



CITY OF DETROIT



**Police and Fire
Retirement System**



**64th Annual Actuarial Valuation
June 30, 2005**

GRS

Gabriel Roeder Smith & Company



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February 27, 2006

Board of Trustees
City of Detroit Police and Fire
Retirement System

The results of the **64th Annual Actuarial Valuation** of the annuity and pension liabilities of the City of Detroit Police and Fire Retirement System are presented in this report. The purpose of the valuation was to measure the System's funding progress and to determine an appropriate contribution level for the next fiscal year.

The date of the valuation was **June 30, 2005**.

The actuarial assumptions used in the valuation are summarized in the appendix. Benefit provisions are summarized on pages 13-14. The statistical data concerning the active, inactive and retired persons covered by the System was furnished by the retirement system staff, together with needed financial information. Data was checked for year-to-year consistency, but was not otherwise audited by the actuary.

Your attention is directed particularly to the employer contribution rates on pages 2a, 2b, and 2c and the COMMENTS on page 12.

The valuation was completed using generally accepted actuarial principles and in accordance with standards of practice prescribed by the Actuarial Standards Board. To the best of our knowledge this report is complete and accurate and the actuarial method and assumptions produce results which are reasonable.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY



Norman L. Jones

Judith A. Kermans

NLJ:lr

VALUATION RESULTS



**EMPLOYER CONTRIBUTION RATES
COMPUTED PAYABLE LAST DAY OF FISCAL YEAR
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
2006-2007 FISCAL YEAR**

**Based on the Board of Trustee's Funding Policy of Amortizing UAAL over 12 years for FY 2007
and 13 years for FY 2008**

Contributions for	Contributions Expressed as Percents of Payroll for the Fiscal Year Ending June 30,	
	2007	2006
Normal Cost		
Age & service allowances	22.74 %	22.46 %
Disability allowances	5.64 %	5.56 %
Death-in-service allowances	0.49 %	0.48 %
Total	28.87 %	28.50 %
Members current contributions: #	4.18 %	4.06 %
(Future refunds)	(0.35)%	(0.36)%
Available for monthly benefits	3.83 %	3.70 %
Employer Normal Cost	25.04 %	24.80 %
Actuarial Accrued Liabilities		
Total (\$ millions)	\$3,780.4	\$3,857.5
Funding Value of Assets	3,757.9	3,074.5
Unfunded Actuarial Accrued Liabilities (UAAL)		
- dollar (millions)	22.5	783.0
- amortization percent	0.94 %	29.56 %
Computed Employer Rate	25.98 %	54.36 %
POC portion	##	23.82 %
Remaining Employer Rate	25.98 %	30.54 %

Member statutory contributions of 5% to the Annuity Savings Fund are not payable during all periods of covered employment. The rate shown is the equivalent rate if paid during all covered employment.

In FY2006, a specific portion of the POC proceeds operated to reduce the FY 2006 employer contribution rate. In FY 2007, the entire POC proceeds operate to reduce the UAAL. Contributions based on alternate amortization periods of 20 and 30 years are shown on the following pages.

**EMPLOYER CONTRIBUTION RATES
COMPUTED PAYABLE LAST DAY OF FISCAL YEAR
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
2006-2007 FISCAL YEAR**

Based on an Alternate UAAL Funding Policy of 20 years in FY 2006 and FY 2007

Contributions for	Contributions Expressed as Percents of Payroll for the Fiscal Year Ending June 30,	
	2007	2006
Normal Cost		
Age & service allowances	22.74 %	22.46 %
Disability allowances	5.64 %	5.56 %
Death-in-service allowances	0.49 %	0.48 %
Total	28.87 %	28.50 %
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Funding Value of Assets	3,757.9	3,074.5
Unfunded Actuarial Accrued Liabilities		
- dollar (millions)	22.5	783.0
- amortization percent	0.62 %	21.05 %
Computed Employer Rate	25.66 %	45.85 %
POC portion	##	16.96 %
Remaining Employer Rate	25.66 %	28.89 %

Member statutory contributions of 5% to the Annuity Savings Fund are not payable during all periods of covered employment. The rate shown is the equivalent rate if paid during all covered employment.

In FY2006, a specific portion of the POC proceeds operated to reduce the FY 2006 employer contribution rate. In FY 2007, the entire POC proceeds operate to reduce the UAAL.

**EMPLOYER CONTRIBUTION RATES
COMPUTED PAYABLE LAST DAY OF FISCAL YEAR
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
2006-2007 FISCAL YEAR**

Based on an Alternate UAAL Funding Policy of 30 years in FY 2006 and FY 2007

Contributions for	Contributions Expressed as Percents of Payroll for the Fiscal Year Ending June 30,	
	2007	2006
Normal Cost		
Age & service allowances	22.74 %	22.46 %
Disability allowances	5.64 %	5.56 %
Death-in-service allowances	0.49 %	0.48 %
Total	28.87 %	28.50 %
Members current contributions: #	4.18 %	4.06 %
(Future refunds)	(0.35)%	(0.36)%
Available for monthly benefits	3.83 %	3.70 %
Employer Normal Cost	25.04 %	24.80 %
Actuarial Accrued Liabilities		
Total (\$ millions)	\$3,780.4	\$3,857.5
Funding Value of Assets	3,757.9	3,074.5
Unfunded Actuarial Accrued Liabilities		
- dollar (millions)	22.5	783.0
- amortization percent	0.48 %	15.89 %
Computed Employer Rate	25.52 %	40.69 %
POC portion	##	12.81 %
Remaining Employer Rate	25.52 %	27.88 %

Member statutory contributions of 5% to the Annuity Savings Fund are not payable during all periods of covered employment. The rate shown is the equivalent rate if paid during all covered employment.

In FY2006, a specific portion of the POC proceeds operated to reduce the FY 2006 employer contribution rate. In FY 2007, the entire POC proceeds operate to reduce the UAAL.

ACTUARIAL ACCRUED LIABILITIES AS OF JUNE 30, 2005

Present Value, June 30	Amount
Accrued Pension Liabilities	
Retirees and beneficiaries	\$2,532,219,410
Inactive members future deferred pensions	4,359,267
Active members	953,272,489
Total accrued pension liabilities	3,489,851,166
Pension fund balances	3,467,297,763
Unfunded accrued pension liabilities	\$ 22,553,403
Accrued Annuity Liabilities	
Retirees and beneficiaries	
Future annuities	\$ 7,707,280
Contingency reserve	3,522,027 *
Total	\$ 11,229,307
Members annuities & future refunds	279,366,941
Total accrued annuity liabilities	290,596,248
Annuity fund balances	290,596,248
Unfunded accrued annuity liabilities	\$ 0
System Totals	
Actuarial accrued liabilities	\$3,780,447,414
Accrued assets	3,757,894,011
Unfunded actuarial accrued liabilities	\$ 22,553,403

* See comment on page 12.

