

SUMMARY OF ASSUMPTIONS USED FOR DGRS ACTUARIAL VALUATIONS

assumptions adopted by Board of Trustees after consulting with actuary

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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 have been calculated. Part of the assumption for each age is for a merit and/or seniority increase, and the other 4.8% recognizes inflation.

TOTAL ACTIVE MEMBER PAYROLL is assumed to increase 4.8% annually, which is the portion of the individual pay increase assumptions attributable to inflation.

NON-ECONOMIC ASSUMPTIONS

THE NUMBER OF ACTIVE MEMBERS is assumed to continue at the present number.

THE MORTALITY TABLE used to measure retired life mortality was 90% of the 1983 Group Annuity Mortality Table. This table was first used for the June 30, 1998 valuation.

THE PROBABILITIES OF AGE/SERVICE RETIREMENT for members eligible to retire have been calculated. 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. These probabilities were revised for the June 30, 1998 valuation.

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 and 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.).

2001-2002 FISCAL YEAR
EMPLOYER CONTRIBUTION RATES
COMPUTED PAYABLE LAST DAY OF FISCAL YEAR

expressed as percents of active member payroll

CONTRIBUTIONS FOR	CONTRIBUTIONS EXPRESSED AS PERCENTS OF PAYROLL
Normal Cost	
Age & service allowances	18.12%
Disability allowances	11.66
Duty death allowances	0.52
TOTALS	30.30
Member current contributions:#	3.66
(Future refunds)	(0.61)
Available for monthly benefits	3.05
EMPLOYER NORMAL COST	27.25
Unfunded Actuarial Accrued Liabilities	(20.60)
(17-year amortization)	
COMPUTED EMPLOYER RATE	
AFTER FFC CREDIT*	6.65%

Member statutory contributions of 5% to 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.

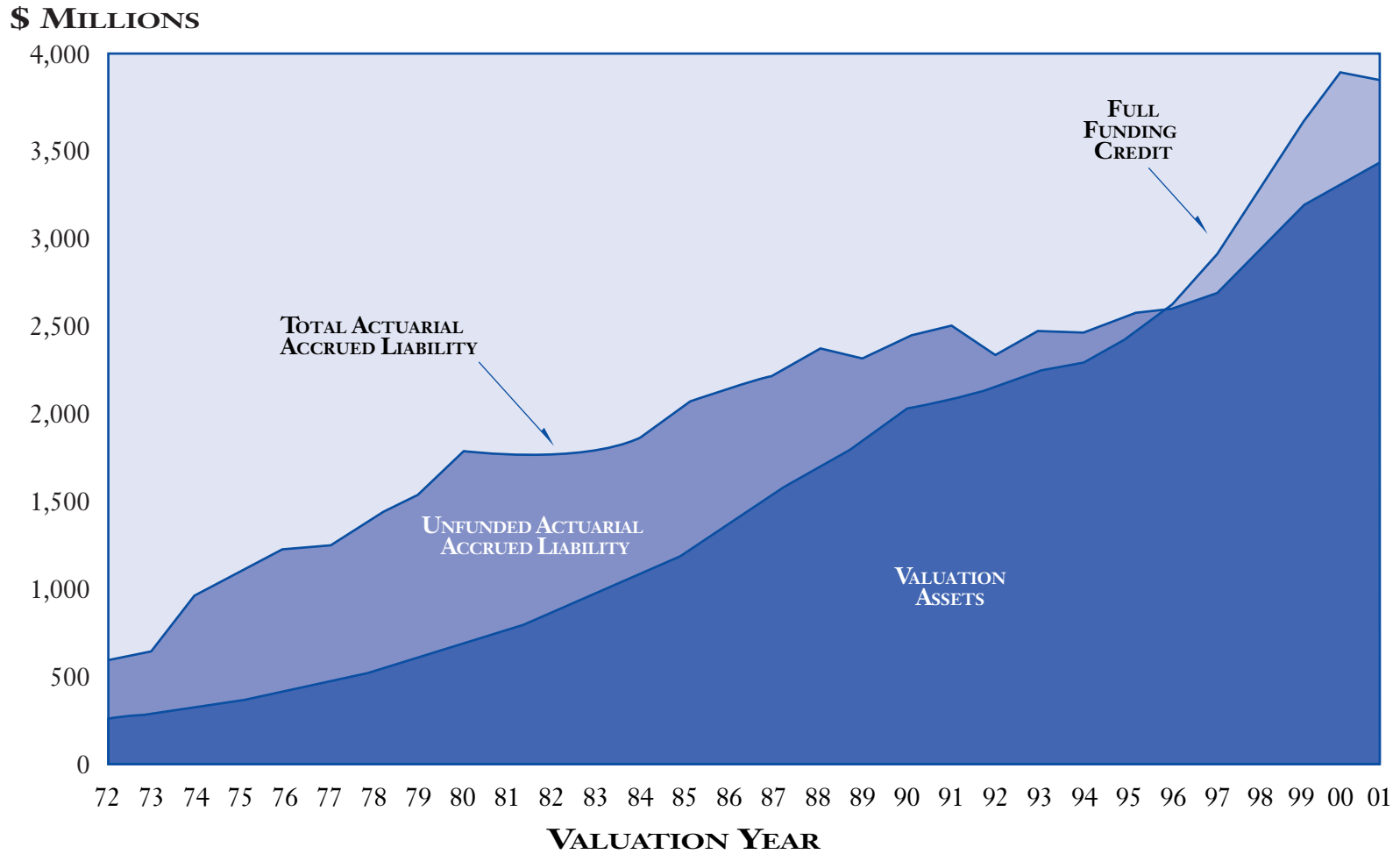
* Dollar contributions for the fiscal year are, by statute, equal to the contribution rate multiplied by the active member payroll for the same fiscal year.

