estimated Employer Contribution Rates	26.70 %	33.65 %	34.60 %	26.63 %	30.05 %
(Change from last year)	6.74 %	9.46 %	6.28 %	0.40 %	6.96 %
Estimated Employer (\$ mill)	\$ 36.7	\$ 12.1	\$ 28.2	\$ 3.6	\$ 80.6

* Includes 0.80% of payroll for defined contribution (DC) payments and 2.00% of payroll for administrative expenses.

Unfunded actuarial accrued liabilities (UAAL) were amortized as a level percent of payroll over an open 30-year period.

@ Includes COBO Hall.

COMMENT

The valuation results shown above include an adjustment to account for certain retroactive benefits paid as a result of the 1998 Defined Contribution Plan. The adjustment is based on experience to date and limited implementation of the plan. Full implementation of the plan may have a material impact on the computed employer contribution rates beyond what is included above.

We understand that the FY 2012 and FY 2013 employer contributions have not yet been made and that the City has filed for Chapter 9 bankruptcy. The FY 2014 contribution shown above is in addition to the FY 2012 and FY 2013 contribution requirements and was calculated based on the assumption that the FY 2012 and FY 2013 contributions would be made on a timely basis and increased with interest at 7.9% per annum. The reported assets as of June 30, 2012 include receivable contributions of \$33,124,897.

DEVELOPMENT OF LIABILITIES AS OF JUNE 30, 2012
RETIREMENT SYSTEM TOTALS

Present Value of Future Benefits	\$ 3,797,216,944
Present Value of Future Normal Costs	153,044,371
Actuarial Accrued Liability	3,644,172,573
Accrued Assets	2,806,489,202
Unfunded Actuarial Accrued Liability	\$ 837,683,371

ACTUARIAL ACCRUED LIABILITIES AS OF JUNE 30, 2012
RETIREMENT SYSTEM TOTALS

Present Value	June 30, 2012	June 30, 2011
Accrued Pension Liabilities (Employer Financed)		
Retirees and beneficiaries		
Future pensions	\$2,213,640,992	\$1,983,919,013
Mortality reserve	0	0
Total	2,213,640,992	1,983,919,013
Inactive members future deferred pensions	165,251,217	186,785,801
Active members	688,597,028	878,193,058
Total accrued pensions	3,067,489,237	3,048,897,872
Pension fund balances	2,229,805,862	2,409,026,428
Unfunded accrued pension liabilities	\$ 837,683,375	\$ 639,871,444
Accrued Annuity Liabilities (Member Financed)		
Retirees and beneficiaries		
Future annuities	\$ 92,108,332	\$ 75,220,724
Mortality reserve	0	0
Total	92,108,332	75,220,724
Member annuities & future refunds	484,575,008	596,048,582
Total accrued annuity liabilities	576,683,340	671,269,306
Annuity fund balances	576,683,340	671,269,306
Unfunded accrued annuity liabilities	\$ 0	\$ 0
Totals		
Actuarial Accrued Liabilities	\$3,644,172,577	\$3,720,167,178
Accrued Assets	2,806,489,202	3,080,295,734
Unfunded Actuarial Accrued Liabilities	\$ 837,683,375	\$ 639,871,444

VALUATION RESULTS - COMPARATIVE STATEMENT
----- \$ IN MILLIONS -----
RETIREMENT SYSTEM TOTALS

June 30	Active Payroll		% of Payroll Contributions For			Actuarial Accrued Liabilities			Unfunded/ Active Pay
			Normal Cost	UAAL	Total	Computed Total	Accrued Assets	Unfunded	
	Total	Average							
1994	\$325.4	\$28,591	8.06%	2.73 %	10.79%	\$2,192.8	\$2,041.9	\$ 150.9	0.46
1995	327.6	28,451	8.11%	4.80 %	12.91%	2,275.2	2,043.4	231.8	0.71
1996	360.1	29,729	8.14%	3.44 %	11.58%	2,382.8	2,193.2	189.6	0.53
1997(a)	382.8	30,951	7.91%	3.93 %	11.84%	2,528.5	2,333.4	195.1	0.51
1998(a)#	387.0	31,565	9.30%	4.45 %	13.75%	2,814.9	2,582.1	232.8	0.60
1999#	383.4	31,989	9.29%	3.97 %	13.26%	2,900.4	2,756.6	143.8	0.38
2000	417.2	34,345	9.22%	4.15 %	13.37%	3,077.0	2,902.4	174.6	0.42
2001	439.6	34,497	9.22%	5.05 %	14.27%	3,179.6	2,912.1	267.5	0.61
2002(a)	440.7	34,867	8.74%	9.31 %	18.05%	3,250.5	2,761.2	489.3	1.11
2003	448.6	34,955	8.82%	13.90 %	22.72%	3,270.6	2,537.7	732.9	1.63
2004	444.6	37,706	8.99%	11.10 %	20.09%	3,383.9	2,470.2	913.7	2.06
2005*	390.6	39,775	9.26%	1.80 %	11.06%	3,347.4	3,222.4	125.0	0.32
2006	361.2	39,919	9.26%	0.95 %	10.21%	3,434.3	3,373.7	60.6	0.17
2007	361.7	40,319	9.29%	0.67 %	9.96%	3,629.2	3,586.6	42.6	0.12
2008(a)	368.5	41,763	10.09%	(0.53)%	9.56%	3,609.6	3,641.2	(31.6)	(0.09)
2009	357.1	41,525	10.84%	4.54 %	15.38%	3,689.1	3,412.4	276.7	0.77
2010(a)	334.3	41,420	10.97%	8.14 %	19.11%	3,719.6	3,238.1	481.5	1.44
2011	303.4	41,845	11.49%	11.60 %	23.09%	3,720.2	3,080.3	639.9	2.11
2012	258.0	41,385	12.82%	18.82 %	31.64%	3,706.0	2,806.5	899.5	3.49
2012#@	258.0	41,385	11.79%	18.26 %	30.05%	3,644.2	2,806.5	837.7	3.25

After plan amendments.

(a) After changes in actuarial assumptions and/or methods.

* After POC transfer.

@ Reflects missing FY12 and FY13 contributions.

COMMENTS

Experience

Experience during the year was less favorable than expected. Overall, the experience loss was approximately \$245 million (6.6% of the beginning of year liability). The experience loss was comprised of two parts: a recognized investment loss of \$191 million and a liability loss of \$54 million.

As mentioned above, the investment loss was the primary source of the experience loss during the year. The fund earned a 2.2% rate of return on a market basis and recognized a 1.4% rate of return on a funding value basis, compared to a 7.9% assumed rate of investment return. The recognized rate of investment return was lower than the market rate of investment return due to the phase-in of a large loss from a prior year.

Funding Value of Assets

Beginning June 30, 2010, gains and losses in excess of the assumed investment return are being recognized over a period of 7 years. As of June 30, 2012, the funding value of assets was nearly \$650 million dollars greater than the market value (see page A-12). As that difference is recognized, computed employer contribution rates will continue to increase by approximately an additional 13%-15% of payroll over the next several years, unless the losses are offset by future experience gains. On a funding value basis the system is 77% funded. On a market value of asset basis, the system is 59% funded.

In accordance with the policy adopted by the Board, the market value corridor used in the derivation of the funding value of assets was decreased from 40% last year to 30% this year. A 30% market value corridor means that the funding value of assets may not be more than 130% of the market value of assets nor less than 70% of the market value of assets. This year the funding value of assets was restricted by the market value corridor. This forced the recognition of an additional \$28 million of this year's investment loss in order to keep the funding value within 30% of the market value.

The current method of allocation of investment income between divisions (as provided by Retirement System staff) results in each division recognizing a rate of return that may differ from the fund, in total. This has led to changes in divisional contribution rates that were not completely uniform. For example, this year the contribution rates for the library division increased by a smaller margin than other divisions. We recommend that staff continue to review the allocation procedures.

Active Member Group Size

As mentioned above, the recognition of prior investment losses will continue to put upward pressure on the employer contribution rate. The employer rate, as a percent of payroll, will increase yet more if the active member group continues to contract.

COMMENTS (CONTINUED)

1998 DC Plan

We were recently informed that the System has been paying a death benefit to beneficiaries of certain retired members who were retroactively grandfathered into the 1998 DC plan. Based on the data supplied by the Retirement System, the average additional payments of this type have been approximately \$2 million per year. We have included an adjustment in the results shown on page 1 to account for these payments. This resulted in an increase in the computed employer contribution rate of approximately 0.80% of covered payroll. We will review this issue further as part of the upcoming experience study.

Plan Changes

During the year the following plan changes were made:

- Future benefit accruals for certain active members were reduced to 1.5% of final average compensation per year of service
- Post-retirement cost-of-living increases were eliminated on future accruals for certain active members

The Retirement System provided a list of the agency codes indicating which change affected which agency as well as the effective dates of the changes for each agency. These changes, in total, resulted in a reduction in the computed employer contribution rate of 2.64% of payroll. We understand that there is some consideration being given to changing the freeze so that it does not affect eligibility. If this change is implemented, the contribution rate will increase approximately 0.07% of payroll.

Assumption and Method Changes

Some technical changes were made in this valuation to more closely model the actual administration of the plan. These include:

- An increase in the administrative expense load in accordance with an increase in the actual expenses as a percent of payroll
- Modeling the delay between the valuation date and the assumed employer contribution payment schedule

Computed Contribution

The computed employer contribution rate was determined assuming that employer contributions due in FY 12 and FY 13 would be made on a timely basis or adjusted by interest for late payments at 7.9% per annum.