VALUATION RESULTS - COMPARATIVE STATEMENT
-- \$ IN MILLIONS --

June 30	Active Payroll		Actuarial Accrued Liabilities			Unfunded / Active Pays	Employer Contributions % of Pays
	Total	Average	Computed Total	Valuation Assets	Unfunded		
1975	\$ 121.5	\$16,670	\$1,107.2	\$ 369.8	\$ 737.4	6.1	53.82%
1976	128.6	19,753	1,240.3	416.0	824.3	6.4	57.49%
1977	134.6	20,012	1,257.9	461.6	796.3	5.9	57.09%
1978	165.0	22,467	1,426.7	531.5	895.2	5.4	56.43%
1979	175.2	25,136	1,557.7	603.2	954.5	5.5	57.54%
1980	178.0	27,992	1,809.0	689.7	1,119.3	6.3	60.35%
1981	155.8	28,429	1,777.8	771.0	1,006.8	6.5	60.95%
1982(a)*	155.4	28,332	1,841.1	864.1	914.8	6.1	58.25%
1983	153.3	28,450	1,810.5	979.7	830.8	5.4	56.95%
1984(a)	148.2	28,455	1,887.2	1,090.2	797.0	5.4	58.16%
1985(a)	171.4	30,302	2,076.4	1,208.3	868.1	5.1	54.66%
1986	185.3	29,220	2,171.5	1,378.5	793.0	4.3	50.21%
1987	202.3	30,906	2,238.2	1,557.0	681.2	3.4	44.69%
1988	206.1	33,120	2,386.0	1,705.4	680.6	3.3	45.71%
1989(a)	208.4	33,179	2,327.9	1,848.9	479.0	2.3	36.52%
1990*	221.5	36,874	2,453.6	2,037.4	416.2	1.9	35.98%
1991	213.1	39,182	2,517.2	2,085.5	431.7	2.0	36.19%
1992(a)*	205.7	39,095	2,345.9	2,163.8	182.1	0.9	27.83%
1993(a)	204.3	38,846	2,493.2	2,256.0	237.2	1.2	28.97%
1994	199.7	38,693	2,486.2	2,304.4	181.8	0.9	27.64%
1995(a)	209.7	39,692	2,574.2	2,443.0	131.2	0.6	25.90%
1996	212.7	39,965	2,633.4	2,628.6	4.8	0.0	21.81%
1997(b)	217.6	40,145	2,724.1	2,944.2	(220.1)	-	7.32%
1998*#	217.5	40,772	2,976.8	3,325.9	(349.1)	-	26.16%
1999#@	216.0	40,542	3,274.1	3,668.4	(394.3)	-	26.17%
2000*#	237.7	43,376	3,342.1	3,964.2	(622.1)	-	27.25%
2001#	253.3	45,353	3,463.2	3,900.0	(436.8)	-	27.22%
2002(a)#	248.7	46,203	3,632.0	3,635.1	(3.1)	-	23.39%
2003	248.7	47,305	3,721.6	3,205.5	516.1	2.1	43.89%
2004	258.7	51,126	3,857.5	3,074.5	783.0	3.0	54.36%
2005+	250.5	52,197	3,780.4	3,757.9	22.5	0.1	25.98%

(a) After changes in actuarial assumptions.

(b) After changes in actuarial assumptions and a temporary full funding credit.

* Plan amended.

Employer normal cost before full funding credit.

@ After \$55.4 million reserve for 1998-99 13th check and ASF distributions.

+ Based on the Board of Trustees funding policy, amortization periods of 12 years in 2005. If an amortization period of 20 years is used in 2005, the employer contribution rate will be 25.66%. If an amortization period of 30 years is used in 2005, the employer contribution rate will be 25.52%.

SOLVENCY TESTS

The PFRS funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will pay all promised benefits when due -- the ultimate test of financial soundness. Testing for level contribution rates is *the long-term solvency test*.

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

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

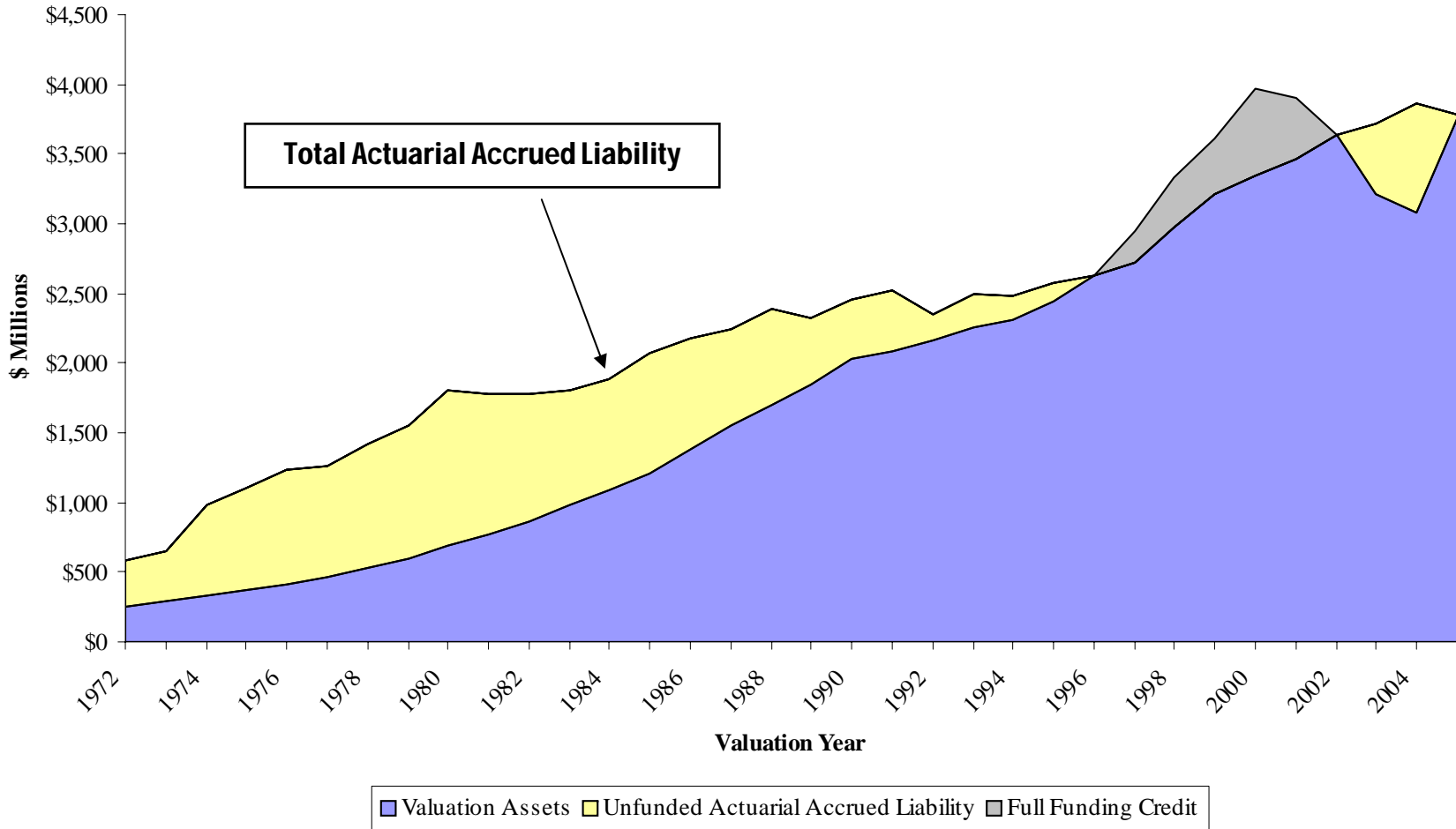
In a system that has been following the discipline of level percent-of-payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances).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

Short-Term Solvency Test 5 Year Comparative Statement (\$ millions)

June 30	Actuarial Accrued Liabilities			Assets	Portion of Accrued Liabilities Covered by Assets			
	(1) Active Member Contr.	(2) Retirees and Benef.	(3) Present Members (Employer Financed Portion)		(1)	(2)	(3)	Total
	-----\$ Millions-----							
2001	\$365	\$2,255	\$843	\$3,900	100%	100%	152%	113%
2002(a)	391	2,299	942	3,635	100%	100%	100%	100%
2003	341	2,400	980	3,206	100%	100%	47%	86%
2004	303	2,516	1,038	3,075	100%	100%	25%	80%
2005	279	2,543	958	3,758	100%	100%	98%	99%

(a) After changes in actuarial assumptions.

