



**OHIO PUBLIC EMPLOYEES
RETIREMENT SYSTEM**

OPERS

Ohio Public Employees Retirement System

**ANNUAL ACTUARIAL VALUATION OF
RETIREMENT ALLOWANCES**

DECEMBER 31, 2003

GABRIEL, ROEDER, SMITH & COMPANY



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GABRIEL, ROEDER, SMITH & COMPANY

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August 17, 2004

The Retirement Board
Ohio Public Employees Retirement System
Columbus, Ohio

Ladies and Gentlemen:

The results of the *December 31, 2003 annual actuarial valuation* of the Ohio Public Employees Retirement System, based upon Chapter 145 of the Code as amended, are presented in this report. (The gain/loss analysis of experience and projections of retiree health and Medicare are covered in separate reports.) The purpose of the valuation is to measure the system's funding progress and to determine employer contribution rates for the coming period in accordance with established funding policy.

The individual member statistical data required for the valuations was furnished by your Executive Director and Staff, together with pertinent data on financial operations. Production of statistical data required significant extra effort this year, due to the introduction of the Combined and Member Directed Plans. We acknowledge the helpful cooperation of staff with sincere appreciation.

The actuarial assumptions used in the valuations are summarized in Section VII of this report. The assumptions are established by the Retirement Board after consulting with the actuary.

The valuation was completed in accordance with standards of practice prescribed by the Actuarial Standards Board and in conformance with Chapter 145 of the Revised Code of Ohio. To the best of our knowledge this report is complete and accurate and the actuarial methods and assumptions produced results which are reasonable.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Norman L. Jones, F.S.A. Brian B. Murphy, F.S.A.

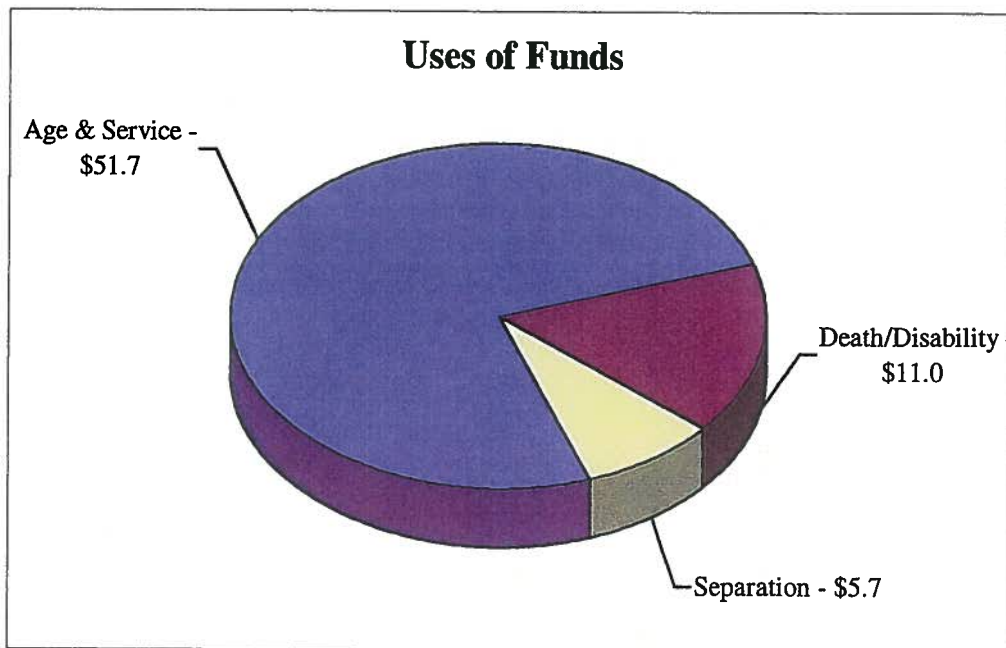
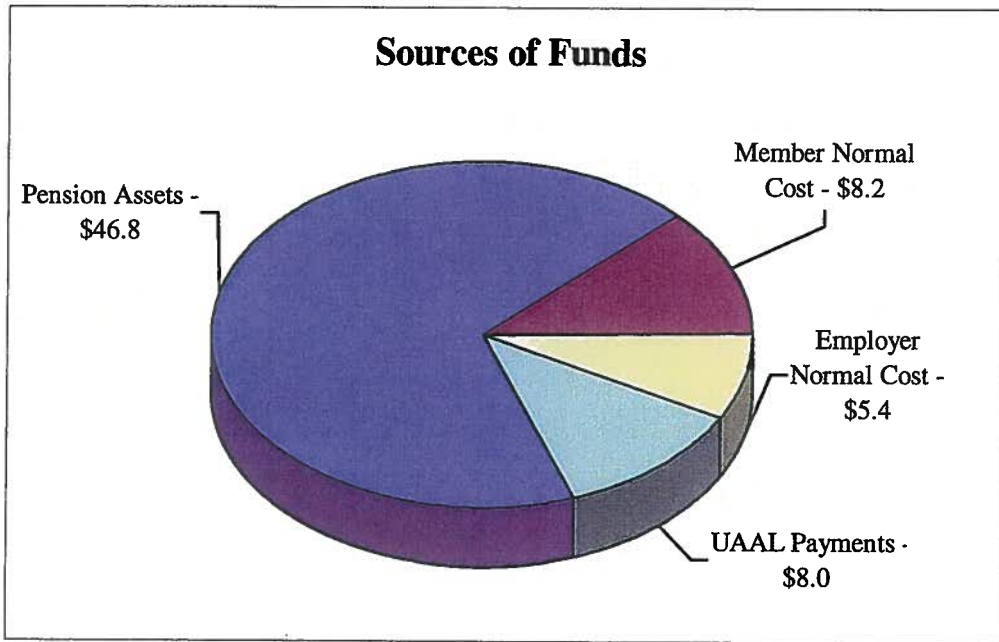
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RETIREMENT SYSTEM TOTALS



**FINANCING \$68.4 BILLION* OF DEFINED BENEFIT PROMISES
FOR PRESENT ACTIVE AND RETIRED MEMBERS
DECEMBER 31, 2003
(DOLLAR AMOUNTS IN BILLIONS)**



* Present value of future benefits – all divisions combined.

COMMENTS REGARDING THE FINANCING OF RETIREMENT ALLOWANCES

The December 31, 2003 actuarial valuations of members indicate the following about the portion of employer contribution rates allocated to financing retirement allowances:

- The employer rates are sufficient to fully fund the cost of benefit commitments being made to members for service currently being rendered.
- After satisfying current cost requirements, the remaining portion of the employer rates provides sufficient funds to amortize unfunded actuarial accrued liabilities over a period of 32 years for the System in total.

Key valuation results are summarized below.

Division	Number	Defined Benefit	Retirement	Amortization Years	
		Active Members	Allowance	for Unfunded Pension	
		Annual	Portion of	Accrued Liabilities	
		Payroll	Employer	This Year	Prior Year
		(\$Millions)	Rate@		
State	108,249	\$ 4,079	9.31%	43	38
Local Government	237,082	6,702	9.55%	27	25
Law	8,253	384	12.70%	41	36
Totals	353,584	\$11,165	9.57%	32	29

@ Based on a 4% retiree health contribution rate. Contribution rate changes currently under consideration would reduce the funding period at 12/31/2003 to 29 years.

Retirees and beneficiaries included in the valuation totaled 145,263 as follows:

Fund	Number	\$ Millions			Ratio of Assets to Liabilities
		Monthly Benefits Valued	Actuarial Liabilities	Assets#	
A & PR	130,433	\$178.02	\$22,535	\$22,535	100.0 %
SBF	14,830	10.74	1,193	1,193	100.0 %
Total	145,263	\$188.76	\$23,728	\$23,728	100.0 %

After recommended reserve transfers.

COMMENTS

Changes Since Last Valuation. This is the first valuation that directly recognizes the introduction of the Member-Directed and Combined Plans. Extensive revisions were made to the reporting of participant and financial information in connection with the introduction of those Plans.

Experience. The computed amortization period this year is 32 years, well below the 50+ year period that had been expected based upon the 2002 results and the losses that remained to be recognized at that time. This favorable result was in large part due to very favorable investment experience for the year ended December 31, 2003. Measured on a market value basis, investment return was close to 25%. Additional information concerning 2003 experience will be presented in a separate report of gain/loss experience.

Recommendation. The Market Value of Assets currently exceeds the Actuarial Value by \$1.8 Billion. (Please see page 8). The unusual pattern of investment return in the recent past, when combined with the asset valuation method used for the valuations, leads to a condition, where, essentially all of the recognition of that gain is deferred until 2006, as shown on page 8. Recognition of 1/3rd of that gain, in each of 2004, 2005, and 2006, would be consistent with level percent of payroll financing, and we present that alternative for the Board's consideration.

Health Care Preservation Plan. The Health Care Preservation Plan currently calls for gradually increasing employer and employee contribution rates beginning in 2006, with an ultimate rate structure taking effect in 2011 that is shown below.

	<u>Employer</u>	<u>Employee</u>	<u>Total</u>
State	14.00%	10.00%	24.00%
Local	14.00%	10.00%	24.00%
Public Safety	18.10%	10.00%	28.10%
Law	18.10%	10.10%	28.20%
Portion for Retiree Health			5.50%

If the ultimate contribution rate schedule were in effect at this time, the amortization period in this valuation would be 29 years, instead of 32 years.

Conclusion. Based on the results of the December 31, 2003 regular annual actuarial valuation, it is our opinion that the Ohio Public Employees Retirement System continues to be in sound financial condition in accordance with actuarial principles of level percent of payroll financing.

DEFINED BENEFIT ACTIVE MEMBERS IN VALUATION GROUP AVERAGES - COMPARATIVE STATEMENT

Valuation Group	Dec. 31	No. of Active Members	Group Averages				
			Attained Age	Accrued Service Yrs.	Annual Payroll		
					Average	Increase	
STATE	1975	83,220	40.6 yrs.	6.5 yrs.	\$ 9,441	6.4 %	@
	1980	92,872	39.4	7.3	13,934	8.1 %	@
	1985	89,256	39.2	8.4	18,677	7.4 %	@
	1990	98,939	40.7	8.1	25,281	6.2 %	@
	1995	114,596	40.4	8.8	27,962	2.0 %	@
	2000	113,099	41.6	9.7	34,201	4.1 %	
	2001	109,219	42.1	10.2	36,589	7.0 %	
	2002	110,017	42.0	10.2	37,531	2.6 %	
	2003	108,249	42.2	10.3	37,679	0.4 %	
LOCAL GOV'T	1975	149,557	40.8 yrs.	6.1 yrs.	\$ 8,771	4.3 %	@
	1980	160,797	40.7	7.4	13,035	8.2 %	@
	1985	158,285	40.1	8.3	15,983	6.2 %	@
	1990	173,220	41.5	7.9	19,506	4.1 %	@
	1995	223,431	41.2	7.6	20,384	0.9 %	@
	2000	245,831	41.8	8.1	24,401	3.7 %	
	2001	243,202	42.2	8.4	26,526	8.7 %	
	2002	247,377	42.2	8.3	27,171	2.4 %	
	2003	237,082	42.8	8.9	28,269	4.0 %	
LAW	1975	2,111	35.0 yrs.	4.9 yrs.	\$ 10,467	-	
	1980	3,019	36.1	6.8	16,846	10.0 %	@
	1985	4,207	36.5	8.4	20,103	5.5 %	@
	1990	5,804	38.6	9.9	26,936	6.0 %	@
	1995	6,605	39.3	11.1	32,441	3.2 %	@
	2000	8,045	39.3	11.7	40,387	4.5 %	
	2001	7,892	39.3	11.8	42,503	5.2 %	
	2002	8,030	39.4	12.0	44,420	4.5 %	
	2003	8,253	39.6	12.2	46,576	4.9 %	

@ 5-year annual compound rate.