Assumptions, Methods and Bankruptcy

Except as noted above, assumptions and methods used in this valuation were adopted by the Board pursuant to the Experience Study covering 2002 through 2007. In connection with the bankruptcy proceedings, changes to the assumptions are being considered that would result in material differences in valuation results. Assumptions and methods that will be used in future valuations are contingent on the future status of the System which is unusually uncertain due to the bankruptcy filing. Different assumptions and methods are used for different purposes. The assumptions and methods used in this valuation are appropriate for the purposes disclosed in this report, given the known status of the plan at the date of the production of this report.

COMMENTS (CONCLUDED)

Experience Study

We perform an experience study every 5 years for the General Retirement System of the City of Detroit, as required by the ordinance. This study reviews all of the actuarial assumptions and methods and compares them to actual experience during the past 5 years. We then make recommendations for changes to the assumptions and methods for use in prospective valuations. The next experience study is scheduled to begin following the June 30, 2012 actuarial valuation. Revised methods and assumptions would first be included in the June 30, 2013 actuarial valuation. While all of the methods and assumptions will be reviewed, we expect (at a minimum) to recommend consideration of changes to the:

- Assumed rate of investment return;
- Rates of post-retirement mortality;
- Length of the asset smoothing period and/or the amount of the corridor; and
- Amortization period.

We also plan to review in depth the payments resulting from retroactive participation in the 1998 DC plan and the Annuity Fund interest crediting and how it impacts the development of the funding value of assets.

GASB Changes

For plan years beginning in 2014, new reporting standards will be required. The new reporting standards will be substantially different than the current standards. Some of the changes include reporting of:

- Liabilities that may be materially different than the liabilities currently developed for funding;
- Unfunded liabilities based on the market value of assets;
- Annual plan expenses that may differ materially from the contribution developed for current funding.

Some of the calculations that will need to be performed will differ depending on the existence of a formal written policy. As such, the Board should consider developing a formal written funding policy if one does not currently exist.

Recommendation

The development of the employer contribution is based on a stable (or growing) total covered payroll. Payroll actually declined during the year ending June 30, 2012. If future payroll contraction is expected over the next 1-2 years, we recommend making employer contributions based on the computed dollar amount shown on page A-1, instead of the percent of payroll, to avoid the contribution loss that occurs with a declining payroll.

Conclusion

The Retirement System is 77% funded as of June 30, 2012, based on the funding value of assets (59% on a market value of assets basis). Based upon the funding policy established by the Board, the data furnished by the Retirement System and the actuarial assumptions shown in the Appendix, the weighted average recommended employer contribution rate for the 2013-2014 fiscal year is 30.05% of covered payroll with the rate for each separate division as shown on page A-1.

SOLVENCY TESTS

The DGRS funding objective is to meet long-term benefit promises through contributions made during members' working careers which, combined with investment income on system assets, will be sufficient to pay benefits throughout their retired lives. If the contributions to the System are received in a timely manner, the System will pay all promised benefits when due -- the ultimate test of financial soundness. Testing for level contribution rates is *the long-term solvency test*.

A short-term solvency test is one means of checking a system's progress under its funding program. In a short-term solvency test, the plan's present assets (cash and investments) are compared with:

- 1) Active member contributions on deposit;
- 2) The liabilities for future benefits to present retired lives;
- 3) The liabilities for service already rendered by active members.

In a system that has been following the discipline of level percent-of-payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 3) will be partially covered by the remainder of present assets. The larger the funded portion of liability 3, the stronger the condition of the System.

SHORT-TERM SOLVENCY TEST 5-YEAR COMPARATIVE STATEMENT (\$ IN MILLIONS)

June 30	Actuarial Accrued Liabilities			Valuation Assets	Portion of Accrued Liabilities Covered by Assets			
	(1) Active Member Contr.	(2) Retirees and Benef.	(3) Present Members (Employer-Financed Portion)		(1)	(2)	(3)	Total
	2008(a)	\$ 732	\$1,805		\$1,073	\$3,641	100%	100%
2009	709	1,901	1,080	3,412	100%	100%	74%	92%
2010(a)	649	1,949	1,121	3,238	100%	100%	57%	87%
2011	596	2,059	1,065	3,080	100%	100%	40%	83%
2012	485	2,306	854	2,806	100%	100%	2%	77% &

(a) After changes in actuarial assumptions and/or methods.
& 59% on a market value basis.

DERIVATION OF EXPERIENCE GAIN (LOSS)
YEAR ENDED JUNE 30, 2012
(\$ IN MILLIONS)

Actual experience will never (except by coincidence) coincide exactly with assumed experience. Gains and losses may 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.

(1) UAAL* at start of year	\$639.9
(2) Normal cost from last valuation	29.7
(3) Employer contributions	64.2
(4) Interest accrual: $[(1) + 1/2 [(2) - (3)]] \times .079$	49.1
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	654.5
(6) Increase due to changes in benefits	(61.8)
(7) Other	0.0
(8) Expected UAAL after changes: (5) + (6) + (7)	592.7
(9) Actual UAAL at end of year	837.7
(10) Experience gain (loss): (8) - (9)	\$(245.0)
(11) Gain (loss) as % of beginning of year (\$3,720 million) accrued pension liability	(6.6)%
(12) Experience gain (loss)	(245.0)
(13) Gain (loss) due to investment experience recognized in this valuation	(191.4)
(14) Gain (loss) from other sources	(53.6)
(15) Gain (loss) from other sources as a % of beginning of year liability	(1.4)%

* *Unfunded actuarial accrued liability.*

A large component of the actuarial experience gain (loss) in any given year is typically the Retirement System's investment gain (loss) on valuation assets. Detail on the investment gain (loss) is shown on Page A-11.

**ASSET INFORMATION
FURNISHED FOR THE VALUATION
RETIREMENT SYSTEM TOTALS**

Reported Assets
(Market Value)

Market Value - June 30, 2012	
Cash & equivalents	\$ 7,972,442
Short term investments	41,982,320
Mortgage securities	25,281,170
Other securities	139,342,728
Receivables & accruals	28,527,344
Contributions receivables	33,124,897
Stocks	1,076,798,650
Bonds & government securities	162,079,138
Real estate	224,725,424
Private equity	464,273,343
Mortgages	106,609,727
Securities lending	(137,864,912)
Pooled investments	7,240,000
Capital assets	1,318,720
Accounts payable	(22,573,143)
Total Current Assets	\$ 2,158,837,848

**ASSET INFORMATION
FURNISHED FOR THE VALUATION
RETIREMENT SYSTEM TOTALS**

***Reserve Accounts
(Funding Value)***

Funds	Fund Balances	
	June 30, 2012	June 30, 2011
Annuity Savings	\$ 484,575,008	\$ 596,048,582
Annuity Reserve	92,108,332	75,220,724
Pension Accumulation	(791,478,253)	(374,150,543)
Pension Reserve	2,213,640,992	1,983,919,013
Accrued Liability Fund Reserve	807,643,123	799,257,958
Total Fund Balances	\$2,806,489,202	\$3,080,295,734

***Revenues and Expenditures
(Funding Value)***

	Pension Funds	Annuity Funds	Total Funds
Balance, July 1, 2011	\$2,409,026,428	\$ 671,269,306	\$3,080,295,734
Prior valuation audit adjustment	0	0	0
Balance July 1, 2011 after adjustment	2,409,026,428	671,269,306	3,080,295,734
Revenues			
Member contributions	259,388	16,325,844	16,585,232
Employer contributions #	64,218,880	0	64,218,880
Recognized investment income	(1,371,483)	40,921,823	39,550,340
Transfers	(11,136,621)	11,136,621	0
Total	\$ 51,970,164	\$ 68,384,288	\$ 120,354,452
Expenditures			
Benefit payments	221,953,964	8,961,581	230,915,545
Refund of member contributions	2,857,187	154,008,673	156,865,860
Administrative expenses	6,379,579	0	6,379,579
Total	\$ 231,190,730	\$ 162,970,254	\$ 394,160,984
Balance, June 30, 2012	\$2,229,805,862	\$ 576,683,340	\$2,806,489,202
Funding Value Rate of Return	(0.1)%	6.8%	1.4%

Includes contributions receivable.

