October 2008

The Fire and Police Employees' Retirement System of the City of Baltimore

Actuarial Valuation Report for June 30, 2008

MERCER

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Contents

Executive Summary

Mercer is pleased to provide the annual actuarial valuation report of the **Fire and Police Employees' Retirement System of the City of Baltimore** as of June 30, 2008. We have identified some of the more significant results and changes from the 2007 valuation as follows:

Key Results and Changes
▪ 18.8% increase in City's recommended contribution. ▪ Investments other than the Paid Up Benefit Fund and Contingency Reserve Fund lost 7.4490%. ▪ Mercer recommended several changes in actuarial assumptions as a result of the 2008 Experience Study. The Trustees adopted most of the recommendations. The changes, which caused an increase of $1.0 million in the FY 2010 contribution, are summarized in Section 5 of this report. ▪ The 10 year phase in of negative balances in the Benefit Improvement, Employer Reserve, and Minimum Stabilization Funds and the routine smoothing of the Actuarial Value of Assets result in an Actuarial Value of Assets that exceeds the Market Value (including accrued contribution) by $456.5 million. This difference increased from $249.6 million at June 30, 2007 due to unfavorable investment experience. The GASB 25 funded ratio would be 74.2% on a market value basis instead of 89.4% on an Actuarial Value of Assets basis. ▪ No variable benefit increase.

The 2008 valuation determines the City's recommended contribution for FY 2010. A key result of the valuation is an 18.8% increase in the City's contribution from $68,928,188 for FY 2009 to $81,879,056 for FY 2010.

The net investment return during FY 2008 was negative 7.4490% compared to our long range assumption of 8.25%. There will be no variable benefit increase effective January 2009.

Executive Summary *(continued)*

In 2005 the Benefit Improvement, Employer Reserve and Minimum Stabilization Funds expired. These funds are being incorporated into the Actuarial Value of Assets by phasing in the negative balances over 10 valuations, beginning June 30, 2005. The combined contribution amount by the City and State during FY 2008 was $72,687,585, which exceeded the anticipated amount of $66,955,744 by $5,731,841. The excess contribution amount was used to pay off a portion of the negative balances immediately. The excess contribution amount reduced the annual amortization amount from $40,592,404 to $39,773,570 starting with the FY 2008 amortization. As of June 30, 2008, the unrecognized amount of the negative balances is $238,641,420. The excess contribution was funded entirely by the City. Similarly, during FY 2007 the City made an excess contribution of $5,505,220 which was used to pay off a portion of the negative balances immediately. After taking the FY 2007 and FY 2008 excess contributions into account as a reduction to the negative balances, an additional credit of $901 plus one year's interest at 8.25% was applied to the City's FY 2010 recommended contributions and an offsetting charge of the same amount was applied to the State's FY 2010 recommended contribution.

A credit of $765,925 plus one year's interest at 8.25% was applied to the FY 2010 recommended contribution due to a transfer of "excess" funds from the Contingency Reserve Fund.

Assets

The market value of assets decreased $191,439,310 (from $2,343,141,978 to $2,151,702,668) during the 2007-2008 fiscal year. The receipts and disbursements of the fund were as follows:

Adjusted fund balance at 7/1/2007		$2,343,141,978
Contributions		$89,235,010
Member	$16,547,425	
Employer	72,687,585	
Investment income		($98,744,679)
Interest, dividends and realized capital gains	$171,730,202	
Unrealized gains (losses)	(259,615,870)	
Expenses	(10,859,011)	
Benefit payments and refunds		($181,929,641)
Adjusted fund balance at 6/30/2008		$2,151,702,668

Executive Summary *(continued)*

Earnings above or below the valuation interest assumption are identified separately. The excess earnings are calculated by the “asset averaging method” referred to in Article 22(36)(j) of the Baltimore City Code. This method uses one-fifth of any excess earnings for the year to adjust the unfunded actuarial liability in the current year. The other four-fifths of any excess earnings have been used for purposes such as benefit improvements, contribution reductions and changes in actuarial assumptions. Recently, this four-fifths is held in reserve.

For more details on assets, see Section 1.

Executive Summary *(continued)*

Valuation Summary

The major components of the **City's** costs, both as a dollar amount and a percentage of payroll, are shown below, together with the corresponding figures from the June 30, 2007 report for comparison:

	2007 Valuation Applies to FY2009		**2008 Valuation Applies to FY2010**	
	Amount	**Percent[1]**	**Amount**	**Percent[1]**
Normal cost	$41,814,851	16.52%	$46,205,005	17.22%
Amortization of unfunded actuarial liability over 20 years	22,301,582	8.81%	30,193,393	11.25%
Reduction due to transfer from Contingency Reserve Fund	(441,294)	(0.17%)	(758,646)	(0.28%)
Adjustment due to City-only excess contribution	(139)	0.00%	(901)	(0.00%)
Interest to 7/1/2008 (2009)	5,253,188	2.08%	6,240,205	2.33%
Total lump sum contribution	$68,928,188	27.24%	$81,879,056	30.52%

The above amounts are based on amortizing the unfunded actuarial liability over a rolling 20-year period, as approved by the Trustees in 1992.

The **State** has employees at BWI airport who participate in the plan. Contributions for the 19 airport employees are billed to the State. The State's cost increased from $542,880 for FY 2009 to $596,412 for FY 2010. The combined City and State contribution for FY 2010 is $82,475,468. This amount is increased for interest if the payment is made after the first day of the 2010 fiscal year.

For more details on the valuation, see Section 2.

[1] Payroll for City Members is $253,030,872 at 6/30/2007 and $268,310,013 at 6/30/2008.

Executive Summary *(continued)*

Variable Benefit Calculation

The retirement ordinance provides for an increase in benefits to certain retirees and beneficiaries whenever the investment performance[2] exceeds 7.5%. During FY 2008, the fund lost 7.4490%. As a result, there will be no increase in benefits for this group of participants.

Future increases will depend on future investment performance.

For more details on the variable benefit calculation, see Section 4.

Plan Membership

We have reconciled the plan membership from the previous year to this year.