ASSETS AND ACCRUED LIABILITIES



**DERIVATION OF EXPERIENCE GAIN (LOSS)
YEAR ENDED JUNE 30, 2005**

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

(1) UAAL* at start of year	\$ 782,976,693
(2) Employer normal cost from last valuation	64,157,496
(3) Actual employer contributions, including POC proceeds	682,431,785
(4) Interest accrual: (1) x .078	61,072,182
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	225,774,586
(6) Change due to benefit provision modifications	0
(7) Change due to revised actuarial methods or assumptions	(66,954,639)
(8) Expected UAAL after changes: (5) + (6) + (7)	158,819,947
(9) Actual UAAL at end of year	22,553,403
(10) Experience gain (loss): (8) - (9)	136,266,544
(11) Experience gain (loss) as a % of beginning of year accrued liability	3.5 %

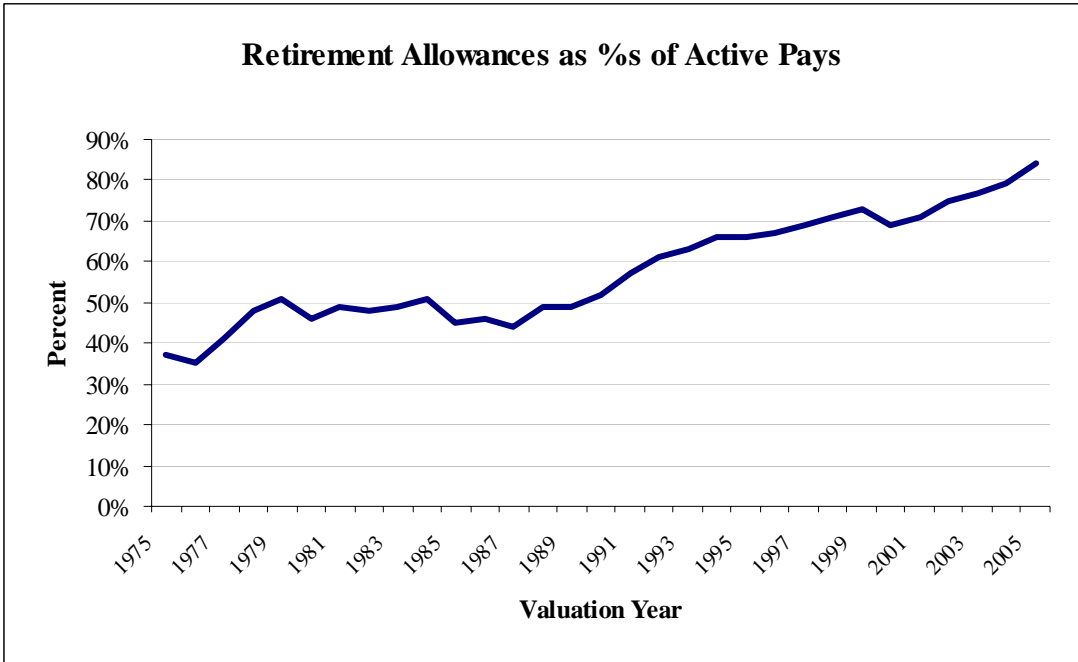
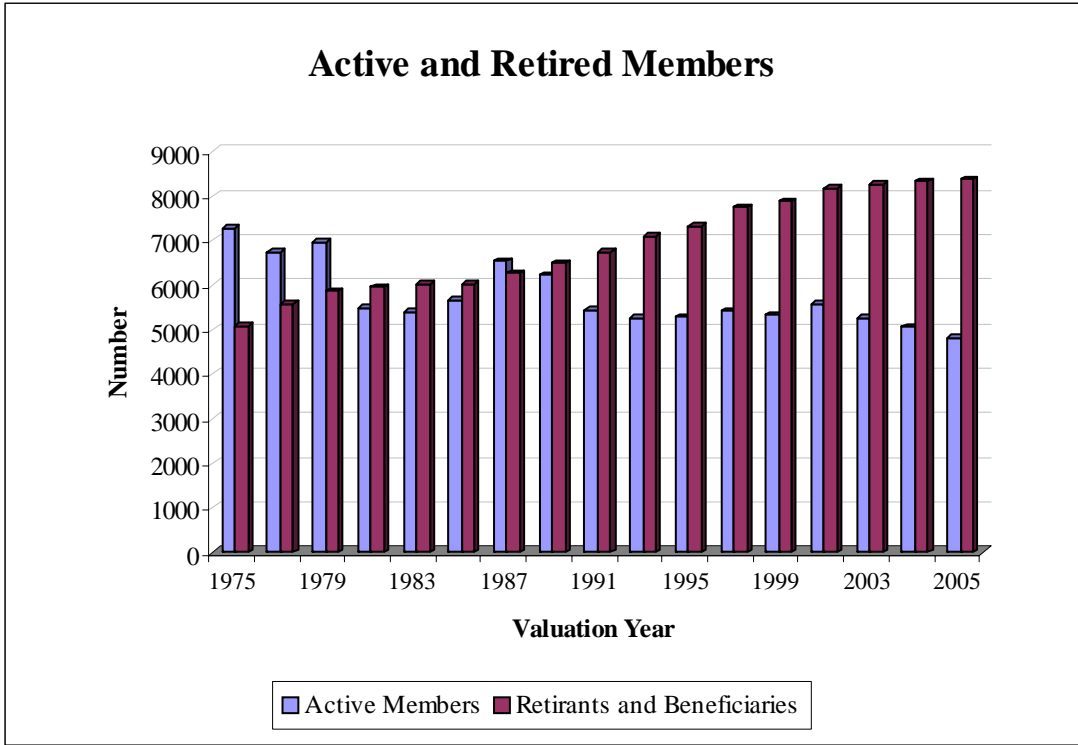
* *Unfunded actuarial accrued liability.*