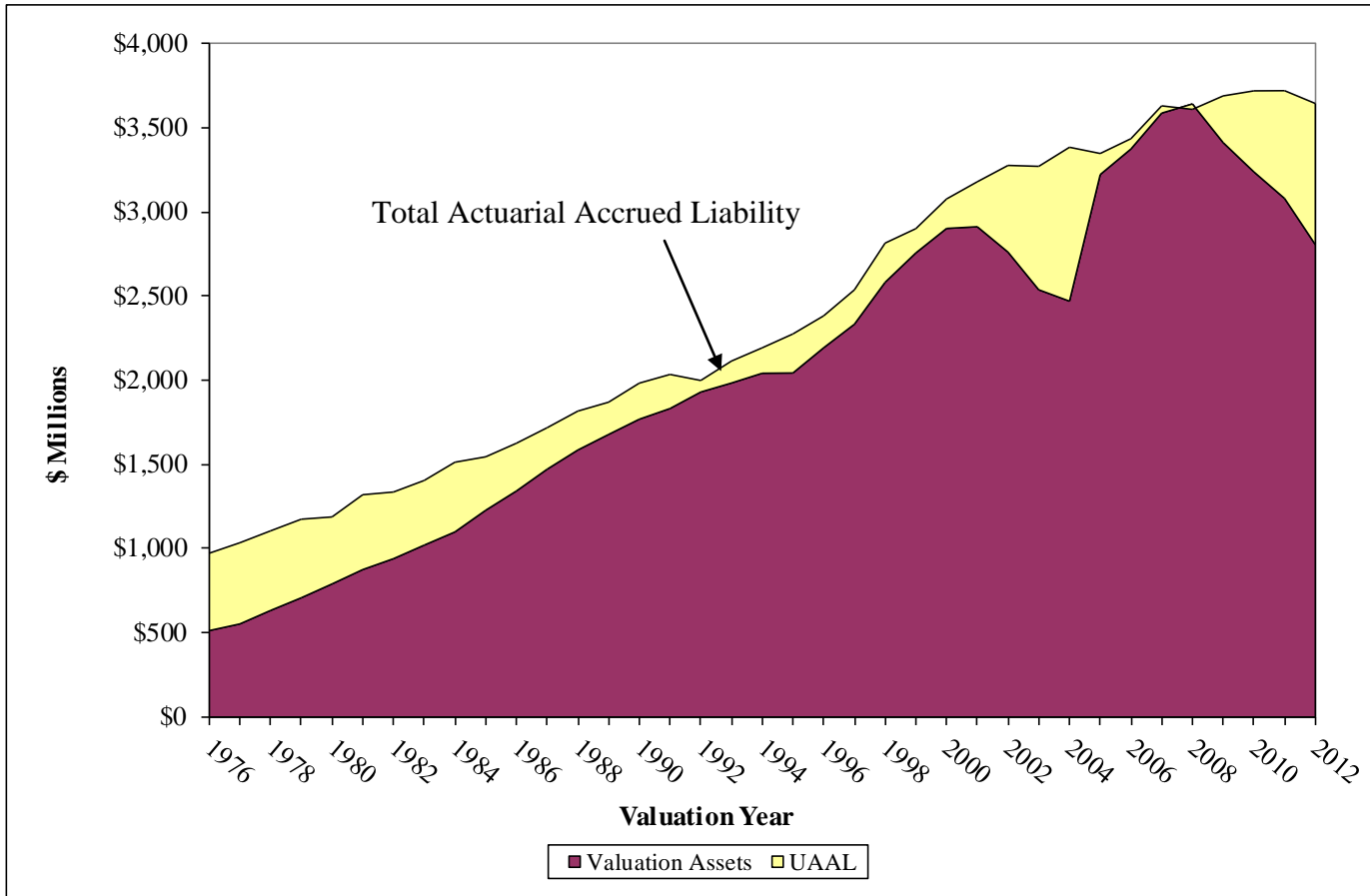
REPORTED FUNDING VALUE OF ASSETS

Year Ended June 30:	2011	2012	2013	2014	2015	2016	2017	2018
A. Funding Value Beginning of Year	\$3,238,130,553	\$3,080,295,734						
B. Market Value End of Year	2,421,566,956	2,158,837,848						
C. Market Value Beginning of Year	2,246,512,689	2,421,566,956						
D. Non-Investment Net Cash Flow (Contribution-Benefits)	(265,814,394)	(313,356,872)						
E. Investment Income								
E1. Market Total: B - C - D	440,868,661	50,627,764						
E2. Amount for Immediate Recogn. Reg. Int. on Reserves	245,312,645	230,965,767						
E3. Amount for Phased-In Recognition: E1-E2	195,556,016	(180,338,003)						
F. Phased-In Recognition of Investment Income								
F1. Current Year: E3/7	27,936,574	(25,762,572)						
F2. First Prior Year	(165,269,644)	27,936,574	\$(21,042,608)					
F3. Second Prior Year		(165,269,644)	27,936,574	\$(21,042,608)				
F4. Third Prior Year			(165,269,644)	27,936,574	\$(21,042,608)			
F5. Fourth Prior Year				(165,269,644)	27,936,574	\$(21,042,608)		
F6. Fifth Prior Year					(165,269,644)	27,936,574	\$(21,042,608)	
F7. Sixth Prior Year						(165,269,644)	27,936,572	\$(21,042,606)
F8. Total Recognized Investment Gain	(137,333,070)	(163,095,642)	(158,375,678)	(158,375,678)	(158,375,678)	(158,375,678)	6,893,964	(21,042,606)
G. Total Recognized Investment Income: (E2+F8)	107,979,575	67,870,125 #						
H. Funding Value End of Year: A + D + G								
H1. Preliminary Funding Value End of Year: A + D + E2 + F8	3,080,295,734	2,834,808,987						
H2. Corridor Limit	40%	30%	30%	30%	30%	30%	30%	30%
H3. Upper Corridor Limit: (100% + H2) * B	3,390,193,738	2,806,489,202						
H4. Lower Corridor Limit: (100% - H2) * B	1,452,940,174	1,511,186,494						
H5. Funding Value End of Year	3,080,295,734	2,806,489,202						
I. Difference between Market & Funding Value: B - H4	(658,728,778)	(647,651,354)						
J. Recognized Rate of Return	3.5%	1.4%						
K. Market Value Rate of Return (net)	20.9%	2.2%						
L. Ratio of Funding Value to Market Value	127.2%	130.0%						

Before application of corridor. After application of corridor, recognized income is \$39,550,340.

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased-in over a closed 7-year period. During periods when investment performance exceeds the assumed rate, the Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. The Funding Value of Assets is unbiased with respect to Market Value. At any time it may be either greater or less than Market Value. If assumed rates are exactly realized for 6 consecutive years, it will become equal to Market Value.

ASSETS AND ACCRUED LIABILITIES



PERSONS IN VALUATIONS - COMPARATIVE STATEMENTS
RETIREMENT SYSTEM TOTALS

Active Members

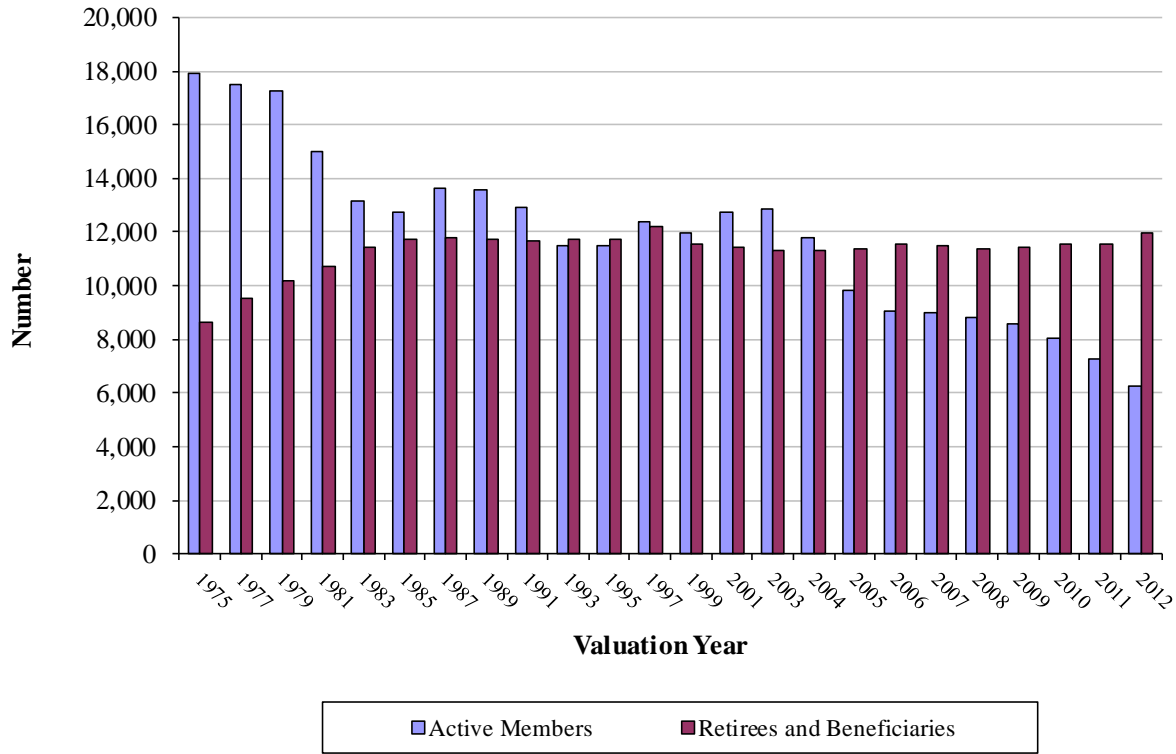
June 30	Active Members		Annual Payroll	Group Averages			
	No.	Change		Average Pay		Age Years	Service Years
				\$	Change		
1983	13,156	(4.2)%	\$272,369,708	\$20,703	0.2 %	41.6	12.6
1984	13,172	0.1 %	288,048,279	21,868	5.6 %	41.5	12.0
1985	12,719	(3.4)%	281,378,439	22,123	1.2 %	41.5	11.9
1986	13,423	5.5 %	299,859,070	22,339	1.0 %	41.1	11.3
1987	13,640	1.6 %	321,402,755	23,563	5.5 %	40.9	11.0
1988	13,368	(2.0)%	326,216,082	24,403	3.6 %	41.0	11.1
1989	13,554	1.4 %	331,555,458	24,462	0.2 %	41.1	11.0
1990	13,207	(2.6)%	352,622,639	26,700	9.1 %	41.5	11.4
1991	12,949	(2.0)%	362,532,918	27,997	4.9 %	41.8	11.7
1992	12,137	(6.3)%	344,320,379	28,369	1.3 %	42.2	12.1
1993	11,508	(5.2)%	331,009,921	28,763	1.4 %	43.0	12.9
1994	11,382	(1.1)%	325,427,813	28,591	(0.6)%	43.1	12.8
1995	11,515	1.2 %	327,615,936	28,451	(0.5)%	42.2	12.6
1996	12,086	5.0 %	360,068,578	29,792	4.7 %	42.8	11.9
1997	12,369	2.3 %	382,835,917	30,951	3.9 %	42.8	11.7
1998	12,261	(0.9)%	387,022,423	31,565	2.0 %	43.3	11.8
1999	11,987	(2.2)%	383,449,421	31,989	1.3 %	43.7	12.1
2000	12,147	1.3 %	417,187,666	34,345	7.4 %	43.5	12.0
2001	12,744	4.9 %	439,636,072	34,497	0.4 %	43.3	11.7
2002	12,639	(0.8)%	440,680,045	34,867	1.1 %	43.7	11.8
2003	12,833	1.5 %	448,579,064	34,955	0.3 %	43.5	11.7
2004	11,791	(8.1)%	444,596,299	37,706	7.9 %	44.5	12.5
2005	9,820	(16.7)%	390,593,600	39,775	5.5 %	45.9	13.8
2006	9,047	(7.9)%	361,151,456	39,919	0.4 %	46.6	14.6
2007	8,971	(0.8)%	361,701,481	40,319	1.0 %	47.0	14.6
2008	8,823	(1.6)%	368,470,990	41,763	3.6 %	47.2	14.7
2009	8,599	(2.5)%	357,072,833	41,525	(0.6)%	47.4	14.8
2010	8,072	(6.1)%	334,343,506	41,420	(0.3)%	47.7	15.3
2011	7,250	(10.2)%	303,379,482	41,845	1.0 %	48.3	15.4
2012	6,234	(14.0)%	257,992,420	41,385	(1.1)%	48.5	15.4