Changes in active membership statistics from last year are as follows for City & State employees:

Plan Statistics	**2007**	**2008**	**% change**
# of active members	4,578	4,615	0.81%
Total payroll	$254,489,308	$269,690,209	5.97%
Average salary	$55,590	$58,438	5.12%
Average age	39.00	38.91	(0.23
Average service	12.52	12.34	(1.44

[2] Performance excludes earnings in Paid up Benefit Fund and Contingency Reserve Fund

Executive Summary *(continued)*

There were 5,881 persons receiving benefits from the plan at June 30, 2008, which is up from 5,828 at June 30, 2007. Average annual benefits have increased to $29,038. The types of retirement and average benefits appear on the following chart:

	Number of Retirees			Average Benefit Amount		
Type of Retirement	**2007**	**2008**	**% increase**	**2007**	**2008**	**% increase**
Normal Service Retirement	3,406	3,446	1%	$33,007	$35,002	6%
Discontinued Service	14	14	0%	29,959	30,621	2%
Non-Line-of-Duty Disability	299	303	1%	17,418	18,213	5%
Line-of-Duty Disability	715	715	0%	29,806	31,504	6%
Beneficiaries of Above	1,155	1,164	1%	12,420	13,346	7%
Non-Line-of-Duty Death	165	165	0%	18,354	19,699	7%
Line-of-Duty Death	74	74	0%	38,209	39,137	2%
Total	**5,828**	**5,881**	**1%**	**$27,379**	**$29,038**	**6%**

For more details on plan membership, see Section 3.

Actuarial Certification

The valuation is based on employee and financial data which were provided by the Retirement Systems' Office and which are summarized in this report.

All costs, liabilities, and other factors under the Plan were determined in accordance with generally accepted actuarial principles and procedures, using an actuarial cost method which we believe is appropriate. In our opinion, the actuarial assumptions, other than the post - retirement investment return assumption, are reasonable and represent our best estimate of the anticipated experience under the Plan. This report fully and fairly discloses the actuarial position of the Plan on an ongoing basis. Results shown in this valuation report could be materially different than the results obtained under a different set of assumptions, and could be materially different from the actual outcome if actual plan experience differs from the assumptions used.

There have been changes to the actuarial assumptions, but no changes in actuarial methods or plan provisions since the last valuation of the Plan as of June 30, 2007. See Section 5 for more details on the assumptions that were changed.

We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest, that would impair the objectivity of our work.

Actuarial Certification *(continued)*

Douglas L. Rowe, FSA, MAAA, EA	October 16, 2008 Date
James Baughman, ASA, EA	October 16, 2008 Date

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Section 1: Assets

Highlights
▪ Total fund decreased by $191 million during FY 2008 ▪ Total fund's investments lost $99 million net of expenses during FY 2008; investment income net of expenses in the Paid Up Benefit Fund and Contingency Reserve Fund combined was $38 million. ▪ The combination of the loss on investments and transfers to the Pension Reserve Fund led to a negative balance in the Pension Accumulation Fund. ▪ Negative balances in the Benefit Improvement, Employer Reserve, and Minimum Stabilization Funds at June 30, 2005 are being recognized in the Actuarial Value of Assets under a 10-year phase in, beginning June 30, 2005. ▪ Contributions in excess of the recommended amount during FY 2008 were used to pay off a portion of the unrecognized BIF, ERF, and MSF balances during FY 2008. ▪ Assets in the Contingency Reserve Fund exceeded 2.5% of combined assets in the Annuity Reserve and Pension Reserve funds as of June 30, 2008. As required, the excess funds of $765,925 were transferred from the Contingency Reserve Fund (CRF) to the Pension Accumulation Fund.

Section 1: Assets *(continued)*

The funds shown on the next page serve the following purpose:

- Annuity Savings Fund (ASF) – contains member contributions for active members
- Annuity Reserve Fund (ARF) – contains retired member contributions
- Pension Accumulation Fund (PAF) – contains City contributions for actives.
- Pension Reserve Fund (PRF) – contains City contributions for retired members; adjusted annually by transfers to/from PAF so that ARF plus PRF equals the actuarial present value of retiree benefits
- [3]Paid Up Benefit Fund (PuBF) – contains assets to pay for variable benefit increases already granted
- [3]Contingency Reserve Fund (CRF) – safety net for PuBF

[3] These funds are invested in fixed income investments only. They generally receive a transfer annually based on ARF plus PRF returns in excess of 7.5%. The CRF never exceeds 2.5% of the ARF plus PRF.

Section 1: Assets *(continued)*

The Assets of the Plan as of June 30, 2008

Based upon unaudited financial data furnished by the Retirement Systems Office, the change in market value of assets of the six funds during the valuation year ending June 30, 2008 is summarized as follows:

	Annuity Savings Fund	Annuity Reserve Fund	Pension Accumulation Fund	Pension Reserve Fund	Paid Up * Benefit Fund	Contingency * Reserve Fund	Total (MV)
Fund Balance on 6/30/07	$214,167,284	$228,599,357	$426,653,475	$1,083,742,416	$354,736,970	$35,242,476	$2,343,141,978
Transfers	$0	$1,294,396	($173,201,722)	$78,223,213	$94,130,104	($445,991)	$0
Adjustment from prior year							
Fund Balance on 6/30/07	$214,167,284	$229,893,753	$253,451,753	$1,161,965,629	$448,867,074	$34,796,485	$2,343,141,978
Contributions							
Member	$16,547,425	$0	$0	$0	$0	$0	$16,547,425
City & State**	$0	$0	$72,687,585	$0	$0	$0	$72,687,585
Net Investment Income							
Interest, Dividends, Real Gains	$11,922,877	$15,299,506	$43,783,812	$77,382,879	$21,310,517	$2,030,611	$171,730,202
Unrealized Gains(Losses)	$0	$0	($274,303,888)	$0	$14,474,067	$213,951	($259,615,870)
Expenses	$0	$0	($10,544,960)	$0	($295,718)	($18,333)	($10,859,011)
Total Investment Income	$11,922,877	$15,299,506	($241,065,036)	$77,382,879	$35,488,866	$2,226,229	($98,744,679)
Transfer for member contributions	$0	$0	$0	$0	$0	$0	$0
Transfers for annuities awarded & military leave credits awarded	($16,274,344)	$16,292,644	($18,300)	$0	$0	$0	$0
Payments of Benefits & Refunds	($3,193,908)	($21,412,373)	($12,552,605)	($107,176,037)	($37,594,718)	$0	($181,929,641)
Fund Balance on 6/30/08 (Market Value)	$223,169,334	$240,073,530	$72,503,397	$1,132,172,471	$446,761,222	$37,022,714	$2,151,702,668
Transfers	$0	$964,724	($77,259,628)	$77,060,829	$0	($765,925)	$0
Fund Balance on 6/30/08 (Market Value)	$223,169,334	$241,038,254	($4,756,231)	$1,209,233,300	$446,761,222	$36,256,789	$2,151,702,668

