

**CITY OF MANCHESTER EMPLOYEES' CONTRIBUTORY RETIREMENT SYSTEM  
ANNUAL ACTUARIAL VALUATION REPORT  
DECEMBER 31, 2009**

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April 28, 2009

Board of Trustees  
City of Manchester Employees'  
Contributory Retirement System  
Manchester, New Hampshire 03101-1829

Dear Board Members:

The results of the **Annual Actuarial Valuation of the City of Manchester Employees' Contributory Retirement System (MECRS)** are presented in this report. The purpose of the valuation was to measure the System's funding progress and to determine the contribution rate for the fiscal year beginning July 1, 2010.

The date of the valuation was December 31, 2009.

The valuation was based upon information, furnished by the Retirement System, concerning Retirement System benefits, financial transactions, and individual members, terminated members, retirees and beneficiaries. Data was checked for year-to-year consistency, but was not otherwise audited.

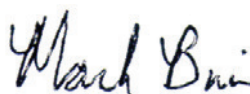
This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, this report is complete and accurate and was made in accordance with standards of practice promulgated by the Actuarial Standards Board of the American Academy of Actuaries. The actuarial assumptions used for the valuation produce results which, individually and in the aggregate, are reasonable. The actuarial assumptions used for this valuation were adopted by the Board pursuant to a review of methods and assumptions dated November, 2009.

One or more of the undersigned is a Member of the American Academy of Actuaries (MAAA) as indicated, and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



Kenneth G. Alberts



Mark Buis, F.S.A., E.A., M.A.A.A.

KGA:MB:bd

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**SECTION A**  
**VALUATION RESULTS**

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## EXECUTIVE SUMMARY

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### FUNDING OBJECTIVE

**The funding objective of the Retirement System is to establish and receive contributions which, when 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 pension contribution rate* for the fiscal year beginning July 1, 2010 is 17.65% of covered payroll. *The computed health subsidy contribution rate* for the fiscal year beginning July 1, 2010 is 0.85% of covered payroll. The details of these contribution rates are shown on page A-7.

The contribution rates are sufficient to finance the employer normal cost and to amortize the unfunded pension actuarial accrued liability (full funding credit) as a level percent-of-payroll over a period of 30 years for pension benefits, and 30 years for health subsidy benefits.

**SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS**  
**DECEMBER 31, 2009**

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*Present Resources and Expected Future Resources*

	<b>Pension</b>	<b>Health</b>
A. Actuarial value of System assets:		
1. Net assets from System financial statements	\$ 125,508,994	\$ 3,490,443
2. Funding Value Adjustment	9,273,509	257,899
3. Valuation assets	134,782,503	3,748,342
B. Present value of expected future employer contributions:		
1. For normal costs	38,721,920	0
2. For unfunded actuarial accrued liabilities	88,122,131	8,223,115
3. Totals	126,844,051	8,223,115
C. Present value of expected future member contributions:	18,299,502	6,099,834
<b>D. Total Present and Expected Future Resources</b>	<b>\$279,926,056</b>	<b>\$18,071,291</b>

*Actuarial Present Value of Expected Future Benefit Payments*

	<b>Pension</b>	<b>Health</b>
A. To retirees and beneficiaries:	\$ 89,530,493	\$ 3,385,293
B. To vested terminated members:	5,141,588	270,671
C. To present active members:		
1. Allocated to service rendered prior to valuation date	128,232,553	9,434,524
2. Allocated to service likely to be rendered after valuation date	57,021,422	4,980,803
3. Total	185,253,975	14,415,327
<b>D. Total Actuarial Present Value of Expected Future Benefit Payments</b>	<b>\$279,926,056</b>	<b>\$18,071,291</b>

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

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*Balance Sheet*

<b>Reported Assets - Actuarial Value as of December 31</b>		
	<b>2009</b>	<b>2008</b>
Cash & Equivalents	\$ 9,205,566	\$ 5,309,192
Investments	139,193,682	102,549,886
Receivables	157,230	692
Property, Plant, Equipment	10,086	23,980
Accrued Interest & Dividends	4,329	3,692
Receivable for Add'l Contribution Calculator	5,700	6,100
Payable for Investments Purchased	(18,793,743)	0
Accounts Payable	(78,258)	(49,189)
Benefits Payable	(705,155)	(680,149)
Additional Contribution Account	0	0
Funding Value Adjustment	9,531,408	21,432,841
<b>Total Valuation Assets</b>	<b>\$138,530,845</b>	<b>\$128,597,045</b>

*Revenues and Expenditures*

	<b>2009</b>	<b>2008</b>
Funding Value - January 1	\$128,597,045	\$141,149,118
Revenues		
Employees' Contributions	2,680,911	2,627,715
Employer Contributions	8,969,525	7,550,903
Recognized Investment Income	8,195,684	(13,221,133)
Total	19,846,120	(3,042,515)
Expenditures		
Benefit Payments	8,620,644	7,976,157
Refund of Member Contributions	223,480	455,086
Expenses and Fees	1,068,196	1,078,315
Total	9,912,320	9,509,558
Funding Value - December 31	\$138,530,845	\$128,597,045
Rate of Return Recognized	5.5 %	(10.1)%

## DEVELOPMENT OF FUNDING VALUE OF ASSETS

Year Ended December 31:	2007	2008	2009	2010	2011	2012	2013
A. Funding Value Beginning of Year	\$127,076,160	\$141,149,118	\$128,597,045				
B. Market Value End of Year	149,173,699	107,164,204	128,999,437				
C. Market Value Beginning of Year	133,448,997	149,196,663	106,403,260				
D. Non-Investment Net Cash Flow	1,687,033	1,747,375	2,806,312				
D1. Post-Valuation Adjustment	124,707	(22,964)	760,944				
E. Investment Income							
E1. Market Total: B - C - D - D1	13,912,962	(43,756,870)	19,028,921				
E2. Amount for Immediate Recognition (7.5%)	9,593,976	10,651,710	9,750,015				
E3. Amount for Phased-In Recognition: E1-E2	4,318,986	(54,408,580)	9,278,906				
F. Phased-In Recognition of Investment Income							
F1. Current Year: 0.20 x E3	863,797	(10,881,716)	1,855,781				
F2. First Prior Year	1,316,979	863,797	(6,666,368)	\$ 1,855,781			
F3. Second Prior Year	7,283	1,316,979	863,797	(6,666,368)	\$ 1,855,781		
F4. Third Prior Year	603,890	7,283	1,316,979	863,797	(6,666,368)	\$ 1,855,781	
F5. Fourth Prior Year	0	603,890	7,284	1,316,977	863,798	(6,666,369)	\$1,855,782
F6. Total Recognized Investment Gain	2,791,949	(8,089,767)	(2,622,527)	(2,629,813)	(3,946,789)	(4,810,588)	1,855,782
G. Preliminary Funding Value End of Year: A + D + E2 + F6	141,149,118	145,458,436	138,530,845				
H. Actuarial Value after application of 20% corridor limit	141,149,118	128,597,045	138,530,845				
I. Difference between Market & Funding Value	8,024,581	(21,432,841)	(9,531,408)				
J. Recognized Rate of Return	9.7 %	(10.1)%	5.5 %				
K. Market Rate of Return	10.5 %	(29.2)%	18.4 %				
L. Ratio of Funding Value to Market Value	94.6 %	120.0 %	107.4 %				

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is unbiased with respect to Market Value. At any time it may be either greater or less than Market Value. If actual and assumed rates of retirement income are exactly equal for four consecutive years, the Funding Value will become equal to Market Value.



**ALLOCATION OF FUNDING VALUE OF ASSETS  
YEAR ENDED DECEMBER 31, 2009**

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(A) Total Market Value	\$128,999,437
(B) Pension Market Value	\$125,508,994
(C) Ratio: (B)/(A)	97.2942%
(D) Total Funding Value	\$138,530,845
<b>(E) Pension Funding Value: (D) x (C)</b>	<b>\$134,782,503</b>
<b>(F) Health Funding Value: (D) - (E)</b>	<b>\$ 3,748,342</b>

**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITY  
YEAR ENDED DECEMBER 31, 2009**

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	<b>Pension</b>	<b>Health</b>
Present Value of Future Benefits - Retirees	\$ 89,530,493	\$ 3,385,293
Present Value of Future Benefits - Deferreds	5,141,588	270,671
Present Value of Future Benefits - Actives	185,253,975	14,415,327
Total Present Value of Future Benefits	\$279,926,056	\$18,071,291
Present Value of Future Normal Cost	57,021,422	4,980,803
<b>Actuarial Accrued Liability</b>	<b>\$222,904,634</b>	<b>\$13,090,488</b>
Actuarial Value of Assets	134,782,503	3,748,342
<b>Unfunded Actuarial Accrued Liability</b>	<b>\$ 88,122,131</b>	<b>\$9,342,146</b>
<b>Funded Ratio</b>	<b>60.5%</b>	<b>28.6%</b>

## DERIVATION OF EXPERIENCE GAIN (LOSS) YEAR ENDED DECEMBER 31, 2009

Actual experience will never (except by coincidence) match 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.

