City of Detroit

Policemen and Firemen Retirement System

61st Annual Actuarial Valuation
June 30, 2002

Gabriel, Roeder, Smith & Company

Actuaries & Consultants

OUTLINE OF CONTENTS

GABRIEL, ROEDER, SMITH & COMPANY
Consultants & Actuaries
One Towne Square • Suite 800 • Southfield, Michigan 48076 • 248-799-9000 • 800-521-0498 • fax 248-799-9020

December 26, 2002

Board of Trustees
City of Detroit Policemen and Firemen
Retirement System

The results of the **61st Annual Actuarial Valuation** of the annuity and pension liabilities of the City of Detroit Policemen and Firemen 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, 2002**.

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 page 2, the COMMENTS on page 12, and the Financial Objective on pages 24-25.

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

Norman L. Jones   Judith A. Kermans

NLJ/rgs/lr

VALUATION RESULTS

EMPLOYER CONTRIBUTION RATES
COMPUTED PAYABLE LAST DAY OF FISCAL YEAR
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
2003-2004 FISCAL YEAR

Contributions for	Contributions Expressed as Percents of Payroll
Normal Cost	
Age & service allowances	18.72 %
Disability allowances	11.65 %
Duty death allowances	0.53 %
Total	30.90 %
Members current contributions: #	3.78 %
(Future refunds)	(0.56)%
Available for monthly benefits	3.22 %
Employer Normal Cost	**27.68 %**
Actuarial Accrued Liabilities	
Total ($ millions)	$3,523.4
Funding Value of Assets	3,635.1
Full Funding Credit - dollars	$ (111.7)
- 15 year amortization	(3.90)%
Computed Employer Rate after FFC Offset	**23.78 %**

\# *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.*

COMMENT

The Employer Normal Cost (27.68% of covered payroll) would be the rate without recognition of the excess of recognized assets over accrued liabilities (the Full Funding Credit).

ACTUARIAL ACCRUED LIABILITIES AS OF JUNE 30, 2002

Present Value, June 30	Amount
Accrued Pension Liabilities	
Retirees and beneficiaries	$2,284,727,011
Inactive members future deferred pensions	4,696,627
Active members	829,231,401
Total accrued pension liabilities	3,118,655,039
Pension fund balances	3,230,314,985
Unfunded accrued pension liabilities (Full funding credit)	$ (111,659,946)
Accrued Annuity Liabilities	
Retirees and beneficiaries	
Future annuities	$ 9,114,275
Contingency reserve	5,039,588 *
Total	$ 14,153,863
Members annuities & future refunds	390,637,733
Total accrued annuity liabilities	404,791,596
Annuity fund balances	404,791,596
Unfunded accrued annuity liabilities	$ 0
System Totals	
Actuarial accrued liabilities	$3,523,446,635
Accrued assets	3,635,106,581
Unfunded actuarial accrued liabilities (Full funding credit)	$ (111,659,946)

* *See comment on page 12.*

Valuation Results - Comparative Statement
-- $ in Millions --

	Active Payroll		Actuarial Accrued Liabilities				Employer
June 30	Total	Average	Computed Total	Valuation Assets	Unfunded	Unfunded / Active Pays	Contributions % of Pays
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	248.7	46,203	3,523.4	3,635.1	(111.7)	-	27.68%#

(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.*

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.

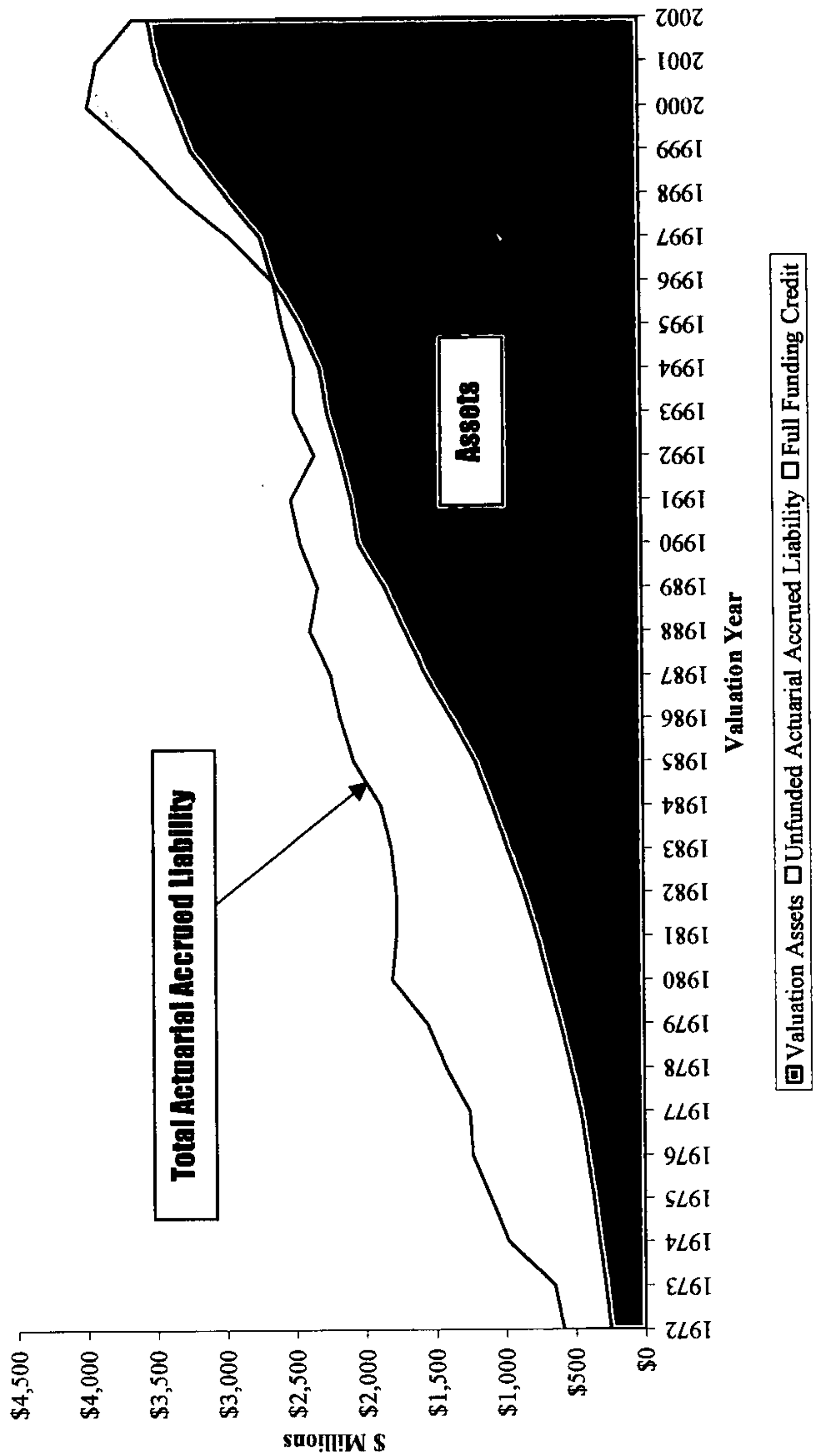
In a system that has been following the discipline of level percent-of-payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). 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)