**COMPARATIVE STATEMENT OF ACTIVE MEMBERS
AND VALUATION PAYROLL**

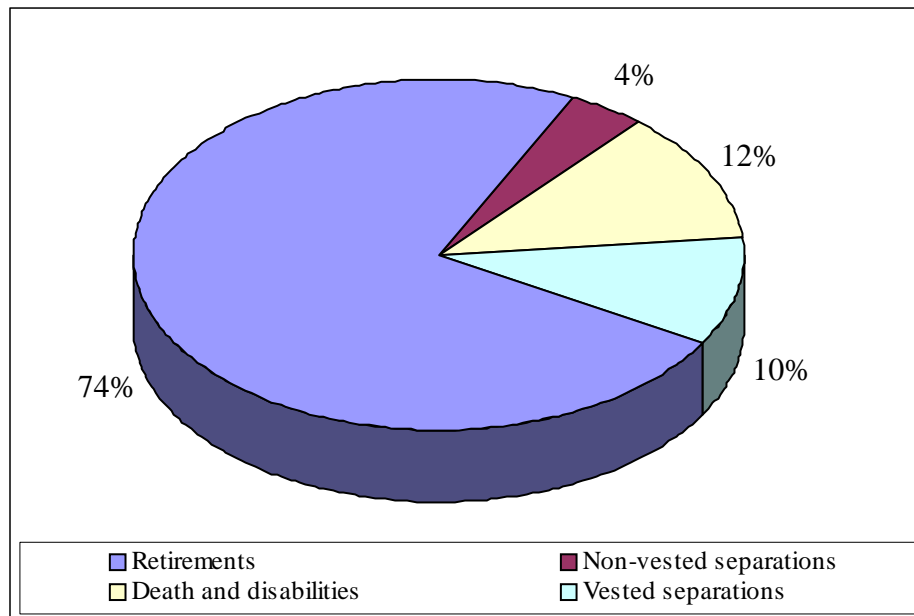
June 30	No. Members		Total Members					
	1969 Plan	Pre- 1969	No.	% Change	Ratio of Active to Retired	Annual Payroll	Average Pay	
							\$	Change
1973	2,796	4,712	7,508	2 %	1.6	\$101,084,327	\$13,463	7.1 %
1974	3,065	4,291	7,356	(2)%	1.5	112,925,940	15,352	14.0 %
1975	3,298	3,993	7,291	(1)%	1.4	121,540,470	16,670	8.6 %
1976	2,900	3,610	6,510	(11)%	1.2	128,594,291	19,753	18.5 %
1977	3,463	3,265	6,728	3 %	1.2	134,639,135	20,012	1.3 %
1978	4,432	2,911	7,343	9 %	1.3	164,975,236	22,467	12.3 %
1979	4,230	2,739	6,969	(5)%	1.2	175,174,674	25,136	11.9 %
1980	3,719	2,640	6,359	(9)%	1.1	178,004,349	27,993	11.4 %
1981	2,991	2,491	5,482	(14)%	0.9	155,849,804	28,429	1.6 %
1982	3,185	2,299	5,484	0 %	0.9	155,372,732	28,332	(0.3)%
1983	3,176	2,214	5,390	(2)%	0.9	153,347,716	28,450	0.4 %
1984	3,070	2,139	5,209	(3)%	0.9	148,223,416	28,455	0.0 %
1985	3,657	1,998	5,655	9 %	0.9	171,357,741	30,302	6.5 %
1986	4,463	1,879	6,342	12 %	1.0	185,312,563	29,220	(3.6)%
1987	4,918	1,627	6,545	3 %	1.0	202,277,028	30,906	5.8 %
1988	4,776	1,447	6,223	(5)%	1.0	206,107,980	33,120	7.2 %
1989	4,942	1,338	6,280	1 %	1.0	208,361,567	33,179	0.2 %
1990	4,834	1,174	6,008	(4)%	0.9	221,538,387	36,874	11.1 %
1991	4,372	1,066	5,438	(9)%	0.8	213,072,553	39,182	6.3 %
1992	4,411	850	5,261	(3)%	0.8	205,681,412	39,095	(0.2)%
1993	4,534	725	5,259	0 %	0.7	204,289,195	38,846	(0.6)%
1994	4,578	584	5,162	(2)%	0.7	199,734,550	38,693	(0.4)%
1995	4,779	505	5,284	2 %	0.7	209,733,734	39,692	2.6 %
1996	4,889	432	5,321	1 %	0.7	212,656,401	39,965	0.7 %
1997	5,049	371	5,420	2 %	0.7	217,585,229	40,145	0.5 %
1998	5,018	316	5,334	(2)%	0.7	217,479,443	40,772	1.6 %
1999	5,099	230	5,329	0 %	0.7	216,049,687	40,542	(0.6)%
2000	5,291	190	5,481	3 %	0.7	237,741,560	43,376	7.0 %
2001	5,453	132	5,585	2 %	0.7	253,297,027	45,353	4.6 %
2002	5,290	92	5,382	(4)%	0.7	248,663,133	46,203	1.9 %
2003	5,181	76	5,257	(2)%	0.6	248,681,461	47,305	2.4 %
2004	5,007	53	5,060	(4)%	0.6	258,699,581	51,126	8.1 %
2005	4,768	31	4,799	(5)%	0.6	250,491,872	52,197	2.1 %

**COMPARATIVE STATEMENT OF ANNUAL RETIREMENT ALLOWANCES
BEING PAID RETIREES AND BENEFICIARIES**

June 30	No. Retired		% of Current Allowances			Current Allowances		Allowances as a % of Payroll
	Pre-69	Total	Annuities	Pensions	Escalators	Total	Average	
1973	4,626	4,626	5.2%	56.2%	38.6%	\$ 28,461,146	\$ 6,152	28%
1974	4,873	4,873	4.7%	51.3%	44.0%	34,888,040	7,159	31%
1975	5,075	5,075	4.0%	48.3%	47.7%	41,808,416	8,238	34%
1976	5,325	5,325	3.5%	48.1%	48.4%	47,479,044	8,916	37%
1977	5,576	5,576	3.2%	52.0%	44.8%	51,040,761	9,154	38%
1978	5,760	5,760	2.8%	44.2%	53.0%	58,117,007	10,090	35%
1979	5,869	5,869	2.6%	51.3%	46.1%	61,355,273	10,454	35%
1980	5,676	5,911	2.1%	45.3%	52.6%	72,671,386	12,294	41%
1981	5,691	5,951	2.0%	46.7%	51.3%	74,565,233	12,530	48%
1982	5,709	6,006	2.0%	49.0%	49.0%	75,348,490	12,545	48%
1983	5,705	6,038	2.0%	50.8%	47.2%	75,774,552	12,550	49%
1984	5,641	5,986	1.9%	51.7%	46.4%	76,126,476	12,717	51%
1985	5,581	6,011	1.9%	54.0%	44.1%	70,776,660	12,773	45%
1986	5,585	6,117	1.6%	52.5%	45.9%	85,409,280	13,962	46%
1987	5,486	6,264	1.5%	53.5%	45.0%	88,608,492	14,146	44%
1988	5,442	6,416	1.3%	53.9%	44.8%	100,659,780	15,689	49%
1989	5,415	6,496	1.3%	55.7%	43.0%	103,122,696	15,875	49%
1990	5,412	6,660	1.1%	54.3%	44.6%	114,650,196	17,215	52%
1991	5,361	6,754	1.1%	54.3%	44.6%	121,715,028	18,021	57%
1992	5,342	6,899	1.0%	57.0%	42.0%	124,835,208	18,095	61%
1993	5,349	7,091	1.0%	59.5%	39.5%	129,027,970	18,196	63%
1994	5,249	7,169	0.9%	61.7%	37.4%	131,595,379	18,356	66%
1995	5,161	7,311	0.9%	61.3%	37.8%	138,959,417	19,007	66%
1996	5,049	7,469	0.8%	62.6%	36.6%	143,536,485	19,218	67%
1997	5,012	7,743	0.8%	63.3%	35.9%	150,843,744	19,481	69%
1998	4,719	7,750	0.7%	65.8%	33.5%	154,226,437	19,900	71%
1999	4,573	7,883	0.7%	68.4%	30.9%	158,523,816	20,110	73%
2000	4,498	8,079	0.6%	70.0%	29.4%	164,279,376	20,334	69%
2001	4,394	8,166	0.6%	67.4%	32.0%	180,239,652	22,072	71%
2002	4,229	8,179	0.5%	68.4%	31.1%	185,658,396	22,699	75%
2003	4,104	8,277	0.5%	69.8%	29.7%	191,634,636	23,153	77%
2004	3,961	8,328	0.4%	68.5%	31.1%	203,083,524	24,386	79%
2005	3,791	8,376	0.4%	69.5%	30.1%	211,114,020	25,205	84%



EXPECTED TERMINATIONS FROM ACTIVE EMPLOYMENT FOR CURRENT ACTIVE MEMBERS



The chart shows the expected future development of the present population in simplified terms. The retirement system presently covers 4,799 active members. Eventually, 197 members are expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 4,025 members are expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. 577 members are expected to become eligible for death-in-service or disability benefits.

COMMENTS

Experience During the Past Year

Investment experience for the year ended June 30, 2005 was nearly as expected with a market rate of return of 7.65%. However, under the asset valuation method, market gains and losses are spread over a 3-year period and prior investment results for some of the years were slightly less favorable. Those unfavorable results are still being recognized. Because of the favorable market return this year, the market value of assets now exceeds the funding value by \$71 million. If market returns average 7.8% or more in future years, the excess \$71 million will ultimately be recognized and provide some contribution rate relief.