FINANCIAL DATA FOR CALENDAR YEAR 2003 CONSOLIDATED ASSET RECONCILIATION ALL PLANS, ALL DIVISIONS

	Traditional Pension Plan	401(k) Health Care	DB Portion of Combined Plan	Total Defined Benefit	DC Portion of Combined Plan	Member Directed	VERA	Total DC	Total 2003
Beginning Market Value @ 12/31/02	\$38,948,921,525	\$ 8,946,381,395	\$ -	\$47,895,302,920	\$ -	\$ -	\$ -	\$ -	\$47,895,302,920
Assets Held in Trust for Benefits	\$ 90,994,145			\$ 90,994,145					\$ 90,994,145
Assets Held for Upcoming Year Budget	\$39,039,915,670	\$ 8,946,381,395	\$ -	\$47,986,297,065	\$ -	\$ -	\$ -	\$ -	\$47,986,297,065
Total Beginning Market Value @ 12/31/02									
External Cash Flows:									
Revenues:									
Member Contributions / Deposits	\$ 1,006,863,813		\$ 2,130	\$ 1,006,865,943	\$ 8,806,169	\$ 7,723,797		\$ 16,529,965	\$ 1,023,395,908
Employer Contributions	\$ 1,026,594,836	\$ 579,904,361	\$ 8,451,494	\$ 1,614,950,691		\$ 7,464,773		\$ 11,826,895	\$ 1,626,777,585
Retiree Paid Health Care Premiums		\$ 38,392,266		\$ 38,392,266				\$ -	\$ 38,392,266
Other Income / Cancelled Warrants	\$ 411,093			\$ 411,093				\$ -	\$ 411,093
Disbursements:									
Refunds of Member Accounts	\$ 192,768,335			\$ 192,768,335	\$ 49,490	\$ 391,773		\$ 441,263	\$ 193,209,598
Retirement Benefits	\$ 2,236,477,662			\$ 2,236,477,662				\$ -	\$ 2,236,477,662
Retiree Paid Post Retirement Health Care		\$ 38,392,266		\$ 38,392,266				\$ -	\$ 38,392,266
ER Paid Post Retirement Health Care		\$ 849,064,510		\$ 849,064,510				\$ -	\$ 849,064,510
ER Paid Post Retirement Medicare		\$ 58,704,582		\$ 58,704,582				\$ -	\$ 58,704,582
Administrative Expenses	\$ 73,573,453	\$ 3,283,040	\$ 4,539,264	\$ 81,395,756	\$ -	\$ 5,157,456		\$ 382,438	\$ 5,539,894
Net External Cash Flow	\$ 2,502,819,450	\$ 949,444,398	\$ 4,539,264	\$ 3,456,803,112	\$ 49,490	\$ 5,549,229		\$ 382,438	\$ 5,981,158
Inter-Plan Activity									
Member Balance Transfers & Plan Switches	\$ (20,567,691)		\$ 3,914,361	\$ (796,183,119)	\$ 8,756,679	\$ 9,639,340		\$ 3,979,683	\$ 22,375,702
Plan Start Up Costs Advanced by TP	\$ 8,330,450			\$ (3,066,736)		\$ (4,100,984)		\$ (1,162,730)	\$ (3,263,713)
Interest on Advance	\$ 354,044			\$ (130,336)		\$ (174,292)		\$ (49,416)	\$ (223,708)
2003 Administrative Expense Advance	\$ (11,883,198)		\$ (3,197,072)	\$ (15,080,270)	\$ 10,279,553	\$ 6,012,863		\$ (1,212,146)	\$ 15,080,270
Investment Income:									
Interest and Dividends	\$ 842,901,998	\$ 191,439,106	\$ 234,061	\$ 1,034,575,166	\$ -	\$ 193,415		\$ 229,443	\$ 1,034,804,609
Other Ordinary Investment Income	\$ 781,725,733	\$ 176,592,836	\$ 72,181	\$ 958,390,750	\$ -	\$ 9,318		\$ 42,553	\$ 958,433,302
Realized Capital Value Changes	\$ 8,055,624,833	\$ 1,830,537,883	\$ 615,192	\$ 9,886,777,908	\$ 2,215,533	\$ 2,609,477		\$ 5,169,514	\$ 9,891,947,422
Ending Market Value @ 12/31/03	\$ 9,680,252,564	\$ 2,198,569,826	\$ 921,434	\$ 11,879,743,824	\$ 2,215,533	\$ 2,812,210		\$ 413,767	\$ 11,885,185,334
	\$48,239,335,328	\$10,813,803,450	\$ 1,638,722	\$59,054,777,499	\$ 21,251,765	\$18,464,413		\$ 3,181,305	\$ 42,897,482
									\$59,097,674,982

**DEVELOPMENT OF FUNDING VALUE OF DEFINED BENEFIT ASSETS
(BASED UPON 4 YEAR PHASE-IN OF DIFFERENCES BETWEEN ACTUAL AND ASSUMED RETURN)**

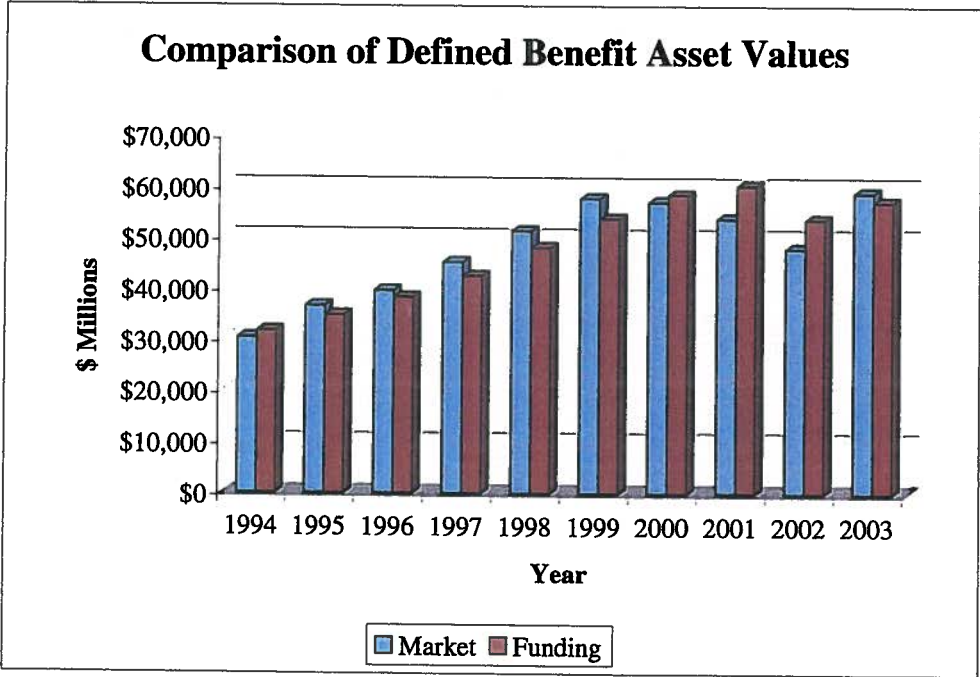
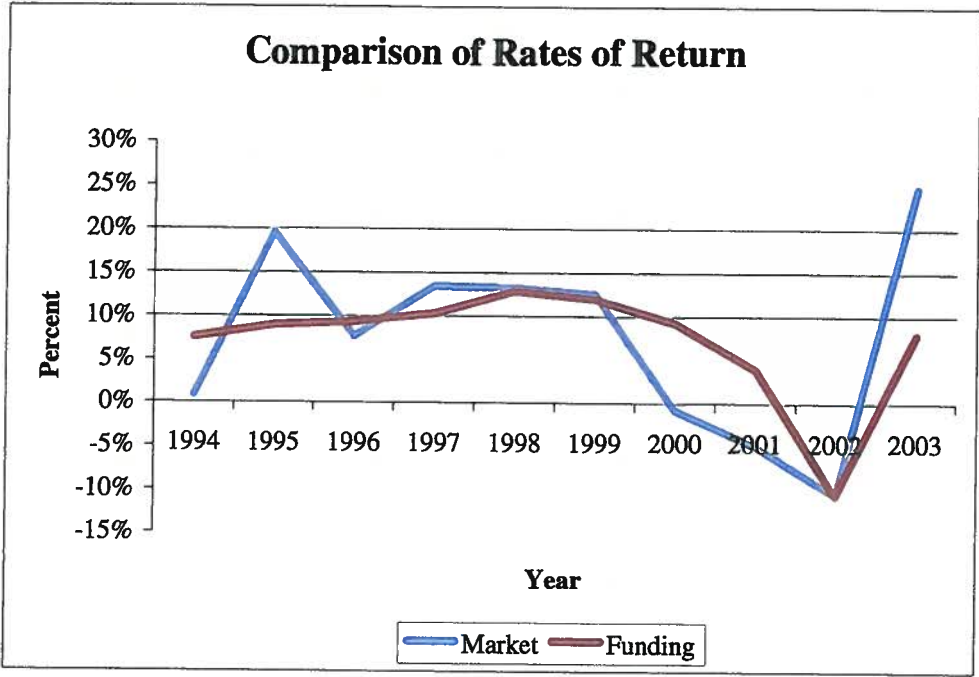
Year Ended December 31	2002	2003	2004	2005	2006
A. Funding Value Beginning of Year	\$60,360,882,688	\$53,744,652,713	\$57,243,423,159		
B. Market Value End of Year	47,986,297,065	59,054,777,499			
C. Market Value Beginning of Year	53,893,645,257	47,986,297,065			
D. Non-Investment/Administrative Net Cash Flow	(245,200,406)	(735,355,054)			
E. Investment Return					
E1. Market Total:B-C-D	(5,662,147,786)	11,803,835,488			
E2. Assumed Rate of Return	8.00%	8.00%			
E3. Assumed Amount of Return	4,819,062,599	4,270,158,015			
E4. Amount Subject to Phase In: E1-E3	(10,481,210,385)	7,533,677,473			
F. Phased-In Recognition of Investment Return					
F1. Current year: 0.25xE4	(2,620,302,596)	1,883,419,368			
F2. First Prior Year	(2,155,745,810)	(1,919,451,883)	1,883,419,368		
F3. Second Prior Year			(1,919,451,883)	\$ 1,883,419,368	
F4. Third Prior Year				(1,919,451,883)	\$ 1,883,419,370
F5. Total Recognized Investment Gain	(4,776,048,406)	(36,032,515)	(36,032,515)	(36,032,515)	1,883,419,370
G. Funding Value End of Year					
G1. Preliminary Funding Value End of Year: A+D+E3+F5	60,158,696,475	57,243,423,159			
G2. Upper Corridor Limit: 112% x B	53,744,652,713	66,141,350,799			
G3. Lower Corridor Limit: 88% x B	42,227,941,417	51,968,204,199			
G4. Funding Value End of Year	53,744,652,713	57,243,423,159			
H. Difference Between Market and Funding Value	(5,758,355,648)	1,811,354,340	1,847,386,855	1,883,419,370	0
I. Recognized Rate of Return	(10.58)%	7.93%			
J. Market Rate of Return	(10.53)%	24.79%			
K. Ratio of Funding Value to Market Value	112%	97%			