	Actuarial Accrued Liabilities				Portion of Accrued Liabilities Covered by Assets			
June 30	(1) Active Member Contr.	(2) Retirees and Benef.	(3) Present Members (Employer Financed Portion)	Assets	(1)	(2)	(3)	Total
1998*	$187	$1,979	$ 811	$3,326	100%	100%	143%	112%
1999	205	2,035	1,034	3,668	100%	100%	138%	112%
2000*	283	2,192	867	3,964	100%	100%	172%	119%
2001	365	2,255	843	3,900	100%	100%	152%	113%
2002	391	2,299	834	3,635	100%	100%	113%	103%

* *After changes in benefit provisions.*

ASSETS AND ACCRUED LIABILITIES



DERIVATION OF EXPERIENCE GAIN (LOSS)
YEAR ENDED JUNE 30, 2002

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	$(436,772,310)
(2)	Normal cost from last valuation	68,947,451
(3)	Actual employer contributions	8,449,645
(4)	Interest accrual: (1) x .078	(34,068,240)
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	(410,342,744)
(6)	Change due to benefit provision modifications	0
(7)	Change due to revised actuarial assumptions	0
(8)	Expected UAAL after changes: (5) + (6) + (7)	(410,342,744)
(9)	Actual UAAL at end of year	(111,659,946)
(10)	Experience gain (loss): (8) - (9)	(298,682,798)
(11)	Experience gain (loss) as a % of beginning of year accrued liability	(8.6)%

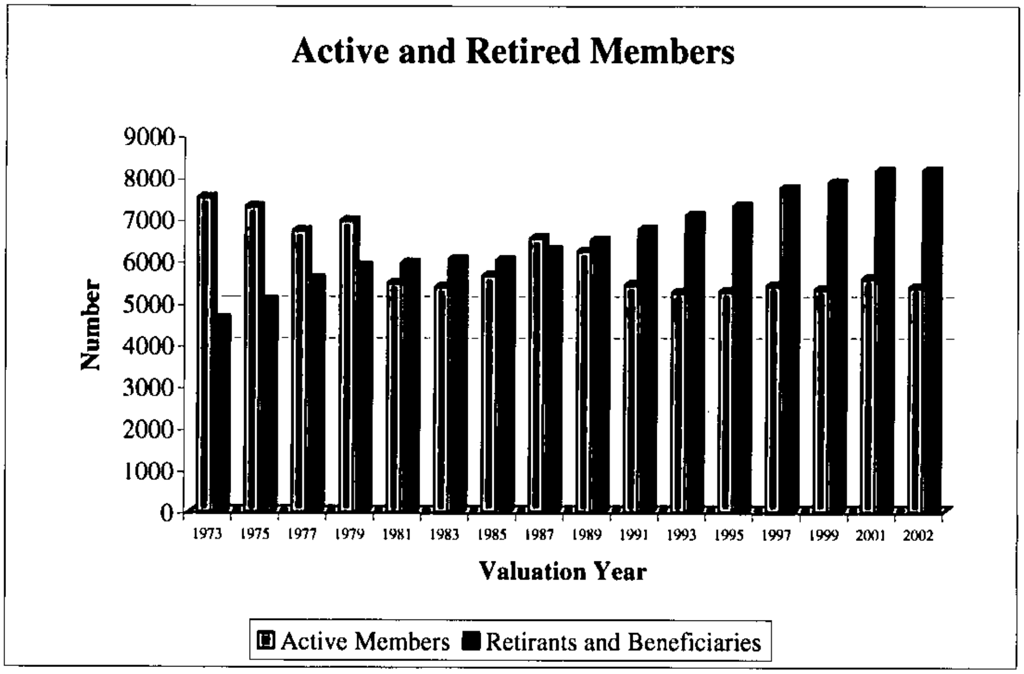
* *Unfunded actuarial accrued liability.*