Annuity Reserve Fund

The contingency reserve in the Annuity Reserve Fund is \$3.5 million and the ratio of the ARF balance to computed liabilities is over 140% (see page 3). The size of the contingency is likely to increase further unless a balance is restored. The Board approved a transfer of \$12 million from the Annuity Reserve Fund to the Pension Accumulation Fund in 2001 and \$5 million in 2005. An additional transfer of \$2 million at this time would reduce the funded ratio to around 120% which would still provide a margin for unforeseen contingencies.

Pension Obligation Certificates (POCs)

During the 2005 fiscal year, POC proceeds were paid into the System. We have treated the proceeds as a contribution made during the year that acted to reduce the unfunded accrued liability. The treatment of the POC for accounting purposes is a matter for the auditor to determine.

Conclusion and Recommendation

The Retirement System enjoys a very high 99% funded ratio as a result of the issuance of the Pension Obligation Certificates. Based upon the funding policy established by the Board, the data furnished by the Retirement System and the actuarial assumptions shown in the Appendix, the recommended employer contribution rate for the 2006-2007 fiscal year is 25.98% of covered payroll, based on a 12 year amortization period.

DATA FURNISHED FOR VALUATION



SUMMARY OF BENEFIT PROVISIONS (JULY 1, 2005)

Age and Service Retirement

Eligibility - 25 years of service regardless of age.

Annual Amount - An annuity equal to the actuarial equivalent of the member's accumulated contribution account plus a defined benefit, which, when added to the annuity will provide the following:

Pre-1969 Members - 2.5% of AFC times the first 25 years of service, with a maximum allowance of 15/22 of a police officer's or firefighter's annual rate of compensation.

1969 Plan Members - 2.5% of AFC times the first 25 years of service plus 2.1% of AFC times each of the next 10 years of service.

Members may elect to receive their accumulated contribution account in a lump sum after 25 years of service. The defined benefit at retirement is then reduced by the actuarial equivalent of the amount of principal withdrawn. No reduction is made with regard to the interest portion of the withdrawal.

Pre-1969 plan members may elect 1969 plan benefits at the time of retirement.

Type of Average Final Compensation (AFC) - Average of the current compensation for the ranks held in each of last 5 years (last 3 years for DPCOA, Executive Members and their Fire equivalents). Pension benefits for non-union employees may not be diminished due to a reduction in compensation because of fiscal emergency. AFC includes prior longevity distributions during the averaging period in accordance with the following schedule: 1% of compensation after 5 years of service, 2% after 11 years, 3% after 16 years and 4% after 21 years.

Deferred Retirement (vested benefit)

Eligibility - 10 years of service for DPOA and Fire equivalents, age 40 with 8 years of service for all others.

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

Benefit Commencement - DPOA and Fire equivalent members hired after 6/30/85: Unreduced benefit begins at age 62. **All other members:** Unreduced benefit begins at the age when the member would have first been eligible for regular retirement had the member continued in City service. **All** members may elect a reduced benefit payable immediately.

Duty Disability Retirement

Eligibility - No age or service requirement.

Annual Amount - A basic benefit of 50% of final compensation and a supplemental benefit of 16-2/3% of final compensation is payable for 24 months. After 24 months, members disabled from any occupation continue to receive both benefits; otherwise, only the 50% benefit is then payable. Upon attaining 25 years of service, the disability benefit is 50% of final compensation. Members convert to regular retirement benefit at age 65. Worker's compensation payments are offset. Members who have already filed under old duty disability plan will receive 66-2/3% of final compensation payable to eligibility date for regular retirement.

SUMMARY OF BENEFIT PROVISIONS (CONTINUED)

Non-Duty Disability Retirement

Eligibility - 5 years of service.

Annual Amount - Computed as a regular retirement benefit, but based on average final compensation and credited service at the time of disability. Minimum benefit is 20% of average final compensation.

Duty Death Before Retirement

Eligibility - No age or service requirement.

Annual Amount – Surviving spouse receives 5/11 of police officer's or firefighter's compensation and each child under age 18 receives 1/10 of such compensation with a maximum total of 7/33 of such compensation. If there is no surviving spouse, each child receives 1/4 of such compensation with a maximum total of 1/2 of such compensation. If there is no surviving spouse or children, each dependent parent receives 1/6 of such compensation. Worker's compensation payments are offset.

Non-Duty Death Before Retirement

Eligibility - No age or service requirement.

Annual Amount - Same as a regular retirement benefit to a surviving spouse, but reduced in accordance with a 100% joint and survivor option election. Minimum benefit is 20% of average final compensation. Each child under 18 receives 1/7 of police officer's or firefighter's compensation with a maximum total of 2/7 of such compensation. If there is no spouse or children, each dependent parent receives 1/7 of such compensation.

Post-Retirement Cost-of-Living Adjustments

Pre-1969 Members - Allowances increase in proportion to active member compensation for the corresponding rank.

1969 Plan Members - Pensions increase by 2.25% of the **current** pension amount each July 1.

Member Contributions

5% of covered compensation payable until first eligible for regular retirement.

ASSET INFORMATION FURNISHED FOR VALUATION

Reserve Accounts

Funds	Fund Balances	
	June 30, 2005	June 30, 2004
Annuity Savings	\$ 279,366,941	\$ 303,320,678
Annuity Reserve	11,229,307	15,410,339
Total Annuity Funds	290,596,248	318,731,017
Pension Accumulation	324,383,582	416,794,522
Pension Reserve	2,532,219,411	2,313,734,450
Accrued Liability Fund Reserve	587,536,385	0
Survivor Benefit	23,158,385	25,266,194
Total Pension Funds	3,467,297,763	2,755,795,166
Total Fund Balances	\$3,757,894,011	\$3,074,526,183

Revenues and Expenditures

	2004-2005	2003-2004
Balance - June 30	\$3,074,516,589	\$3,205,516,657
Revenues		
Employes' contributions	10,430,854	10,318,299
Employer contributions	51,602,596	69,475,202
04/05 POC contributions	47,239,665	0
Balance of POC proceeds	583,589,524	0
Recognized investment income	236,792,398	40,446,043
Total	929,655,037	120,239,544
Expenditures		
Regular benefit payments	208,994,947	200,381,990
13th Check payments	0	0
Withdrawal of member contributions	33,557,578	47,129,942
Administrative expenses	3,725,090	3,727,680
Total	246,277,615	251,239,612
Balance - June 30	\$3,757,894,011	\$3,074,516,589
Ratio of Net Investment Income to Mean Assets	7.1%	1.2%

REPORTED FUNDING VALUE OF ASSETS

	2002	2003	2004	2005	2006	2007
A. Funding Value Beginning of Year	\$3,900,020,703	\$3,635,106,581	\$3,205,516,657	\$3,074,516,589		
B. Market Value End of Year	2,988,906,988	2,878,264,946	3,122,510,425	3,828,954,758		
C. Market Value Beginning of Year	3,483,625,219	2,988,906,988	2,878,264,946	3,122,510,425		
D. Contributions During Year						
D1. City Contributions (End of Year)	8,449,645	66,843,029	69,475,202	682,431,785		
D2. Member Contributions	10,301,295	10,143,948	10,318,299	10,430,854		
E. Benefits Paid During Year	220,857,844	262,710,933	247,511,932	242,552,524		
F. Investment Income						
F1. Market Total: B - C - D + E	(292,611,327)	75,081,914	411,963,910	256,134,218		
F2. Amount for Immediate Recognition (7.8% of mean Fund balances)	291,736,913	273,785,362	240,621,434	235,214,336		
F3. Amount for Phased-In Recognition: F1-F2	(584,348,240)	(198,703,448)	171,342,476	20,919,882		
G. Phased-In Recognition of Investment Income						
G1. Current Year: F3/3	(194,782,747)	(66,234,483)	57,114,159	6,973,294		
G2. 1st Prior Year:	(256,634,100)	(194,782,747)	(66,234,483)	57,114,159	\$ 6,973,294	
G3. 2nd Prior Year:	96,872,716	(256,634,100)	(194,782,747)	(66,234,482)	57,114,159	\$6,973,294
G4. Total Recognized Investment Gain	(354,544,131)	(517,651,329)	(203,903,071)	(2,147,029)	64,087,453	6,973,294
H. Total Interest Distributed - Current Year (F2 + G4)	(62,807,218)	(243,865,967)	36,718,363	233,067,307		
I. Funding Value End of Year: A + D - E + H	3,635,106,581	3,205,516,657	3,074,516,589	3,757,894,011		
J. Difference Between Market & Funding Value (B - I)	(646,199,593)	(327,251,711)	47,993,836	71,060,747		
K. Recognized Rate of Return: H / [1/2 (A + I - H)]	(1.7)%	(6.9)%	1.2%	7.1%		
L. Market Rate of Return: F1 / [C - 1/2 (E - D)]	(8.7)%	2.6%	14.7%	7.7%		