	<u>Pension</u>	<u>Health</u>
(1) UAAL* at start of year	\$75,447,113	\$9,820,788
(2) Total normal cost from last valuation	6,144,676	568,294
(3) Actual contributions (employer & employee)	10,537,048	1,113,388
(4) Interest accrual: $[(1) + 1/2 ((2) - (3))] \times .075$	5,493,820	716,118
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	76,548,561	9,991,812
(6) Change from new Assumptions and Methodology	10,706,101	(299,782)
(7) Change from ad-hoc COLA increases	0	N/A
(8) Change from Chapter 159 service upgrade	307,468	N/A
(9) Expected UAAL after changes: (5) + (6) + (7) + (8)	87,562,130	9,692,031
(10) Actual UAAL at end of year	88,122,131	9,342,146
(11) Gain (loss): (9) - (10)	(560,001)	349,885
(12) Gain (loss) as percent of actuarial accrued liabilities at start of year	(0.3)%	2.8 %

\* *Unfunded actuarial accrued liabilities.*

<b>Valuation Date December 31</b>	<b>Experience Gain (Loss) As % of Beginning Accrued Liability #</b>	
	<b>Pension</b>	<b>Health</b>
2000	Gain	N/A
2001	Loss	N/A
2002	Loss	N/A
2003	(4.0)%	N/A
2004	0.5 %	N/A
2005	(2.9)%	N/A
2006	0.1 %	N/A
2007	2.3 %	2.4 %
2008	(14.3)%	(2.8)%
2009	(0.3)%	2.8 %

# *Magnitude of gain or loss prior to 2003 is not available.*

**COMPUTED CONTRIBUTIONS FOR THE  
FISCAL YEAR BEGINNING JULY 1, 2010**

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<b>Contributions For</b>	<b>Contributions Expressed as % of Active Member Payroll 30-Year Amortization</b>
Total Normal Cost	12.00%
Member Contributions (weighted average)	3.75%
Employer Normal Cost	8.25%
Unfunded Actuarial Accrued Liabilities*	9.40%
<b>Employer Pension Total</b>	<b>17.65%</b>
Health Contribution**	0.85%
<b>Employer Total</b>	<b>18.50%</b>
 Valuation Payroll	 \$50,547,690
Projected Payroll	\$53,224,530
Estimated Contribution Dollars	\$ 9,846,538

\* *Unfunded actuarial accrued liabilities for pension are currently financed as a level percent of payroll over a period of 30 years.*

\*\* *Currently based on a 30-year amortization of unfunded actuarial accrued liabilities for Health.*

**Note:** *For each 1% ad-hoc COLA increase above the assumed COLA, the UAAL will increase by approximately \$895,000 and the employer contribution rate will increase by approximately 0.11% (based on current payroll and a 30-year amortization period). In developing these costs for the ad-hoc COLA increase, it was assumed that the increase would be a one-time permanent increase to all members retired as of 12/31/2009 and the additional liability would be amortized over 30 years. It was also assumed that the increase would be effective on 1/1/2010.*

<b>Contribution Rate Reconciliation</b>	<b>% of Payroll</b>		
	<b>Pension</b>	<b>Health</b>	<b>Total</b>
Last Year's Rate	17.17%	0.93%	18.10%
Normal Cost Change	0.20%	0.13%	0.33%
Miscellaneous Changes in Group Demographics	0.66%	0.05%	0.71%
Assumption and Methodology Changes#	0.82%	-0.14%	0.68%
Employer Portion of SB 402 Purchases	0.02%	0.00%	0.02%
COLA (portion above the assumption)	0.00%	0.00%	0.00%
Change to 30-year Amortization	-1.29%	-0.08%	-1.37%
Experience Gain (Loss)	0.07%	-0.04%	0.03%
<b>This Year's Rate</b>	<b>17.65%</b>	<b>0.85%</b>	<b>18.50%</b>

# *See Comments.*

**MECRS AND CITY  
COMPUTED CONTRIBUTIONS FOR THE  
FISCAL YEAR BEGINNING JULY 1, 2010**

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<b>Contributions For</b>	<b>Contributions Expressed as % of Active Member Payroll</b>		
	<b>City# Non EPD and Parking</b>	<b>City# EPD and Parking</b>	<b>Other MECRS Employers</b>
Employer Pension Total	17.65%	17.65%	17.65%
Health Contribution	0.85%	0.85%	0.85%
<b>Employer Total</b>	<b>18.50%</b>	<b>18.50%</b>	<b>18.50%</b>
Valuation Payroll	\$28,757,755	\$2,550,113	\$19,239,822
<b>Projected Payroll FY 2010##</b>	<b>30,280,672</b>	<b>2,685,159</b>	<b>20,258,700</b>
<b>Estimated Annual Dollar Contributions</b>			
Pension	\$5,344,539	\$473,931	\$3,575,661
Health	257,386	22,824	172,199
<b>Total</b>	<b>\$5,601,925</b>	<b>\$496,755</b>	<b>\$3,747,860</b>
<b>Semi-Annual Dollar Contribution Payable on July 1 and December 31</b>			
Pension	\$2,623,960	\$232,682	N/A
Health	126,366	11,206	N/A
<b>Total</b>	<b>\$2,750,326</b>	<b>\$243,887</b>	N/A

# Assuming contributions continuously throughout the year.

## Current projection factor is 1.05296 (1.035<sup>1.5</sup>).

**CITY**  
**TRUE-UP CONTRIBUTIONS FOR THE**  
**FISCAL YEAR BEGINNING JULY 1, 2010**

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	City
<b>(1) City's Projected 2009 Payroll</b>	\$30,525,000
<b>(2) City's Actual 2009 Payroll #</b>	31,405,826
<b>(3) True-Up Rate (2)/(1) - 1</b>	2.89%
<b>(4) 2009 Semi-Annual Contribution</b>	
Pension	\$2,573,196
Health	139,375
Total	\$2,712,571
<b>(5) Semi-Annual Shortfall/(Overage)</b>	
Pension	\$74,252
Health	4,022
Total	\$78,274
<b>(6) 2009 True-Up as of July 1, 2010</b>	
(5) x 1.075 + (5) x 1.0375	
Pension	\$156,857
Health	8,496
Total	\$165,353

# \$2,628,770 from EPD and Parking and \$28,777,056 from other City Employees.

The true up is to account for the differences in actual and assumed payroll that would have affected the contribution had the City been making contributions on a payroll period basis.

## COMMENTS

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**COMMENT A – RESULTS:** The Retirement System is 60.5% funded for pension benefits and 28.6% funded for health subsidy benefits as of December 31, 2009. The pension Unfunded Actuarial Accrued Liability (UAAL) of \$88,122,131 is amortized over a 30-year period; the health subsidy UAAL of \$9,342,146 is amortized over a 30-year period.

**COMMENT B – METHODS AND ASSUMPTIONS:** Effective with the December 31, 2009 valuation, the actuarial methods and assumptions were revised pursuant to the 2004-2008 experience study as adopted by the Board. Effective March 9, 2010 the board adopted a 30 year closed amortization for unfunded liabilities.

**COMMENT C – EXPERIENCE:** Experience during 2009 was less favorable than expected, resulting in an experience loss of \$560,001 for pension benefits. The primary source of this loss was investment return (7.5% assumed versus 5.5% recognized). As a result, the pension funding status declined from 62.5% to 60.5%.

**COMMENT D – BENEFIT CHANGES:** The adoption of SB402 allowed for members to upgrade their benefit multiplier under Chapter 159 from 1.5% to 2.0% per year of service rendered prior to 1999. Liabilities increased approximately \$308,000 as a result of members electing to purchase this benefit during 2009. An additional \$154,000 in member contributions was contributed as a result of these elections.

**COMMENT E – RETIREE HEALTH BENEFITS:** Post-retirement health care benefits are funded in part by retired members (via co-pays, deductibles, etc.), but mostly by employer contributions to the retirement system that are permitted (up to certain limits) by §401(h) of the U.S. Internal Revenue Code. IRC §401(h) permits a defined benefit plan to provide medical benefits for retired employees if, among other things:

- A separate medical care account is maintained.
- The benefits satisfy non-discrimination rules.
- The medical benefits, along with any life insurance provided by the plan, are subordinate to the retirement benefits. Benefits are considered subordinate if they do not exceed 25% of the aggregate contributions other than contributions to fund past service liabilities.

## COMMENTS

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The health care contribution rate was determined to pass the 25% test for the 2009/2010 fiscal year as follows:

Employer Pension Rate (not more than normal cost)	8.25%
Employee Pension Rate	3.75%
Total Pension Rate*	12.00%
Maximum Health Rate (1/3 x Pension Rate)	4.00%
Employee Health Rate	1.25%
Maximum Employer Health Rate	2.75%
Actual Employer Health Rate	0.85%

\* *Smaller of actual contribution or projected unit credit normal cost rate.*

Although the IRC §401(h) allows for a much more complicated test, the results of the simplified approach illustrated above indicate that the more complicated test is not warranted.