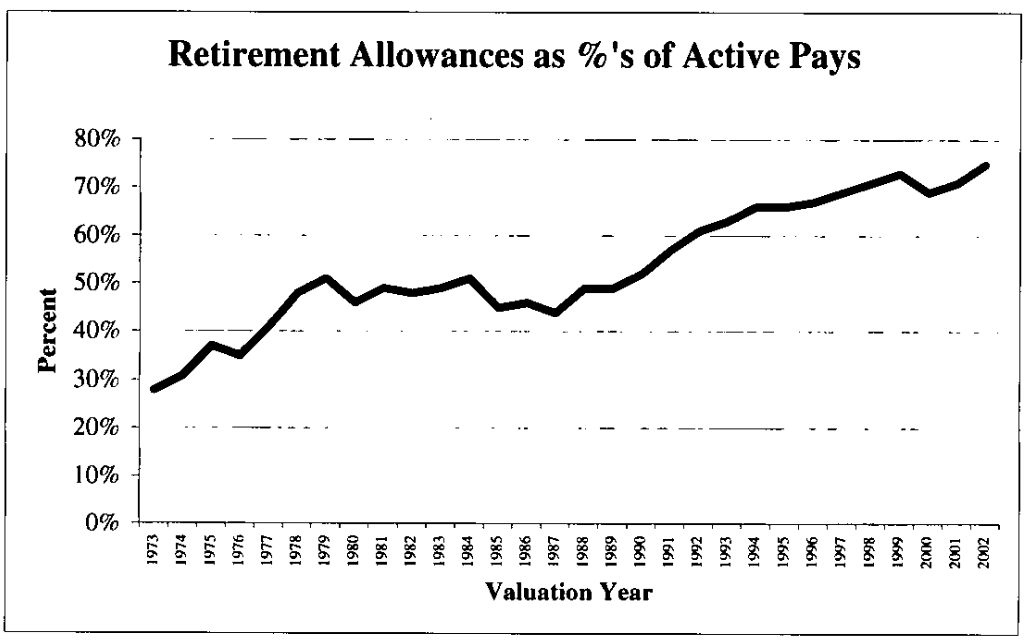
COMPARATIVE STATEMENT OF ACTIVE MEMBERS AND VALUATION PAYROLL

June 30	No. Members 1969 Plan	No. Members Pre-1969	Total Members No.	% Change	Ratio of Active to Retired	Annual Payroll	Average Pay $	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 %

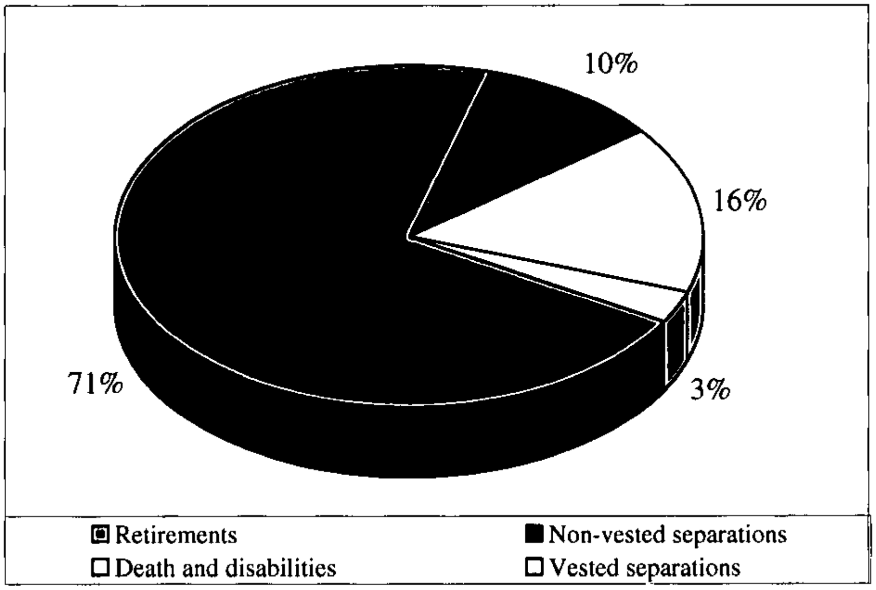
COMPARATIVE STATEMENT OF ANNUAL RETIREMENT ALLOWANCES BEING PAID RETIREES AND BENEFICIARIES

	No. Retired		% of Current Allowances			Current Allowances		Allowances as a % of
June 30	Pre-69	Total	Annuities	Pensions	Escalators	Total	Average	Payroll
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%


Active and Retired Members
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Number
1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2002
Valuation Year
Active Members
Retirants and Beneficiaries


Retirement Allowances as %'s of Active Pays
80%
70%
60%
50%
40%
30%
20%
10%
0%
Percent
1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
Valuation Year

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 5,382 active members. Eventually, 557 members are expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 3,969 members are expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. 856 members are expected to become eligible for death-in-service or disability benefits.

COMMENTS

Experience During the Past Year

Overall experience was less favorable than assumed during the year ended June 30, 2002. The primary source of the experience loss was investment return that was less than assumed. Investment return was (1.7)% on a funding value basis. On a market value basis, there was a $584 million loss. Under the asset valuation method, gains and losses are spread over a 3 year period. As a result of this year's market value loss and a similar loss last year, the funding value of assets now exceeds the market value by $646 million. If the unrecognized losses are not offset by future market gains (i.e., returns in excess of 7.8%), the funded status will decline over the next 2 years, and the computed employer contribution rate will increase.

Annuity Reserve Fund

The contingency reserve in the Annuity Reserve Fund is $5.0 million and the ratio of the ARF balance to computed liabilities is over 150% (see page 3). The size of the contingency is likely to increase further unless a balance is restored. The Board approved a transfer for $12 million from the Annuity Reserve Fund to the Pension Accumulation Fund in May 2001. An additional transfer of $3 million at this time would reduce the funded ratio to 122% which would still provide an ample margin for unforeseen contingencies.

Overall Financial Condition

The Retirement System continues in sound actuarial condition in accordance with the principles of level percent-of-payroll financing.

DATA FURNISHED FOR VALUATION

SUMMARY OF BENEFIT PROVISIONS (JULY 1, 2002)

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 - Age 40 with 8 years of service.