PERSONS IN VALUATIONS - COMPARATIVE STATEMENTS
RETIREMENT SYSTEM TOTALS

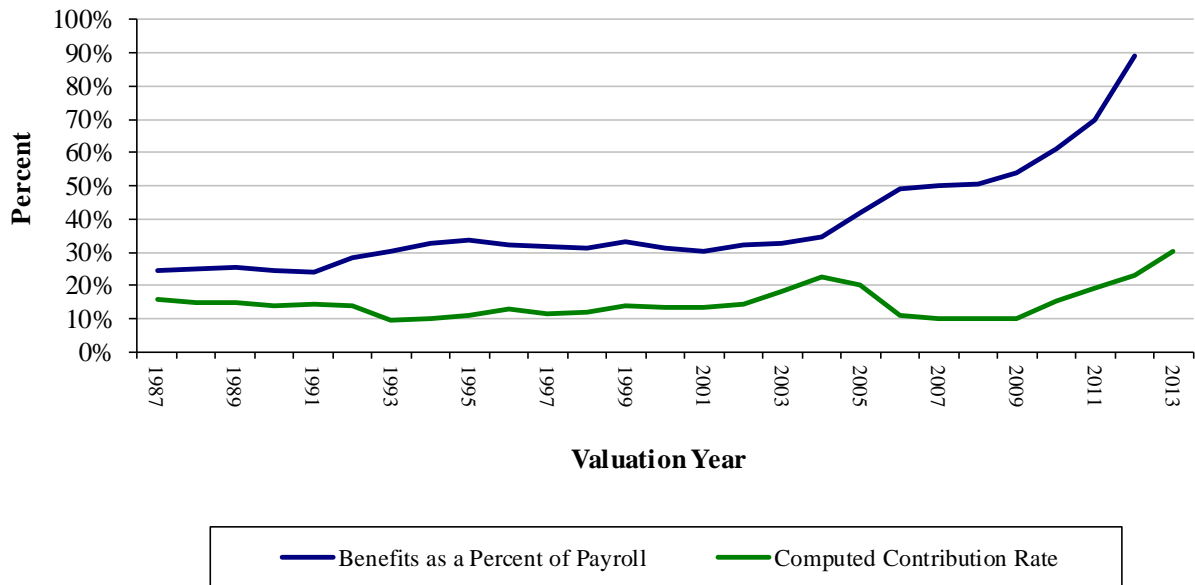
Retirees and Beneficiaries

June 30	No.	% of Current Allowances				Current Annual Pensions		
		Annuities	Initial Pensions	Escalators & Other Increases	Allow.	Total	Average	% of Payroll
1983	11,418	4.1%	79.6%	16.3%	100.0%	\$ 64,048,464	\$ 5,609	23.5%
1984	11,643	3.8%	80.4%	15.8%	100.0%	68,564,556	5,889	23.8%
1985	11,710	3.4%	80.6%	16.0%	100.0%	71,433,168	6,100	25.4%
1986	11,776	3.2%	80.7%	16.1%	100.0%	74,834,820	6,355	25.0%
1987	11,800	2.9%	80.2%	16.9%	100.0%	78,342,384	6,639	24.4%
1988	11,728	3.0%	80.0%	17.0%	100.0%	81,346,500	6,936	24.9%
1989	11,734	3.0%	79.8%	17.2%	100.0%	83,790,744	7,141	25.3%
1990	11,684	2.9%	79.1%	18.0%	100.0%	85,720,620	7,337	24.3%
1991	11,691	2.9%	78.7%	18.4%	100.0%	87,625,800	7,495	24.2%
1992	11,674	2.6%	76.5%	20.9%	100.0%	97,218,012	8,328	28.2%
1993	11,719	2.8%	77.7%	19.5%	100.0%	100,203,596	8,551	30.3%
1994	11,649	2.8%	76.9%	20.3%	100.0%	106,193,220	9,116	32.6%
1995	11,756	2.7%	76.7%	20.6%	100.0%	110,262,876	9,379	33.7%
1996	11,889	2.6%	75.5%	21.9%	100.0%	115,232,400	9,692	32.0%
1997	12,199	2.4%	74.4%	23.2%	100.0%	121,255,488	9,940	31.7%
1998	11,593	2.3%	73.7%	24.0%	100.0%	119,852,820	10,338	31.0%
1999	11,537	2.4%	76.6%	21.0%	100.0%	127,535,748	11,054	33.3%
2000	11,480	2.2%	77.7%	20.1%	100.0%	129,354,696	11,268	31.0%
2001	11,450	2.3%	77.7%	20.0%	100.0%	133,170,804	11,631	30.3%
2002	11,363	2.2%	78.2%	19.6%	100.0%	140,805,120	12,392	32.0%
2003	11,322	2.4%	78.3%	19.3%	100.0%	147,024,720	12,986	32.8%
2004	11,311	2.6%	78.5%	18.9%	100.0%	154,133,460	13,627	34.7%
2005	11,396	2.7%	79.6%	17.7%	100.0%	165,095,736	14,487	42.3%
2006	11,541	2.7%	79.6%	17.7%	100.0%	175,193,088	15,180	48.5%
2007	11,478	2.7%	79.6%	17.7%	100.0%	180,332,688	15,711	49.9%
2008	11,388	2.8%	79.9%	17.3%	100.0%	185,688,852	16,306	50.4%
2009	11,407	3.0%	79.8%	17.2%	100.0%	193,045,584	16,923	54.1%
2010	11,539	3.4%	79.6%	17.0%	100.0%	202,935,852	17,587	60.7%
2011	11,555	3.7%	79.9%	16.4%	100.0%	211,169,292	18,275	69.6%
2012	11,943	4.2%	80.7%	15.1%	100.0%	229,466,507	19,213	88.9%

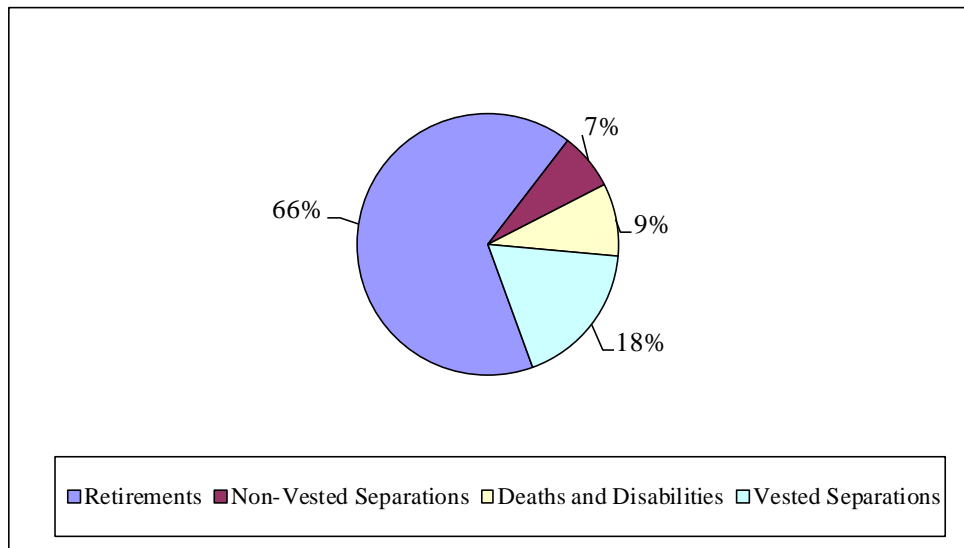
ACTIVE AND RETIRED MEMBERS



BENEFIT PAYOUT AND COMPUTED CONTRIBUTIONS AS A PERCENT OF PAYROLL



EXPECTED TERMINATIONS FROM ACTIVE EMPLOYMENT FOR CURRENT ACTIVE MEMBERS



The chart shows the expected future development of the present population in simplified terms. The Retirement System presently covers 6,234 active members. Eventually, 420 people are expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 5,262 people are expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. 552 people are expected to become eligible for death-in-service or disability benefits.