* Excluded from valuation

Section 1: Assets *(continued)*

Development of Investment Gain (Loss)

1. Mean assets (see Section 4)	$1,831,928,463
2. Investment return (see Section 4)	(7.4490)%
3. Investment gain (loss) a. Relative to 6.80%: [(2) – 6.80%] x (1) b. Relative to 8.25%: [(2) – 8.25%] x (1)	 ($261,031,487) ($287,594,449)
4. Funds as a portion of market value of assets (excluding PuBF and CRF) at the beginning of the year a. (ARF + PRF)/MVA b. (ASF + PAF)/MVA c. Total: (a) + (b)	 0.748521 0.251479 1.000000
5. Gain (Loss) allocation (beginning of the year) a. ARF and PRF: (3a) x (4a) b. ASF and PAF: (3b) x (4b) c. Total: (a) + (b)	 ($195,387,550) ($72,323,964) ($267,711,514)

Section 1: Assets *(continued)*

Development of Unallocated Earnings

Ordinance 97-164 set up two funds – the Employer Reserve Fund (ERF) and the Benefit Improvement Fund (BIF) – which are credited with unallocated earnings, beginning with the $50 million excess earnings from the June 30, 1996 valuation. As of June 30, 1997, a minimum stabilization fund (MSF) was established within each Fund. Ordinance 00-49 provided for increases in the minimum stabilization funds annually from 2000 through 2003. All of these funds expired as of June 30, 2005. The actuarial value of assets recognizes the negative balances as of June 30, 2005 in 10 equal amounts beginning with the June 30, 2005 valuation.

Date of Valuation	**6/30/2007**	**6/30/2008**
Investment gain (loss)	$204,386,444	$(267,711,514)
Unallocated earnings for prior year	(31,946,225)	30,174,169
Variable benefit funds	(94,130,104)	0
Allocation for Experience Study	0	0
Allocation for 10% of the BIF, ERF & MSF	(40,592,404)	(39,773,570)
Balance for unallocated earnings calculation	$37,717,711	$(277,310,915)
One-fifth (credit) charge	(7,543,542)	55,462,183
Unallocated earnings for date of valuation	$30,174,169	$(221,848,732)

The actuarial value of assets used to calculate the unfunded actuarial liability is developed as follows:

Actuarial Value of Assets	**6/30/2008**
Assets in the Fund: 6/30/2008	$2,151,702,668
Paid-up benefit fund	(446,761,222)
Contingency reserve fund	(36,256,789)
Remaining BIF, ERF & MSF Balance 6/30/2008	238,641,420
Unallocated excess losses (earnings) for 2008	221,848,732
Reserve for future costs under Ordinance 98-319	(4,000,207)
Transfer from CRF for contribution reduction	(765,925)
Present value of prior year’s contribution not yet paid	68,928,188
Actuarial value of assets on 6/30/2008	$2,193,336,865

Section 2: Valuation Summary

Highlights
▪ City contribution increased 18.8% from \$68.9 million in FY 2009 to \$81.9 million in FY 2010. ▪ Total (City plus State) unfunded liability increased from \$235.2 million at 6/30/2007 to \$318.0 million at 6/30/2008 ▪ Total (City plus State) Net Normal Cost increased from \$42.1 million in FY 2009 to \$46.5 million in FY 2010.

Section 2: Valuation Summary *(continued)*

Valuation Summary

	As of June 30, 2008		
	Airport	**City**	**Total**
Number of Participants			
Active	19	4,596	4,615
Service retired	N/A	N/A	3.460
Disabled	N/A	N/A	1,018
Beneficiaries	N/A	N/A	1,403
Total participants	N/A	N/A	10,496
Annual compensation of active participants	$1,380,196	$ 268,310,013	$ 269,690,209
Development of Normal Cost and Actuarial Liability			
Actuarial liability			
Actives	$10,083,631	$ 1,051,020,562	$ 1,061,104,193
Service retired	N/A	N/A	1,094,223,903
Disabled	N/A	N/A	227,696,997
Beneficiaries	N/A	N/A	128,350,654
Total	N/A	N/A	$ 2,511,375,747
Less: actuarial value of assets	N/A	N/A	2,193,336,865
Unfunded actuarial liability	$3,022,311	$ 315,016,571	$ 318,038,882
Net (of expected member contributions) normal cost	$ 267,657	$ 46,205,005	$ 46,472,662
Development of contribution payable for the fiscal year beginning July 1, 2009			
Net normal cost	$ 267,657	$ 46,205,005	$ 46,472,662
Twenty-year amortization of Unfunded Actuarial Liability	289,679	30,193,393	30,483,072
Reduction due to transfer from Contingency Reserve Fund	(7,279)	(758,646)	(765,925)
Adjustment due to city-only excess contribution	901	(901)	-
Net plan cost at 7/1/2008	$ 550,958	$ 75,638,851	$ 76,189,809
Interest to 7/1/2009	45,454	6,240,205	6,285,659
Net plan cost at 7/1/2009	$ 596,412	$ 81,879,056	$ 82,475,468

Section 3: Plan Membership

Highlights
▪ Active membership increased 0.8% from 4,578 to 4,615 ▪ Active payroll increased 6.0% from $254 million to $270 million ▪ Average salary increased 5.1% from $55,590 to $58,438 ▪ Inactive participants stay constant at 127% of active membership

Section 3: Plan Membership *(continued)*

Plan Membership

This section contains tables which summarize the data used in the valuation. The data as of June 30, 2008, which was supplied by the Retirement System Office, has been reviewed by Mercer to ensure as high a degree of accuracy as possible. This data would customarily not be verified by a plan's actuary. We have reviewed the member data for internal consistency and reasonableness and have no reason to doubt its substantive accuracy.