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 a 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 a 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	-	*For Police and Fire Supervisory and Command groups who retire on or after 7/1/98*: Pensions increase by 2.25% of the **current** pension amount each July 1. *Others*: Pensions increase by 2.25% of the **original** 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, 2002	Fund Balances June 30, 2001
Annuity Savings	$ 390,637,733	$ 364,648,948
Annuity Reserve	14,153,863	13,975,360
Total Annuity Funds	404,791,596	378,624,308
Pension Accumulation	916,841,337	1,249,672,365
Pension Reserve	2,284,727,011	2,241,443,403
Survivor Benefit	28,746,637	30,280,627
Total Pension Funds	3,230,314,985	3,521,396,395
Total Fund Balances	$3,635,106,581	$3,900,020,703

Revenues and Expenditures

	2001-2002	2000-2001
Balance - June 30	$3,900,020,703	$3,964,231,470
Revenues		
Employes' contributions	10,301,295	10,300,781
Employer contributions	8,449,645	14,443,382
Recognized investment income	(59,243,772)	163,444,827
Total	(40,492,832)	188,188,990
Expenditures		
Regular benefit payments	186,683,099	179,212,275
13th Check payments	0	52,273,480
Withdrawal of member contributions	34,174,745	17,766,305
Administrative expenses	3;563,446	3,147,697
Total	224,421,290	252,399,757
Balance - June 30	$3,635,106,581	$3,900,020,703
Ratio of Net Investment Income to Mean Assets	**(1.7)%**	**4.2%**

DEVELOPMENT OF FUNDING VALUE OF ASSETS

	2000	2001	2002	2003	2004
A. Funding Value Beginning of Year	$3,668,362,979	$3,964,231,470	$3,900,020,703		
B. Market Value End of Year	4,175,946,568	3,483,625,219	2,988,906,988		
C. Market Value Beginning of Year	3,807,897,364	4,175,946,568	3,483,625,219		
D. Contributions During Year					
D1. City Contributions (End of Year)	28,642,060	14,443,382	8,449,645		
D2. Member Contributions	#	10,300,781	10,301,295		
E. Benefits Paid During Year	253,840,778	249,252,060	220,857,844		
F. Investment Income					
F1. Market Total: B - C - D + E	593,247,921	(467,813,451)	(292,611,327)		
F2. Amount for Immediate Recog(A-E/2+D2/2)x.078 or actual	302,629,774	302,088,849	291,736,913		
F3. Amount for Phased-In Recognition: F1-F2	290,618,147	(769,902,300)	(584,348,240)		
G. Phased-In Recognition of Investment Income					
G1. Current Year: F3/3	96,872,716	(256,634,100)	(194,782,747)		
G2. 1st Prior Year:	17,969,665	96,872,716	(256,634,100)	(194,782,747)	
G3. 2nd Prior Year:	103,595,055	17,969,665	96,872,716	(256,634,100)	(194,782,746)
G4. Total Recognized Investment Gain	218,437,436	(141,791,719)	(354,544,131)	(451,416,847)	(194,782,746)
H. Total Interest Distributed - Current Year (F2 + G4)	521,067,210	160,297,130	(62,807,218)		
I. Funding Value End of Year: A + D - E + H	3,964,231,470	3,900,020,703	3,635,106,581		
J. Difference Between Market & Funding Value (B - I)	211,715,097	(416,395,484)	(646,199,593)		
K. Recognized Rate of Return: H / [1/2 (A + I - H)]	14.6%	4.2%	(1.7)%		
L. Market Rate of Return: F1 / [C - 1/2 (E)]	15.0%	(11.5)%	(8.7)%		

 # Included in D1.

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, 2002
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*	6	$ 6,865			71	$ 33,851	77	$ 40,716
20-24	1	509	1	$ 2,079	1	1,739	3	4,327
25-29	2	2,198	2	5,051	1	742	5	7,991
30-34	1	896	16	38,799	3	2,197	20	41,892
35-39	4	5,082	81	192,694	8	11,382	93	209,158
40-44	31	27,833	97	224,484	14	15,924	142	268,241
45-49	183	251,627	196	444,173	29	33,553	408	729,353
50-54	702	1,343,960	475	935,125	45	58,271	1,222	2,337,356
55-59	955	1,917,006	454	855,749	40	54,419	1,449	2,827,174
60-64	738	1,587,037	203	375,601	29	38,248	970	2,000,886
65-69	476	940,445	90	184,483	19	30,879	585	1,155,807
70-74	699	1,365,249	144	281,203	41	63,523	884	1,709,975
75-79	974	1,808,622	177	338,252	47	74,018	1,198	2,220,892
80-84	588	1,011,221	81	166,387	31	47,113	700	1,224,721
85-89	290	489,515	19	40,502	13	21,367	322	551,384
90-94	65	90,878	1	1,849	6	9,292	72	102,019
95 & Over	27	36,247			2	3,387	29	39,634
Totals	**5,742**	**$10,885,190**	**2,037**	**$4,086,431**	**400**	**$499,905**	**8,179**	**$15,471,526**

* *May include records with defective birth dates.*

INACTIVE VESTED MEMBERS JUNE 30, 2002
TABULATED BY ATTAINED AGE

Attained Age	No.	Estimated Annual Allowances
45-49	8	$ 166,212
50-54	14	175,440
55-59	11	148,344
60-64	2	16,956
Totals	**35**	**$506,952**

PRE 1969 RETIREES AND BENEFICIARIES JUNE 30, 2002
TABULATED BY ATTAINED AGE

Attained Age	Age & Service# No.	Age & Service# Monthly Allowances	Disability No.	Disability Monthly Allowances	Death-in-Service No.	Death-in-Service Monthly Allowances	Totals No.	Totals Monthly Allowances
Under 20*	5	$ 5,582			2	$ 1,509	7	$ 7,091
20-24			1	$ 2,079			1	2,079
25-29								
30-34	1	896					1	896
35-39								
40-44	3	2,742					3	2,742
45-49	5	4,992			2	3,154	7	8,146
50-54	14	17,086	3	5,442	9	14,506	26	37,034
55-59	263	427,795	142	260,211	17	26,712	422	714,718
60-64	392	693,229	146	264,933	23	30,923	561	989,085
65-69	324	570,260	66	119,509	16	24,708	406	714,477
70-74	477	832,192	129	245,862	38	56,439	644	1,134,493
75-79	837	1,482,387	168	319,079	45	70,740	1,050	1,872,206
80-84	576	988,063	81	166,387	29	45,377	686	1,199,827
85-89	287	486,933	18	38,240	13	21,367	318	546,540
90-94	61	87,143	1	1,849	6	9,292	68	98,284
95 & Over	27	36,247			2	3,387	29	39,634
Totals	**3,272**	**$5,635,547**	**755**	**$1,423,591**	**202**	**$308,114**	**4,229**	**$7,367,252**