The Funding Value of Assets recognizes assumed investment income (line F2) fully each year. Differences between actual and assumed investment income (line F3) are phased in over a closed 3-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 assumed rates are exactly realized for 2 consecutive years, the Funding Value will become equal to Market Value.

RETIREES AND BENEFICIARIES JUNE 30, 2005
TABULATED BY ATTAINED AGE

Attained Age	Age & Service		Disability		Death-in-Service		Totals	
	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances
Under 20*	8	\$ 17,985			72	\$ 33,189	80	\$ 51,174
20-24	1	1,082			1	1,867	2	2,949
25-29	4	6,779	3	\$ 7,504	2	2,083	9	16,366
30-34	2	2,329	22	57,190	7	7,067	31	66,586
35-39	7	5,914	47	121,805	3	3,603	57	131,322
40-44	23	19,059	109	277,924	13	19,503	145	316,486
45-49	124	181,658	120	285,530	22	31,388	266	498,576
50-54	511	1,041,315	302	693,570	32	40,840	845	1,775,725
55-59	1,175	2,737,741	514	1,058,815	50	71,516	1,739	3,868,072
60-64	968	2,315,176	334	670,616	34	49,936	1,336	3,035,728
65-69	611	1,396,475	132	266,785	22	30,992	765	1,694,252
70-74	490	1,037,065	100	216,403	20	34,692	610	1,288,160
75-79	848	1,744,073	150	325,322	47	77,219	1,045	2,146,614
80-84	745	1,415,030	109	228,505	33	54,624	887	1,698,159
85-89	359	644,789	46	105,287	18	30,068	423	780,144
90-94	100	166,797	3	5,358	5	8,414	108	180,569
95 & Over	26	38,283			2	3,670	28	41,953
Totals	6,002	\$12,771,550	1,991	\$4,320,614	383	\$500,671	8,376	\$17,592,835

* May include records with defective birth dates.

INACTIVE VESTED MEMBERS JUNE 30, 2005
TABULATED BY ATTAINED AGE

Attained Age	No.	Estimated Annual Allowances
40-44	5	\$99,024
45-49	8	131,496
50-54	6	105,168
55-59	5	62,388
Totals	24	\$398,076

PRE 1969 RETIREES AND BENEFICIARIES JUNE 30, 2005
TABULATED BY ATTAINED AGE

Attained Age	Age & Service#		Disability		Death-in-Service		Totals	
	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances
Under 20*	4	\$ 4,960					4	\$ 4,960
20-24								
25-29								
30-34								
35-39	1	942					1	942
40-44								
45-49	6	4,878			1	\$ 1,569	7	6,447
50-54	6	9,237			3	4,877	9	14,114
55-59	99	168,153	36	\$ 71,084	12	20,521	147	259,758
60-64	332	612,453	168	334,380	18	29,774	518	976,607
65-69	363	720,356	103	201,691	19	27,787	485	949,834
70-74	331	633,202	79	155,106	16	26,414	426	814,722
75-79	644	1,236,912	136	290,712	44	69,705	824	1,597,329
80-84	686	1,270,965	106	222,392	31	52,309	823	1,545,666
85-89	353	634,397	45	102,927	17	28,905	415	766,229
90-94	97	162,979	3	5,358	5	8,414	105	176,751
95 & Over	25	37,083			2	3,670	27	40,753
Totals	2,947	\$5,496,517	676	\$1,383,650	168	\$273,945	3,791	\$7,154,112

* May include records with defective birth dates.

Includes survivor beneficiaries of service retirees.

ACTIVE MEMBERS JUNE 30, 2005
BY ATTAINED AGE AND YEARS OF SERVICE

Police Members

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
Under 20									
20-24	98	7						105	\$ 3,881,002
25-29	204	279	2					485	21,680,408
30-34	110	522	103					735	35,164,023
35-39	69	297	230	61				657	33,234,036
40-44	29	106	109	279	7	1		531	28,314,683
45-49	15	41	31	247	68	13	1	416	23,242,092
50-54	2	5	10	125	124	56	63	385	22,387,875
55-59	1	3	7	14	38	31	113	207	12,248,434
60	1		1		4	1	15	22	1,303,181
61				1	1	2	5	9	555,913
62					1		7	8	447,272
63					1	2	5	8	449,271
64					1		4	5	295,438
65							1	1	47,763
66							7	7	391,415
69							1	1	71,803
70							3	3	183,621
Totals	529	1,260	493	727	245	106	225	3,585	\$183,898,230

Fire Members

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
Under 20									
20-24	5	1						6	\$ 249,573
25-29	41	66						107	4,759,463
30-34	47	93	28	1				169	7,866,406
35-39	17	69	92	67				245	12,278,799
40-44	11	25	54	112	25			227	12,135,136
45-49	2	10	16	66	51	27	1	173	10,224,061
50-54			1	23	22	59	42	147	9,380,830
55-59				4	7	27	99	137	9,480,715
60							3	3	218,659
Totals	123	264	191	273	105	113	145	1,214	\$66,593,642

TOTAL ACTIVE MEMBERS JUNE 30, 2005
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
Under 20									
20-24	103	8						111	\$ 4,130,575
25-29	245	345	2					592	26,439,871
30-34	157	615	131	1				904	43,030,429
35-39	86	366	322	128				902	45,512,835
40-44	40	131	163	391	32	1		758	40,449,819
45-49	17	51	47	313	119	40	2	589	33,466,153
50-54	2	5	11	148	146	115	105	532	31,768,705
55-59	1	3	7	18	45	58	212	344	21,729,149
60	1		1		4	1	18	25	1,521,840
61				1	1	2	5	9	555,913
62					1		7	8	447,272
63					1	2	5	8	449,271
64					1		4	5	295,438
65							1	1	47,763
66							7	7	391,415
67									
68									
69							1	1	71,803
70							3	3	183,621
Totals	652	1,524	684	1,000	350	219	370	4,799	\$250,491,872

	Group Averages		
	Police	Fire	Total
Age:	39.3 years	41.9 years	40.0 years
Service:	12.8 years	16.1 years	13.7 years
Annual Pay:	\$51,297	\$54,855	\$52,197