A reconciliation chart is included on page 17, which traces the active membership through the year, showing the exits and entrances by category. The members are grouped by age and service in a chart on page 18.

The retired member data are displayed in charts on pages 19, 20 and 21.

Section 3: Plan Membership *(continued)*

Reconciliation of Active F&P Members

A.	**Active members as of June 30, 2007**		**4,578**
B.	Exits:		
	1. Terminations:	Non-vested	137
	2. Transfers Out:		0
	3. Leaves:	Other	0
	4. Prior Incorrect Inclusions		10
	5. Deaths:	Ordinary with no Survivor	0
		Accidental with Survivor	0
		Ordinary with Survivor	3
	6. Retirements:	Service	142
	7. Disablements:	Ordinary	10
		Special	18
		Special - 100%	0
	8. Other Exits:	Hired and Terminated During Year	48
	9. Subtotal (all exits):		368
	10. Military Leaves:		29
	11. Pending Disablement:		19
C.	**Remaining Active (A - B.9)**		**4,210**
D.	Entrances:		
	1. New Entrants:		387
	2. Prior Omissions:		3
	3. Transfers In:		0
	4. Restorations:	Pending	0
		Leave	0
		Retirement	0
		Disability-Ordinary	0
		Disability-Special	0
		Other Termination	15
	5. Subtotal (all entrances):		405
E.	**Active Members as of June 30, 2008 (C + D.5)[4]**		**4,615**

[4] Includes 29 participants on military leave and 19 participants pending disablement.

Section 3: Plan Membership *(continued)*

Average Earnings for Active Service Groups by Age Groups

	Service Group									
Age Group	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40+**	**TOTAL**
0-19	3 32,501									3 32,501
20-24	239 39,643									239 39,643
25-29	334 43,171	165 55,091	1 57,366							500 47,133
30-34	243 45,511	372 56,613	127 60,062	5 64,438						747 53,640
35-39	168 47,331	231 56,765	384 61,973	251 65,122	8 73,834					1,042 59,308
40-44	71 47,993	111 56,294	204 60,765	307 63,625	199 69,028	3 66,646				895 62,035
45-49	19 54,450	43 56,060	62 59,810	123 62,604	198 66,634	114 74,472	1 77,177			560 65,382
50-54	10 43,883	19 56,117	27 60,500	59 60,159	77 65,752	146 70,024	33 75,080	4 74,639		375 66,001
55-59	1 57,102	3 59,230	7 60,349	10 59,612	26 63,793	57 70,601	59 74,165	40 77,292		203 70,954
60-64		2 57,375	1 59,322		7 65,675	9 71,237	6 76,825	10 70,171	3 78,337	38 70,332
65-69			1 61,319	2 61,538				3 55,312	4 69,440	10 62,809
70-74							1 10,583			1 10,583
75+									2 38,555	2 38,555
TOTAL	1,088 44,063	946 56,322	814 61,135	757 63,632	515 67,382	329 71,668	100 74,021	57 74,700	9 65,542	4,615 58,438

Total Earnings: $269,690,209
Average Age: 38.91
Average Service: 12.34

Section 3: Plan Membership *(continued)*

Reconciliation of Retired Fire and Police Members and their Beneficiaries

		Retired		Disabled		
		Primary	Beneficiary	Primary	Beneficiary	Total
A.	**Members as of June 30, 2007**	**3,420**	**953**	**1,014**	**441**	**5,828**
B.	Exits:					
	1. Beneficiary Payments Ceased	0	5	0	1	6
	2. Returned to Active Membership	0	0	0	0	0
	3. Prior Incorrect Inclusion	0	0	0	0	0
	4. Deaths: Primary with no Survivor	53	0	8	0	61
	Beneficiary	0	47	0	30	77
	Primary with Survivor	51	0	16	0	67
	5. Subtotal (all exits)	104	52	24	31	211
C.	**Remaining Members (A - B.5)**	**3,316**	**901**	**990**	**410**	**5,617**
	Adjustments	0	0	0	0	0
	Adjusted Remaining Members	**3,316**	**901**	**990**	**410**	**5,617**
D.	Entrances:					
	1. New Entrants: Primary	142	0	28	0	170
	2. Active Death: Beneficiary	0	3	0	0	3
	3. Beneficiary Assumes Payments	0	51	0	16	67
	4. Prior Omissions	2	8	0	2	12
	5. Ex-Spouse Receiving Payments	0	12	0	0	12
	6. Subtotal (all entrances):	144	74	28	18	264
E.	**Members as of June 30, 2008 (C + D.6)**	**3,460**	**975**	**1,018**	**428**	**5,881**

Section 3: Plan Membership *(continued)*

Schedule of Benefit Recipients by Attained Age and Type of Retirement F&P June 30, 2008– PRIMARY MEMBERS

		Type of Retirement[5]				
AGE	**Total**	**NR**	**DS**	**ODis**	**SD**	**S100**
0-24	0	0	0	0	0	0
25-29	3	0	0	0	3	0
30-34	24	0	0	5	19	0
35-39	67	1	1	16	49	0
40-44	170	67	8	18	76	1
45-49	281	182	3	25	70	1
50-54	410	346	1	18	45	0
55-59	644	562	0	21	61	0
60-64	863	743	1	34	85	0
65-69	616	513	0	32	69	2
70-74	503	381	0	45	77	0
75-79	459	330	0	44	84	1
80-84	297	219	0	31	46	1
85 and up	141	102	0	14	25	0
Totals	4,478	3,446	14	303	709	6
Average Annual Benefit	$33,294	$35,002	$30,621	$18,213	$31,321	$53,103

[5] Type of Retirement

NR	Normal Retirement for age and service
DS	Discontinued Service
ODis	Non-Line-of-Duty Disability
SD	Line-of-Duty Disability
S100	Line-of-Duty Disability 100% of Compensation

Section 3: Plan Membership *(continued)*

Schedule of Benefit Recipients by Attained Age and Type of Retirement
F&P
June 30, 2008– BENEFICIARIES