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (line E4) are phased in over a closed 4-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. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

**DEVELOPMENT OF FUNDING VALUE OF PENSION AND HEALTH ASSETS
DECEMBER 31, 2003**

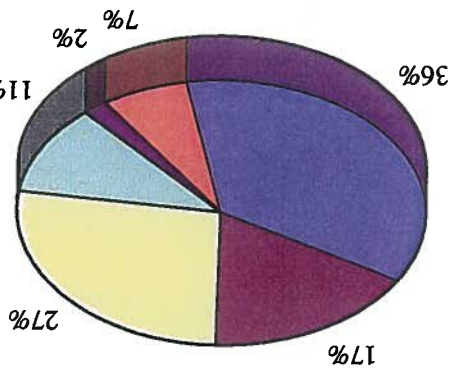
	State	Local	Law	PS	Total
1 Employer Accumulation Fund Traditional	\$ 6,361,365,091	\$ 9,027,636,555	\$ 626,781,331	\$ (52,381,201)	\$ 15,963,401,776
2 Employer Accumulation Fund Combined	491,006	1,147,716	0	0	1,638,722
3 Retired Assets Traditional	<u>9,342,165,945</u>	<u>12,503,798,980</u>	<u>815,119,621</u>	<u>45,205,531</u>	<u>22,706,290,078</u>
4 Subtotal: (1)+(2)+(3)	15,704,022,042	21,532,583,251	1,441,900,952	(7,175,670)	38,671,330,576
Member Deposits from Participant Data					
5 Active Member Deposits	3,976,083,545	6,033,725,745	390,702,116	4,108,163	10,404,619,569
6 Inactive Member Deposits	413,885,932	568,307,693	10,945,194	58,884	993,197,703
7 Total Member Deposits: (5)+(6)	4,389,969,477	6,602,033,438	401,647,310	4,167,047	11,397,817,272
8 Share of Total Member Deposits	38.52%	57.92%	3.52%	0.04%	100.00%
9 Assets without Division Allocated according to (8)	224,470,296	337,578,748	20,537,248	213,072	582,799,364
10 Employee Saving Fund Allocated according to (8)	3,426,743,059	5,153,446,368	313,519,750	3,252,733	8,896,961,910
11 Total Er +Ee Defined Benefit Assets: (4)+(9)+(10)	19,355,235,397	27,023,608,367	1,775,957,950	(3,709,865)	48,151,091,849
12 Traditional and CB Health (Market Values)	3,856,251,158	6,615,600,034	349,106,834	(7,154,576)	10,813,803,450
13 Total Market Value With Health (Traditional Plus CP)*	23,211,486,556	33,639,208,401	2,125,064,784	(10,864,441)	58,964,895,299
14 Share of Total Market Value	39.36%	57.05%	3.60%	(0.02)%	100.00%
15 Market Value Adjustment according to (14)*	(677,656,209)	(982,092,138)	(62,040,979)	317,186	(1,721,472,140)
16 Funding Value of DB and Health Assets (13)+(15)	22,533,830,347	32,657,116,263	2,063,023,805	(10,547,255)	57,243,423,159
17 Health Share of Market Value	16.61%	19.67%	16.43%	65.85%	18.34%
18 Health Market Adjustment: (15) x (17)	(112,582,731)	(193,141,548)	(10,192,127)	208,877	(315,707,529)
19 Health Funding Value	3,743,668,427	6,422,458,486	338,914,707	(6,945,699)	10,498,095,921
20 Pension Market Adjustment:(15)-(18)	(565,073,478)	(788,950,590)	(51,848,852)	108,309	(1,405,764,611)
21 Pension Funding Value	\$18,790,161,919	\$26,234,657,777	\$1,724,109,098	\$ (3,601,556)	\$46,745,327,239

* Row 13 does not include assets held for upcoming year budget. This amount is \$89,882,200 and is reflected in row 15. Consequently, row 15 does not match the corresponding figure in row H on page 8.



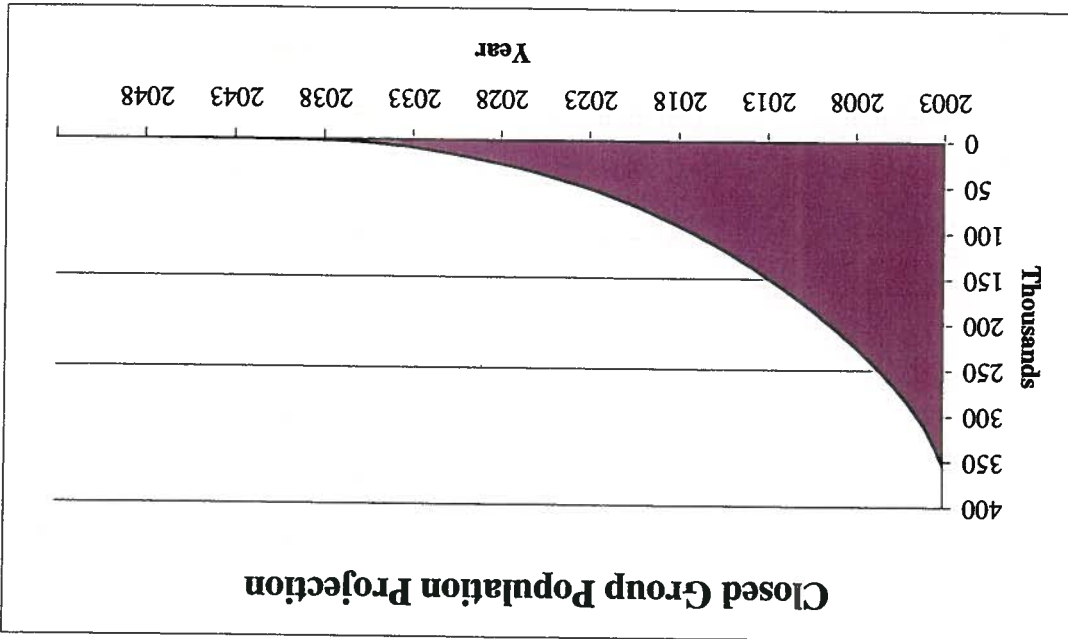
**DEVELOPMENT OF PRESENT DEFINED BENEFIT POPULATION
DECEMBER 31, 2003**

**Expected Terminations from Active
Employment for Current Active Members**



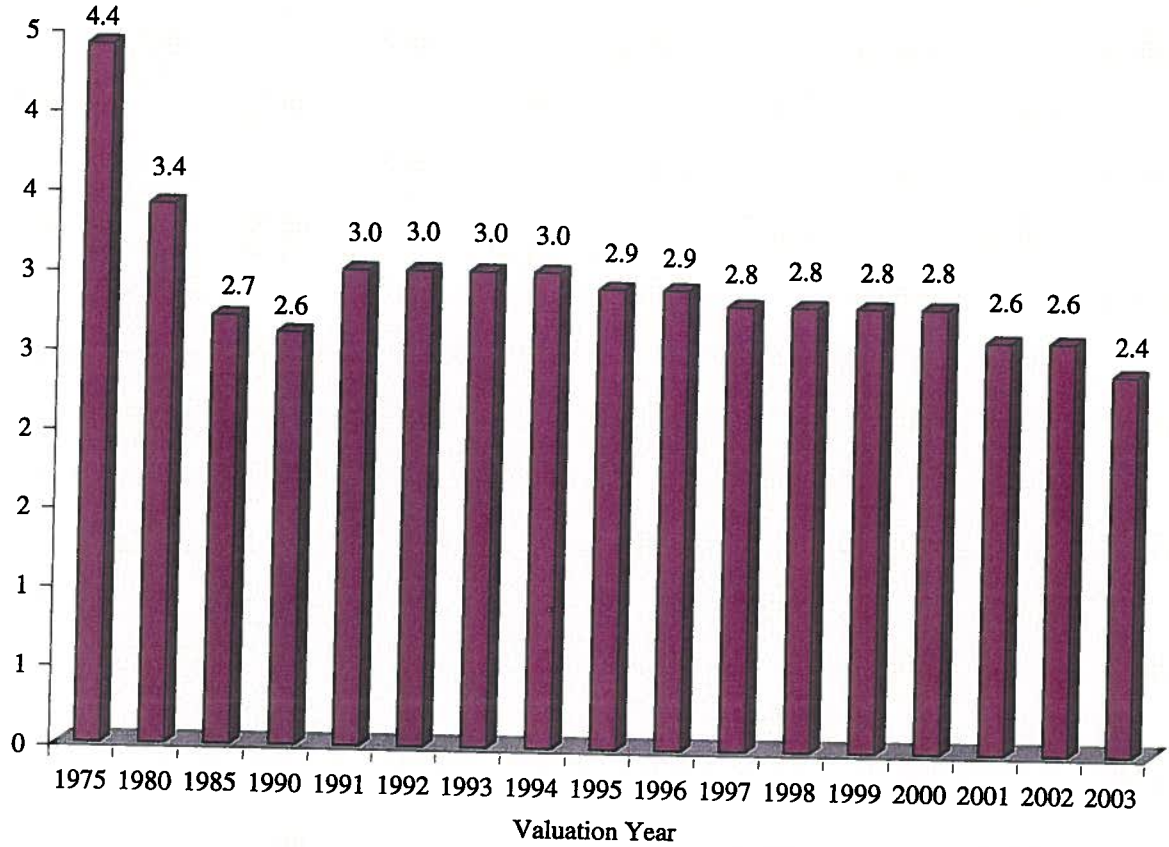
Normal Retirement Reduced Retirement Non-Vested Separations
 Vested Separations Deaths Disabilities