* *May include records with defective birth dates.*
\# *Includes survivor beneficiaries of service retirees.*

ACTIVE MEMBERS JUNE 30, 2002
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
20-24	250	5						255	$ 8,787,396
25-29	461	219						680	26,639,687
30-34	355	412	36	2				805	34,254,935
35-39	133	185	97	187	0			602	27,653,388
40-44	51	70	50	291	7	0		469	22,586,258
45-49	12	26	28	251	139	42	3	501	25,281,375
50-54	3	6	8	97	111	136	113	474	24,947,135
55-59	2		3	14	36	42	116	213	11,311,407
60	1			0	8	2	9	20	1,026,765
61					1	4	4	9	472,169
62						0	6	6	342,270
63						2	7	9	471,255
64							3	3	173,476
66							1	1	82,500
67							3	3	165,123
Totals	**1,268**	**923**	**222**	**842**	**302**	**228**	**265**	**4,050**	**$184,195,139**

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	48							48	$ 1,630,792
25-29	101	16	0					117	4,303,106
30-34	98	82	59	1				240	10,188,280
35-39	27	61	114	51	1			254	11,905,252
40-44	18	24	69	68	10	1		190	9,059,426
45-49	2	3	18	53	79	8	0	163	8,577,229
50-54			3	10	40	111	32	196	11,127,976
55-59			2	3	10	34	73	122	7,546,192
60						1	1	2	129,741
Totals	**294**	**186**	**265**	**186**	**140**	**155**	**106**	**1,332**	**$ 64,467,994**

TOTAL ACTIVE MEMBERS JUNE 30, 2002
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	298	5						303	$ 10,418,188
25-29	562	235						797	30,942,793
30-34	453	494	95	3				1045	44,443,215
35-39	160	246	211	238	1			856	39,558,640
40-44	69	94	119	359	17	1		659	31,645,684
45-49	14	29	46	304	218	50	3	664	33,858,604
50-54	3	6	11	107	151	247	145	670	36,075,111
55-59	2		5	17	46	76	189	335	18,857,599
60	1				8	3	10	22	1,156,506
61					1	4	4	9	472,169
62							6	6	342,270
63						2	7	9	471,255
64							3	3	173,476
65									
66							1	1	82,500
67							3	3	165,123
Totals	**1,562**	**1109**	**487**	**1028**	**442**	**383**	**371**	**5382**	**$248,663,133**

	Group Averages		
	Police	**Fire**	**Total**
Age:	38.3 years	40.7 years	38.9 years
Service:	11.9 years	14.9 years	12.6 years
Annual Pay:	$45,480	$48,399	$46,203

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: Actuarial Accrued Liability (AAL) -- Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b - a) / c)
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	-

* *Plan amended.*
\# *After changes in actuarial assumptions.*

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ended June 30	Actual Contribution	Contribution as Percent of Valuation Payroll #	Percentage Contributed
1994	$54,898,990	27.83%	100%
1995	57,328,033	28.97%	100%
1996	55,010,539	27.64%	100%
1997	54,572,561	25.90%	100%
1998	48,120,578	21.81%	100%
1999	15,709,799	7.32%	100%
2000	19,972,058	9.18%*	100%
2001	14,443,382	6.69%*	100%
2002	8,449,645	3.40%*	100%

* *Estimated.*
\# *Valuation payroll in second prior year.*

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, 2002
Actuarial cost method	Entry Age
Amortization method	Level percent
Remaining amortization period	15 years
Asset valuation method	3 year smoothed market
Actuarial assumptions:	
Investment rate of return	7.8%
Projected salary increases*	5.5% - 9.0%
*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 for supervisory and command groups and 2.25% of original pension amount for all others.

Membership of the plan consisted of the following at June 30, 2002, the date of the latest actuarial valuation:

Retirees and beneficiaries receiving benefits	8,179
Terminated plan members entitled to but not yet receiving benefits	35
Active plan members	5,382
Total	**13,596**

FINANCIAL PRINCIPLES

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:

$$B = C + I - E$$

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 . . .

Investment 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 DPFRS 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 3%.

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 in on page 30. These probabilities were last revised for the June 30, 1998 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, 1998 valuation.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS
JUNE 30, 2002

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:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
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. They also do 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.

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 5%. 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

Ages	Salary Increase Assumptions for an Individual Member: Merit & Seniority	Base (Economic)	Increase Next Year
20	4.11%	4.80%	8.91%
25	3.66%	4.80%	8.46%
30	2.27%	4.80%	7.07%
35	1.45%	4.80%	6.25%
40	1.13%	4.80%	5.93%
45	0.86%	4.80%	5.66%
50	0.65%	4.80%	5.45%
Ref			24 + 1.80%

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: 4.8% Compound Men	4.8% Compound Women	2.25% Simple Men	2.25% Simple Women	2.25% Compound Men	2.25% Compound Women	Future Life Expectancy (years) Men	Future Life Expectancy (years) 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	14.1
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		

October 6, 2003

Mr. Nicholas H. Degel, Executive Secretary
City of Detroit Policeman and
Fireman Retirement System
2 Woodward Avenue, Suite 908
Detroit, Michigan 48226

Re: Preliminary Estimate of FY 2005 Contribution Rate

Dear Nick:

We have received census data and preliminary financial information for the June 30, 2003 regular annual actuarial valuation. Very preliminary valuation results are shown below along with a comparison with the June 30, 2002 results.