JUNE 30, 2001
ACTUARIAL ACCRUED LIABILITIES

PRESENT VALUE, JUNE 30	AMOUNT
ACCRUED PENSION LIABILITIES	
Retirees and beneficiaries future pensions	\$ 2,241,443,403
Inactive members future deferred pensions	5,530,247
Active members	837,650,435
Total accrued pension liabilities	<u>3,084,624,085</u>
Pension fund balances	<u>3,521,396,395</u>
Unfunded accrued pension liabilities	\$ (436,772,310)
(Full funding credit)	
ACCRUED ANNUITY LIABILITIES	
Retirees and beneficiaries	
Future annuities	\$ 9,094,529
Contingency reserve	<u>4,880,831</u>
Total	\$ 13,975,360
Members annuities and future refunds	<u>364,648,948</u>
Total accrued annuity liabilities	378,624,308
Annuity fund balances	<u>378,624,308</u>
Unfunded accrued annuity liabilities	\$ 0
SYSTEM TOTALS	
Actuarial Accrued Liabilities	\$3,463,248,393
Accrued Assets	<u>3,900,020,703</u>
Unfunded Actuarial Accrued Liabilities ...	\$ (436,772,310)
(Full funding credit)	

RETIREMENT SYSTEM TOTALS
ASSETS AND ACCRUED LIABILITIES

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COMPARATIVE STATEMENT

ACTUARIAL ACCRUED LIABILITIES
\$ IN MILLIONS

JUNE 30	ACTIVE PAYROLL		COMPUTED TOTAL	VALUATION ASSETS	UNFUNDED	UNFUNDED/ ACTIVE PAYS	EMPLOYER CONTRIBUTIONS % OF PAYS
	TOTAL	AVERAGE					
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)	0.0	7.32
1998*	217.5	40,772	2,976.8	3,325.9	(349.1)	0.0	26.16#
1999@	216.0	40,542	3,724.1	3,668.4	(394.3)	0.0	26.17#
2000*	237.7	43,376	3,342.1	3,964.2	(622.1)	0.0	27.25#
2001	\$253.3	\$45,353	\$3,463.2	\$3,900.0	\$(436.8)	0.0	27.22%#

(a) After changes in actuarial assumptions.

(b) After changes in actuarial assumptions and 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.

In an inflationary economy the value of dollars is decreasing. This environment results in employee pays increasing in dollar amounts, retirement benefits increasing in dollar amounts, and then, unfunded accrued liabilities increasing in dollar amounts, all at a time when the actual substance of these items may be decreasing. Looking at just the dollar amounts of unfunded accrued liabilities can be misleading. Unfunded accrued liabilities dollars divided by active employee payroll provides an index which helps understanding. **The smaller the ratio of unfunded liabilities to active member payroll, the stronger the system.** Observation of this relative index over a period of years will give an indication of whether the system is becoming financially stronger or weaker.