Closed Group Population Projection

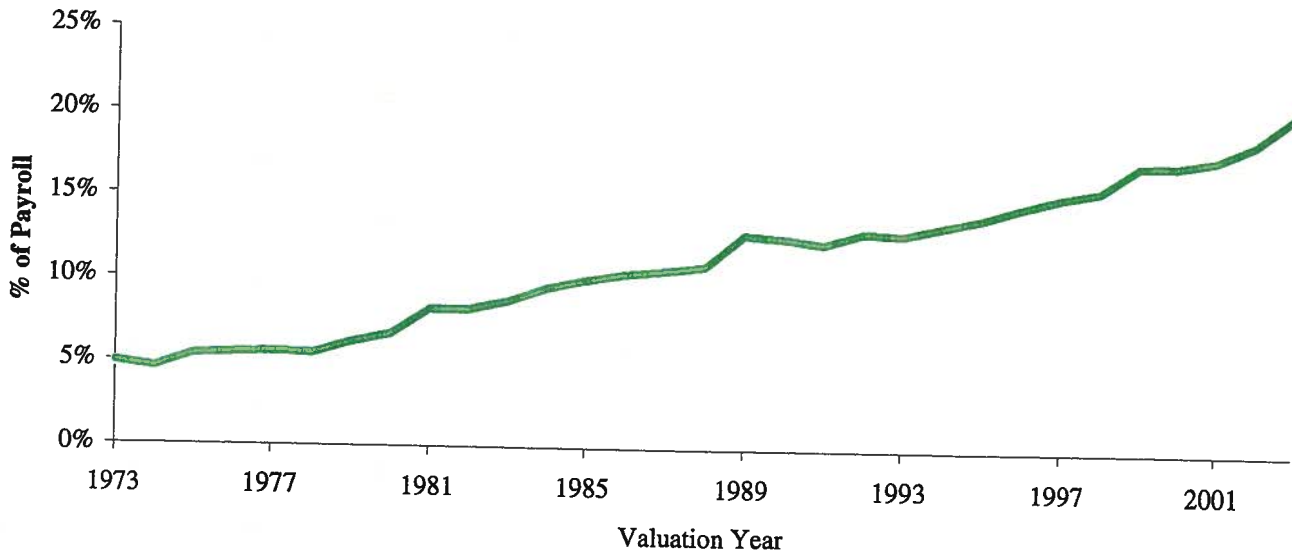


The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 353,584 active members. Eventually, 27% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for a monthly benefit. 64% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. 9% of the present population is expected to become eligible for death-in-service or disability benefits. Within 9 years, over half of the covered membership is expected to consist of new hires.

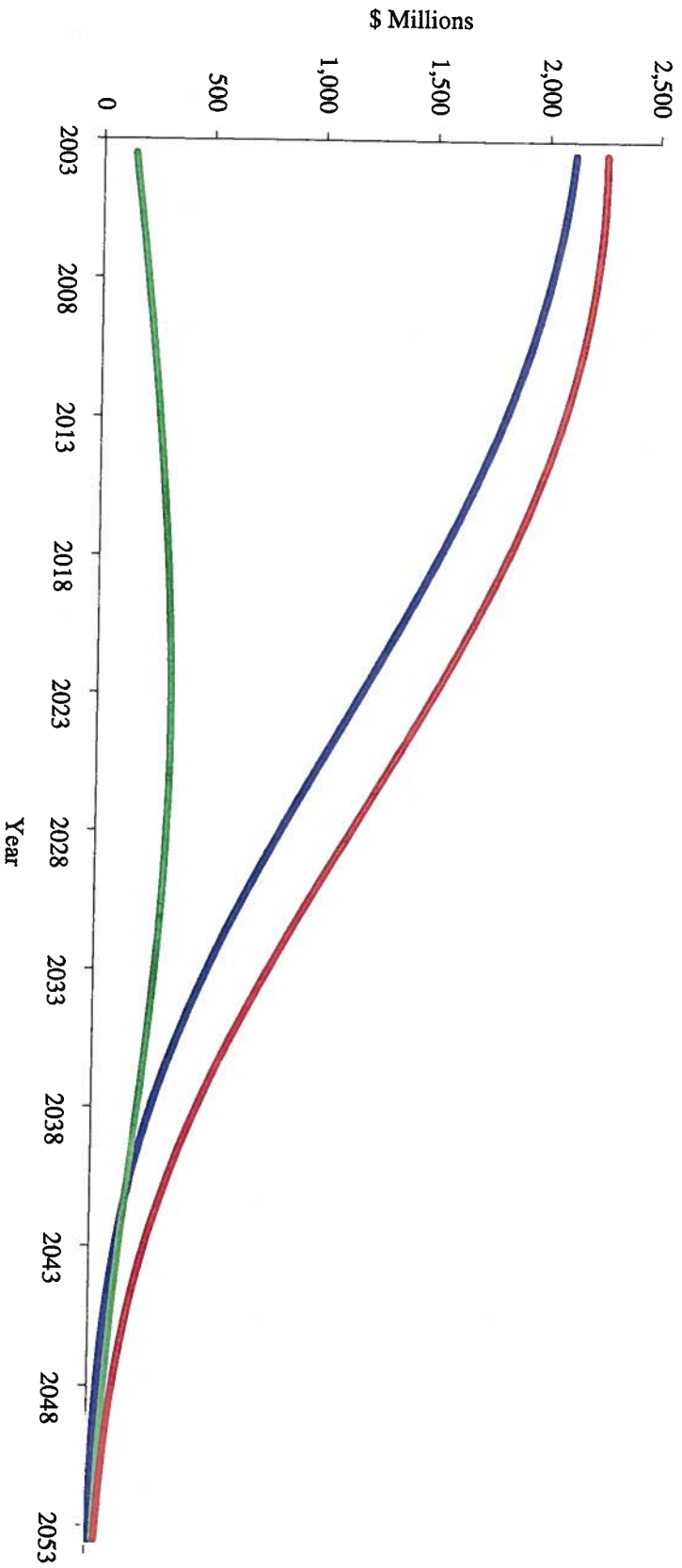
Active Members Per Retired Life



Retirement Benefits Being Paid as a Percent of Payroll



PROJECTED FUTURE BENEFIT PAYMENTS ON BEHALF OF PRESENT RETIRED LIVES



— Member Benefits
 — Survivor Benefits
 — Total Benefits

Total future payments:	\$58.0 billion
From present assets:	\$23.7 billion
From future earnings:	\$34.3 billion

ALL DIVISIONS
DEFINED BENEFIT ACTIVE MEMBERS IN VALUATION
DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Total Number	Payroll
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
15-19	13,368							13,368	\$ 70,364,924
20-24	25,993	412						26,405	317,983,217
25-29	21,507	4,644	171					26,322	667,132,447
30-34	17,735	11,896	3,693	132				33,456	1,052,657,272
35-39	15,033	10,184	9,200	3,726	141			38,284	1,316,742,458
40-44	15,091	10,116	8,961	9,141	4,610	406		48,325	1,738,328,272
45-49	14,074	10,026	8,812	8,240	8,116	5,323	240	54,831	2,046,750,129
50	2,499	1,735	1,656	1,479	1,336	1,460	289	10,454	396,973,637
51	2,276	1,634	1,717	1,431	1,256	1,469	325	10,108	387,267,166
52	2,128	1,563	1,598	1,413	1,205	1,405	416	9,728	379,471,421
53	2,175	1,494	1,484	1,379	1,210	1,261	482	9,485	365,994,391
54	1,828	1,342	1,518	1,333	1,030	1,051	538	8,640	335,743,917
55	1,917	1,320	1,450	1,322	993	997	553	8,552	325,584,139
56	1,749	1,270	1,313	1,311	988	870	509	8,010	297,394,737
57	1,756	1,261	1,410	1,348	1,002	786	481	8,044	294,894,050
58	1,183	788	914	878	645	465	259	5,132	183,737,667
59	1,049	815	823	888	630	433	279	4,917	172,814,378
60	959	712	700	746	568	408	220	4,313	148,353,700
61	991	769	763	707	608	383	229	4,450	147,745,338
62	811	578	605	568	420	321	207	3,510	117,666,462
63	673	489	467	438	313	231	120	2,731	84,638,508
64	606	415	371	349	243	181	125	2,290	68,272,026
65	555	369	274	245	212	164	100	1,919	54,591,297
66	512	293	266	224	177	136	74	1,682	43,482,656
67	480	247	192	142	115	84	72	1,332	30,285,566
68	437	201	171	131	97	71	69	1,177	25,303,328
69	402	164	120	109	75	51	50	971	19,420,610
70 & Over	2,139	1,092	719	420	286	225	267	5,148	75,572,305
Totals	149,926	65,829	49,368	38,100	26,276	18,181	5,904	353,584	\$11,165,166,018

**ALL DIVISIONS
DEFINED BENEFIT ACTIVE MEMBERS IN VALUATION
DECEMBER 31, 2003
BY GENDER AND YEARS OF SERVICE**

Service Years	Active Member Count		Total	Total	Average
	Males	Females			
0	26,854	29,137	55,991	\$ 640,514,917	\$11,440
1	13,410	16,048	29,458	572,828,038	19,446
2	10,781	13,046	23,827	551,175,018	23,132
3	9,549	12,488	22,037	606,160,100	27,506
4	8,370	10,243	18,613	553,780,467	29,752
5	6,981	8,697	15,678	498,850,802	31,819
6	6,547	7,532	14,079	456,322,127	32,412
7	5,738	6,847	12,585	431,958,226	34,323
8	5,532	6,076	11,608	408,365,381	35,180
9	5,668	6,211	11,879	438,917,200	36,949
10	4,784	5,502	10,286	377,927,200	36,742
11	4,364	4,813	9,177	349,891,493	38,127
12	4,790	5,583	10,373	394,472,794	38,029
13	4,741	5,548	10,289	423,955,946	41,205
14	4,337	4,906	9,243	377,274,918	40,817
15 & Up	43,857	44,604	88,461	4,082,771,291	46,153
Totals	166,303	187,281	353,584	\$11,165,166,018	\$31,577

RETIREMENT SYSTEM TOTALS
DECEMBER 31, 2003
(\$ MILLIONS)

Division	Traditional and Combined Defined Benefits		Retired Lives		Actuarial Accrued Liabilities		Unfunded				
	Active Members	Annual Payroll	Number	Annual Allowances	Active & Inactive Members	Retired Lives	Total	Assets	Liabilities	Accrued	Amort. Years
State	108,249	\$ 4,079	51,390	\$ 927	\$12,230	\$ 9,760	\$21,990	\$18,790	\$3,200		43
Local	237,082	6,702	91,080	1,267	17,646	13,086	30,732	26,235	4,497		27
Law	8,253	384	2,793	71	1,170	882	2,052	1,721	331		41
Total	353,584	\$11,165	145,263	\$2,265	\$31,046	\$23,728	\$54,774	\$46,746	\$8,028		32

Division	Number Counts			Unfunded		
	Traditional Combined	MDP	Total	Assets	Liabilities	Funded Ratio
State	107,292	957	1,096	\$18,803	\$22,003	85%
Local	234,477	2,605	239,644	26,262	30,759	85%
Law	8,253	-	8,253	1,721	2,052	84%
Total	350,022	3,652	357,242	\$46,786	\$54,814	85%

SECTION I



Benefits and Conditions Evaluated

BENEFITS AND CONDITIONS EVALUATED

PLANS

Traditional Pension Plan. The Traditional Pension Plan is a defined benefit plan under which a member's retirement benefit is based on a formula. The formula is determined by years of contributing service and the average of the three highest years of earnable salary (or final average salary). The OPERS investment professionals manage the investment of employee and employer contributions to ensure that funds are available to pay the formula benefit.