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



GASB STATEMENT NO. 25 REQUIRED SUPPLEMENTARY INFORMATION

Actuarial Valuation Date	Actuarial Value of Assets (a)	Schedule of Funding Progress			Covered Payroll (c)	UAAL as a % of Covered Payroll ((b - a) / c)
		Actuarial Accrued Liability (AAL) -- Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)		
1992*#	\$2,163,797,445	\$2,345,918,889	\$ 182,121,444	92.2 %	\$205,681,412	88.5 %
1993#	2,255,955,423	2,493,225,379	237,269,956	90.5 %	204,289,195	116.1 %
1994	2,304,360,431	2,486,218,878	181,858,447	92.7 %	199,734,550	91.1 %
1995#	2,443,016,319	2,574,189,310	131,172,991	94.9 %	209,733,734	62.5 %
1996	2,628,627,790	2,633,394,644	4,766,854	99.8 %	212,656,401	2.2 %
1997#	2,944,208,105	2,820,330,323	(123,877,782)	104.4 %	217,585,229	-
1998#*	3,325,929,721	2,976,770,662	(349,159,059)	111.7 %	217,479,443	-
1999	3,668,362,979	3,274,050,127	(394,312,852)	112.0 %	216,049,687	-
2000*	3,964,231,470	3,342,123,550	(622,107,920)	118.6 %	237,741,560	-
2001	3,900,020,703	3,463,248,393	(436,772,310)	112.6 %	253,297,027	-
2002	3,635,106,581	3,523,446,635	(111,659,946)	103.2 %	248,663,133	-
2002#	3,635,106,581	3,631,971,448	(3,135,133)	100.1 %	248,663,133	-
2003	3,205,516,657	3,721,593,210	516,076,553	86.1 %	248,681,461	207.5 %
2004	3,074,516,589	3,857,493,282	782,976,693	79.7 %	258,699,581	302.7 %
2005@	3,757,894,011	3,780,447,414	22,553,403	99.4 %	250,491,872	9.0 %

* Plan amended.

After changes in actuarial assumptions.

@ After POC transfer.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ended June 30	Reported City Contribution
1994	\$54,898,990
1995	57,328,033
1996	55,010,539
1997	54,572,561
1998	48,120,578
1999	15,709,799
2000	19,972,058
2001	14,443,382
2002	8,449,645
2003	66,843,029
2004	69,475,202
2005#	682,431,785

Includes POC proceeds.

GASB STATEMENT NO. 25 REQUIRED SUPPLEMENTARY INFORMATION

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

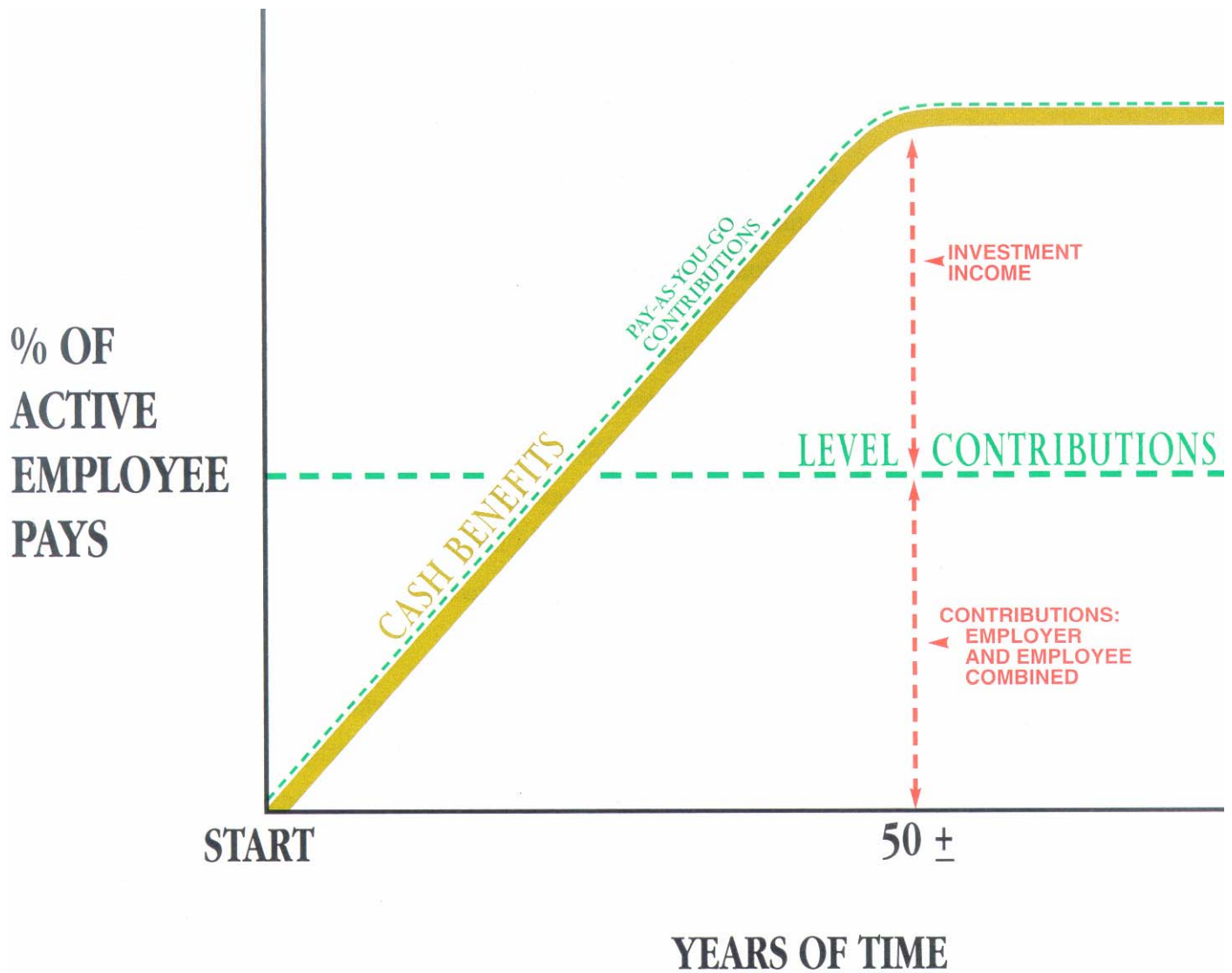
Valuation date:	June 30, 2005
Actuarial cost method	Entry Age
Amortization method	Level percent
Remaining amortization period	12 years closed
Asset valuation method	3 year smoothed market
 Actuarial assumptions:	
Investment rate of return	7.8%
Projected salary increases*	5.8% - 10.8%
*Includes inflation at	4.8%
Cost-of-living adjustments	Pre-1969 Plan Members: Allowances increase in proportion to active member compensation for corresponding rank.
	1969 Plan Members: Pensions increase by 2.25% of current pension amount each July 1.

Membership of the plan consisted of the following at June 30, 2005, the date of the latest actuarial valuation:

Retirees and beneficiaries receiving benefits	8,376
Terminated plan members entitled to but not yet receiving benefits	24
Active plan members	4,799
Total	13,199

FINANCIAL PRINCIPLES





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

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

Economic Risk Areas

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

Non-Economic Risk Areas

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

THE ACTUARIAL VALUATION PROCESS

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

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

A. *Member Census Data:*

- Retired lives now receiving benefits
- Former members with vested benefits
- Active members

B. *Benefit provisions* that establish eligibility and amounts of payments to members

C. *Asset Data* (cash & investments)

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

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

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

G. *Determination* of:

- Plan Financial position and
- New Employer Contribution Rate

BASIC FINANCIAL OBJECTIVE AND OPERATION OF THE RETIREMENT SYSTEM

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

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

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

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

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

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

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

. . . plus . . .

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

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

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

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

Contributions received over time on behalf of the group

. . . plus . . .

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

. . . minus . . .

Expenses incurred in operating the program.

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

A by-product of the level percent-of-payroll contribution objective is the accumulation of invested assets for varying periods of time. Investment income becomes the major contributor to the retirement program, and the amount is directly related to the amount of past contributions and investment performance.

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

APPENDIX



**SUMMARY OF ASSUMPTIONS USED FOR DPFERS ACTUARIAL VALUATION
ASSUMPTIONS ADOPTED BY BOARD OF TRUSTEES
AFTER CONSULTING WITH ACTUARY**

ECONOMIC ASSUMPTIONS

The investment return rate used in the valuation was 7.8% per year, compounded annually (net after administrative expenses). The real rate of return is the portion of total investment return which is more than the inflation rate. Considering other financial assumptions, the 7.8% total investment return rate translates to an assumed real rate of return of 4% over price inflation.