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) RETIRANTS AND BENEF.	(3) PRESENT MEMBERS (EMPLOYER FINANCED PORTION)		(1)	(2)	(3)	TOTAL
1997(a)	\$187	\$1,918	\$715	\$2,944	100%	100%	117%	104%
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%

(a) After changes in actuarial assumptions and benefit provision changes.

* After changes in benefit provisions.

**GASB STATEMENT 25 REQUIRED
SUPPLEMENTARY INFORMATION**

Schedule of Funding Progress

ACTUARIAL VALUATION DATE	ACTUARIAL VALUE OF ASSETS (a)	ACTUARIAL ACCRUED LIABILITY (AAL) - ENTRY AGE (b)	UNFUNDED AAL (UAAL) (b-a)	FUNDED RATIO (a/b)	COVERED PAYROLL (c)	UAAL AS A % OF COVERED PAYROLL ((b-a)/c)
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	(662,107,920)	118.6%	237,741,560	-
2001	\$3,900,020,703	\$3,463,248,393	\$(436,772,310)	112.6%	\$253,297,027	-

* Plan amended.

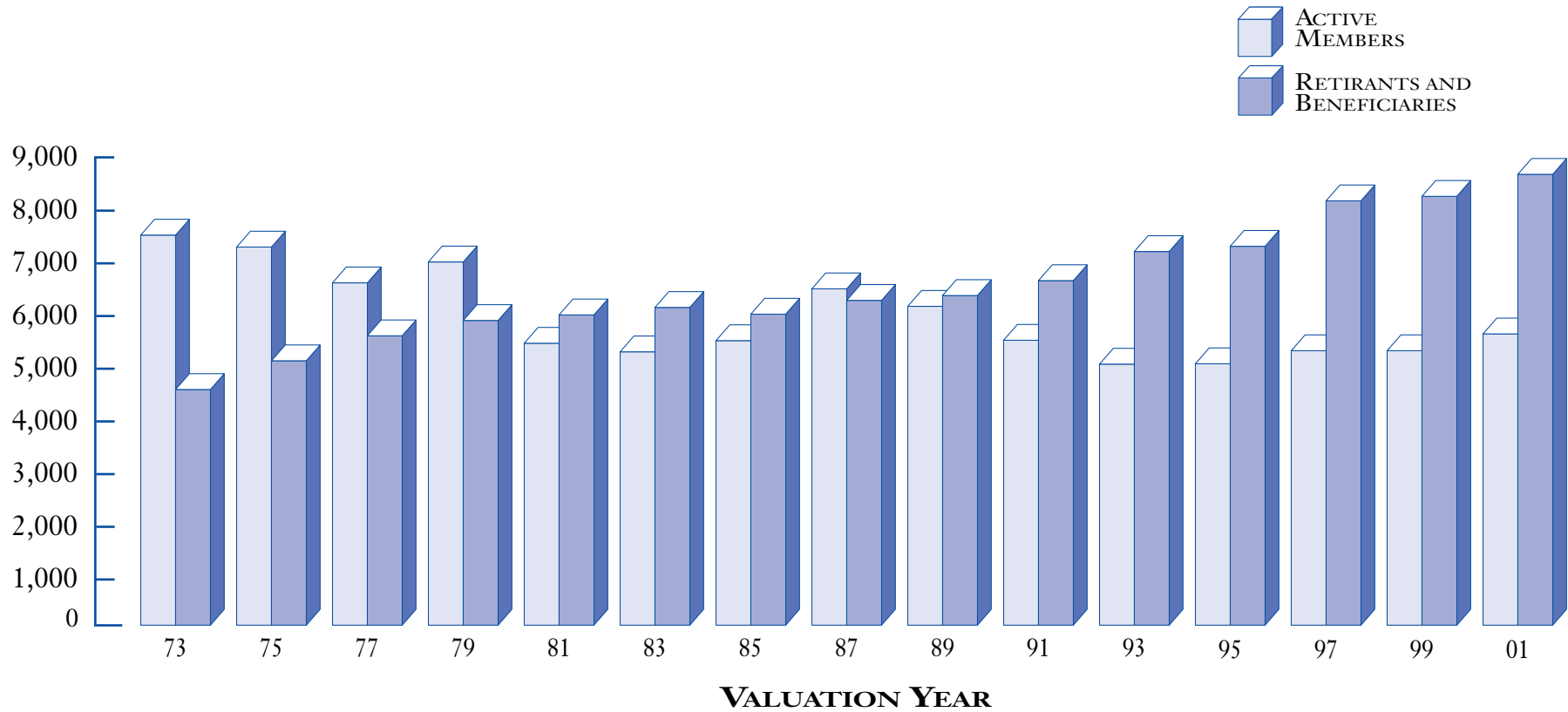
After changes in actuarial assumptions.