Combined Plan. The Combined Plan is a retirement plan with both a defined benefit and a defined contribution component. Under the defined benefit portion of the Combined Plan, the member's benefit is determined by a reduced formula (similar to the Traditional Pension Plan). Ohio investment professionals manage the investment of employer contributions to ensure that funds are available to pay the reduced formula benefit. Under the defined contribution portion of the Combined Plan, employee contributions are deposited into the member's individual defined contribution account and invested as directed by the member. The member's retirement benefit under this portion of the Combined Plan is based on employee contributions and the gains and losses on those contributions. The member directs the investment by selecting from among the nine professionally-managed OPERS Investment Options.

Member-Directed Plan. The Member-Directed Plan is a defined contribution plan under which employee and employer contributions are deposited into a member's individual defined contribution account and invested as directed by the member. The member's retirement benefit is based on employee and employer contributions and the gains and losses on those contributions. Under the Member-Directed Plan, the member directs the investment by selecting from nine professionally-managed OPERS Investment Options.

BENEFITS AND CONDITIONS EVALUATED

TERMS

Final average salary ("FAS") means the average of the annual earnings for the 3 highest calendar years of compensation.

Participant Contribution Account is the account for each Participant in the Combined or Member-Directed Plan to which shall be credited the employee contributions.

Miscellaneous Contribution Account is the account to which shall be credited any voluntary after-tax contributions for members in the Combined and Member-Directed Plans.

Rollover Account is the account to which shall be credited any rollover amounts for members in the Combined or Member-Directed Plans.

Employers' Accumulation Fund is the fund to which shall be credited employer contributions for members in the Combined Plan. There are separate accounts in the Employers' Accumulation Fund for the Combined Plan and the Traditional Pension Plan.

Employer Contribution Account is the fund to which shall be credited a portion of the employer contributions for members in the Member-Directed Plan.

CONTRIBUTIONS

Member contributions. State and local government members contribute 8.5% of earnable salary. The maximum statutory rate is 10% of earnable salary.

Law enforcement members whose primary duties are to preserve the peace, to protect life and property, and to enforce the laws of the state contribute 10.1% of earnable salary effective 1/1/2001. Remaining Law enforcement members (Public Safety) contribute 9.0% of earnable salary.

Employer contributions. Each employer contributes the remainder amounts necessary to finance OPERS benefits. Employer contributions are expressed as percents of member-covered payroll. The maximum statutory rate for state and local government employers is 14%. The maximum statutory rate for law enforcement employers is 18.1% (H.B. 416, effective 1/1/2001).

TRADITIONAL PENSION PLAN

AGE & SERVICE BENEFITS - STATE AND LOCAL GOVERNMENT MEMBERS

Age and service eligibility. A member who (i) has attained age 60 years and has 5 or more years of service credit or 60 contributing months, or (ii) has attained age 55 years and has 25 or more years of service credit, or (iii) has 30 or more years of service credit, may retire with an age and service retirement allowance.

Age and service allowance.- A retiring member's age and service allowance is equal to Ohio service credit times the greater of \$86, or 2.2% of FAS for the first 30 years of service plus 2.5% for years of service over 30 years (H.B. 628). The allowance is then adjusted by factors based on attained age or years of service (whichever yields the higher percentage) as determined in the following schedule:

Attained Age	OR	Years of Service Credit	Percentage of Base Amount
58		25	75%
59		26	80
60		27	85
61		N/A	88
N/A		28	90
62		N/A	91
63		N/A	94
N/A		29	95
64		N/A	97
65		30 or more	100

Maximum allowance is 100% of FAS or the limits under IRC Section 415(b). Minimum allowance is based upon twice the member's savings funding balance at retirement together with interest credits.

TRADITIONAL PENSION PLAN

AGE & SERVICE BENEFITS - LAW MEMBERS (PUBLIC SAFETY) ELIGIBLE TO RETIRE UNDER OHIO

REVISED CODE SECTION 145.33(B)(2)(B)

Age and service eligibility. A law member whose secondary duties are to preserve the peace, to protect life and property, and to enforce the laws of the state and who (i) has attained age 52 and has 25 or more years of credited service, or (ii) has attained age 62 and has 15 or more years of credited service, or (iii) has attained age 52 and has 15 or more years of credited service, may retire with an age and service allowance. A member covered by these provisions may retire at age 48 with 25 or more years of service subject to the reduction described in 145.33 (C)(1).

Age and service allowance. A retiring member's age and service allowance under eligibility (i) or (ii) above is equal to 2.5% of FAS times the first 25 years of service credit plus 2.1% of FAS times service credit in excess of 25 years (H.B. 628). Maximum allowance is 90% of FAS or the limits under IRC Section 415(b). A retiring member's age and service allowance under eligibility (iii) above is equal to 1.5% of FAS times years of service credit. Minimum allowance for all law members is based upon twice the member's savings fund balance at retirement together with interest credits.

AGE & SERVICE BENEFITS - LAW MEMBERS (LAW ENFORCEMENT) ELIGIBLE TO RETIRE UNDER OHIO REVISED CODE SECTION 145.33(B)(2)(A)

Age and service eligibility. A law member whose primary duties are to preserve the peace, to protect life and property, and to enforce the laws of the state and who (i) has attained age 48 and has 25 or more years of credited service, or (ii) has attained age 62 and has 15 or more years of credited service, or (iii) has attained age 52 and has 15 or more years of credited service, may retire with an age and service allowance.

Age and service allowance. A retiring member's age and service allowance under eligibility (i) or (ii) above is equal to 2.5% of FAS times the first 25 years of service credit plus 2.1% of FAS times service credit in excess of 25 years (H.B. 628). Maximum allowance is 90% of FAS or the limits under IRC Section 415(b). A retiring member's age and service allowance under eligibility (iii) above is equal to 1.5% of FAS times years of service credit. Minimum allowance for all law members is based upon twice the member's savings fund balance at retirement together with interest credits.

TRADITIONAL PENSION PLAN

DISABILITY RETIREMENT

The disability program was revised in order to comply with the Older Workers Benefit Protection Act. Employees becoming members after July 29, 1992 are covered by the post July 29, 1992 program. Other members were able to elect coverage under the pre July 29, 1992 program (original plan) or elect to be covered by the post July 29, 1992 program (revised plan).

Features of the original plan are:

- a) Upon becoming permanently disabled after completion of at least 5 years or 60 contributing months of service but before attaining age 60, a member is eligible for a disability allowance. The service requirement is waived for Law Enforcement members with an on-duty illness or injury.
- b) The amount of the allowance is the service the member would have had if employment had continued to age 60 times (i) 2.2% of FAS (H.B. 628), or (ii) \$86, whichever produces the greater benefit.
- c) Maximum allowance is 75% of FAS, minimum allowance is 30% of FAS.

Features of the revised plan are:

- a) A member may apply at any age after completion of 5 years or 60 contributing months of service. The service requirement is waived for Law Enforcement members with an on-duty illness or injury.
- b) A disability benefit equal to the greater of 45% of FAS or the actual service credit times 2.2% of FAS (H.B. 628) with no early retirement reduction (maximum 60% of FAS). The disability benefit period is to age 65 if the member is disabled prior to age 60. The benefit period declines gradually from 60 months for members disabled at ages 60 and 61 to 12 months for members disabled at age 69 or older.
- c) After the disability benefit ends, a service retirement benefit equal to the greater of (i) the accrued benefit based on actual service, or (ii) 2.2% of FAS (H.B. 628) times service credit including the period of disability (maximum 45% of FAS). In addition, an amount equal to the cost-of-living increases the member would have received had the member retired on the basis of age and service is paid.

TRADITIONAL PENSION PLAN

SURVIVOR BENEFITS

Death while eligible to retire. If a member dies in service after becoming eligible to retire with an age and service allowance and leaves a surviving spouse or other sole dependent beneficiary, the survivor receives the same amount that would have been paid had the member retired the last day of the month of death and elected the 100% joint and survivor form of payment.

Survivor (death-in-service) allowances. If a deceased member had at least 1-1/2 years of contributing service credit, with at least ¼ year of such service occurring within the 2-1/2 years prior to death, or was receiving a disability benefit, qualified survivors may receive the following monthly benefits. The benefit paid will be the greater of the applicable benefits paid under the following two schedules (H.B. 628):

Schedule 1

Number of Qualified Survivors Affecting the Benefit	Annual Benefit as a % of Deceased Member's FAS	Minimum Monthly Benefit
1	25%	\$250
2	40%	\$400
3	50%	\$500
4	55%	\$500
5 or more	60%	\$500

Schedule 2

Years of Service	Annual Benefit as a % of Deceased Member's FAS
20	29%
21	33%
22	37%
23	41%
24	45%
25	48%
26	51%
27	54%
28	57%
29 or more	60%

Qualifying survivors who are paid benefits under Schedule 2 share equally in the benefits, except that if there is a surviving spouse, the spouse receives the greater of 25% of FAS or \$250.

TRADITIONAL PENSION PLAN

A *qualified spouse* is the surviving spouse of a deceased member who is age 62 or at any age if the deceased member had 10 or more years of Ohio service credit or if the surviving spouse is caring for a qualified child or is adjudged physically or mentally incompetent.

A *qualified child* is a child who has never been married and under the age of 18 (or 22 if attending an approved school), or regardless of age is adjudged physically or mentally incompetent at the time of the member's death.

A *qualified parent* is a dependent parent aged 65 or older (earlier if mentally or physically incompetent) who received at least one-half support from the member during the 12-month period immediately preceding the member's death.

Qualified *survivors of disability benefit recipients* have the FAS used in calculating their benefits adjusted for each year between the effective date of the disability benefit and the recipient's date of death. The FAS is adjusted by the lesser of (1) 3% or (2) the actual average percentage change in the CPI.

BENEFITS AT RETIREMENT

Optional Benefit Forms. Retiring members may elect to have benefits paid in straight life form, in a form that guarantees a minimum number of monthly payments, or in a form that provides a continuation of all or a portion of the monthly benefit to a beneficiary after the death of the retiree. If a retiring member elects benefits in other than straight life form, the monthly amount is adjusted. The adjustment is based upon interest and mortality assumptions (with a blend of male and female mortality rates to produce unisex election factors consistent with the gender distribution of members electing optional forms of payment).