**COMMENT F – HEALTH VALUATION:** Post-retirement health subsidy valuation results were included in this valuation. Effective with the December 31, 2007 valuation we set the utilization assumption at 60%. There is very little historical data, but it appears that over the last four years only about 50% have elected to receive the subsidy. We will continue to monitor this as experience emerges.

New Retirements In Year	New Retirees	New Retirees Electing Post-Ret. Health Care Election %	
2006	35	17	48.6%
2007	38	19	50.0%
2008	36	20	55.6%
2009	39	18	46.2%

**COMMENT G – HEALTH VALUATION:** The methods and assumptions used in this valuation, in our opinion, satisfy the parameters of GASB No. 43 and adequately measure the Plan's liability and required contribution. However, the calculations contained herein were not intended to satisfy the parameters of GASB No. 45 and should not be used for that purpose.

**CERTIFICATION:** We certify that the valuation is complete and accurate and was made in accordance with generally recognized actuarial methods. The actuarial assumptions summarized in Section C are in aggregate a reasonable representation of the past and anticipated future experience of the System.

## COMPARATIVE STATEMENT

Valuation Date December 31	Active Members				% Increase
	Number	Ratio to Retired	Valuation Payroll		
			\$	Average	
2004#	1,344	2.59	\$ 45,027,930	\$ 33,503	5.0%
2005	1,354	2.55	47,233,321	34,884	4.1%
2006	1,328	2.44	47,537,456	35,796	2.6%
2007	1,325	2.33	48,556,218	36,646	2.4%
2008	1,323	2.23	50,740,516	38,353	4.7%
2009	1,300	2.08	50,547,690	38,883	1.4%

Valuation Date December 31	Retirees & Beneficiaries						Annual Contributions as a Percent of Payroll					
	Pension			Health			Member		Employer		Total	
	Number	% of Payroll	Number	Annual Benefits	% of Payroll	Annual Benefits	% of Payroll	Pension	Health	Pension		Health
2004#	519	11.7%	N/A	N/A	N/A	N/A	N/A	3.75%	N/A	8.72%	N/A	12.47%
2005	531	12.3%	81	\$ 49,124	0.1%	\$ 49,124	0.1%	3.75%	1.25%	10.63%	1.41%	17.04%
2006#	544	13.7%	152	178,152	0.4%	178,152	0.4%	3.75%	1.25%	13.27%	1.24%	19.51%
2007#	569	15.1%	155	206,045	0.4%	206,045	0.4%	3.75%	1.25%	13.84%	0.91%	19.75%
2008#	594	16.1%	162	245,670	0.5%	245,670	0.5%	3.75%	1.25%	17.17%	0.93%	23.10%
2009	625	16.7%	166	275,852	0.5%	275,852	0.5%	3.75%	1.25%	17.52%	1.07%	23.59%
2009#	625	16.7%	166	275,852	0.5%	275,852	0.5%	3.75%	1.25%	17.65%	0.85%	23.50%

# After changes in methods and/or assumptions.



**ACTUARIAL ACCRUED LIABILITIES & VALUATION ASSETS  
COMPARATIVE STATEMENT – PENSION ONLY**

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<b>Valuation Date December 31</b>	<b>Actuarial Accrued Liability (AAL)</b>	<b>Valuation Assets</b>	<b>Unfunded Actuarial Accrued Liability (UAAL)</b>	<b>Ratio of Present Assets to AAL</b>	<b>Ratio of UAAL to Valuation Payroll</b>
2004#	\$ 126,346,993	\$ 103,826,765	\$ 22,520,228	82.2 %	50.0 %
2005#	147,915,666	113,856,253	34,059,413	77.0 %	72.1 %
2006#	172,538,747	126,293,879	46,244,869	73.2 %	97.3 %
2007#	187,625,784	139,240,661	48,385,123	74.2 %	99.6 %
2008#	201,439,017	125,991,904	75,447,113	62.5 %	148.7 %
2009	212,198,533	134,782,503	77,416,030	63.5 %	153.2 %
2009#	222,904,634	134,782,503	88,122,131	60.5 %	174.3 %

# After changes in methods and/or assumptions.

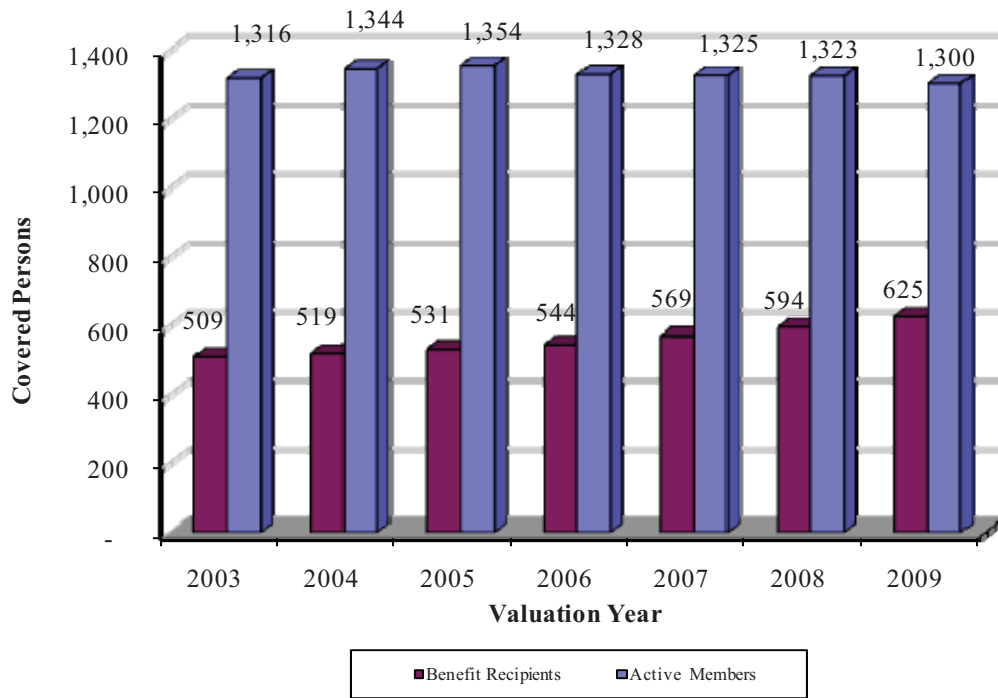
**ACTUARIAL ACCRUED LIABILITIES & VALUATION ASSETS  
COMPARATIVE STATEMENT – HEALTH SUBSIDY ONLY**

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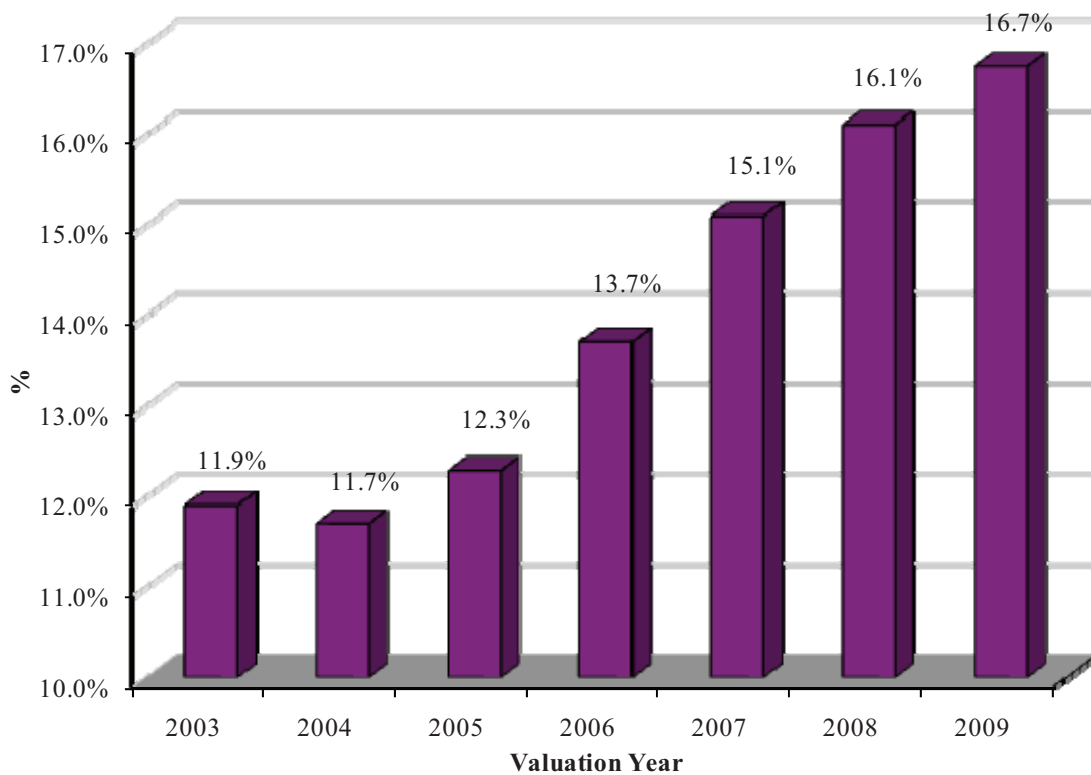
<b>Valuation Date December 31</b>	<b>Actuarial Accrued Liability (AAL)</b>	<b>Valuation Assets</b>	<b>Unfunded Actuarial Accrued Liability (UAAL)</b>	<b>Ratio of Present Assets to AAL</b>	<b>Ratio of UAAL to Valuation Payroll</b>
2006	\$ 11,744,315	\$ 782,281	\$10,962,034	6.7 %	23.1 %
2007	12,745,847	1,908,487	10,837,360	15.0 %	21.4 %
2007#	11,306,516	1,908,457	9,398,059	16.9 %	19.4 %
2008	12,425,929	2,605,141	9,820,788	21.0 %	19.4 %
2009	13,390,269	3,748,342	9,641,927	28.0 %	19.1 %
2009#	13,090,488	3,748,342	9,342,146	28.6 %	18.5 %