**COMPARATIVE STATEMENTS OF
ANNUAL RETIREMENT ALLOWANCES**

being paid to retirants and beneficiaries

JUNE 30	NO. RETIRED		% OF CURRENT ALLOWANCES			CURRENT ALLOWANCES	
	PRE-1969	TOTAL	ANNUITIES	PENSIONS	ESCALATORS	TOTAL	AVERAGE
1991	5,361	6,754	1.1%	54.3%	44.6%	\$121,715,028	\$18,021
1992	5,342	6,899	1.0	57.0	42.0	124,835,208	18,095
1993	5,349	7,091	1.0	59.5	39.5	129,027,970	18,196
1994	5,249	7,169	0.9	61.7	37.4	131,595,379	18,356
1995	5,161	7,311	0.9	61.3	37.8	138,959,417	19,007
1996	5,049	7,469	0.8	62.6	36.6	143,536,485	19,218
1997	5,012	7,743	0.8	63.3	35.9	150,843,744	19,481
1998	4,719	7,750	0.7	65.8	33.5	154,226,437	19,900
1999	4,573	7,883	0.7	68.4	30.9	158,523,816	20,110
2000	4,498	8,079	0.6	70.0	29.4	164,279,376	20,334
2001	4,394	8,166	0.6%	67.4%	32.0%	\$180,239,652	\$22,072

RETIREMENT SYSTEM TOTALS
ACTIVE AND RETIRED MEMBERS



COMPARATIVE STATEMENT OF ACTIVE MEMBERS & VALUATION PAYROLL

JUNE 30	NO. MEMBERS		TOTAL MEMBERS					AVERAGE PAY	
	1969 PLAN	PRE-1969	NO.	% CHANGE	RATIO OF ACTIVE TO RETIRED	ANNUAL PAYROLL	\$	CHANGE	
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%	

ACTIVE MEMBERS AS OF JUNE 30, 2001

by attained age & years of service

ATTAINED AGE	POLICE YEARS OF SERVICE TO VALUATION DATE							TOTALS	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	VALUATION PAYROLL
UNDER 20	5							5	\$ 143,850
20-24	370	2						372	12,127,948
25-29	574	162						736	27,733,603
30-34	404	302	66	2				774	32,150,739
35-39	146	130	205	128	0			609	27,700,426
40-44	55	48	124	227	8	1		463	22,277,933
45-49	9	15	65	267	102	82	7	547	27,725,522
50-54	5	3	16	108	60	210	98	500	26,645,015
55-59	3		2	24	19	61	75	184	9,599,176
60				1		5	8	14	726,442
61						1	6	7	398,676
62						2	10	12	647,296
63							3	3	173,476
64							2	2	90,976
65							1	1	82,500
66							3	3	165,123
79							1	1	45,488
TOTALS	1,571	662	478	757	189	362	214	4,233	\$188,434,189

ATTAINED AGE	FIRE YEARS OF SERVICE TO VALUATION DATE							TOTALS	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	VALUATION PAYROLL
UNDER 20									
20-24	50							50	\$ 1,589,102
25-29	112	20	1					133	4,698,202
30-34	88	93	66	4				251	10,752,389
35-39	30	48	134	31				243	11,118,839
40-44	10	20	68	60	25	1		184	8,987,778
45-49	1	4	26	33	69	23	2	158	8,251,929
50-54			2	11	38	122	34	207	11,669,442
55-59			2	2	7	29	84	124	7,638,132
60							2	2	157,025
TOTALS	291	185	299	141	139	175	122	1,352	\$64,862,838

**TOTAL ACTIVE MEMBERS
AS OF JUNE 30, 2001**

by attained age & 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+	No.	VALUATION PAYROLL
UNDER 20	5							5	\$ 143,850
20-24	420	2						422	13,717,050
25-29	686	182	1					869	32,431,805
30-34	492	395	132	6				1,025	42,903,128
35-39	176	178	339	159				852	38,819,265
40-44	65	68	192	287	33	2		647	31,265,711
45-49	10	19	91	300	171	105	9	705	35,977,451
50-54	5	3	18	119	98	332	132	707	38,314,457
55-59	3		4	26	26	90	159	308	17,237,308
60				1		5	10	16	883,467
61						1	6	7	398,676
62						2	10	12	647,296
63							3	3	173,476
64							2	2	90,976
65							1	1	82,500
66							3	3	165,123
79							1	1	45,488
TOTALS	1,862	847	777	898	328	537	336	5,585	\$253,297,027