TRADITIONAL PENSION PLAN

PLOP. Effective 01/01/2004, retiring members may also elect to receive a Partial Lump Sum Option Payment (PLOP) (S.B.247). The PLOP is an option that allows a retiree to initially receive a partial lump sum benefit payment along with a reduced monthly retirement allowance. The lump sum payment cannot be less than 6 times or more than 36 times the monthly amount that would be payable to the member under the plan of payment selected and shall not result in a monthly allowance that is less than 50% of the monthly benefit. The total amount paid as a lump sum and monthly benefit shall be the actuarial equivalent of the amount that would have been paid had the lump sum not been selected.

QEBA. Qualified Excess Benefit Arrangement was established 01/01/2004 (H.B.190). The QEBA is operated in accordance with Internal Revenue Code Section 415(m). Under this arrangement the recipient may be paid the portion of his/her retirement benefit that was previously limited due to IRC Section 415(b).

Post-retirement increases. Each July after June 30, 1971 or the annual anniversary established 12 months after the initial date of retirement, each allowance is increased by 3.0% of the corresponding base allowance, except that no allowance shall exceed the limits established by Section 415 of the Internal Revenue Code.

Post-retirement death benefit. Upon the death of an age and service or disability retiree, a death benefit in the following amount is payable:

Service Credit at Retirement	Amount of Death Benefit
5 to 9 years	\$ 500
10 to 14 years	1,000
15 to 19 years	1,500
20 to 24 years	2,000
25 or more years	2,500

Deferred benefits. A member with at least 5 years of service credit who leaves service before being eligible for an immediate allowance and who does not withdraw accumulated contributions will be entitled to a deferred allowance at age 60. For law members, the age at which benefits commence depends on the amount of service credit. The amount of the allowance will be based on credited service and final average salary at time of leaving service.

TRADITIONAL PENSION PLAN

REFUND OF MEMBERS ACCUMULATED CONTRIBUTIONS

In the event a member leaves service prior to retirement, the member may elect to receive a refund of contributions with interest and may be eligible to receive an additional amount as described below. These refund provisions are available to all members. If a member dies prior to retirement and survivor benefits are not payable, the member's contributions with interest are paid to a designated beneficiary or other survivor. Interest is credited annually to member contribution balances. The rate of interest credited is determined by the OPERS Board and will not be greater than 6%. At the present time, 1% interest is credited to member contribution balances.

If the member has, or had at the time of death, at least 5 years but less than 10 years of qualified service, an additional 33% of the member's eligible contributions will be paid to the member or survivor. If the member has, or had at the time of death, at least 10 years of qualified service credit, an additional 67% of the member's eligible contributions will be paid to the member or survivor. The additional amount is not paid if the member is a re-employed retiree, or in the case of a deceased member, was receiving disability benefits at the time of death.

SUPPLEMENTAL BENEFITS

Health Care Coverage. Health care coverage is available to persons being paid a monthly allowance from OPERS. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit.

Medicare premiums. Medicare part B premiums are paid for those eligible, upon proof of coverage. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit.

COMBINED PLAN

AGE & SERVICE BENEFITS - STATE AND LOCAL GOVERNMENT MEMBERS*

Eligibility. A member who (i) has attained age 60 years and has 5 or more years of service credit in the Plan or 60 contributing months in the Plan, or (ii) has attained age 55 years and has 25 or more years of service credit, or (iii) has 30 or more years of service credit, may retire under the Combined Plan with an age and service retirement allowance under the defined benefit portion of the Plan and with a retirement benefit under the defined contribution portion of the Plan.

**Law Enforcement and Public Safety members must contribute to the Traditional Pension Plan only.*

Age and service retirement allowance (Defined Benefit portion of the Plan). A retiring member's age and service retirement allowance is equal to Ohio service credit in the Plan times 1.0% of FAS for the first 30 years of service plus 1.25% for years of service over 30 years. The allowance is then adjusted by factors based on attained age or years of service (which ever yields the higher percentage) as determined in the following schedule:

Attained Age	OR	Years of Service Credit	Percentage of Base Amount
58		25	75%
59		26	80
60		27	85
61		N/A	88
N/A		28	90
62		N/A	91
63		N/A	94
N/A		29	95
64		N/A	97
65		30 or more	100

Maximum allowance is 100% of FAS or the limits under IRC Section 415(b).

Retirement benefit (Defined Contribution portion of the Plan). The member's retirement benefit under this portion of the Combined Plan is based on the amounts credited to the Participant Contribution Account, Rollover Account, and Miscellaneous Account and the gains and losses on the amounts in those Accounts.

COMBINED PLAN

DISABILITY RETIREMENT

A Combined Plan member may apply after completion of 5 years in the Plan or 60 contributing months of service in the Plan. Combined Plan members may be covered under the original or revised disability plan. Combined Plan members who apply for disability may:

- 1) Take a lump sum distribution of the Participant Contribution Account, Rollover Account, and Miscellaneous Account and any additional amount they are entitled to from the Employers' Accumulation Fund, or
- 2) Transfer all service credit and the Participant's Accounts (as listed above) in the Combined Plan to the Traditional Pension Plan to be paid a disability benefit under the Traditional Pension Plan guidelines.

SURVIVOR BENEFITS

Combined Plan members are eligible for the same survivor benefits as those listed under the Traditional Pension Plan and must qualify for survivor benefits under the same guidelines as those members in the Traditional Pension Plan.

BENEFITS AT RETIREMENT

Optional Benefit Forms under the Defined Benefit portion of the Plan. Retiring members may elect to have their age and service retirement allowance in straight life form, in a form that guarantees a minimum number of monthly payments, or in a form that provides a continuation of all or a portion of the monthly benefit to a beneficiary after the death of the retiree. If a retiring member elects benefits in other than straight life form, the monthly amount is adjusted. The adjustment is based upon interest and mortality assumptions (with a blend of male and female mortality rates to produce unisex election factors consistent with the gender distribution of members electing optional forms of payment).

COMBINED PLAN

Optional Benefit Forms under the Defined Contribution portion of the Plan. Retiring members may elect to have retirement benefits paid in a partial lump sum, subject to any rules adopted by the Board; monthly annuity payments (with joint and survivor options) similar to those offered under the defined benefit portion of the Plan; periodic payments over a period certain; periodic payments of a specific monthly amount; payments with a deferred start date; or a combination of these options.

PLOP. Effective 01/01/2004, retiring members may also elect to receive a Partial Lump Sum Option Payment (PLOP) (S.B.247). The PLOP is an option that allows a retiree to initially receive a partial lump sum benefit payment along with a reduced monthly retirement allowance. The lump sum payment cannot be less than 6 times or more than 36 times the monthly amount that would be payable to the member under the plan of payment selected and shall not result in a monthly allowance that is less than 50% of the monthly benefit. The total amount paid as a lump sum and monthly benefit shall be the actuarial equivalent of the amount that would have been paid had the lump sum not been selected. The PLOP is available to Combined Plan members for the age and service retirement allowance under the defined benefit portion of the Plan and for the monthly annuity under the defined contribution portion of the Plan.

QEBA. Qualified Excess Benefit Arrangement was established 01/01/2004 (H.B.190). The QEBA is operated in accordance with Internal Revenue Code Section 415(m). Under this arrangement the recipient may be paid the portion of his/her retirement benefit that was previously limited due to IRC Section 415(b). The QEBA is available to Combined Plan members for the age and service retirement allowance under the defined benefit portion of the Plan.

Post-retirement increases. Each July after June 30, 1971 or the annual anniversary established 12 months after the initial date of retirement, each age and service retirement allowance under the defined benefit portion of the plan is increased by 3.0% of the corresponding base allowance, except that no allowance shall exceed the limits established by Section 415 of the Internal Revenue Code.

COMBINED PLAN

Post-retirement death benefit. Upon the death of an age and service retiree, a death benefit in the following amount is payable:

Service Credit at Retirement	Amount of Death Benefit
5 to 9 years	\$ 500
10 to 14 years	1,000
15 to 19 years	1,500
20 to 24 years	2,000
25 or more years	2,500

REFUNDS AND VESTING

A participant in the Combined Plan shall at all times be 100% vested in the Participant Contribution Account, Miscellaneous Contribution Account, and the Rollover Account.

If the member has at least 5 years but less than 10 years of qualified service credit in the Plan, an additional 33% of the member's eligible contributions will be paid from the Employers' Accumulation Fund. If the member has at least 10 years of qualified service credit in the Plan, an additional 67% of the member's eligible contributions will be paid to the member. Amounts paid to purchase service credit earn interest at the same rates as the Traditional Pension Plan and are payable on a refund.

In the event a member leaves service prior to retirement, the member may elect to receive a refund of their Participant Contribution Account, the Rollover Account, the Miscellaneous Account, and any additional amounts they are entitled to from the Employers' Accumulation Fund (as described above).

SUPPLEMENTAL BENEFITS

Health Care Coverage. Health care coverage is available to persons being paid a monthly allowance from OPERS. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit.

COMBINED PLAN

Medicare premiums. Medicare part B premiums are paid for those eligible, upon proof of coverage. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit. [Although it is not mentioned under the Traditional Pension Plan either, Combined Plan members are eligible for the Medicare Part-A equivalent coverage under R.C. 145.325.]

MEMBER-DIRECTED PLAN

AGE & SERVICE BENEFITS - STATE AND LOCAL GOVERNMENT MEMBERS*

Eligibility. A participant who has attained age fifty-five (55) may retire under the Member-Directed Plan.

**Law Enforcement and Public Safety members must contribute to the Traditional Pension Plan only.*

Retirement benefits. The member's retirement benefit is based on the value of the Participant Contribution Account, the Rollover Account, the Miscellaneous Account, and any vested portion of the Employer Contribution Account.

DISABILITY RETIREMENT

Not available under the Member-Directed Plan. Members may:

- 1) If age fifty-five (55), terminate employment and begin receiving retirement benefits, or
- 2) Take a lump sum distribution of their Participant Contribution Account, Rollover Account, Miscellaneous Account and any vested portion of the Employer Contribution Account.

SURVIVOR BENEFITS

Not available under the Member-Directed Plan. Survivors must take a lump sum distribution of the member's Participant Contribution Account, Rollover Account, Miscellaneous Account and any vested portion of the Employer Contribution Account.

MEMBER-DIRECTED PLAN

BENEFITS AT RETIREMENT

Optional Benefit Forms. Retiring members may elect to have retirement benefits paid in a partial lump sum, subject to any rules adopted by the Board; monthly annuity payments (with joint and survivor options) similar to those offered under the defined benefit portion of the Combined Plan; periodic payments over a period certain; periodic payments of a specific monthly amount; payments with a deferred start date; or a combination of these options.