	June 30, 2003 Estimated	**June 30, 2002 Actual**
Employer normal cost	24%	27.68%
Unfunded accrued liabilities (full funding credit)		
Amount ($ millions)	$574	$(112)
Amortization years	14	-
% to amortize	21%	-
Computed employer rate	45%	27.68%
Percent Funded	85%	103%

As you can see, the estimated computed employer rate this year is much higher than last year. Roughly 1% of the increase is attributable to assumption changes, 2% to changes in benefit provisions and the remainder from plan experience. Plan experience mostly relates to previously unrecognized market losses which were already expected to flow into this year's valuation results (see comments on page 12 of the June 30, 2002 actuarial valuation report).

Most public sector plans are seeing significant contribution rate increases due to the difficult market environment over the past 3 years. However, the increase for DPFRS is magnified due to:

- A relatively short (14 years) remaining UAAL amortization period, and
- A relatively short (3 year) period for smoothing market gains and losses.

In addition, the 3% spread between assumed future investment return (7.8)% and future wage inflation (4.8)% is somewhat more conservative than the assumptions commonly used in other large public sector retirement plans. Please let us know if the Board would like to explore potential changes in any of these areas.

Finally, it is expected that final results will differ from preliminary estimated results once complete financial information becomes available and all results are thoroughly peer reviewed.

Sincerely,

Judith A. Kermans

Norman L. Jones Judith A. Kermans

NLJ:lr

GABRIEL, ROEDER, SMITH & COMPANY
Consultants & Actuaries
One Towne Square • Suite 800 • Southfield, Michigan 48076 • 248-799-9000 • 800-521-0498 • fax 248-799-9020

October 6, 2003

Mr. Nicholas H. Degel, Executive Secretary
City of Detroit General Retirement System
2 Woodward Avenue, Suite 908
Detroit, Michigan 48226

Re: Preliminary Estimate of FY 2005 Contribution Rate

Dear Nick:

We have received census data and preliminary financial information for the June 30, 2003 regular annual actuarial valuation. Very preliminary valuation results are shown below along with a comparison with the June 30, 2002 results.

	June 30, 2003 Estimated	June 30, 2002 Actual
Employer normal cost	12%	9.23%
Unfunded accrued liabilities (full funding credit)		
Amount ($ millions)	$989	$515
Average Amortization years	15	16
% to amortize	28%	9.83%
Computed employer rate	30%	19.06%
Percent Funded	65%	84%

As you can see, the estimated computed employer rate this year is much higher than last year.

Roughly 6% of the increase is attributable to assumption changes and the remainder from plan experience. Plan experience mostly relates to previously unrecognized market losses which were already expected to flow into this year's valuation results (see comments on page A-7 of the June 30, 2002 actuarial valuation report).

Mr. Nicholas H. Degel
Page 2

October 6, 2003

Most public sector plans are seeing significant contribution rate increases due to the difficult market environment over the past 3 years. However, the increase for DGRS is magnified due to:

- A relatively short (15 years) remaining average UAAL amortization period, and
- A relatively short (3 year) period for smoothing market gains and losses.

In addition, the assumed future investment return (7.0)% and future wage inflation (4.0)% is somewhat more conservative than the assumptions commonly used in other large public sector retirement plans. Please let us know if the Board would like to explore potential changes in any of these areas.

Finally, it is expected that final results will differ from preliminary estimated results once complete financial information becomes available and all results are thoroughly peer reviewed.

Sincerely,

Norman L. Jones Judith A. Kermans

NLJ:lr

City of Detroit Policemen and Firemen Retirement System
Supplement to 5 Year Experience Study (Report Dated June 13, 2003)
14-Year Amortization of UAAL

Contributions for	Present Economic Assumptions (7.8%/4.8%)	Alternate Economic Assumptions 7.8/4.0	7.3/4.3	8.3/4.8	5.0/2.25
Normal Cost					
Age & service allowances	22.47 %	20.39 %	23.43 %	20.34 %	30.43 %
Disability allowances	5.57 %	5.42 %	5.89 %	5.20 %	7.96 %
Death-in-service allowances	0.49 %	0.45 %	0.51 %	0.44 %	0.71 %
Total	28.53 %	26.26 %	29.83 %	25.98 %	39.10 %
Members current contributions (average)	4.07 %	4.09 %	4.07 %	4.08 %	4.06 %
(Future refunds)	(0.36)%	(0.38)%	(0.36)%	(0.37)%	(0.36)%
Available for monthly benefits	3.71 %	3.71 %	3.71 %	3.71 %	3.70 %
Employer Normal Cost	**24.82 %**	**22.55 %**	**26.12 %**	**22.27 %**	**35.40 %**
Actuarial Accrued Liabilities					
Total ($ millions)	$3,721.6	$3,620.1	$3,849.3	$3,541.6	$4,656.7
Funding Value of Assets	$3,205.5	$3,205.5	$3,205.5	$3,205.5	$3,205.5
UAAL - dollars	516.1	414.6	643.8	336.1	1,451.2
- 14-year amortization	19.07 %	16.04 %	23.70 %	12.82 %	51.71 %
Computed Employer Rate	**43.89 %**	**38.59 %**	**49.82 %**	**35.09 %**	**87.11 %**

Combination	Economic Assumptions: Net Investment Income	Wage Inflation	Spread
Present	7.80%	4.80%	3.00%
Alternate 1	7.80%	4.00%	3.80%
Alternate 2	7.30%	4.30%	3.00%
Alternate 3	8.30%	4.80%	3.50%
Alternate 4	5.00%	2.25%	2.75%

City of Detroit Policemen and Firemen Retirement System
Supplement to 5 Year Experience Study (Report Dated June 13, 2003)
14-Year Amortization of UAAL