# After changes in methods and/or assumptions.

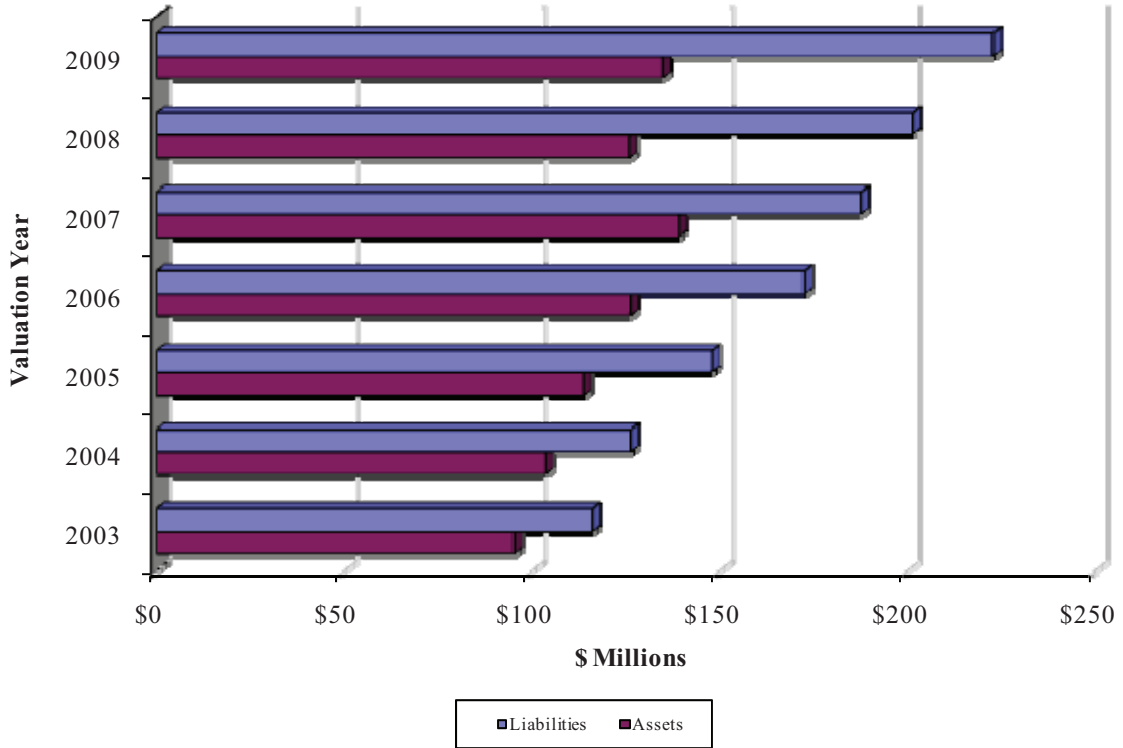
### Active Members & Benefit Recipients



### Pension Benefits as a Percent of Payroll



## Assets & Accrued Liabilities (Pension Only)



**SCHEDULE OF CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY  
OTHER THAN ANNUAL GAINS (LOSSES)**

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**Schedule of Changes in Pension UAAL  
Other than Gains (Losses)**

---

<b>Date Established</b>	<b>Original Amount</b>	<b>Description</b>
01/01/1991	\$ 2,656,461	Initial Unfunded
01/01/1997	32,202	Plan Amendment
01/01/1997	588,165	1996 COLA
01/01/1998	602,888	1997 COLA
01/01/1999	4,750,497	Plan Amendment
01/01/1999	62,532	Assumption Change
01/01/1999	866,215	1998 COLA
01/01/2000	847,614	1999 COLA
01/01/2001	958,172	2000 COLA
01/01/2002	1,047,075	2001 COLA
01/01/2003	1,214,958	2002 COLA
01/01/2003	(3,319,777)	Assumption Change
01/01/2003	6,317,683	Plan Amendment
12/31/2004	231,803	Assumption Change
12/31/2004	1,809,405	2004 COLA
12/31/2005	1,310,995	2005 COLA
12/31/2005	5,368,777	Phase-in of COLA assumption
12/31/2005	1,205,702	Chapter 159 upgrade (employer)
12/31/2006	787,237	2006 COLA
12/31/2006	7,794,903	Phase-in of COLA assumption
12/31/2006	1,313,426	Chapter 159 upgrade (employer)
12/31/2006	2,025,864	Severance Load
12/31/2007	330,568	2007 COLA
12/31/2007	4,220,982	Phase-in of COLA assumption
12/31/2007	223,538	Chapter 159 upgrade (employer)
12/31/2008	469,373	2008 COLA
12/31/2008	(839,918)	Miscellaneous Technical Change in Treatment of COLA Assumption
12/31/2008	193,614	Chapter 159 upgrade (employer)
12/31/2008	(122,243)	Retirement Eligibility Correction
12/31/2009	307,468	Chapter 159 upgrade (employer)
12/31/2009	10,706,101	Assumption and Methodology Change

**UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)  
AMORTIZATION SCHEDULE AND PROJECTED FUNDED STATUS**

Fiscal Year	Employer Contribution Rates			Projected Active Member Payroll	Beginning of Year	
	Total Contribution	Employer Normal Cost	UAAL Payment		UAAL	Funded Status
2009*	17.17%	8.60%	8.57%	\$ 51,424,667	\$88,122,131	60.5%
2010	17.65%	8.25%	9.40%	53,224,530	89,123,220	60.4%
2011	17.65%	8.25%	9.40%	55,087,389	90,620,131	62.0%
2012	17.65%	8.25%	9.40%	57,015,447	92,047,753	63.6%
2013	17.65%	8.25%	9.40%	59,010,988	93,394,537	65.0%
2014	17.65%	8.25%	9.40%	61,076,373	94,647,841	66.3%
2015	17.65%	8.25%	9.40%	63,214,046	95,793,848	67.6%
2016	17.65%	8.25%	9.40%	65,426,537	96,817,465	68.9%
2017	17.65%	8.25%	9.40%	67,716,466	97,702,221	70.0%
2018	17.65%	8.25%	9.40%	70,086,542	98,430,155	71.2%
2019	17.65%	8.25%	9.40%	72,539,571	98,981,693	72.3%
2020	17.65%	8.25%	9.40%	75,078,456	99,335,520	73.3%
2021	17.65%	8.25%	9.40%	77,706,202	99,468,442	74.4%
2022	17.65%	8.25%	9.40%	80,425,919	99,355,230	75.4%
2023	17.65%	8.25%	9.40%	83,240,827	98,968,460	76.5%
2024	17.65%	8.25%	9.40%	86,154,256	98,278,337	77.5%
2025	17.65%	8.25%	9.40%	89,169,655	97,252,509	78.5%
2026	17.65%	8.25%	9.40%	92,290,592	95,855,859	79.6%
2027	17.65%	8.25%	9.40%	95,520,763	94,050,290	80.7%
2028	17.65%	8.25%	9.40%	98,863,990	91,794,486	81.8%
2029	17.65%	8.25%	9.40%	102,324,230	89,043,662	83.0%
2030	17.65%	8.25%	9.40%	105,905,578	85,749,287	84.2%
2031	17.65%	8.25%	9.40%	109,612,273	81,858,791	85.5%
2032	17.65%	8.25%	9.40%	113,448,702	77,315,248	86.8%
2033	17.65%	8.25%	9.40%	117,419,407	72,057,037	88.2%
2034	17.65%	8.25%	9.40%	121,529,086	66,017,469	89.6%
2035	17.65%	8.25%	9.40%	125,782,604	59,124,400	91.1%
2036	17.65%	8.25%	9.40%	130,184,995	51,299,797	92.6%
2037	17.65%	8.25%	9.40%	134,741,470	42,459,286	94.1%
2038	17.65%	8.25%	9.40%	139,457,422	32,511,658	95.7%
2039	17.65%	8.25%	9.40%	144,338,431	21,358,334	97.3%
2040	17.65%	8.25%	9.40%	149,390,276	8,892,801	98.9%

\* Represents a 6-month period from December 31, 2009 through June 30, 2010.