		Type of Retirement[6]								
AGE	**Total**	**NR**	**DS**	**ODis**	**SD**	**S100**	**ODR[7]**	**OD[8]**	**OD[9]**	**SDth[10]**
<20[11]	25	1	0	2	5	0	0	0	9	8
20-24	4	1	0	0	0	0	0	0	3	0
25-29	2	0	0	1	0	0	0	0	1	0
30-34	1	0	0	0	0	0	0	0	1	0
35-39	7	0	0	0	0	0	0	0	1	6
40-44	12	6	0	1	2	0	0	1	0	2
45-49	38	26	0	2	3	0	2	0	2	3
50-54	72	42	0	6	8	0	8	3	2	3
55-59	102	57	1	9	6	0	13	6	2	8
60-64	129	78	0	11	11	0	9	10	1	9
65-69	155	85	0	19	26	0	11	8	0	6
70-74	202	92	0	38	44	0	13	9	0	6
75-79	232	107	0	45	51	0	20	4	0	5
80-84	229	125	0	35	47	0	11	1	1	9
85 and up	193	115	0	26	30	0	10	3	0	9
Totals	1,403	735	1	195	233	0	97	45	23	74
Average Annual Benefit	$15,453	$14,343	$11,971	$10,264	$12,785	$0	$23,732	$11,485	$18,764	$39,137

[6] Type of Retirement

NR	Normal Retirement for age and service
DS	Discontinued Service
ODis	Non-Line-of-Duty Disability
SD	Line-of-Duty Disability
S100	Line-of-Duty Disability 100% of Compensation

[7] Non-Line-of-Duty Death member eligible for Service Retirement

[8] Non-Line-of-Duty Death prior to 7/1/91.

[9] Non-Line-of-Duty Death with 25% of compensation.

[10] Line-of-Duty Death

[11] Beneficiaries in this age group are children of deceased members

Section 4: Variable Benefit Calculation

Highlights
▪ No increase in January 2009

Abbreviations used in the following table:

MV	=	Market Value
PuBF	=	Paid-up Benefit Fund
CRF	=	Contingency Reserve Fund
ARF	=	Annuity Reserve Fund
PRF	=	Pension Reserve Fund

Section 4: Variable Benefit Calculation *(continued)*

Variable Benefit Calculation

1.	MV of assets as of 6/30/2007 after transfers and before adjustment (excluding PuBF and CRF)	$1,859,478,419
2.	MV of assets as of 6/30/2008 before transfers (excluding PuBF and CRF)	$1,667,918,732
3.	Earnings during 7/1/2007 to 6/30/2008 (excluding PuBF and CRF)	($136,459,774)
4.	Mean Assets Half of [(1) + (2) - (3)]	$1,831,928,463
5.	Investment return 2007-2008	(7.4490%)
6.	Earnings between 7.5% and 10% (Excess of (5) over 7.5%, but not more than 2.5%) divided by (5) times (3)	$0
7.	One half of earnings above 10% Half of [((5) less 10%) divided by (5) times (3)]	$0
8.	Retired Life Reserve on 6/30/2007 (ARF) $229,893,753 (PRF) $1,161,965,629	$1,391,859,382
9.	MV of assets as of 6/30/2007 (excluding PuBF and CRF)	$1,859,478,419
10.	Assets available for Variable Benefit Funds ((6) plus (7)) times ((8) divided by (9))	$0
11.	Retired Life Reserve on 6/30/2008 (ARF) $241,038,254 (PRF) $1,209,233,300	$1,450,271,554
12.	Amount to transfer to (from) the Contingency Reserve Fund on 6/30/2008 (2.5% of (11)) less current assets in CRF $37,022,714	($765,925)
13.	Amount available for Paid up Benefit Fund (10) less [the greater of (12) and $0]	$0
14a.	Cost to provide each additional 1% (6.8% Purchase Assumption)	$15,571,503
14b.	Cost to provide each additional 1% (Current Market Rate)	N/A
15a.	Compound Increase (13) ÷ (14a) x 1% (assuming that the new funds can be invested at 6.8% or that surplus is available in the Paid Up Benefit Fund and will be used)	0.00%
15b.	Compound Increase (13) ÷ (14b) x 1% (assuming that the new funds can be invested at current market rate or that surplus is available in the Paid Up Benefit Fund and will be used)	N/A

Section 5: Actuarial Basis

Highlights
Changes in actuarial assumptions from the 2007 valuation include: ▪ Salary scale ▪ Pre-retirement non-line-of-duty mortality ▪ Post-retirement disability mortality ▪ Withdrawal rates ▪ Line-of-duty disability rates ▪ Retirement rates

Section 5: Actuarial Basis *(continued)*

Projected Unit Credit Method

Liabilities and contributions shown in this report are computed using the Projected Unit Credit method of funding.

The objective under this method is to fund each participant's benefits under the Plan as they would accrue, taking into consideration future salary increases. The total pension, to which each participant is expected to become entitled, is broken down into units, each associated with a year of past or future credited service. When this method is introduced, there will be an initial liability for benefits credited for service prior to that date, and to the extent that the liability is not covered by assets of the Plan, there is an unfunded liability to be funded over a chosen period in accordance with an amortization schedule.

A description of the calculation follows:

An individual's **accrued benefit** for valuation purposes related to a particular separation date is the accrued benefit described under the Plan but determined using the projected salary that would be used in the calculation of the benefit on the expected separation date.

The **benefit** deemed to accrue for an individual during a plan year is the prorated portion of the projected benefit attributable to one year of service. The projected benefit is calculated at the various anticipated separation dates.

An individual's **accrued liability** is the present value of the accrued benefit for valuation purposes at the beginning of the plan year, and the normal cost is the present value of the benefit deemed to accrue in the plan year. If multiple decrements are used, the accrued liability and the normal cost for an individual are the sum of the component accrued liabilities and normal costs associated with the various anticipated separation dates. Such accrued liabilities and normal costs reflect the accrued benefits as modified to obtain the benefits payable on those dates and the probability of the individual separating on those dates.

The Plan's **normal cost** is the sum of the individual normal costs, and the Plan's **accrued (actuarial) liability** is the sum of the accrued liabilities for all participants under the Plan.

Section 5: Actuarial Basis *(continued)*

Actuarial Assumptions and Methods

Method of funding: Effective June 30, 1988, the Projected Unit Credit Funding Method is used.