RETIREES AND BENEFICIARIES JUNE 30, 2012
TABULATED BY ATTAINED AGES
RETIREMENT SYSTEM TOTALS

Attained Ages	Age & Service#		Disability		Death-in-Service		Totals	
	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances
Under 20*	13	\$ 22,226			10	\$ 5,121	23	\$ 27,347
20-24	4	1,333					4	1,333
25-29	4	2,749	2	\$ 422			6	3,171
30-34	5	4,644	6	3,290	1	793	12	8,727
35-39	15	11,861	25	14,531			40	26,392
40-44	51	66,904	51	31,541	6	7,721	108	106,166
45-49	274	579,574	130	83,065	25	28,798	429	691,437
50-54	839	2,089,953	235	195,806	36	42,920	1,110	2,328,679
55-59	1,686	3,874,154	224	283,366	44	69,322	1,954	4,226,842
60-64	1,893	3,599,353	186	215,878	36	59,022	2,115	3,874,253
65-69	1,417	2,300,085	89	77,714	46	55,977	1,552	2,433,776
70-74	1,059	1,519,638	66	56,921	40	44,736	1,165	1,621,295
75-79	1,102	1,386,904	50	38,781	67	60,960	1,219	1,486,645
80-84	1,107	1,258,464	62	54,778	56	44,225	1,225	1,357,467
85-89	661	681,353	20	13,992	46	35,553	727	730,898
90-94	191	151,904	9	5,705	13	9,496	213	167,105
95-99	38	29,448	1	604	2	624	41	30,676
Totals	10,359	\$17,580,547	1,156	\$1,076,394	428	\$465,268	11,943	\$19,122,209

* May include records with defective birth dates.

Includes survivor beneficiaries of deceased retirees.

ACTIVE MEMBERS AS OF JUNE 30, 2012
BY ATTAINED AGE AND YEARS OF SERVICE
RETIREMENT SYSTEM TOTALS

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
Under 20	2							2	\$ 42,619
20-24	47	4						51	1,206,349
25-29	96	55	2					153	4,512,743
30-34	101	112	118	5				336	11,487,949
35-39	147	124	168	93	3			535	20,158,433
40-44	128	120	306	224	64	12		854	35,049,228
45-49	130	129	268	332	236	130	2	1,227	51,335,433
50-54	90	110	257	266	291	285	55	1,354	57,874,279
55-59	67	82	202	221	206	273	82	1,133	49,640,827
60-64	37	45	90	74	59	64	43	412	18,114,901
65-69	10	9	32	26	18	13	19	127	6,373,444
70-74	1	4	10	9	3	1	6	34	1,581,010
75-79	0	4	2	2	2	1	5	16	615,205
Totals	856	798	1,455	1,252	882	779	212	6,234	\$257,992,420

Group Averages:

Age: 48.5 years
Service: 15.4 years
Annual Pay: \$41,385

RETIREES AND BENEFICIARIES JUNE 30, 2012
TABULATED BY YEAR OF RETIREMENT

Year of Retirement	No.	Monthly Allowances	
		Total	Average
1950 & before	1	\$ 341	\$ 341
1951-1955	2	493	247
1956-1960	3	1,304	435
1961-1965	25	11,508	460
1966-1970	66	30,585	463
1971-1975	254	149,216	587
1976-1980	704	562,382	799
1981-1985	1,150	1,248,241	1,085
1986-1990	1,105	1,286,177	1,164
1991-1995	1,582	2,052,745	1,298
1996-2000	1,701	2,669,447	1,569
2001	329	589,348	1,791
2003	432	826,456	1,913
2004	391	788,811	2,017
2005	460	957,373	2,081
2006	530	1,194,966	2,255
2007	459	883,253	1,924
2008	392	726,067	1,852
2009	388	807,727	2,082
2010	504	1,009,760	2,003
2010	472	1,030,022	2,182
2011	587	1,332,037	2,269
2012	406	963,947	2,374
Totals	11,943	\$19,122,206	\$1,601

SUMMARY OF BENEFIT PROVISIONS EVALUATED

Age and Service Pension

Eligibility - Any age (minimum age 55 for non-EMS members hired after 1995) with 30 years of service (25 for EMS members), or age 60 with 10 years of service, or age 65 with 8 years of service.

Annual Amount – EMS Members: Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to 2.0% of AFC multiplied by years of service. Maximum benefit is 90% of AFC. **Other Members:** Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to the first 10 years of service multiplied by 1.6% of AFC, plus 1.8% of AFC for each year of service greater than 10 years up to 20 years, plus 2.0% of AFC for each year of service greater than 20 years up to 25 years, plus 2.2% of AFC for each year of service greater than 25 years. Future benefit accruals for certain active members (depending on bargaining unit) were reduced to 1.5% of final average compensation per year of service.

Type of Average Final Compensation (AFC) - Highest 3 consecutive years out of the last 10. Pension benefits will not be diminished if compensation is reduced because of a fiscal emergency. Effective July 1, 1999, in computing the AFC, a member shall have the option of adding the value of 25% of unused accrued sick leave to the earnings used in computing the AFC. Longevity is added to AFC in accordance with the following schedule: \$150 after 5 years, \$300 after 10 years, \$450 after 15 years, \$600 after 20 years, and \$750 after 25 years.

Early Retirement

Eligibility - Any age with 25 or more years of service (min. age 55 for members hired after 1995).

Annual Amount - Same as regular retirement but actuarially reduced.

Deferred Retirement (Vested Benefit)

Eligibility - Hired prior to 7-1-80: Age 40 with 8 years of service. Hired on or after 7-1-80: Any age with 10 years of service.

Benefit Commencement - APTE hired prior to July 1, 1988: Benefit begins at the age the member would have become eligible for regular retirement if service had continued. **SAAA, Non-Union and lawyers hired prior to June 30, 1986:** Benefit begins at the age the member would have become eligible for regular retirement. **Others:** Benefits based on service rendered by June 30, 1986 begin at the age the member would have become eligible for regular retirement. Benefits based on service rendered after July 1, 1986 begin at age 62.

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

Duty Disability Retirement

Eligibility - Service related disability before age 60. No service requirement.

Annual Amount - An annuity which is the actuarial equivalent of the accumulated contributions at date of disability plus a pension of two-thirds of average final compensation at time of disability. The maximum annual pension is \$9,000. At the earliest of when the member would have accrued 30 years of service credit (25 for EMS) or age 60, the annuity is recomputed assuming contributions would have continued at a salary level equal to final compensation. The pension is recomputed with additional service credit granted from the date of disability to age 60 (or 30 years of service credit) with no maximum.

SUMMARY OF BENEFIT PROVISIONS EVALUATED (CONCLUDED)

Non-Duty Disability Retirement

Eligibility - Disability from any cause before age 60 with 10 or more years of service.

Annual Amount - Computed in the same manner as a regular retirement benefit. Maximum annual pension to age 60 is \$6,000. Benefit is recomputed at age 60 with no maximum.

Duty Death Before Retirement

Eligibility - Death from service related causes. No age or service requirements.

Annual Amount - One-third of final compensation to the surviving spouse for life or until remarriage, plus an equal share of 1/4 of final compensation to each unmarried child under age 18. If there is no eligible spouse, eligible children each receive 1/4 of final compensation; if there are more than 2 such children, each child shares an equal part of 1/2 of final compensation. Maximum total amount for spouse and children is \$9,000 annually. If there is no eligible spouse or children, dependent parents each receive 1/6 of deceased's final compensation, to a total maximum of \$600 annually.

Non-Duty Death Before Retirement

Eligibility – Death-in-service at any age with 15 years of service; or after age 60 with 10 years of service; or after age 65 with 8 years of service.

Annual Amount - To Surviving Spouse: Computed as a regular retirement benefit but reduced in accordance with a 100% joint and survivor election for members with 20 or more years of service. For members with 15 years of service but less than 20, benefit is reduced in accordance with a 50% joint and survivor election. To Dependent Children if no Surviving Spouse: \$9,000 payable to age 19 of the youngest child or for life if child is physically or mentally impaired for members with 20 or more years of service (\$6,000 if less than 20 years of service).

Post-Retirement Cost-of-Living Adjustments

Benefit is increased annually by 2.25% of the **original** pension amount at retirement. Post-retirement cost-of-living increases were eliminated on future accruals for certain active members (depending on bargaining unit).

Member Contributions

Members have the option of choosing one of four contribution amounts: (1) 0%; (2) 3.0% of compensation up to the Social Security wage base, plus 5.0% of compensation in excess of the Social Security wage base; (3) 5.0% of total compensation; or (4) 7.0% of total compensation. Member contributions can be paid as a lump sum or annuitized at retirement to provide an annuity in addition to the pension (which is not affected by the level of member contributions).

SECTION B

DIVISIONS SEPARATELY EXPERIENCE RATED

SUMMARY OF MEMBER DATA
JUNE 30, 2012

Active Members

	General	D.O.T.	Water/ Sewage	Library	Totals
Number	3,099	986	1,825	324	6,234
% Change in active members	(17.3)%	(20.1)%	(4.2)%	(10.5)%	(14.0)%
Annual payroll (\$ millions)	\$ 132.0	\$ 34.7	\$ 78.4	\$ 12.9	\$ 258.0
Average pay	\$42,595	\$35,166	\$42,973	\$39,788	\$41,385
% Change in average pay	(2.8)%	(1.5)%	1.2 %	1.1 %	(1.1)%

Retired Members and Survivor Beneficiaries

	General	D.O.T.	Water/ Sewage	Library	Totals
Number	7,525	1,621	2,466	331	11,943
Annual benefits (\$ millions) #	\$ 142.1	\$ 30.4	\$ 59.0	\$ 7.5	\$ 239.0
Average benefits	\$18,888	\$18,748	\$23,930	\$22,605	\$20,013
% Change in average benefit	5.1 %	6.4 %	6.0 %	3.9 %	5.6 %

Includes Annuities.