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**SECTION B**

**BENEFIT PROVISIONS AND VALUATION DATA**

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**SUMMARY OF BENEFIT PROVISIONS**  
**AS OF DECEMBER 31, 2009**

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**Eligibility**

---

**Amount**

---

**NORMAL RETIREMENT**

Members are eligible to retire at age 60.

Straight life pension equals 2.0% of 3-year final average earnings (FAE) times service on and after January 1, 1999 *plus* 1.5% of FAE times service before January 1, 1999.

Members with at least 20 years of service at retirement are eligible for a minimum benefit if employed on or before January 1, 1974.

Minimum benefit for eligible members is 50% of FAE.

**EARLY RETIREMENT**

Members are eligible to retire early if the sum of age and service is at least 80, or at age 55 with at least 20 years of service.

Computed as a normal retirement pension. If the early retirement occurs prior to the member attaining age 60, the benefit is reduced by 1/6 of 1% for each month that the early retirement precedes age 60.

**DEFERRED RETIREMENT**

Members are eligible to retire with a deferred benefit after attaining at least 5 years of service, provided they do not take a refund of member contributions.

Pension is computed as a normal retirement pension, based on service and FAE on date of termination. Commencement of benefits begins at age 60.

**NON-DUTY DISABILITY**

Members are eligible upon attainment of 15 years of service.

Pension is computed as a normal retirement pension based on service and FAE as of date of disability.

**DUTY DISABILITY**

No age or service requirement.

Pension is computed as a normal retirement pension based on service and FAE as of date of disability. Minimum duty disability benefit is 50% of FAE.



**SUMMARY OF BENEFIT PROVISIONS  
AS OF DECEMBER 31, 2009**

---

**Eligibility**

---

**Amount**

---

**ORDINARY DEATH-IN-SERVICE**

- |  |   |
|--|---|
| (1) Any age with less than 5 years of service. | (1) Beneficiary receives member's contributions and accumulated interest, and an additional lump sum equal to one year's salary.  |
| (2) Any age with 5 or more years of service.   | (2) Beneficiary receives normal or early retirement benefit (depending on eligibility), actuarially reduced as if the member had elected the 100% Joint & Survivor benefit. The combined reduction for the Joint & Survivor reduction and early retirement reduction shall not be more than 50%. If the beneficiary is the spouse, they will receive an additional lump sum equal to one year's salary. |

**DUTY DEATH-IN-SERVICE**

- |  |  |
|--|--|
| Death as a result of a work-related accident; not caused by willful neglect of the member. | 50% of FAE payable to the unmarried surviving spouse, child, or children under age 18, or dependent parent. If none of the above-mentioned potential beneficiaries are alive at the time of the member's death, a lump sum is payable to the member's estate in the amount of 100% of base salary plus the member's accumulated contributions (including interest) plus accrued fringe benefits not paid at the time of death. |
|--|--|

**MEMBER CONTRIBUTIONS**

3.75% of pay for service on and after January 1, 1999. 2.5% of pay for service prior to January 1, 1999. Contributions are credited with 5.0% interest per annum. Members may elect to contribute additional contributions which are accounted for separately. At retirement the additional contribution balance is annuitized to provide an additional benefit, within certain limits.

**SUMMARY OF BENEFIT PROVISIONS  
AS OF DECEMBER 31, 2009**

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**OPTIONAL FORMS OF PAYMENT**

In lieu of the straight life benefit, a member may elect an actuarially reduced benefit in one of the following forms:

- 100% Joint & Survivor with pop-up
- 66 2/3 % Joint & Survivor with pop-up
- 50% Joint & Survivor with pop-up
- 10-year Certain & Life Option

The actuarial factors for optional forms of payment are based on the 1983 Group Annuity Mortality Table and 7.5% interest.

**SERVICE UPGRADE**

Members may elect to purchase an increase in their benefit multiplier for service rendered before 1999 under Chapter 159 (or Senate Bill 402). The cost to the member is ½ of the actuarially determined increase in System costs and results in a benefit based on 2% of FAE for the time purchased.

**HEALTH SUBSIDY**

Current and future retired members who are in receipt of an annuity benefit may elect to participate in a monthly health insurance subsidy. Spouses, dependents, and/or beneficiaries are not eligible for any subsidy. The full amount of the monthly health insurance subsidy is \$200 as of January 1, 2006 and increases by 4% annually beginning January 1, 2007. The full \$200 is prorated based on the member's service at retirement, as shown in the schedule below. Members who were already retired as of March 2006 are entitled to 50% of the subsidy available to members retired after March 2006. Active members must contribute 1.25% of pay.

<b>Service at Retirement</b>	<b>% of Full Subsidy Payable</b>	
	<b>Active on or after March 1, 2006</b>	<b>Terminated Vested or Retired on March 1, 2006</b>
Less than 10 years	25.0%	12.5%
10 years or more, but less than 15 years	50.0%	25.0%
15 years or more, but less than 20 years	75.0%	37.5%
20 years or more	100.0%	50.0%

## RETIREES AND BENEFICIARIES COMPARATIVE STATEMENT

---

Year Ended December 31	Added to Rolls		Removed from Rolls		Rolls End of Year		Average Pension
	No.	Annual Pensions*	No.	Annual Pensions	No.	Annual Pensions	
2004	26	\$ 417,907	16	\$131,448	519	\$5,268,169	\$ 10,151
2005	31	683,071	19	148,055	531	5,803,185	10,929
2006	41	898,189	28	186,217	544	6,515,157	11,976
2007	49	1,109,288	24	297,006	569	7,327,439	12,878
2008	46	1,053,112	21	210,203	594	8,170,348	13,755
2009	47	511,404	16	221,371	625	8,460,381	13,537

\* Includes adjustments due to COLA.

**RETIREES AND BENEFICIARIES DECEMBER 31, 2009**  
**TABULATED BY TYPE OF PENSIONS BEING PAID**

---

Type of Pensions Being Paid	Number	Annual Pensions
<b>Age and Service Pensions</b>		
Regular Pension - Benefit terminating at death of retiree	321	\$3,557,165
For life of member, but not less than 10 years	50	743,054
100% Joint & Survivor	114	1,824,094
66 2/3% Joint & Survivor	30	637,903
50% Joint & Survivor	41	752,364
Survivor Beneficiary	34	374,268
Survivor of 10-year certain	5	49,872
Total age and service pensions	595	\$7,938,720
<b>Casualty Pensions</b>		
Duty Disability	22	\$ 408,631
Non-Duty Disability	8	113,030
Duty Death - Survivor Benefits	0	0
Non-Duty Death - Survivor Benefits	0	0
Total casualty pensions	30	\$ 521,661
<b>Total Pensions Being Paid</b>	<b>625</b>	<b>\$8,460,381</b>

Each member is counted only once in the above table. Members who have purchased an upgrade to their benefit multiplier may elect a different payment option for the additional purchased benefits. All benefit payments are included in the table.

**RETIREES AND BENEFICIARIES DECEMBER 31, 2009**  
**PENSION BENEFITS TABULATED BY ATTAINED AGES**

---

Attained Age	Age and Service		Casualty		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
30-34	1	\$ 20,970			1	\$ 20,970
35-39		-				
40-44	1	11,134			1	11,134
45-49	3	17,131	1	\$ 18,362	4	35,493
50-54	8	159,530	8	156,850	16	316,380
55-59	25	755,410	4	69,641	29	825,051
60-64	96	1,575,669	5	102,200	101	1,677,869
65-69	120	1,785,630	5	73,203	125	1,858,833
70-74	97	1,249,587	3	35,570	100	1,285,157
75-79	86	899,923	1	10,961	87	910,884
80-84	83	878,913	2	27,837	85	906,750
85-89	54	409,462	1	27,037	55	436,499
90-94	19	139,843			19	139,843
95-100	2	35,517			2	35,517
<b>Totals</b>	<b>595</b>	<b>\$ 7,938,720</b>	<b>30</b>	<b>\$ 521,661</b>	<b>625</b>	<b>\$ 8,460,381</b>

Average Age at Retirement: 62.1 years

Average Age Now: 72.5 years

**RETIREES AND BENEFICIARIES DECEMBER 31, 2009**  
**HEALTH SUBSIDY BENEFITS TABULATED BY ATTAINED AGES**

---

Attained Age	Health Subsidy	
	Number	Annual Amount
50-54	5	\$ 8,072
55-59	13	29,831
60-64	36	74,403
65-69	36	69,840
70-74	22	30,183
75-79	16	20,356
80-84	16	19,653
85-89	11	12,283
90-94	10	9,827
95-100	1	1,404
<b>Totals</b>	<b>166</b>	<b>\$ 275,852</b>