The current Unfunded Actuarial Liability is amortized over 20 years. This 20-year period is restarted each year. (Effective 7/1/1992)

Asset valuation: The actuarial value of assets is equal to the market value, adjusted for investment surpluses and deficits over a five-year period. This calculation is done in the following steps:

1) The investment gain or loss for the current year is calculated; this equals the actual investment earnings during the year minus the expected earnings. Expected earnings are calculated using a weighted average of the pre- and post-retirement interest rate assumptions multiplied by the mean market value of assets during the year. Market value for this purpose excludes the PuBF and CRF.
2) The amount allocated to the variable benefit fund is deducted from this total.
3) Of this difference, 20% is used in the current actuarial value of assets. Beginning again at June 30, 2007 the remaining 80% is held in reserve.

The actuarial value of assets is the market value (excluding the PuBF and CRF) less cumulative unallocated earnings plus the remaining balance of the BIF, ERF, and Minimum Stabilization Fund. Any contribution receivable for the upcoming fiscal year (as determined in the prior year’s valuation) is added to the result.

Investment return: 8.25% compounded annually until retirement. 6.80% compounded annually after retirement. (Effective 6/30/1995)

Section 5: Actuarial Basis *(continued)*

Salary increases: Salary increases are assumed to vary with age. Sample rates are as follows:

	Annual Rate of Salary Increase	
Age	**6/30/2007 Valuation**	**6/30/2008 Valuation**
20	0.0850	0.0800
25	0.0725	0.0700
30	0.0650	0.0625
35	0.0550	0.0500
40	0.0475	0.0500
45	0.0475	0.0500
50	0.0450	0.0500
55	0.0450	0.0400
60	0.0400	0.0400
64	0.0400	0.0400
	(effective 6/30/2005)	(effective 6/30/2008)

Post-retirement mortality: Retirees and beneficiaries:
Male and Females - 1994 Uninsured Pensioners Generational Mortality table projected 5 additional years (effective 6/30/2005).

Disabled Members:
Male and Females – GAM 1983 (M&F) set forward 4 years and reduced by 19% (effective 6/30/2008). This is updated from the assumption used for the June 30, 2007 valuation: GAM 1983(M&F) set forward 4 years and reduced by 10% (effective 6/30/2005).

Sample rates are shown on the next page.

Section 5: Actuarial Basis *(continued)*

	Retirees and Beneficiaries		Disabled Members	
Age	**Male***	**Female***	**Male**	**Female**
55	0.004944	0.002506	0.006451	0.002940
60	0.008857	0.004821	0.010671	0.004913
65	0.016076	0.009380	0.019097	0.008404
70	0.026299	0.014912	0.031079	0.016230
75	0.041156	0.024788	0.051653	0.029663
80	0.068050	0.042960	0.081603	0.049100

***Rates for individuals who are the age shown as of 6/30/2008.*

Percent married: Males 75%, Females 75%

Spouse age: A husband is assumed to be 4 years older than his wife.

Remarriage rates: None

Children: All benefits with Joint & Survivor Forms of Payments for retirees had their survivor benefits increased by 4% to account for children's benefits.

Benefit loads: Benefits to certain types of beneficiaries receiving Line-of-Duty death benefits were increased by 3.0% to allow for contingent beneficiaries.

Benefits to certain types of members receiving Line-of-Duty disability benefits were increased by 1.5% to allow for possible conversion to Line-of-Duty death benefits.

Expenses: All expenses are paid from the fund. It is assumed that fund earnings will be sufficient to pay these expenses and meet the interest assumption.

Section 5: Actuarial Basis *(continued)*

Mortality and Morbidity Rates for Active Members: Sample rates of all decrements applicable to active participants are as follows:

Age	Non-Line-of-Duty Disability	Line-of-Duty Disability	Non-Line-of-Duty Death[12]		Line-of-Duty Death[13]
			Males	Females	
20	0.000228	0.000864	0.000566	0.000315	0.000076
25	0.000232	0.001138	0.000725	0.000322	0.000119
30	0.000594	0.001792	0.000871	0.000385	0.000164
35	0.001914	0.003520	0.000924	0.000525	0.000253
40	0.001840	0.004988	0.001172	0.000786	0.000385
45	0.002651	0.005644	0.001742	0.001080	0.000433
50	0.002800	0.004600	0.002876	0.001590	0.000372
55	0.001446	0.004664	0.004944	0.002506	0.000300
60	0.001162	0.006208	0.008857	0.004821	0.000159
64	0.000812	0.006353	0.014312	0.008277	0.000062

The above rates for line-of-duty disability were effective 6/30/2008. The rates were reduced by 20% from the rates used for the 6/30/2007 valuation. The rates in the 6/30/2007 valuation were effective 6/30/2005.

The above rates for non-line-of-duty death were effective 6/30/2008. The rates were updated from the rates used in the 6/30/2007 valuation to use the same basis for mortality as for service retirees and beneficiaries (1994 Uninsured Pensioners Generational Mortality table projected 5 additional years). The rates in the 6/30/2007 valuation, which were based on a unisex table and were higher than those used in the current year's valuation, were effective 6/30/2005.

The above rates for non-line-of-duty disability and line-of-duty death were effective 6/30/2005.

[12] Males and Females – 1994 Uninsured Pensioners Generational Mortality table projected 5 additional years
[13] Benefit loaded ½% for post-disability line-of-duty death benefit.

Section 5: Actuarial Basis *(continued)*

Mortality and Morbidity Rates for Active Members *(continued):*

Withdrawal rates are shown below.

Years of Service	Withdrawal[14]
0	0.0700
1	0.0650
2	0.0600
3	0.0575
4	0.0525
5	0.0450
6	0.0400
7	0.0325
8	0.0250
9	0.0200
10	0.0130
11-14	0.0085
15-19	0.0035
20+	0.0000

The above rates were effective 6/30/2008. The rates are updated from the rates used for the 6/30/2007 valuation, which were based on age rather than service. The rates used for the 6/30/2007 valuation were effective 6/30/2005. Sample rates from the 6/30/2007 valuation are:

Age	Withdrawal and Early Retirement[15]
20	0.070083
25	0.054430
30	0.031211
35	0.018943
40	0.010828
45	0.003026
50	0.037573
55	0.048033
60	0.084338
64	0.100843

[14] Withdrawal decrements are reduced to zero when participant is eligible to retire (rates effective 6/30/2008).