GROUP AVERAGES:

	POLICE	FIRE	TOTAL
Age:	37.7 years	40.5 years	38.4 years
Service:	11.4 years	14.8 years	12.2 years
Annual Pay:	\$44,516	\$47,975	\$45,353

ACTUARIAL COMMENTS

**REVISED
ASSUMPTIONS AND
FUNDING METHODS**

Each year as of June 30, the actuarial liabilities of DPFERS are valued. In order to perform the valuation, assumptions must be made regarding the future experience of the System with regard to the following risk areas:

1. Rates of **withdrawal** of active members.
2. Rates of **disability** among active members.
3. Patterns of **salary increases** to active members.
4. Rates of **retirement** among active members.
5. Rates of mortality among active members, retirants and beneficiaries.
6. Long-term rates of **investment return** to be generated by the assets of the System.

Assumptions should be carefully chosen and continually monitored. An unrealistic set of assumptions can lead to:

- Understated costs resulting in either an inability to pay benefits when due, or sharp increases in required contributions at some point in the future;
- Overstated costs resulting in either benefit levels that are kept below the level that could be supported by the computed rate, or an unnecessarily large burden on the current generation of members, employers and taxpayers.

A single set of assumptions will not be suitable indefinitely. Things change, and our understanding of things (whether or not they are changing) also changes.

In recognition of this, the City Charter provides that assumptions used to value the liabilities of the Policemen and

Firemen Retirement System should be studied in depth every five years. The package of assumptions is then adjusted to reflect basic experience trends – but not random year-to-year fluctuations. Actuarial assumptions were revised following the 1992-1997 experience study and were used for the June 30, 1998 actuarial valuation. A summary of the 1992-1997 experience study findings follows:

RATES OF WITHDRAWALS from service without entitlement to an immediate benefit (other than a separation benefit) increased for members withdrawing after age 30 and decreased somewhat at ages earlier than 30. The revised withdrawal assumptions recognize the 1992-1997 observed rates.

PAY INCREASE RATES (MERIT AND LONGEVITY PORTION) were found to be consistent with assumed rates. Therefore,

current pay increase assumptions will be continued for the ensuing 5-year period.

RETIREMENT EXPERIENCE indicated more retirements than assumed at ages under 50 and fewer retirements than assumed between ages 50 and 60 and more retirements than expected over age 60. Revised rates substantially reflect the 1992-97 observed rates.

POST-RETIREMENT MORTALITY RATES observed in the study were lower than the present assumed rates. Consequently, mortality rates were revised to reflect longevity improvement.

PRE-RETIREMENT MORTALITY experience was inconclusive. Rates were revised to be consistent with post-retirement mortality rates.

VALUATION METHOD. The method used to measure the cost of disability and death-in-service benefits was changed from a 5-year terminal funding method to the entry age normal cost method. The previous method is a carry-over from the original city charter. This change puts all portions of the rate setting process on a consistent basis.

EXPERIENCE DURING THE PAST YEAR

During the year ended June 30, 2001, overall Retirement System experience was less favorable than assumed. The poor experience was primarily attributable to recognized investment income which was lower than assumed. The funding value rate of return was 4.2%. Even with this year's experience loss, the actuarial value of assets exceeded actuarial accrued liabilities by \$437 million as of June 30, 2001. On a market value basis, experience was even less favorable. The ratio of the market value of assets to accrued liabilities is 100.6%. Market returns in the near term exceeding the assumed rate of return will be necessary for the System to remain fully funded.

ANNUITY RESERVE FUND

The contingency reserve in the Annuity Reserve Fund is \$4.9 million and the ratio of the ARF balance to computed liabilities is over 150%.

CONTRIBUTION RECEIVABLE

Financial information submitted for the year indicated employer contributions of \$7,144,892 were unpaid as of June 30, 2001.

BENEFIT CHANGES

This valuation reflects changes in benefits for Police and Fire Command groups who retire on or after 7/1/98. Pensions for these members will increase annually by 2.25% of the current amount.

In addition, all members now have longevity payments added to average final compensation accordance with the schedule shown on page 5.

OVERALL FINANCIAL CONDITION

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