Pay increase assumptions for individual active members are shown on page 29. Part of the assumption for each age is for a merit and/or seniority increase, and the other 4.8% recognizes wage inflation.

Total active member payroll is assumed to increase 4.8% annually, which is the portion of the individual pay increase assumptions attributable to wage inflation.

NON-ECONOMIC ASSUMPTIONS

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

The mortality table used to measure retired life mortality was 90% of the 1983 Group Annuity Mortality Table. Related values are shown on page 29. This table was first used for the June 30, 1998 valuation.

The probabilities of age/service retirement for members eligible to retire are shown on page 30. These probabilities were last revised for the June 30, 2003 valuation.

The probabilities of separation from service (including *death-in-service*) are shown for sample ages on page 30. These probabilities were last revised for the June 30, 2003 valuation.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

JUNE 30, 2005

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	End of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year beginning the day after the valuation date.
Decrement Timing:	Decrements are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and exact fractional service nearest the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability and mortality decrements do not operate during the first 5 years of service. Disability also does not operate during retirement eligibility.
Incidence of Contributions:	Member contributions are assumed to be received continuously throughout the year. Employer contributions are assumed to be received on the last day of the fiscal year.
Longevity in AFC:	Longevity payments included in the computation of Average Final Compensation were assumed to increase age and service costs by 4% and disability and death-in-service costs by 2%.
Post-Retirement COLA:	Active members are assumed to receive a 1.9% COLA rather than 2.25% because the annuity portion is not subject to the COLA.
FAC Period:	1 year FAC period was used.
Disability Change Age:	The duty disability benefit is assumed to change at normal retirement age.

FUNDING METHODS

The entry age actuarial cost method was used in determining age and service liabilities and normal cost, vesting liabilities and normal cost, and casualty liabilities and normal cost.

Differences between assumed experience and actual experience (“actuarial gains and losses”) become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities, if any, are amortized over periods of future years to produce contribution amounts (principal & interest) which are level percent of payroll contributions.

Employer contribution dollars were assumed to be *paid in a single sum on the last day* of the employer fiscal year. (Adopted for the 6-30-79 actuarial valuation.)

Valuation assets recognize investment return above or below the actuarial assumed rate over a three year period. (Adopted for the 6-30-95 actuarial valuation.)

The effect of changes in eligibility for normal retirement due to service purchases was approximated by increasing computed actuarial accrued liabilities by 3%. In addition, active member accrued liabilities were increased by 2% to approximate the effect of incomplete service data.

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

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

SAMPLE SALARY ADJUSTMENT RATES

Service	Salary Increase Assumptions for an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
5	6.00%	4.80%	10.80%
10	2.00%	4.80%	6.80%
15	1.00%	4.80%	5.80%
20	1.00%	4.80%	5.80%
25	1.00%	4.80%	5.80%
30	1.00%	4.80%	5.80%
35	1.00%	4.80%	5.80%
Ref			21 + 4.80%

SINGLE LIFE RETIREMENT VALUES BASED ON 1983 GROUP ANNUITY MORTALITY & 7.8% INTEREST

Sample Attained Ages	Present Value of \$1.00 Monthly Increasing "X"% Annually After Retirement						Future Life Expectancy (years)	
	4.8% Compound		2.25% Simple		2.25% Compound		Men	Women
	Men	Women	Men	Women	Men	Women		
45	\$251.08	\$276.66	\$173.68	\$183.84	\$180.93	\$192.80	34.78	40.65
50	229.39	257.20	164.33	176.80	170.22	184.37	30.19	35.86
55	206.16	235.52	153.16	167.82	157.74	173.98	25.79	31.15
60	181.12	211.60	139.67	156.56	143.05	161.34	21.55	26.56
65	154.72	185.69	123.81	142.81	126.15	146.31	17.54	22.13
70	128.80	158.13	106.82	126.42	108.33	128.82	13.96	17.93
75	104.33	130.47	89.48	108.30	90.39	109.81	10.84	14.10
80	82.29	104.80	72.72	90.12	73.24	91.01	8.23	10.84
Ref:	30 x 0.90	31 x 0.90	30 x 0.90	31 x 0.90	30 x 0.90	31 x 0.90		

PROBABILITIES OF SERVICE RETIREMENT

Service	Percent of Eligible Active Members Retiring Within Next Year			Retirement
	Police	Fire	Police & Fire	Ages
24	35%	20%	25%	60
25	25%	20%	25%	61
26	20%	15%	25%	62
27	20%	15%	22%	63
28	20%	15%	20%	64
29	18%	15%	18%	65
30	18%	15%	15%	66
31	18%	15%	15%	67
32	20%	15%	15%	68
33	25%	20%	15%	69
34	30%	25%	15%	70
35	30%	30%	15%	71
36	30%	30%	15%	72
37	30%	30%	15%	73
38	30%	30%	15%	74
39	30%	30%	40%	75
40	100%	100%	30%	76
			30%	77
			30%	78
			30%	79
			30%	80
			30%	81
			30%	82
			30%	83
			30%	84
			100%	85
Ref	823	824	537	

PROBABILITIES OF SEPARATION

Sample Ages	Years of Service	% of Active Members Separating Within Next Year			
		Withdrawal		Death	
		Police	Fire	Male	Female
ALL	0	7.00%	5.00%		
	1	5.50%	4.00%		
	2	4.00%	3.00%		
	3	4.00%	2.00%		
	4	3.50%	2.00%		
25	5 & Over	4.50%	2.30%	0.02%	0.01%
30		3.30%	1.90%	0.03%	0.02%
35		2.30%	1.30%	0.04%	0.02%
40		1.70%	0.90%	0.06%	0.03%
45		1.50%	0.70%	0.11%	0.05%
50		1.10%	0.60%	0.20%	0.08%
55		0.80%	0.60%	0.31%	0.13%
60	0.80%	0.60%	0.46%	0.21%	
Ref		154 207	230 113	30 x .50	31 x .50

Sample Ages	% of Active Members Becoming Disabled Within Next Year			
	Police		Fire	
	Ordinary	Duty	Ordinary	Duty
25	0.08%	0.15%	0.08%	0.31%
30	0.09%	0.22%	0.09%	0.46%
35	0.11%	0.38%	0.11%	0.80%
40	0.14%	0.55%	0.14%	1.16%
45	0.21%	0.81%	0.21%	1.71%
50	0.62%	1.29%	0.62%	2.72%
55	0.97%	2.19%	0.97%	4.61%
60	1.10%	3.15%	1.10%	6.64%
Ref	105 x 1.00	90 x 0.95	105 x 1.00	90 x 2.00

MEANING OF “UNFUNDED ACTUARIAL ACCRUED LIABILITIES”

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

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

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

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

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

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

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

GLOSSARY

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

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

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

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

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

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

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

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

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

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

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

Valuation Assets. The value of current plan assets recognized for valuation purposes.

February 27, 2006

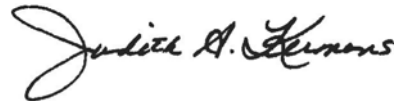
Mr. Walter Stampor
Executive Secretary
City of Detroit Police and Fire
Retirement System
2 Woodward Avenue – Suite 908
Detroit, Michigan 48226

Re: June 30, 2005 Actuarial Valuation

Dear Walter:

Enclosed are 20 copies of the report of the June 30, 2005 annual actuarial valuation.

Sincerely,



Judith A. Kermans

JAK:lr
Enclosures

cc: Cynthia Thomas, City of Detroit Retirement Systems
Norman Jones, GRS
Kenneth Alberts, GRS