[15] Withdrawal/early retirement decrements are reduced to zero when participant has attained 20 years of service (rates effective 6/30/2005).

Section 5: Actuarial Basis *(continued)*

Fire and Police Retirement Rates

The retirement rates are assumed to be affected by whether a member participates in the DROP. Members that do not join DROP are assumed to have retirement rates that vary by service until age 50. After age 50 they are assumed to vary solely by age.

Members that join DROP are assumed to have retirement rates that vary solely by service from the time they join and leave the DROP. Key points of DROP service include 3 years (maximum time under DROP) and 4.5 years (time to restore Average Final Compensation). We have assumed that 90% of members will elect the DROP. Retirement rates for members are as follows and reflect possibilities of retirement with and without DROP rates:

Non-Drop Rates Until Age 50 (with 90% reduction)

Years of Service	Non-DROP Retirement Rate
20	6.00%
21	2.25%
22	2.25%
23	2.93%
24	3.38%
25 or later	3.38%

Non-DROP Rates After Age 50 (with 90% reduction)

Age	Non-DROP Retirement Rate
50	0.64%
51	0.46%
52	0.46%
53	0.47%
54	0.59%
55	0.73%
56	0.69%
57	0.69%
58	0.69%
59	1.39%
60	2.12%
61	1.72%
62	2.55%
63	2.55%
64	3.23%
65	100%

Full DROP Rates

Years after electing DROP	DROP Retirement Rate
1	4.00%
2	5.00%
3	8.00%
4	10.00%
5	25.00%
6	17.00%
7+	25.00%

After we know a member has elected the DROP, only DROP rates will be used. If a member has more than 20 years of service and has not elected the DROP, only non-DROP rates without the 90% reduction will be used.

The above rates were effective 6/30/2008. The rates were updated as follows:

- Non-DROP rates until age 50 were increased by 50% at 20 years of service and tripled at 21+ years of service,
- Non-DROP rates after age 50 were reduced by 50% at ages 50-58, and

Section 5: Actuarial Basis *(continued)*

Fire and Police Retirement Rates *(continued)*

- DROP rates were updated as follows:
  - 1 year after entering DROP: no change
  - 2 years after entering DROP: increased from 3% to 5%
  - 3 years after entering DROP: decreased from 10% to 8%
  - 4 years after entering DROP: increased from 4% to 10%
  - 5 years after entering DROP: decreased from 35% to 25%
  - 6 years after entering DROP: decreased from 18% to 17%
  - 7+ years after entering DROP: decreased from 35% to 25%

Section 6: Summary of Plan Provisions

Highlights
There were no changes in plan provisions from the 2007 valuation.

Section 6: Summary of Plan Provisions *(continued)*

1. Effective Date

The System was effective July 1, 1962 and has periodically been amended. The most recent amendment was contained in Ordinance 03-576.

2. Eligibility

Any officer or employee of the Police Department or the Fire Department and certain Department of Aviation employees shall become a member as a condition of employment. Any officer or employee for whom the City makes contributions to Social Security shall be excluded.

3. Member Contributions

Members contribute at the rate of 6% of regular compensation for their entire period of service. Contributions are treated as made by the employer and are made to the system pre-tax according to Section 414(h)(2) of the Internal Revenue Code. Members of the ERS who transferred to this System after July 1, 1967 and did not make up the contributions which would have been made from July 1, 1962 are to have their retirement allowance reduced by the actuarial equivalent of the deficient contributions with interest. Interest is credited on contributions at a rate of 5.5% per annum. Members' contributions have been reduced in several recent years by a specific ordinance for each year. For purposes of calculating benefits that depend on the amount of member contributions (e.g., DROP accounts), members are deemed to have contributed the full amount.

4. Compensation

Earnable compensation is all usual compensation including lodging, subsistence, etc. When compensation is not paid in money, the Board of Trustees shall fix the value of that part of compensation. This definition excludes overtime.

Average Final Compensation is the average annual compensation during any eighteen consecutive month period of service during which earnable compensation was highest or, if less than eighteen months, the average during total service.

Section 6: Summary of Plan Provisions *(continued)*

5. Military Service Credit

A. Military Service Prior to Employment: A maximum of three years of service credit is granted provided the member has acquired 10 years of service and attained age 50, or has acquired 20 years of service regardless of age.

B. Military Service Within Employment: Upon retirement or death, any member who, because of military duty, had a break in employment shall receive credit for the period of absence as provided by the Veterans Reemployment Rights Act.

6. Retirement Allowance Eligibility

A. Service Retirement: Age 50 or 20 years of service.
Membership commencing on or after July 1, 2003: Age 50 with 10 years of service as a contributing member, or 20 years of service with 10 years of service as a contributing member.

B. Non-Line-of-Duty Disability Retirement: Five years of service and certified by a member of the Panel of Hearing Examiners to be mentally or physically incapacitated for the performance of duty and that incapacity is likely to be permanent.

C. Line-of-Duty Disability Retirement: No service or age constraints apply. The benefit is awarded when a participant becomes totally and permanently incapacitated for duty as the result of an injury while in performance of duty and certified by a Hearing Examiner as incapacitated for the performance of duty where such incapacity is likely to be permanent. Should such disability further result in extensive brain damage causing total incapacity or in the loss of or the loss of use of both hands or both arms or both feet or both legs or both eyes or any two thereof, an additional pension will be payable.

7. Termination of Employment

A. Eligible for a Termination Retirement Allowance payable immediately upon completion of 15 years of service if removed from a position without fault. Presently, this benefit is not reflected in the valuation.

B. Eligible for a refund of accumulated contributions if not eligible for any other benefits.

Section 6: Summary of Plan Provisions *(continued)*

8. Retirement Allowances

A. Service Retirement:

The retirement allowance shall be the sum of:

(1) An annuity of the actuarial equivalent of a member's accumulated contributions.

(2) A pension, which together with the annuity in (1), equals 2.5% of Average Final Compensation times the first 20 years of service, plus 2.0% of Average Final Compensation times service in excess of 20 years.