Contributions for	Present Economic Assumptions (7.8%/4.8%)	Alternate Economic Assumptions			
		7.8/4.0	7.3/4.3	8.3/4.8	5.0/2.25
Normal Cost					
Age & service allowances	22.47 %	20.39 %	23.43 %	20.34 %	30.43 %
Disability allowances	5.57 %	5.42 %	5.89 %	5.20 %	7.96 %
Death-in-service allowances	0.49 %	0.45 %	0.51 %	0.44 %	0.71 %
Total	28.53 %	26.26 %	29.83 %	25.98 %	39.10 %
Members current contributions (average)	4.07 %	4.09 %	4.07 %	4.08 %	4.06 %
(Future refunds)	(0.36)%	(0.38)%	(0.36)%	(0.37)%	(0.36)%
Available for monthly benefits	3.71 %	3.71 %	3.71 %	3.71 %	3.70 %
Employer Normal Cost	**24.82 %**	**22.55 %**	**26.12 %**	**22.27 %**	**35.40 %**
Actuarial Accrued Liabilities					
Total ($ millions)	$3,721.6	$3,620.1	$3,849.3	$3,541.6	$4,656.7
Funding Value of Assets	$3,205.5	$3,205.5	$3,205.5	$3,205.5	$3,205.5
UAAL - dollars	516.1	414.6	643.8	336.1	1,451.2
- 14-year amortization	19.07 %	16.04 %	23.70 %	12.82 %	51.71 %
Computed Employer Rate	**43.89 %**	**38.59 %**	**49.82 %**	**35.09 %**	**87.11 %**

	Economic Assumptions		
Combination	**Net Investment Income**	**Wage Inflation**	**Spread**
Present	7.80%	4.80%	3.00%
Alternate 1	7.80%	4.00%	3.80%
Alternate 2	7.30%	4.30%	3.00%
Alternate 3	8.30%	4.80%	3.50%
Alternate 4	5.00%	2.25%	2.75%

City of Detroit Policemen and Firemen Retirement System
Supplement to 5 Year Experience Study (Report Dated June 13, 2003)
20-Year Amortization of UAAL

Contributions for	Present Economic Assumptions (7.8%/4.8%)	Alternate Economic Assumptions			
		7.8/4.0	7.3/4.3	8.3/4.8	5.0/2.25
Normal Cost					
Age & service allowances	22.47 %	20.39 %	23.43 %	20.34 %	30.43 %
Disability allowances	5.57 %	5.42 %	5.89 %	5.20 %	7.96 %
Death-in-service allowances	0.49 %	0.45 %	0.51 %	0.44 %	0.71 %
Total	28.53 %	26.26 %	29.83 %	25.98 %	39.10 %
Members current contributions (average)	4.07 %	4.09 %	4.07 %	4.08 %	4.06 %
(Future refunds)	(0.36)%	(0.38)%	(0.36)%	(0.37)%	(0.36)%
Available for monthly benefits	3.71 %	3.71 %	3.71 %	3.71 %	3.70 %
Employer Normal Cost	**24.82 %**	**22.55 %**	**26.12 %**	**22.27 %**	**35.40 %**
Actuarial Accrued Liabilities					
Total ($ millions)	$3,721.6	$3,620.1	$3,849.3	$3,541.6	$4,656.7
Funding Value of Assets	$3,205.5	$3,205.5	$3,205.5	$3,205.5	$3,205.5
UAAL - dollars	516.1	414.6	643.8	336.1	1,451.2
- 20-year amortization	14.43 %	12.37 %	17.94 %	9.81 %	38.96 %
Computed Employer Rate	**39.25 %**	**34.92 %**	**44.06 %**	**32.08 %**	**74.36 %**

	Economic Assumptions		
Combination	Net Investment Income	Wage Inflation	Spread
Present	7.80%	4.80%	3.00%
Alternate 1	7.80%	4.00%	3.80%
Alternate 2	7.30%	4.30%	3.00%
Alternate 3	8.30%	4.80%	3.50%
Alternate 4	5.00%	2.25%	2.75%

EMPLOYER CONTRIBUTIONS DUE THE POLICEMEN AND FIREMEN RETIREMENT SYSTEM OF THE CITY OF DETROIT FOR THE FISCAL YEAR BEGINNING JULY 1, 2003 AND ENDING JUNE 30, 2004 - PAYMENT OF WHICH IS DUE NO LATER THAN JUNE 30, 2004

BY MR. ORZECH - SUPPORTED BY MR. ROYAL

WHEREAS, ARTICLE IX, SECTION 24 OF THE STATE OF MICHIGAN CONSTITUTION, THE CITY CHARTER, RETIREMENT SYSTEM PROVISIONS AND COLLECTIVE BARGAINING AGREEMENTS REQUIRE EMPLOYER CONTRIBUTIONS TO BE MADE IN THE REQUIRED AMOUNT (AS DETERMINED BY ACTUARIAL REPORT AND APPROVED BY THE BOARD OF TRUSTEES) AND PAID TIMELY, I.E., NO LATER THAN THE LAST DAY OF THE APPLICABLE FISCAL YEAR, AND

WHEREAS, PER JANUARY 9, 2003 RESOLUTION OF THE BOARD OF TRUSTEES, THE BOARD OF TRUSTEES APPROVED THE SIXTY-FIRST ACTUARIAL VALUATION REPORT AND EMPLOYER NORMAL COST WHICH PROVIDES FOR REQUIRED EMPLOYER CONTRIBUTIONS AS 27.68% OF PAYROLL, THE TOTAL AMOUNT BEING DUE ON JUNE 30, 2004, AND

WHEREAS, THE BOARD IS MINDFUL OF THE BUDGET RESPONSIBILITIES OF THE BUDGET DIRECTOR, FINANCE DIRECTOR, MAYOR AND CITY COUNCIL, UNDER APPLICABLE LAW, AND

WHEREAS, THE BOARD IS IN RECEIPT OF A COPY OF A MEMORANDUM FROM THE BUDGET DEPARTMENT (WHICH WAS RECEIVED BY THE BOARD ON THURSDAY, JULY 17, 2003) INDICATING THE CITY'S INTENTION TO BUDGET ONLY 23.78% OF PAYROLL INSTEAD OF THE REQUIRED 27.68% OF PAYROLL, AND