Average Age at Retirement: 62.5 years

Average Age Now: 71.5 years

**RETIREES AND BENEFICIARIES DECEMBER 31, 2009**  
**TABULATED BY YEAR OF RETIREMENT**

Year of Retirement	Number	Annual Pensions	
		Totals	Average
1976	1	\$ 27,037	\$ 27,037
1977	2	23,422	11,711
1978	2	27,427	13,714
1979	2	6,322	3,161
1980	2	1,912	956
1981	4	41,164	10,291
1982	6	27,415	4,569
1983	8	62,086	7,761
1984	7	36,135	5,162
1985	7	37,959	5,423
1986	8	63,211	7,901
1987	10	156,166	15,617
1988	9	61,293	6,810
1989	16	196,506	12,282
1990	16	233,451	14,591
1991	18	147,237	8,180
1992	14	184,380	13,170
1993	21	292,625	13,935
1994	33	303,591	9,200
1995	25	272,283	10,891
1996	27	356,809	13,215
1997	18	228,726	12,707
1998	17	187,144	11,008
1999	32	506,879	15,840
2000	28	423,803	15,136
2001	22	294,241	13,375
2002	33	334,343	10,132
2003	18	231,855	12,881
2004	25	185,167	7,407
2005	35	530,262	15,150
2006	41	781,621	19,064
2007	45	900,761	20,017
2008	41	884,090	21,563
2009	32	413,058	12,908

**INACTIVE VESTED MEMBERS DECEMBER 31, 2009**  
**TABULATED BY ATTAINED AGE**

---

<b>Attained Age</b>	<b>Number</b>	<b>Estimated Annual Pensions</b>
25-29	1	\$ 3,694
30-34	1	3,875
35-39	8	51,339
40-44	7	47,552
45-49	16	118,171
50-54	34	301,818
55-59	32	196,941
<b>Totals</b>	<b>99</b>	<b>\$723,390</b>

Average Age at Termination: 45.5 years

Average Age Now: 51.2 years



## ACTIVE MEMBERS ADDED TO AND REMOVED FROM ROLLS

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Valuation Date	Number Added During Year		Terminations During Year										Active Members End of Year
			Retirement		Disability		Died-in Service		Withdrawals				
	A	E	A	E	A	E	A	E	Vested A	Other A	Totals A E		
2005	151	141	24	47.0	1	1.1	1	1.8	10	105	115	69.5	1,354
2006	140	166	34	52.6	0	1.1	1	2.0	15	116	131	66.5	1,328
2007	178	181	37	52.4	0	1.1	0	2.1	23	121	144	63.3	1,325
2008	128	130	35	53.9	1	1.1	0	2.1	9	85	94	65.3	1,323
2009	91	114	27	62.3	1	1.1	1	2.1	13	72	85	64.4	1,300
5-Year Totals	688	732	157	268	3	6	3	10	70	499	569	329	

*A = Actual*

*E = Expected*

**ACTIVE MEMBERS DECEMBER 31, 2009**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

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Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Number	Valuation Payroll
20-24	31							31	\$ 707,243
25-29	80	9	2					91	2,445,356
30-34	40	29	4					73	2,567,038
35-39	40	31	11	9				91	3,672,303
40-44	65	27	28	17	8			145	5,603,843
45-49	79	63	34	15	35	16		242	9,638,145
50-54	39	51	55	24	26	13	19	227	9,078,304
55-59	33	39	36	36	34	11	38	227	10,182,456
60-64	16	18	24	14	15	17	15	119	4,869,517
65-69	5	3	3	2	5	2	3	23	917,453
70-74	3	5	1		5		5	19	646,306
75 & over	1	1	3	3	1		3	12	219,726
<b>Totals</b>	<b>432</b>	<b>276</b>	<b>201</b>	<b>120</b>	<b>129</b>	<b>59</b>	<b>83</b>	<b>1,300</b>	<b>\$50,547,690</b>

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

Age: 48.0 years  
Service: 11.4 years  
Annual Pay: \$38,883

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## **SECTION C**

### **VALUATION METHODS AND ASSUMPTIONS**

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## ACTUARIAL COST METHOD

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*Normal cost and the allocation of benefit values* between service rendered before and after the valuation date was determined using the *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, are sufficient to accumulate the value of the member's benefit at the time of retirement;
- each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

**MECRS currently has a tiered benefit structure with the ultimate tier being more costly than the initial tier. The normal cost is computed based on this tiered structure. As a result, the normal cost rate is expected to increase as the members affected by the initial tier are replaced by new members.**

*Financing of Unfunded Actuarial Accrued Liabilities.* Unfunded actuarial accrued liabilities were amortized by level (principal and interest combined) percent of payroll contributions over 30 future years for pension benefits, and over 30 future years for health subsidy benefits.

*Asset Valuation Method.* Last year's valuation assets are increased by contributions and reduced by refunds, benefit payments and expenses. An amount equal to the assumed investment return for the year is then added. Differences between actual return on a market value basis and an assumed return are phased in over a five-year period. For the December 31, 2004 valuation, the Funding Value of assets was reset to the Market Value as of January 1, 2004.

## ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION

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The contribution requirements and benefit values of the System are calculated 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,
- rates of disability among members,
- the age patterns of actual retirement.

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

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Actual experience of the System will not coincide exactly with assumed experience, 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). Assumptions used in this report are based on the January 1, 2004 – December 31, 2008 experience study of the MECRS and were adopted by the Board in March 2010. These assumptions were first used in the December 31, 2009 actuarial valuation.

## VALUATION ASSUMPTIONS

*The rate of investment return was 7.5% 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) is 3.5%. Experience over the last 5 years has been as follows:*

	Year Ended December 31					5-Year Average
	2009	2008	2007	2006	2005	
1) Nominal rate of return#	5.5 %	(10.1)%	9.7 %	9.2 %	8.1 %	4.2 %
2) Increase in CPI	2.7 %	0.1 %	2.5 %	2.5 %	3.4 %	2.2 %
3) Average salary increase (ASI)	1.4 %	4.7 %	2.4 %	2.6 %	4.1 %	3.0 %
4) Real Return						
- Total: CPI (1) - (2)						2.0 %
- Total: ASI (1) - (3)						1.2 %
- Assumption*	4.0 %	3.5 %	3.5 %	3.5 %	3.5 %	3.6 %

\* 5-year average is based on current assumption.

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

*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.*

Service	Salary Increase Assumptions For an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
1	5.80%	3.50%	9.30%
2	5.80%	3.50%	9.30%
3	5.34%	3.50%	8.84%
4	4.88%	3.50%	8.38%
5	4.42%	3.50%	7.92%
6	3.96%	3.50%	7.46%
7	3.50%	3.50%	7.00%
8	3.20%	3.50%	6.70%
9	2.90%	3.50%	6.40%
10	2.60%	3.50%	6.10%
15	1.52%	3.50%	5.02%
20	0.96%	3.50%	4.46%
25	0.56%	3.50%	4.06%
30	0.22%	3.50%	3.72%
35	0.10%	3.50%	3.60%
40	0.10%	3.50%	3.60%
Ref:	109		

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.

## VALUATION ASSUMPTIONS

*The mortality table* was the 1994 Group Annuity Mortality Table (95% of male rates, 95% of female rates), set back 1 year for men and 0 years for women.

Sample Attained Ages	Single Life Retirement Values			
	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	\$143.04	\$147.83	32.11	35.35
55	135.33	141.34	27.52	30.63
60	125.68	132.91	23.12	26.03
65	114.29	122.75	19.03	21.69
70	101.76	111.01	15.36	17.69
75	87.98	96.97	12.07	13.95
80	73.18	81.46	9.17	10.62
Ref:	261 x 0.95 sb 1	262 x 0.95 sb 0		

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement.

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

Active Members Retiring Next Year Under Normal Retirement			Active Members Retiring Next Year Under Early Retirement			
Ages	% Retiring		Ages	% Retiring		Rule of 80
	Men	Women		Age and Service		
	Men	Women	Men	Women		
60	10%	12%	50			6%
61	10%	15%	51			6%
62	30%	30%	52			6%
63	15%	15%	53			6%
64	15%	10%	54			6%
65	30%	32%	55	10%	8%	6%
66	18%	20%	56	10%	8%	6%
67	18%	18%	57	10%	8%	6%
68	18%	15%	58	10%	8%	6%
69	18%	15%	59	10%	8%	6%
70	18%	25%				
71	50%	25%				
72	50%	25%				
73	50%	25%				
74	50%	25%				
75	100%	25%				
76	100%	25%				
77	100%	25%				
78	100%	25%				
79	100%	25%				
80	100%	100%				
Ref.	1782	1783		1780	1781	1784

*A member* was assumed to be eligible for normal retirement after attaining age 60 regardless of service. A member was assumed to be eligible for early retirement after attaining age 55 with at least 20 years of service or if the sum of age and service is at least 80.