Inactive Vested Members

	General	D.O.T.	Water/ Sewage	Library	Totals
Number	1,190	256	391	57	1,894
Annual benefits (\$ millions)	\$ 12.0	\$ 2.5	\$ 4.1	\$ 0.5	\$ 19.1
Average benefits	\$10,101	\$9,825	\$10,614	\$8,020	\$10,107
% Change in average benefit	(18.3)%	(21.9)%	(22.1)%	(30.8)%	(20.0)%

**ALLOCATION OF ASSETS USED FOR VALUATION
RESERVE ACCOUNTS**

	June 30, 2012	June 30, 2011
Annuity Savings Fund		
General	\$ 219,393,754	\$ 284,888,534
D.O.T.	99,389,687	111,819,992
Water	132,184,635	164,289,865
Sewage	14,012,347	11,502,201
Housing	447,049	1,617,761
Library	19,147,536	21,930,229
Totals	484,575,008	596,048,582
Annuity Reserve Fund		
General	48,480,832	40,578,275
D.O.T.	8,137,878	6,140,779
Water	27,480,981	20,385,428
Sewage	2,573,678	2,618,774
Housing	1,629,365	1,669,483
Library	3,805,598	3,827,985
Totals	92,108,332	75,220,724
Pension Accumulation Fund		
General	(385,303,885)	(161,384,581)
D.O.T.	(119,736,981)	(55,660,607)
Water	(135,731,698)	(46,196,244)
Sewage	(112,224,078)	(90,591,178)
Housing	(18,310,569)	(2,547,865)
Library	(20,171,042)	(17,770,068)
Totals	(791,478,253)	(374,150,543)
Pension Reserve Fund		
General	1,249,146,935	1,123,907,328
D.O.T.	284,763,471	254,044,633
Water	504,700,502	435,521,686
Sewage	74,044,441	73,546,072
Housing	35,352,558	36,704,789
Library	65,633,085	60,194,505
Totals	2,213,640,992	1,983,919,013
Accrued Liability Fund		
General	513,056,701	504,590,894
D.O.T.	104,455,897	103,571,123
Water	152,509,673	154,538,076
Sewage	13,595,765	12,600,338
Housing	N/A	N/A
Library	24,025,087	23,957,527
Totals	807,643,123	799,257,958
Retirement System Totals	\$2,806,489,202	\$3,080,295,734

ACTUARIAL ACCRUED LIABILITIES AS OF JUNE 30, 2012
BY DIVISION
(\$ IN THOUSANDS)

Present Value, June 30 of	General	D.O.T.	Water/ Sewage	Library	Totals
Accrued Pension Liabilities					
Retirees and beneficiaries	\$1,284,499	\$284,763	\$578,745	\$ 65,633	\$2,213,640
Inactive members future deferred pensions	102,717	21,574	37,037	3,924	165,252
Active members	348,478	103,728	201,785	34,606	688,597
Total accrued pension liabilities	1,735,694	410,065	817,567	104,163	3,067,489
Pension fund balances	1,393,942	269,482	496,895	69,487	2,229,806
Unfunded accrued pension liabilities	341,752	140,583	320,672	34,676	837,683
Accrued Annuity Liabilities					
Retirees and beneficiaries	50,110	8,138	30,055	3,806	92,109
Members annuities & future refunds	219,841	99,390	146,197	19,147	484,575
Total accrued annuity liabilities	269,951	107,528	176,252	22,953	576,684
Annuity fund balances	269,951	107,528	176,252	22,953	576,684
Unfunded accrued annuity liabilities	0	0	0	0	0
Totals					
Actuarial Accrued Liabilities	2,005,645	517,593	993,819	127,116	3,644,173
Accrued Assets	1,663,893	377,010	673,147	92,440	2,806,490
Funded Ratio	83.0%	72.8%	67.7%	72.7%	77.0%
Unfunded Actuarial Accrued Liabilities	\$ 341,752	\$ 140,583	\$ 320,672	\$ 34,676	\$ 837,683

Note: Totals may be off slightly due to rounding.

**ACTIVE AND RETIRED MEMBERS
INCLUDED IN VALUATION
HISTORIC COMPARISONS**

*Active Members
by Valuation Division*

June 30	General	D.O.T.	Water	Sewage	Housing	Library	Totals
1998	6,659	1,764	1,785	1,184	430	439	12,261
1999	6,527	1,669	1,768	1,173	414	436	11,987
2000	6,941	1,606	1,770	1,064	334	432	12,147
2001	7,325	1,677	1,836	1,094	325	487	12,744
2002	7,320	1,705	1,797	1,106	262	449	12,639
2003	7,575	1,734	1,744	1,090	227	463	12,833
2004	7,068	1,652	1,592	1,035	0	444	11,791
2005	5,414	1,529	1,472	973	0	432	9,820
2006	4,935	1,460	1,329	886	0	437	9,047
2007	4,914	1,509	1,289	834	0	425	8,971
2008	4,848	1,447	1,338	765	0	425	8,823
2009	4,664	1,456	1,327	727	0	425	8,599
2010	4,286	1,303	2,041	#	0	442	8,072
2011	3,749	1,234	1,905	#	0	362	7,250
2012	3,099	986	1,825	#	0	324	6,234

Included with Water beginning 6/30/2010.

*Retired Members & Beneficiaries
by Valuation Division*

June 30	General	D.O.T.	Water	Sewage	Housing	Library	Totals
1998	7,665	1,738	1,334	247	337	272	11,593
1999	7,599	1,719	1,360	243	338	278	11,537
2000	7,522	1,706	1,387	242	330	293	11,480
2001	7,483	1,684	1,418	235	327	303	11,450
2002	7,392	1,667	1,446	227	327	304	11,363
2003	7,329	1,659	1,481	227	319	307	11,322
2004	7,593	1,614	1,569	226	*	309	11,311
2005	7,592	1,623	1,643	235	*	303	11,396
2006	7,638	1,617	1,714	267	*	305	11,541
2007	7,567	1,591	1,721	299	*	300	11,478
2008	7,459	1,553	1,742	333	*	301	11,388
2009	7,376	1,559	1,819	343	*	310	11,407
2010	7,408	1,567	2,248	#	*	316	11,539
2011	7,340	1,576	2,315	#	*	324	11,555
2012	7,525	1,621	2,466	#	*	331	11,943

* Included with General City beginning 6/30/2004.

Included with Water beginning 6/30/2010.

EMPLOYER COMPUTED CONTRIBUTIONS - HISTORICAL COMPARISON

Valuation Date June 30	As Percents of Valuation Payroll						
	General	D.O.T.	Water	Sewage	Housing	Library	Totals
1984(a)	20.27%	27.45%	18.36%	9.48%	17.22%	18.15%	19.78%
1985	17.81%	24.64%	16.35%	6.52%	14.45%	13.75%	17.22%
1986*	16.39%	23.17%	15.28%	5.04%	12.29%	11.46%	15.82%
1987	15.62%	21.67%	14.74%	3.26%	11.24%	10.10%	14.87%
1988(a)*	15.96%	19.82%	15.03%	2.98%	11.54%	10.47%	14.90%
1989	15.18%	18.54%	14.49%	1.58%	11.33%	8.80%	14.02%
1990	15.72%	18.62%	15.10%	2.02%	11.08%	9.04%	14.46%
1991	15.31%	17.73%	14.45%	1.80%	10.51%	8.42%	13.89%
1992(a)*	11.21%	10.08%	10.49%	0.76%	6.94%	6.15%	9.61%
1993(a)	11.57%	10.80%	12.31%	0.59%	8.14%	5.51%	10.10%
1994	12.31%	11.35%	13.42%	0.25%	8.55%	7.65%	10.79%
1995	14.71%	12.65%	15.68%	0.98%	10.74%	10.28%	12.91%
1996	13.23%	12.52%	15.83%	0.00%	9.74%	7.64%	11.58%
1997(a)	13.47%	12.94%	15.32%	0.00%	9.34%	7.09%	11.84%
1998(a)*	15.80%	14.23%	17.16%	0.00%	11.38%	9.73%	13.75%
1999*	15.31%	13.70%	16.95%	0.00%	10.48%	8.04%	13.26%
2000	15.19%	14.37%	17.12%	0.00%	9.01%	6.97%	13.37%
2001	15.92%	15.36%	19.12%	0.00%	9.25%	9.20%	14.27%
2002(a)	19.32%	19.51%	26.33%	0.33%	10.90%	15.82%	18.05%
2003	23.45%	23.59%	29.82%	10.09%	13.11%	21.72%	22.72%
2004	19.75%	19.96%	31.71%	6.80%	-	20.40%	20.09%
2005#	10.35%	10.88%	20.84%	2.04%	-	11.33%	11.06%
2006	9.57%	9.93%	20.05%	0.80%	-	10.44%	10.21%
2007	9.52%	10.54%	18.62%	0.00%	-	9.22%	9.96%
2008(a)	8.59%	10.51%	17.98%	1.36%	-	9.18%	9.56%
2009	13.37%	15.34%	12.91%	30.09%	-	17.23%	15.38%
2010(a)	15.26%	20.26%	25.82%	&	-	22.15%	19.11%
2011	19.96%	24.19%	28.32%	&	-	26.23%	23.09%
2012	28.36%	35.26%	36.04%	&	-	28.63%	31.64%
2012*	26.70%	33.65%	34.60%	&	-	26.63%	30.05%

(a) After changes in actuarial assumptions or methods.