DROP Benefits

Members with more than 20 years of service can elect to participate in DROP. A member's DROP participation period can be for one, two or three years. During that time the member will accrue no additional service. A member who continues employment at the end of his/her DROP participation period shall begin to earn additional service credit.

If a member retires during his/her DROP participation period or immediately at the end of this period, he/she shall be entitled to a Basic DROP Retirement Benefit. This shall equal:

(1) The retirement benefit that would have been paid had the member retired at the time he/she began his/her DROP participation, plus

(2) A lump sum equal to the member's DROP account. This equals the accumulation of the annuity payments the member would have received had he/she retired at the time his/her DROP participation began receiving benefits, plus the member contributions paid during his/her DROP participation period, plus interest at 8.25%.

Section 6: Summary of Plan Provisions *(continued)*

If a member retires later than the end of the 3 year DROP period but less than 18 months after the conclusion of his/her DROP participation period, he/she is entitled to an Intermediate DROP Retirement Benefit. This shall equal:

(1) The retirement benefit that would have been paid had the member retired at the time he/she began his/her DROP participation, plus

(2) Benefit accrual of 2% plus an extra 1.5% per year (not to exceed 18 months) for service after the DROP participation period.

(3) A lump sum equal to the DROP account. No additions (other than interest) are added after the conclusion of the DROP participation period.

If a member retires more than 18 months after the conclusion of his/her DROP participation period, he/she is entitled to a Full DROP Retirement Benefit. This shall equal:

(1) The retirement benefit based on current average final compensation and all service excluding service while a participant in DROP.

(2) Benefit accrual includes an extra 1.5% per year (not to exceed four years) for service after the DROP participation period.

(3) A lump sum equal to the DROP account. No additions (other than interest) are added after the conclusion of the DROP participation period.

B. Non-Line-of-Duty Disability Retirement: A member shall receive an annuity of the actuarial equivalent of a member's accumulated contributions plus a pension which, together with the annuity, shall equal 2.5% of his/her Average Final Compensation times service up to 20 years, plus 2.0% of his/her Average Final Compensation times service in excess of 20 years, but in no event less than 25% of Average Final Compensation.

NOTE: This allowance is offset by workers' compensation, if the member entered the system after July 1, 1970.

Section 6: Summary of Plan Provisions *(continued)*

C. Line-of-Duty Disability Retirement: An annuity of the actuarial equivalent of a member's accumulated contributions, plus a pension equal to 66-2/3% of Average Final Compensation. An additional pension is paid for certain disabilities so that the retirement allowance is equal to 100% of compensation at the time of retirement.

Note: The same offsets apply as in Non-Line-of-Duty Disability.

D. Termination Retirement Allowance: Determined the same as if the member had retired on a Non-Line-of-Duty Disability Allowance.

9. Optional Methods of Receiving Benefit Payments

These options are available for Service, Non-Line-of-Duty Disability and Line-of-Duty Disability Retirement. The option and/or beneficiary may be changed within 30 days after retirement.

A. Joint and 50% to unremarried spouse or dependent children until the last marries, dies or attains age 18 (age 22 if a full-time student) (this is known as the maximum service allowance)

B. Cash refund to designated beneficiary with refund based on present value of allowance at retirement less payments made

C. Joint and 100% to Contingent beneficiary

D. Joint and 50% to Contingent beneficiary

E. Some other periodic benefit subject to the approval of the Board of Trustees

Section 6: Summary of Plan Provisions *(continued)*

10. Non-Line-of-Duty Death Benefits

Upon the non-duty related death of a member in service, benefits are payable as follows:

A. The member's accumulated contributions shall be payable to the member's designated beneficiary or estate.

B. If a member had one or more years of service, 50% of the greater of his/her current annual compensation or Average Final Compensation will be payable as a lump-sum.

C. In lieu of the A and B above, if the member had at least two years of continuous service, the benefit is an annual sum equal to 25% of the member's regular gross compensation, plus 1.5% of regular gross compensation times years of service in excess of 2 years, up to a maximum benefit of 50% of regular gross compensation. The death benefit shall be payable to:

   (1) the widow(er), if the beneficiary so elects, during widowhood only, or

   (2) if no eligible widow(er), the child or children until the last marries, dies or attains age 18 (age 22 if a full-time student).

D. If the member was eligible for a service retirement or, if retired on account of service or non-line-of-duty disability and dies within 30 days of retirement, and the member's designated beneficiary is the member's spouse with whom the member had been living for at least one year or the member's surviving parent(s), such beneficiary may elect, in lieu of (A) and (B) above, an allowance equal to the amount that would have been paid under the Joint and 100% Contingent Option.

These benefits are offset by workers' compensation, if the member entered the system after July 1, 1970. If no beneficiary and if intestate without heirs, then the benefit shall remain part of the System.

Section 6: Summary of Plan Provisions *(continued)*

11. Line-of-Duty Death Benefits

If a member's death arose out of and in the performance of duty as certified by a Hearing Examiner, or if the member dies within five years as a result of the last injury which resulted in a Line-of-Duty Disability Retirement, a refund of accumulated contributions shall be paid, plus a pension of 100% of current compensation (not less than $15,000) shall be payable to:

A. the surviving spouse, or

B. if no eligible spouse or if the spouse dies, any children, equally, until age 18 (or age 22 if full-time student(s)), or

C. if no eligible spouse or children, any dependent father or dependent mother for their lifetime.

This benefit is offset by workers' compensation, if the member entered the system after July 1, 1970. If no beneficiary and if intestate without heirs, then the benefit shall remain part of the System.

12. Post-Retirement Benefit Increase (Variable Benefits)

Post-retirement benefit increases are automatically provided to certain retirees and beneficiaries when investment performance, as determined each June 30, exceeds 7.5%. Only retirees and beneficiaries, who have been receiving periodic benefit payments for two or more years as of the June 30 determination date, are eligible for the increase. For a member who retires during or at the end of the DROP participation period, the member's DROP participation period shall count toward the eligibility requirement for post-retirement benefit increases. Earnings on the Pension and Annuity Reserve Funds between 7.5% and 10% and one-half of the earnings above 10% are available for the variable benefit funds. For further details see the City code.

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