## VALUATION ASSUMPTIONS

*Rates of separation from active membership* are 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	Service	% of Active Members Separating Within Next Year	
		Men	Women
35	0-1	20.00%	30.00%
	1-2	19.00%	20.00%
	2-3	13.00%	15.00%
	3-4	7.00%	10.00%
	4-5	6.00%	9.00%
	5-6	5.00%	8.00%
	6-7	4.00%	7.00%
	7-8	4.00%	7.00%
	8 & Up	3.80%	3.80%
40		3.00%	3.00%
45		2.57%	2.57%
50		2.40%	2.40%
Ref.		623 77x0.45	624 77x0.45

*Rates of disability* were divided equally between duty and non-duty disability and are as follows:

Sample Ages	% of Active Members Becoming Disabled Within Next Year	
	Male	Female
20	0.001%	0.001%
25	0.001%	0.001%
30	0.001%	0.001%
35	0.007%	0.007%
40	0.028%	0.028%
45	0.058%	0.058%
50	0.096%	0.096%
55	0.142%	0.142%
60	0.212%	0.212%
Ref.	37 x 0.20	37 x 0.20

*Expense Load.* None.



## MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

### DECEMBER 31, 2009

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<b>Marriage Assumption:</b>	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
<b>Pay Increase Timing:</b>	Beginning of the year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
<b>Decrement Timing:</b>	Decrements of all types are assumed to occur mid-year.
<b>Eligibility Testing:</b>	Eligibility for benefits is determined based upon the age nearest birthday and exact fractional service on the date the decrement is assumed to occur.
<b>Decrement Relativity:</b>	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
<b>Decrement Operation:</b>	Disability and withdrawal decrements do not operate after member reaches retirement eligibility.
<b>Normal Form of Benefit:</b>	The assumed normal form of benefit is the straight life form.
<b>Benefit Service:</b>	Exact fractional service as of the valuation date is used to determine the amount of benefit payable.
<b>Incidence of Contributions:</b>	For Manchester School District and enterprise funds of the City (Airport, Water Works, and the MECRS), contributions are assumed to be received continuously throughout the year based upon the actual payroll payable at the time contributions are made. For the remaining City group, contributions are assumed to be received on a semiannual basis in December and July.
<b>COLA Assumption:</b>	1.75% compounded annually.
<b>Loads:</b>	Normal and Early retirement costs were loaded by 8% to reflect lump sums payable at retirement.
<b>Post-Retirement Subsidy:</b>	60% of future retirees were assumed to elect to receive the post-retirement health subsidy.

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## **SECTION D**

### **GASB STATEMENT NO. 25 AND NO. 43**

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**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 for Pension Benefits*

<b>Actuarial Valuation Date</b>	<b>(a) Actuarial Value of Assets \$Millions</b>	<b>(b) Actuarial Accrued Liability (AAL) Entry Age \$Millions</b>	<b>(b) - (a) Unfunded AAL (UAAL) \$Millions</b>	<b>Funded Ratio (a)/(b)</b>	<b>Covered Payroll (\$ Millions) (c)</b>	<b>UAAL as a Percent of Covered Payroll [(b) - (a)] / (c)</b>
12/31/1997	\$ 65.8	\$ 61.5	\$ (4.3)	107.0 %	\$27.0	-
12/31/1998	72.6	71.1	(1.5)	102.1 %	28.4	-
12/31/1999	82.6	79.3	(3.3)	104.1 %	29.6	-
12/31/2000	90.1	87.1	(3.0)	103.4 %	35.4	-
12/31/2001	94.8	96.3	1.5	98.4 %	38.7	3.8 %
12/31/2002	89.7	106.1	16.4	84.5 %	38.9	42.0 %
12/31/2003	95.3	116.3	21.0	81.9 %	42.0	50.0 %
12/31/2004	103.8	126.3	22.5	82.2 %	45.0	50.0 %
12/31/2005	113.9	147.9	34.0	77.0 %	47.2	72.0 %
12/31/2006#	126.3	172.5	46.2	73.2 %	47.5	97.3 %
12/31/2007#	139.2	187.6	48.4	74.2 %	48.6	99.6 %
12/31/2008#	126.0	201.4	75.4	62.6 %	50.7	148.7 %
12/31/2009	134.8	212.2	77.4	63.5 %	50.5	153.2 %
12/31/2009#	134.8	222.9	88.1	60.5 %	50.5	174.3 %

# After assumption changes.

*Schedule of Employer Contributions for Pension Benefits*

<b>City Fiscal Year Ended June 30*</b>	<b>Annual Required Contribution (ARC) as a Percent of Valuation Payroll</b>	<b>Plan Fiscal Year/ Valuation Year Ended December 31</b>	<b>Actual Contributions</b>
2000	N/A	1998	\$ 514,216
2001	N/A	1999	796,552
2002	N/A	2000	713,685
2003	N/A	2001	1,117,163
2004	N/A	2002	1,794,576
2005	8.76%	2003	3,323,023
2006	8.72%	2004	3,950,981
2007	10.63%	2005	5,413,826
2008	13.27%	2006	6,760,377
2009	13.84%	2007	6,646,801
2010	17.17%	2008	7,062,994
2011	17.65%	2009	8,508,451

\* Effective January 1, 2004, contributions were determined on a percent-of-payroll basis by multiplying the ARC rate by the actual payroll.

**GASB STATEMENT NO. 25**  
**REQUIRED SUPPLEMENTARY INFORMATION – PENSION BENEFITS**

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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	December 31, 2009
Actuarial cost method	Entry Age Normal
Amortization method	Level percent of payroll
Remaining amortization period	30 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment net rate of return*	7.5%
Projected salary increases*	3.5%-9.3%
*Includes inflation at	3.5%

Membership of the plan consisted of the following at December 31, 2009, the date of the latest actuarial valuation:

Retirees and Beneficiaries receiving benefits	625
Terminated plan members entitled to but not yet receiving benefits	99
Active plan members	<u>1,300</u>
Total	2,024

**GASB STATEMENT NO. 43**  
**REQUIRED SUPPLEMENTARY INFORMATION**

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**Schedule of Funding Progress for Health Subsidy Program**

<b>Actuarial Valuation Date</b>	<b>(a) Actuarial Value of Assets \$Millions</b>	<b>(b) Actuarial Accrued Liability (AAL) Entry Age \$Millions</b>	<b>(b) - (a) Unfunded AAL (UAAL) \$Millions</b>	<b>Funded Ratio (a)/(b)</b>	<b>Covered Payroll (\$ Millions) (c)</b>	<b>UAAL as a Percent of Covered Payroll [(b) - (a)] / (c)</b>
12/31/2006	0.8	11.7	10.9	6.7 %	47.5	23.1 %
12/31/2007#	1.9	11.3	9.4	16.8 %	48.6	19.3 %
12/31/2008	2.6	12.4	9.8	21.0 %	50.7	19.3 %
12/31/2009*	3.7	13.4	9.6	28.0 %	50.5	19.1 %
12/31/2009#*	3.7	13.1	9.3	28.6 %	50.5	18.5 %

# After changes in methods and/or assumptions.

\* Assets plus UAAL does not equal Accrued Liability in this exhibit due to rounding.

**Schedule of Employer Contributions for Health Subsidy Program**

<b>City Fiscal Year Ended June 30</b>	<b>Annual Required Contribution (ARC) as a Percent of Valuation Payroll</b>	<b>Plan Fiscal Year/ Valuation Year Ended December 31</b>	<b>Actual Contributions</b>
2008	1.24%	2006	\$ 333,028
2009	0.91%	2007	641,197
2010	0.93%	2008	487,909
2011	0.93%	2009	461,074

**GASB STATEMENT NO. 43**  
**REQUIRED SUPPLEMENTARY INFORMATION – HEALTH SUBSIDY**

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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:

Health Subsidy Program Implementation Date	March 1, 2006
Valuation date	December 31, 2009
Actuarial cost method	Entry Age Normal
Amortization method	Level percent of payroll
Remaining amortization period	30 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment net rate of return*	7.5%
Projected salary increases*	3.5%-9.3%
Future annual increases in subsidy amount	4.0%
*Includes inflation at	3.5%

Membership of the plan consisted of the following at December 31, 2009, the date of the latest actuarial valuation:

Retirees and Beneficiaries receiving benefits	166
Terminated plan members entitled to but not yet receiving benefits	99
Active plan members	<u>1,300</u>
Total	1,565

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**SECTION E**

**OPERATION OF THE RETIREMENT SYSTEM**

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## BASIC FINANCIAL OBJECTIVE AND OPERATION OF THE RETIREMENT SYSTEM

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***Benefit Promises Made Which Must Be Paid For.*** A retirement system 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 system 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?