PLOP. Effective 01/01/2004, retiring members who elect a monthly annuity under the Member-Directed Plan may also elect to receive a Partial Lump Sum Option Payment (PLOP) (S.B.247). The PLOP is an option that allows a retiree to initially receive a partial lump sum benefit payment along with a reduced monthly annuity. The lump sum payment cannot be less than 6 times or more than 36 times the monthly amount that would be payable to the member under the plan of payment selected and shall not result in a monthly annuity that is less than 50% of the monthly benefit. The total amount paid as a lump sum and monthly benefit shall be the actuarial equivalent of the amount that would have been paid had the lump sum not been selected. The PLOP is available to Member-Directed Plan members only is they elect a monthly annuity.

REFUNDS AND VESTING

A participant shall at all times be 100% vested in the Participant Contribution Account, Miscellaneous Contribution Account, and the Rollover Account. A participant shall vest in the Employer Contribution Account according to the Participant's attained years of participation in the Plan as follows:

One year of participation	20%
Two years of participation	40%
Three years of participation	60%
Four years of participation	80%
Five years of participation	100%

In the event a member leaves service prior to retirement, the member may elect to receive a refund of their Participant Contribution Account, Rollover Account, and Miscellaneous Account and any vested amounts in the Employer Contribution Account (as described above).

MEMBER-DIRECTED PLAN

SUPPLEMENTAL BENEFITS

Health Care Coverage. A portion of the employer contribution for Member-Directed participants is credited to a Retiree Medical Account (RMA). Amounts contributed to the RMA may be used after separation from service and a refund or retirement distribution is made to pay qualified health, dental and vision care expenses. Members vest in their RMA based on their attained years of participation in the Plan as follows:

1 – 2 years	0%
3 years	30%
4 years	40%
5 years	50%
6 years	60%
7 years	70%
8 years	80%
9 years	90%
10 years	100%

**SAMPLE BENEFIT COMPUTATION - TRADITIONAL PLAN
STATE OR LOCAL MEMBER - NORMAL RETIREMENT
RETRIRING DECEMBER 31, 2003
UNDER BENEFIT PROVISIONS EVALUATED**

Data:

A.	Final Average Earnings	\$32,000
B.	Years of Credited Service	33
C.	Age of Retiree	59
D.	Age of Spouse	56
E.	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)	100%

Computations:

- F. Formula Benefit: $(0.022 \times 30 \text{ years} + 0.025 \times 3 \text{ years}) \times \$32,000 =$ \$ 23,520
- G. Reduction for Line E Election: $(1 - 0.81174) \times (F) =$ 4,428
- H. Benefit Payable to Retiree while Spouse is Alive: $(F) - (G) =$ 19,092
- I. Benefit Payable to Spouse after Retiree's Death 19,092
- J. Benefit Payable to Retiree after Spouse's Death 23,520

Projected Benefits:

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2004	\$ 19,092	\$ 19,092	\$ 23,520
2005	19,665	19,665	24,226
2006	20,238	20,238	24,931
2007	20,810	20,810	25,637
2008	21,383	21,383	26,342
2009	21,956	21,956	27,048
2010	22,529	22,529	27,754
2011	23,101	23,101	28,459
2012	23,674	23,674	29,165
2013	24,247	24,247	29,870

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN
STATE OR LOCAL MEMBER - EARLY RETIREMENT
RETIRING DECEMBER 31, 2003
UNDER BENEFIT PROVISIONS EVALUATED**

Data:

A.	<u>\$32,000</u>	Final Average Earnings
B.	<u>26</u>	Years of Credited Service
C.	<u>59</u>	Age of Retiree
D.	<u>56</u>	Age of Spouse
E.	<u>100%</u>	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)

Computations:

F.	Formula Benefit: $0.022 \times 26 \text{ years} \times \$32,000 =$	\$ 18,304
G.	Adjustment factor for Early Retirement (from schedule)	80%
H.	Adjusted benefit: $(F) \times (G) =$	14,643
I.	Reduction for Line E Election: $(1 - 0.81174) \times (H) =$	<u>2,757</u>
J.	Benefit Payable to Retiree while Spouse is Alive: $(H) - (I)$	11,886
K.	Benefit Payable to Spouse after Retiree's Death	11,886
L.	Benefit Payable to Retiree after Spouse's Death	14,643

Projected Benefits:

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2004	\$ 11,886	\$ 11,886	\$ 14,643
2005	12,243	12,243	15,082
2006	12,599	12,599	15,522
2007	12,956	12,956	15,961
2008	13,313	13,313	16,400
2009	13,669	13,669	16,840
2010	14,026	14,026	17,279
2011	14,382	14,382	17,718
2012	14,739	14,739	18,158
2013	15,095	15,095	18,597

**SAMPLE BENEFIT COMPUTATION - TRADITIONAL PLAN
SECTION 145.33 (B)(2)(a) LAW MEMBER - NORMAL RETIREMENT
RETIRING DECEMBER 31, 2003
UNDER BENEFIT PROVISIONS EVALUATED**

Data:

A.	Final Average Earnings	\$38,000
B.	Years of Credited Service	28
C.	Age of Retiree	49
D.	Age of Spouse	46
E.	Percentage of Pension to Continue to Spouse after retiree's death	100%

(Retiree makes the choice of 100% Joint and Survivor with Pop-Up)

Computations:

- F. Formula Benefit: $(0.025 \times 25 \text{ years} + 0.021 \times 3 \text{ years}) \times \$38,000 =$ \$ 26,144
- G. Reduction for Line E Election: $(1 - 0.87869) \times (F) =$ 3,172
- H. Benefit Payable to Retiree while Spouse is Alive: $(F) - (G) =$ 22,972
- I. Benefit Payable to Spouse after Retiree's Death 22,972
- J. Benefit Payable to Retiree after Spouse's Death 26,144

Projected Benefits:

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2004	\$ 22,972	\$ 22,972	\$ 26,144
2005	23,661	23,661	26,928
2006	24,350	24,350	27,713
2007	25,039	25,039	28,497
2008	25,729	25,729	29,281
2009	26,418	26,418	30,066
2010	27,107	27,107	30,850
2011	27,796	27,796	31,634
2012	28,485	28,485	32,419
2013	29,174	29,174	33,203

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN
STATE OR LOCAL MEMBER – TERMINATION BENEFIT
RETIRING DECEMBER 31, 2003
UNDER BENEFIT PROVISIONS EVALUATED**

Data:

A.	<u>\$32,000</u>	Final Average Earnings
B.	<u>15</u>	Years of Credited Service
C.	<u>45</u>	Age of Member
D.	<u>42</u>	Age of Spouse
E.	<u>60:57</u>	Ages at Which Benefits are Payable
F.	<u>100%</u>	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)
G.	<u>\$44,000</u>	Accumulated Contributions with Interest at Termination Date

Computations:

H.	Formula Benefit: $(0.022 \times 15 \text{ years} + 0.025 \times 0 \text{ years}) \times \$32,000 =$	\$ 10,560
I.	Adjustment factor for Early Retirement (from schedule)	85%
J.	Adjusted benefit: $(H) \times (I) =$	8,976
K.	Reduction for Line F Election: $(1 - 0.80366) \times (J) =$	<u>1,762</u>
L.	Benefit Payable to Retiree while Spouse is Alive: $(J) - (K) =$	7,214
M.	Benefit Payable to Spouse after Retiree's Death	7,214
N.	Benefit Payable to Retiree after Spouse's Death	8,976
O.	In lieu of a lifetime benefit, terminatee may elect to receive a refund of accumulated contributions with interest plus an additional 67% of eligible accumulated contributions because terminatee had more than 10 years of service.	73,480

Projected Benefits:

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2004	\$ 7,214	\$ 7,214	\$ 8,976
2005	7,430	7,430	9,245
2006	7,647	7,647	9,515
2007	7,863	7,863	9,784
2008	8,080	8,080	10,053
2009	8,296	8,296	10,322
2010	8,513	8,513	10,592
2011	8,729	8,729	10,861
2012	8,945	8,945	11,130
2013	9,162	9,162	11,400

SAMPLE BENEFIT COMPUTATION - TRADITIONAL PLAN
SECTION 145.33 (B)(2)(a) LAW MEMBER - TERMINATION BENEFIT
RETIRED DECEMBER 31, 2003
UNDER BENEFIT PROVISIONS EVALUATED

Data:

A.	Final Average Earnings	\$38,000
B.	Years of Credited Service	15
C.	Age of Retiree	37
D.	Age of Spouse	34
E.	Ages at Which Benefits are Payable	52:49
F.	Percentage of Pension to Continue to Spouse after retiree's death	100%
G.	Accumulated Contributions at Termination Date (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)	\$46,000

Computations:

- H. Formula Benefit: $(0.015 \times 15 \text{ years}) \times \$38,000 =$
- I. Reduction for Line F Election: $(1 - 0.86085) \times (H) =$
- J. Benefit Payable to Retiree while Spouse is Alive: $(H) - (I) =$
- K. Benefit Payable to Spouse after Retiree's Death
- L. Benefit Payable to Retiree after Spouse's Death
- M. In lieu of a lifetime benefit, terminatee may elect to receive a refund of accumulated contributions with interest plus an additional 67% of eligible accumulated contributions because terminatee had more than 10 years of service.

Projected Benefits:

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2004	\$ 7,360	\$ 7,360	\$ 8,550
2005	7,581	7,581	8,807
2006	7,802	7,802	9,063
2007	8,022	8,022	9,320
2008	8,243	8,243	9,576
2009	8,464	8,464	9,833
2010	8,685	8,685	10,089
2011	8,906	8,906	10,346
2012	9,126	9,126	10,602
2013	9,347	9,347	10,859

SECTION II



Recommendations for Reserve Transfers



DECEMBER 31, 2003 RETIRED LIFE VALUATION RESERVE TRANSFERS

Reserve transfers from the Employer Accumulation Fund to the A & PR Fund and/or Survivor Benefit Funds are recommended in the following instances.

- Whenever the December 31 valuation shows unfunded accrued liabilities or assets in excess of computed liabilities in any of the retired life funds.
- To adjust retired life reserves for the payment of health insurance premiums and Medicare reimbursements for the previous 12 month period if this has not already been done.
- To cover the cost of ad-hoc post retirement benefit increases.
- To adjust retired life reserves for any changes in computed liabilities resulting from assumption changes.

By making these annual adjustments in addition to the regular transfers when allowances are added to the rolls, the ratio of assets to liabilities for retired members and beneficiaries will stay at 100%. Year to year changes in this ratio before recommended transfers will normally be isolated to mortality experience within the retired life group.

In 1992, PERS began making interim benefit payments for certain retirements to shorten the delay between the retirement effective date and receipt of the first monthly check. However, reserve transfers are not made until benefit amounts are final. Transfers for these cases have been accrued based upon supplemental information supplied by PERS staff and are shown on the following page. The accruals, when added to other assets, are intended to put retired life reserves in the same position they would have been in if reserve transfers for the interim benefit cases had been coincident with benefit commencement.

It is recommended that the transfers shown on the following page be made from the Employer Accumulation Fund to the Annuity & Pension Reserve Fund and Survivor Benefit Funds as indicated. The Accrued Transfers is an estimate of pending future transfers for interim cases, and does not require a year end transfer.