* After plan amendments.

After issuance of POCs.

& Included with Water beginning 6/30/2010.

SECTION C

ACTUARIAL DISCLOSURES REQUIRED BY STATEMENT NO. 25 OF THE GOVERNMENTAL ACCOUNTING STANDARDS BOARD

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

GASB STATEMENT NO. 25 REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Funding Progress

Actuarial Valuation Date June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) -- Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b - a) / c)
1999*	\$2,756,614,458	\$2,900,404,223	\$143,789,765	95.0%	\$383,449,421	37.5 %
2000	2,902,433,063	3,077,001,129	174,568,066	94.3%	417,187,666	41.8 %
2001	2,912,146,389	3,179,601,214	267,454,825	91.6%	439,636,072	60.8 %
2002#	2,761,203,680	3,250,514,916	489,311,236	84.9%	440,680,045	111.0 %
2003	2,537,668,376	3,270,627,177	732,958,801	77.6%	448,579,064	163.4 %
2004	2,470,243,470	3,383,926,672	913,683,202	73.0%	444,596,299	205.5 %
2005@	3,222,393,861	3,347,387,652	124,993,791	96.3%	390,593,600	32.0 %
2006	3,373,687,677	3,434,288,153	60,600,476	98.2%	361,151,456	16.8 %
2007	3,586,550,485	3,629,217,059	42,666,574	98.8%	361,701,481	11.8 %
2008(a)	3,641,197,523	3,609,558,628	(31,638,895)	100.9%	368,470,990	(8.6)%
2009	3,412,411,183	3,689,065,726	276,654,543	92.5%	357,072,833	77.5 %
2010#	3,238,130,553	3,719,586,762	481,456,209	87.1%	334,343,506	144.0 %
2011	3,080,295,734	3,720,167,178	639,871,444	82.8%	303,379,482	210.9 %
2012	2,806,489,202	3,705,965,474	899,476,272	75.7%	257,992,420	348.6 %
2012*	2,806,489,202	3,644,172,577	837,683,375	77.0%	257,992,420	324.7 %

@ After POC transfer.

* After plan amendments.

After changes in actuarial assumptions or methods.

Schedule of Employer Contributions

Valuation Year Ended June 30	Reported Employer Contributions	
	From Pension Obligation Certificates (POCs)	Employer Contributions other than from POCs
2003		\$72,859,246
2004		95,876,076
2005	\$739,793,898	41,689,528
2006		58,162,088
2007		41,442,687
2008		43,546,951
2009		41,395,719
2010		34,602,184
2011		55,138,044
2012		64,218,880

GASB STATEMENT NO. 25 REQUIRED SUPPLEMENTARY INFORMATION

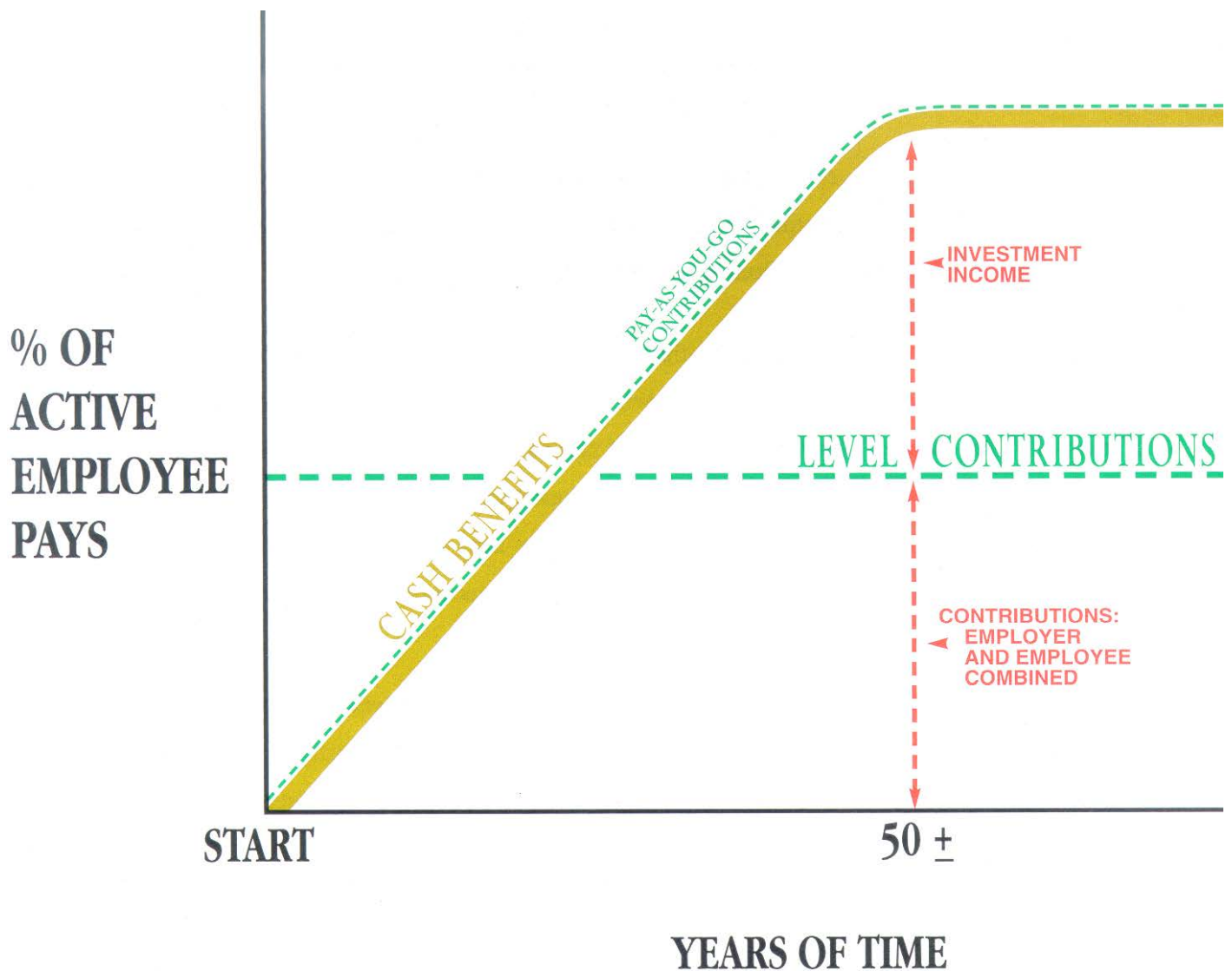
The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	June 30, 2012
Actuarial cost method	Entry Age
Amortization method	Level percent
Remaining amortization period for unfunded accrued liabilities	30 years (see page A-1)
Asset valuation method	7-year smoothed market
Actuarial assumptions:	
Investment rate of return	7.9%
Projected salary increases*	4.0% - 8.9%
*Includes inflation at	4.0%
Cost-of-living adjustments	2.25% of original pension amount at retirement.

Membership of the plan consisted of the following at June 30, 2012, the date of the latest actuarial valuation:

Retirees and beneficiaries receiving benefits	11,943
Terminated plan members entitled to but not yet receiving benefits	1,894
Active plan members	6,234
Total	20,071

SECTION D
FINANCIAL PRINCIPLES



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

THE ACTUARIAL VALUATION PROCESS

The financing diagram on page D-1 shows the relationship between two different philosophies of paying for retirement benefits: the method where contributions match cash benefit payments (as in the Federal Social Security program) and is an *increasing contribution method*; and the *level contribution method* which seeks to balance contribution rates between generations.

The actuarial valuation is the mathematical process in which the level contribution rate is determined. The flow of activity constituting the valuation may be summarized as follows:

A. *Member Census Data:*

Retired lives now receiving benefits

Former employees with vested benefits not yet payable

Active employees

B. *Benefit provisions* governing future payments from the plan

C. *Asset data* (cash & investments)

D. *Assumptions concerning future experience in various risk areas*, which are established by the Board of Trustees and the City Council after consulting with the actuary

E. *The funding method* for employer contributions (the long-term, planned pattern for employer contributions)

F. *Mathematically combining the assumptions, the funding method, and the data*

G. *Determination of:*

Plan financial position, and

New Employer Contribution Rate

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 meet long-term benefit promises through contributions made during members’ working careers which, combined with investment income on system assets, will be sufficient to pay benefits throughout their retired lives.*

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. Contributions in early years are low, 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. Investment income becomes the 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 contribution rate is calculated *by means of an actuarial valuation* - the technique of assigning monetary values to the risks assumed in operating a retirement program.

SECTION E
APPENDIX

SUMMARY OF ASSUMPTIONS USED FOR DGRS ACTUARIAL VALUATIONS
ASSUMPTIONS ADOPTED BY BOARD OF TRUSTEES
AFTER CONSULTING WITH ACTUARY

Economic Assumptions

The investment return rate used in making the valuation was 7.9% per year, compounded annually (net after administrative and investment expenses). The real rate of return is the portion of total investment return which is more than the inflation rate. The 7.9% total investment return rate translates to a spread of 3.9% over wage inflation and 4.4% to 4.9% over price inflation.

Pay increase assumptions for individual active members are shown on page E-3. Part of the assumption for each age is for a merit and/or seniority increase, and the other 4.0% recognizes wage inflation. Wage inflation has historically exceeded price inflation by 0.5% to 1.0% a year, on average. Wage inflation of 4% suggests an underlying rate of price inflation of 3.0% to 3.5%. The merit and/or seniority increase assumption was first used in the June 30, 2008 valuation.