This Retirement System meets the requirement of funding future benefits during the year by having the following ***Financial Objective: To establish and receive contributions, expressed as percents of active member payroll, which will remain approximately level from year to year*** and will not have to be increased for future generations of taxpayers.

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

***Normal Cost*** (the 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 System 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 systems 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 on behalf of the group

... plus ...

**Ivestment** earnings on contributions received

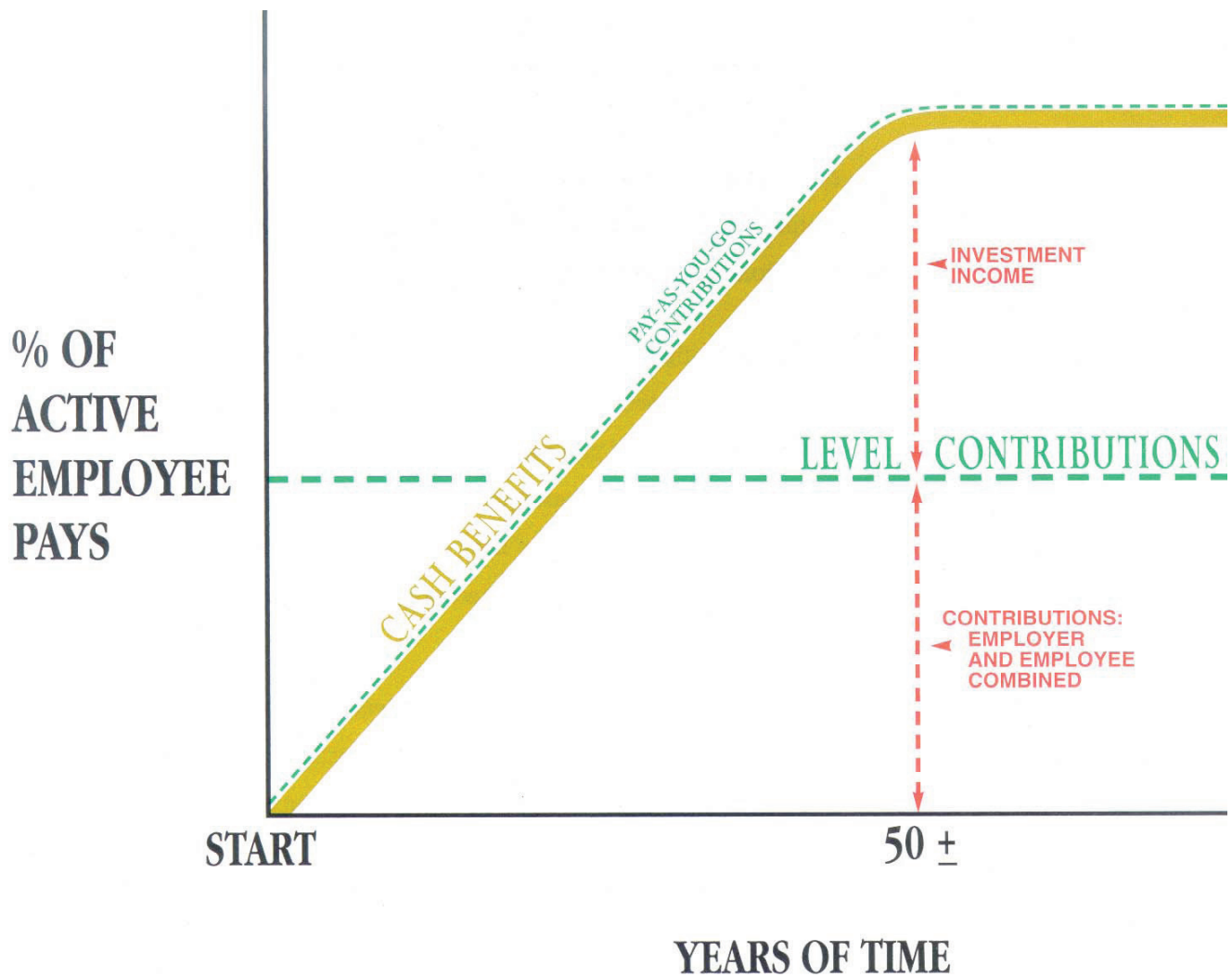
... minus ...

**Expenses** incurred in the operation of the system.

There are retirement systems designed to defer the bulk of contributions far into the future. They are lured by artificially low present contributions, but the inevitable consequence is a relentlessly increasing contribution rate to a level greatly in excess of the level percent-of-payroll rate.

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 a major contributor to the Retirement System 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 contribution rate is calculated ***by means of an actuarial valuation*** - the technique of assigning monetary values to the risks assumed in operating a retirement system.



**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:

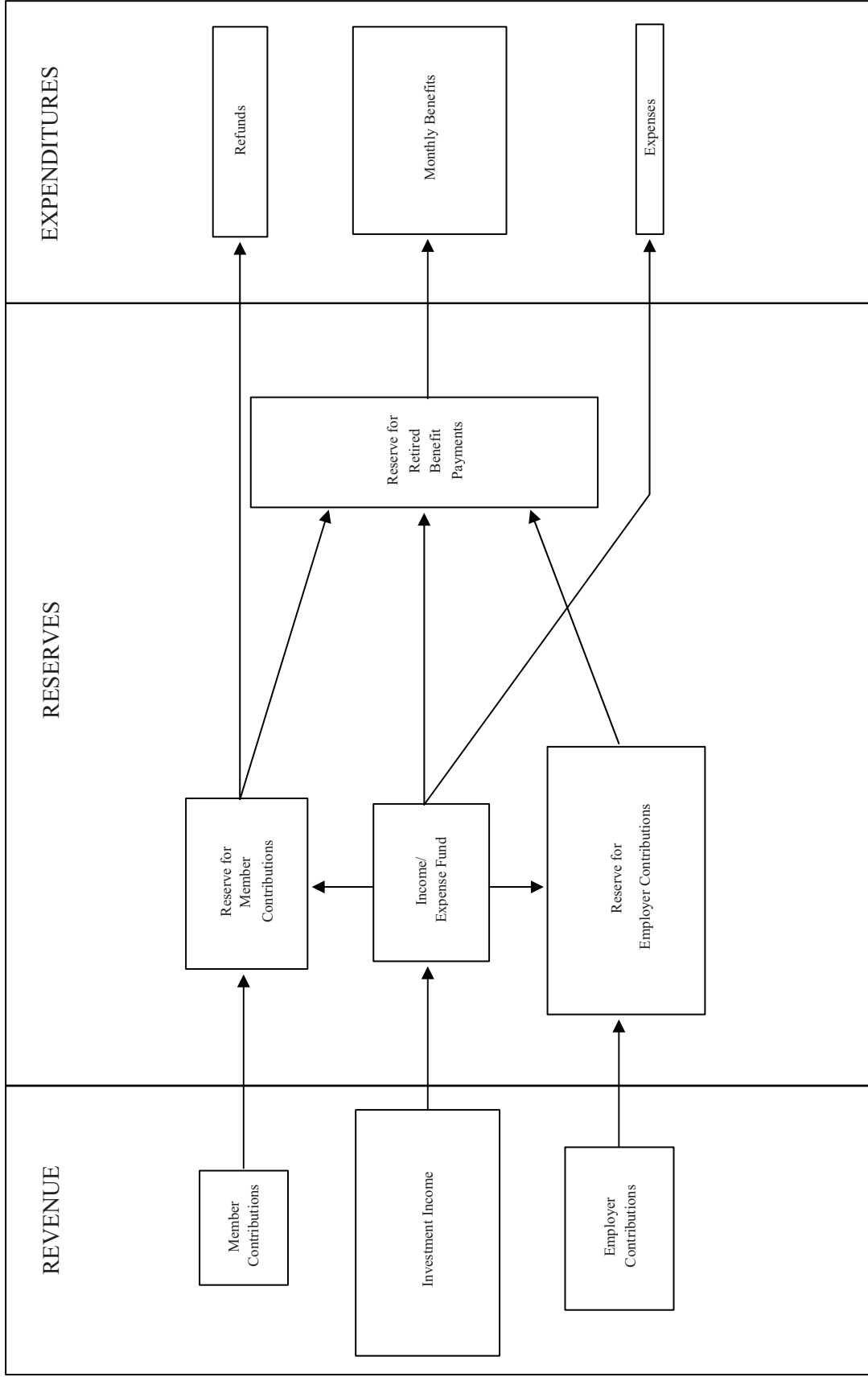
Economic Risk Areas

- 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

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***Actuarial Accrued Liability.*** The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

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

***Actuarial Assumptions.*** Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

***Actuarial Cost Method.*** A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

***Actuarial Equivalent.*** A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

***Actuarial Present Value.*** The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

***Amortization.*** Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

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

## **GLOSSARY (CONCLUDED)**

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***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 Liabilities.*** 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.