WHEREAS, THE BOARD IS CONCERNED ABOUT AN ERROR IN BUDGETING BY THE EMPLOYER (CITY OF DETROIT) WITH RESPECT TO THE EMPLOYER CONTRIBUTIONS DUE THE RETIREMENT SYSTEM NO LATER THAN JUNE 30, 2004, RE: THE 2003-2204 FISCAL YEAR, AND

WHEREAS, THE BOARD DEEMS IT APPROPRIATE TO FORWARD A LETTER OF INQUIRY TO BUDGET DIRECTOR ROGER SHORT REGARDING THIS MATTER, AND

EMPLOYER CONTRIBUTIONS DUE THE POLICEMEN AND FIREMEN RETIREMENT SYSTEM OF THE CITY OF DETROIT FOR THE FISCAL YEAR BEGINNING JULY 1, 2003 AND ENDING JUNE 30, 2004 - PAYMENT OF WHICH IS DUE NO LATER THAN JUNE 30, 2004

WHEREAS, THE BOARD OF TRUSTEES ESTIMATES THE REQUIRED EMPLOYER CONTRIBUTIONS DUE JUNE 30, 2004 TO BE $73,098,083.89, BASED UPON THE REQUIRED CALCULATION OF $27.68% OF $264,082,673.00 OF ESTIMATED PAYROLL, AND

WHEREAS, THE BOARD NOTES THE SIGNIFICANCE DIFFERENCE BETWEEN THE BOARD'S ESTIMATE OF $73,098,083.89 AND THE EMPLOYER'S BUDGETED AMOUNT OF $62,798,859.64, A DIFFERENCE OF $10,299,224.25, AND

WHEREAS, THE BOARD NOTES THAT THE EMPLOYER DID NOT TIMELY MEET ITS EMPLOYER CONTRIBUTION REQUIREMENTS DUE JUNE 30, 2001, JUNE 30, 2002 AND JUNE 30, 2003, AND WISHED TO ALERT THE EMPLOYER TO WHAT APPEARS TO BE AN OBVIOUS (1) MIS-CALCULATION BY THE EMPLOYER, OR (2) INADVERTENT OR INTENTIONAL IGNORING OF THE APPLICABLE ACTUARIAL VALUATION REPORT AND THE LEGAL REQUIREMENTS, OR (3) MIS-COMMUNICATION TO THE BOARD OF TRUSTEES REGARDING THE INTENTIONS OF THE EMPLOYER, OR (4) MISUNDERSTANDING AS STATUTORY REQUIREMENTS, RE: PROCEDURES RELATIVE TO THE CITY BUDGET, AND

WHEREAS, THE BOARD WISHES TO ALERT THE EMPLOYER ABOUT THESE ISSUES IN THE HOPES OF HELPING THE EMPLOYER AVOID A SEVERE FINANCIAL AND LEGAL PROBLEM, THEREFORE BE IT

RESOLVED, THAT THE BUDGET DIRECTOR, FINANCE DIRECTOR, MAYOR AND CITY COUNCIL ARE HEREBY REQUESTED TO REVIEW THEIR DECISION AND ESTIMATES RELATIVE TO THE BUDGETARY PROCESS FOCUSING ON THE AMOUNTS DUE THE RETIREMENT SYSTEM ON JUNE 30, 2004 AND TAKE APPROPRIATE ACTION TO RESOLVE THE DISPARITY OF THE ESTIMATE AND TO OTHERWISE TAKE ACTION TO ASSURE THAT THE EMPLOYER WILL BE ABLE TO MAKE FULL PAYMENT OF THE REQUIRED EMPLOYER CONTRIBUTIONS FOR THE FISCAL YEAR JULY 1, 2003 THROUGH JUNE 30, 2004, DUE JUNE 30, 2004, AND BE IT FURTHER

EMPLOYER CONTRIBUTIONS DUE THE POLICEMEN AND FIREMEN RETIREMENT SYSTEM OF THE CITY OF DETROIT FOR THE FISCAL YEAR BEGINNING JULY 1, 2003 AND ENDING JUNE 30, 2004 - PAYMENT OF WHICH IS DUE NO LATER THAN JUNE 30, 2004

RESOLVED, THAT A COPY OF THIS RESOLUTION BE FORWARDED TO THE BUDGET DIRECTOR, FINANCE DIRECTOR, MAYOR, CITY COUNCIL AND FOUR UNIFORM COLLECTIVE BARGAINING ASSOCIATIONS:

Yeas – Trustees Fairweather, Isom, Orzech, Royal, Scott and Chairman Golden – 6

Nays – Trustee Cheek – 1

Abstain – Trustees Talabi and Williams – 2

PROBABILITIES OF SERVICE RETIREMENT

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year
45	25%
46	25%
47	25%
48	22%
49	20%
50	18%
51	15%
52	15%
53	15%
54	15%
55	15%
56	15%
57	15%
58	15%
59	15%
60	40%
61	30%
62	30%
63	30%
64	30%
65	30%
66	30%
67	30%
68	30%
69	30%
70	100%
Ref	537

Sample Ages	Percent of Active Members Separating Within Next Year				
	Death		Disability		
	Men	Women	Non-Duty	Duty	Withdrawal
20	0.02%	0.01%	0.20%	1.13%	9.00%
25	0.02%	0.01%	0.20%	1.13%	6.50%
30	0.03%	0.02%	0.20%	1.13%	4.00%
35	0.04%	0.02%	0.20%	1.13%	2.30%
40	0.06%	0.03%	0.28%	1.13%	0.90%
45	0.11%	0.05%	0.42%	1.13%	0.50%
50	0.20%	0.08%	0.80%	1.13%	0.50%
Ref	30 x 0.5	31 x 0.5	208 x 1.00	209 x 0.90	351

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.