Total active member payroll is assumed to increase 4.0% annually, which is the portion of the individual pay increase assumptions attributable to inflation.

Non-Economic Assumptions

The number of active members is assumed to continue at the present number.

The mortality table used to measure retired life mortality was 110% of the RP-2000 Combined Table for males and 110% of the RP-2000 Combined Table set back 2 years for females. These tables provide a margin for mortality improvements of approximately 15% based on the 2002-2007 experience study. For disabled members, a 10-year set forward of the healthy rates was used to measure post-retirement mortality. Related values are shown on page E-3. This table was first used for the June 30, 2008 valuation.

The probabilities of retirement for members eligible to retire are shown on pages E-4 and E-5. These probabilities were revised for the June 30, 2008 valuation.

The probabilities of separation from service (including *death-in-service* and *disability*) are shown for sample ages on page E-6. These probabilities were revised for the June 30, 2008 valuation.

Funding Methods

The entry age actuarial cost method was used in determining age & service pension liabilities and normal cost, vesting liabilities and normal cost, and casualty pension liabilities and normal cost. Under this method, each individual's normal cost is determined as a level percent of pay from plan entry to retirement.

Unfunded actuarial accrued liabilities are amortized over a 30-year period (see page A-1), to produce contribution amounts (principal & interest) which are level percent-of-payroll contributions.

Employer contribution dollars were assumed to be paid in equal monthly installments throughout the employer fiscal year.

Present assets were reported to be valued using a seven-year smoothing of the difference between expected and actual investment income. The actuarial value of assets is restricted to a range of 70% to 130% of the market value of assets.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

SAMPLE SALARY ADJUSTMENT RATES

Sample Ages	Salary Increase Assumptions For an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
20	4.9%	4.0%	8.9%
25	4.9%	4.0%	8.9%
30	4.1%	4.0%	8.1%
35	3.0%	4.0%	7.0%
40	2.3%	4.0%	6.3%
45	1.8%	4.0%	5.8%
50	1.3%	4.0%	5.3%
55	0.9%	4.0%	4.9%
60	0.5%	4.0%	4.5%
Ref	81		

SINGLE LIFE RETIREMENT VALUES

Sample Attained Ages	Present Value of \$1 Monthly for Life Increasing 2.25% Annually		Future Life Expectancy (years)	
	Men	Women	Men	Women
	50	\$163.69	\$172.57	29.97
55	151.88	163.09	25.38	29.91
60	137.56	151.16	20.98	25.33
65	121.19	136.98	16.90	20.98
70	103.48	121.17	13.23	17.00
75	84.85	103.98	10.00	13.41
80	66.44	86.12	7.27	10.25
Ref:	506 sb0 x 1.1	507 sb2 x 1.1		

**PROBABILITIES OF AGE/SERVICE RETIREMENT
FOR MEMBERS ELIGIBLE TO RETIRE**

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year With Unreduced Benefits		
	EMS	D.O.T.	Others
45	25%		
46	25%		
47	25%		
48	22%		
49	20%		
50	18%	55%	50%
51	15%	50%	50%
52	15%	50%	45%
53	15%	50%	45%
54	15%	55%	40%
55	15%	50%	30%
56	15%	50%	30%
57	15%	50%	30%
58	15%	50%	30%
59	15%	55%	40%
60	40%	40%	25%
61	30%	30%	25%
62	30%	30%	25%
63	30%	30%	25%
64	30%	30%	25%
65	30%	30%	35%
66	30%	30%	30%
67	30%	30%	25%
68	30%	50%	25%
69	30%	50%	25%
70	100%	100%	20%
71			20%
72			20%
73			20%
74			20%
75			20%
76			20%
77			20%
78			20%
79			20%
80			100%
Ref	537	1648	1647

**PROBABILITIES OF EARLY RETIREMENT
FOR MEMBERS ELIGIBLE FOR EARLY RETIREMENT**

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year With Reduced Benefits
55	7%
56	8%
57	9%
58	10%
59	12%
60	12%
61	12%
62	12%
63	12%
64	12%
Ref	1649

**SAMPLE RATES OF SEPARATION FROM ACTIVE
EMPLOYMENT BEFORE RETIREMENT**

Sample Ages	Years of Service	% of Active Members Separating Within Next Year			
		Withdrawal			
		EMS	D.O.T.	Others	
Men	Women				
ALL	0	11.00%	18.00%	18.00%	20.00%
	1	10.00%	16.00%	15.00%	16.00%
	2	8.00%	14.00%	13.00%	14.00%
	3	8.00%	11.00%	11.00%	12.00%
	4	7.00%	9.00%	10.00%	10.00%
25	5 & Over	6.70%	8.00%	7.60%	7.60%
30		5.90%	7.60%	7.22%	7.22%
35		5.20%	5.56%	5.28%	5.28%
40		4.40%	4.26%	4.05%	4.05%
45		3.40%	3.69%	3.51%	3.51%
50		2.40%	3.50%	3.33%	3.33%
55		2.00%	3.50%	3.33%	3.33%
60		0.00%	3.50%	3.33%	3.33%
Ref		338	143	584	188
		1068	212	212 x 0.95	212 x 0.95

Sample Ages	% of Active Members Becoming Disabled Within Next Year			
	D.O.T.		Others	
	Ordinary	Duty	Ordinary	Duty
25	0.02%	0.03%	0.01%	0.25%
30	0.05%	0.08%	0.04%	0.29%
35	0.14%	0.21%	0.11%	0.34%
40	0.27%	0.42%	0.21%	0.39%
45	0.51%	0.79%	0.40%	0.45%
50	0.66%	1.03%	0.51%	0.52%
55	0.76%	1.18%	0.59%	0.60%
60	0.86%	1.34%	0.67%	0.70%
Ref	23 x 0.45	23 x 0.70	23 x 0.35	423 x 0.90

Sample Ages	% of Active Members Dying Within Next Year			
	Non-Duty Death		Duty Death	
	Men	Women	Men	Women
25	0.03%	0.02%	0.01%	0.01%
30	0.03%	0.02%	0.01%	0.01%
35	0.06%	0.04%	0.02%	0.01%
40	0.08%	0.05%	0.03%	0.02%
45	0.11%	0.08%	0.04%	0.03%
50	0.16%	0.13%	0.05%	0.04%
55	0.27%	0.20%	0.09%	0.07%
60	0.51%	0.38%	0.17%	0.13%
Ref	506 sb0 x 0.75	507 sb0 x 0.75	506 sb0 x 0.25	507 sb0 x 0.25

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Benefit Service	Exact Fractional service is used to determine the amount of benefit payable.
Decrement Operation	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal also do not operate during retirement eligibility.
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 exact fractional service on the date the decrement is assumed to occur.
Forfeitures	For vested separations from service, it is assumed that 0% of members separating will withdraw their contributions and forfeit an employer financed benefit.
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.
Liability Adjustments	Liabilities were increased by 1.0% to adjust for data uncertainty.
Marriage Assumption	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
Normal Form of Benefit	Straight life is the normal form of benefit.
Pay Increase Timing	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Service Credit Accruals	It is assumed that members accrue one year of service credit per year.
Administrative Expenses	2.00% of payroll was added to the normal cost for administrative expenses.
Defined Contribution Plan	0.80% of payroll was added to the normal cost for DC payments.

MEANING OF “UNFUNDED ACTUARIAL ACCRUED LIABILITIES”

Actuarial accrued liabilities are *the portion of the present value of plan promises to pay benefits in the future not covered by future normal cost contributions.*

--- a liability has been established (“accrued”) because the service has been rendered, but the resulting monthly cash benefit may not be payable until years in the future.

If actuarial accrued liabilities at any time exceed the plan’s accrued assets (cash & investments), the difference is *unfunded actuarial accrued liabilities*. If the plan’s assets equal the plan’s actuarial accrued liabilities, the plan would be termed “fully funded”.

Each time a plan adds a new benefit which applies to service already rendered, an actuarial accrued liability is created. If assets are insufficient to cover the value of the new benefit promises, an additional unfunded actuarial accrued liability is also created. Payment for such unfunded accrued liabilities is generally spread over a period of years, commonly in the 15-30 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual financial experience is less favorable than assumed financial experience, the difference is added to unfunded actuarial accrued liabilities. For example, during periods of high inflation, unfunded actuarial accrued liabilities generally increase because unexpected rates of pay increase will create additional liabilities which may not be matched by investment performance. Inflation is a very destructive force on financial stability.

The existence of unfunded actuarial accrued liabilities is not bad, but the changes from year-to-year in the amount of unfunded actuarial accrued liabilities are important -- “bad” or “good” or somewhere in between.

Unfunded actuarial accrued liabilities do not represent a bill payable immediately, but it is important that policy-makers prevent the amount from becoming unreasonably high and *it is vital that there is a sound method for making payments toward them*, so that they are controlled.

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.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”

Valuation Assets. The value of current plan assets recognized for valuation purposes. Generally based on market value plus a portion of unrealized appreciation or depreciation.

November 5, 2013

Ms. Cynthia Thomas, Executive Director
The General Retirement System of the City of Detroit
2 Woodward Avenue, Suite 908
Detroit, Michigan 48226

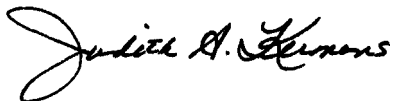
Re: Report of the June 30, 2012 74th Annual Actuarial Valuation

Dear Cynthia:

Enclosed are 20 copies of the report.

As always, your questions and comments are welcome.

Sincerely,



Judith A. Kermans, EA, MAAA

JAK:dj
Enclosures