**RESERVES AND TRANSFERS AFFECTING THE EMPLOYER ACCUMULATION FUND
DECEMBER 31, 2003**

State	Assets Before Transfers	Transfers		Assets After Transfers	Liabilities	Ratio
		Accrued	Other			
State A&PR FUND CR,JR,SR,MP BD&DR TOTAL A&PR S-1 S-2 TOTAL SBF TOTAL STATE	\$ 7,497,627,355	\$212,476,252	\$36,884,718	\$ 7,746,988,325	\$ 7,746,988,325	
	1,432,610,331	118,724,673	30,959,526	1,582,294,530	1,582,294,530	
	8,930,237,686	331,200,925	67,844,244	9,329,282,855	9,329,282,855	100.0%
	102,922,869	1,121,601	(1,497,274)	102,547,196	102,547,196	
S-1	309,005,390	11,129,188	7,913,999	328,048,577	328,048,577	
S-2	411,928,260	12,250,789	6,416,724	430,595,773	430,595,773	
TOTAL SBF	\$ 9,342,165,945	\$343,451,714	\$74,260,969	\$ 9,759,878,628	\$ 9,759,878,628	100.0%
TOTAL STATE						100.0%
Local A&PR FUND CR,JR,SR,MP BD&DR TOTAL A&PR S-1 S-2 TOTAL SBF TOTAL LOCAL	\$ 9,953,311,676	\$279,729,129	\$ (11,858,020)	\$ 10,221,182,785	\$ 10,221,182,785	
	1,850,759,210	166,075,190	120,928,693	2,137,763,093	2,137,763,093	
	11,804,070,885	445,804,319	109,070,674	12,358,945,878	12,358,945,878	100.0%
	163,176,814	3,470,147	(4,655,552)	161,991,409	161,991,409	
S-1	536,551,280	16,266,624	12,889,743	565,707,647	565,707,647	
S-2	699,728,095	19,736,771	8,234,190	727,699,056	727,699,056	
TOTAL SBF	\$12,503,798,980	\$465,541,090	\$117,304,864	\$13,086,644,934	\$13,086,644,934	100.0%
TOTAL LOCAL						100.0%
Law A&PR FUND CR,JR,SR,MP BD&DR TOTAL A&PR S-1 S-2 TOTAL SBF TOTAL LAW	\$ 497,818,636	\$ 0	\$ (23,679,051)	\$ 474,139,585	\$ 474,139,585	
	330,698,930	918,702	41,189,121	372,806,753	372,806,753	
	828,517,566	918,702	17,510,070	846,946,338	846,946,338	100.0%
	8,054,816	0	(155,397)	7,899,419	7,899,419	
S-1	23,752,770	1,042,129	2,155,830	26,950,729	26,950,729	
S-2	31,807,586	1,042,129	2,000,433	34,850,148	34,850,148	
TOTAL SBF	\$ 860,325,153	\$ 1,960,831	\$19,510,502	\$ 881,796,486	\$ 881,796,486	100.0%
TOTAL LAW						100.0%
GRAND TOTAL	\$22,706,290,078	\$810,953,635	\$211,076,335	\$23,728,320,048	\$23,728,320,048	100.0%

SECTION III



State Division



STATE DIVISION

Data on active, inactive, retired and money purchase members that was used in the valuation is tabulated briefly below.

Defined Benefit Active Members in Valuation December 31, 2003

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	49,870	\$1,998,548,002	\$40,075	41.8	10.4
Women	58,379	2,080,173,621	35,632	42.4	10.3
Totals	108,249	\$4,078,721,623	\$37,679	42.2	10.3

Also included in the valuation were 81,695 inactive members eligible for deferred retirement allowances or contribution refunds and 2,587 members active in the money purchase plan.

Retired Members in Valuation December 31, 2003

Fund / Type of Allowance	Number	Current Monthly Benefits	Actuarial Liabilities
A & PR Fund			
Superannuation Retirement	39,427	\$61,806,920	\$7,739,383,389
Disability Retirement	6,936	11,485,980	1,582,294,530
Money Purchase	222	79,589	7,604,936
Total A & PR Fund	46,585	73,372,489	9,329,282,855
Total SBF	4,805	3,888,361	430,595,773
Grand Total	51,390	\$77,260,850	\$9,759,878,628

**STATE DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
DEFINED BENEFIT RETIREMENT ALLOWANCES
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
DECEMBER 31, 2003**

Contributions for		Normal Cost Age and Service Allowances Disability Allowances Survivor's Benefits Separation Benefits Total Normal Cost (Member Current Contributions) Employer Normal Cost Unfunded Actuarial Accrued Liabilities Financing Years* Total Available Contribution	Total Employer Contribution Rate
2003	2002		
8.16 %	8.31 %	Normal Cost Age and Service Allowances Disability Allowances Survivor's Benefits Separation Benefits Total Normal Cost (Member Current Contributions) Employer Normal Cost Unfunded Actuarial Accrued Liabilities Financing Years* Total Available Contribution Total Employer Contribution Rate	9.31 %
2.17 %	2.05 %		
0.41 %	0.42 %		
3.46 %	3.67 %		
14.20 %	14.45 %		
8.50 %	8.50 %		
5.70 %	5.95 %		
43	38		
3.61 %	3.36 %		
9.31 %	9.31 %		

* The period sufficient to produce the Total Employer Contribution Rate for retirement allowances and survivor benefits.

**STATE DIVISION
COMPARATIVE STATEMENT**

Valuation Date December 31	Defined Benefit Active Members in Valuation			Computed Employer Contributions as % of Payroll as a Result of the Actuarial Valuation				
	No.	Annual Payroll		Normal Cost	Unfunded Accrued Liability	Pension Total	Retiree Health	Grand Total
		Total (\$Millions)	Average					
1990@	98,939	\$ 2,501	\$ 25,281	5.7 %	2.78 %	9.29 %	4.42 %	13.71 %
1991&	107,025	2,693	25,163	(0.5)%	2.45 %	9.02 %	4.29 %	13.31 %
1992	109,701	2,767	25,224	0.2 %	2.61 %	9.02 %	4.29 %	13.31 %
1993	112,748	2,894	25,673	1.8 %	2.62 %	9.02 %	4.29 %	13.31 %
1994	115,238	3,063	26,580	3.5 %	2.36 %	9.02 %	4.29 %	13.31 %
1995	114,596	3,204	27,962	5.2 %	2.35 %	9.02 %	4.29 %	13.31 %
1996@	115,712	3,319	28,684	2.6 %	2.81 %	9.02 %	4.29 %	13.31 %
1997	114,036	3,405	29,858	4.1 %	2.90 %	9.11 %	4.20 %	13.31 %
1998	112,323	3,500	31,159	4.4 %	2.90 %	9.11 %	4.20 %	13.31 %
1999#	112,761	3,592	31,851	2.2 %	1.33 %	9.01 %	4.30 %	13.31 %
2000	113,099	3,868	34,201	7.4 %	1.32 %	9.01 %	4.30 %	13.31 %
2001@	109,219	3,996	36,589	7.0 %	2.14 %	8.31 %	5.00 %	13.31 %
2002	110,017	4,129	37,531	2.6 %	3.36 %	9.31 %	4.00 %	13.31 %
2003##	108,249	4,079	37,679	0.4 %	3.61 %	9.31 %	4.00 %	13.31 %

After benefit changes.

@ Revised actuarial assumptions.

& Reflects inclusion of part-time, seasonal, and temporary employees in compliance with OBRA 90 and revised actuarial assumptions.

Includes Combined Plan.

**STATE DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 2003**

Allocation by Entry Age		(1) Total Actuarial Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Allowances currently being paid from the Amnity & Pension Reserve Fund	\$ 9,329,282,855	\$ -	\$ -	\$ 9,329,282,855
Allowances currently being paid from the Survivors Benefit Fund	430,595,773	-	-	430,595,773
Age and service allowances based on service rendered before and likely to be rendered after valuation date	12,707,469,852	2,700,407,465	10,007,062,387	1,040,531,245
Disability allowances likely to be paid to present active members who become permanently disabled	1,769,888,756	729,357,511	1,040,531,245	1,040,531,245
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	357,290,878	137,913,117	219,377,761	219,377,761
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	2,157,274,239	1,194,005,160	963,269,079	963,269,079
Total	\$26,751,802,353	\$4,761,683,253	\$21,990,119,100	\$21,990,119,100
Actuarial Value of Assets				18,790,161,919
Unfunded Actuarial Accrued Liability				\$ 3,199,957,181

STATE DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
COMPARATIVE STATEMENT
(\$ IN MILLIONS EXCEPT AVERAGES)

Dec. 31	Defined Benefit Active Payroll		Active and Inactive Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed	Valuation	Unfunded	Amort. Years	
	Total	Average	Total	Assets			
1990@	\$2,501	\$25,281	\$ 5,091	\$3,391	\$1,700	34	0.68
1991&	2,693	25,163	5,528	4,030	1,498	32	0.56
1992	2,767	25,224	5,934	4,552	1,382	25	0.50
1993	2,894	25,673	6,671	5,357	1,314	22	0.45
1994	3,063	26,580	7,182	5,956	1,226	21	0.40
1995	3,204	27,962	7,811	6,706	1,105	17	0.34
1996@	3,319	28,684	8,104	7,387	717	8	0.22
1997	3,405	29,858	8,591	8,268	323	3	0.09
1998	3,500	31,159	9,223	9,666	(443)	-	-
1999#	3,592	31,851	10,298	10,474	(176)	-	-
2000	3,868	34,201	11,273	11,558	(285)	-	-
2001@	3,996	36,589	11,352	11,863	(511)	-	-
2002	4,129	37,531	11,822	8,965	2,857	38	0.69
2003##	4,079	37,679	12,230	9,030	3,200	43	0.78

After benefit changes.

@ Revised actuarial assumptions.

& Reflects inclusion of part-time seasonal, and temporary employees in compliance with OBRA 90 and revised actuarial assumptions.

Includes Combined Plan.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll ("UNFUNDED / PAYROLL" above) is significant. Unfunded actuarial accrued liabilities represent plan debt, while active member payroll represents the plan's capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength, and vice-versa.

**STATE DIVISION
MALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION
DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service to Valuation Date						Payroll		
	0-4	5-9	10-14	15-19	20-24	25-29		30+	Total Number
15-19	856							856	\$ 5,355,554
20-24	4,552	24						4,576	51,950,658
25-29	3,422	569	11					4,002	104,568,848
30-34	2,493	1,881	484	11				4,869	177,296,319
35-39	1,898	1,566	1,751	625	18			5,858	248,482,947
40-44	1,738	1,401	1,473	1,940	903	53		7,508	338,253,939
45-49	1,476	1,170	1,115	1,496	1,657	884	37	7,835	371,089,315
50	254	211	182	249	252	286	49	1,483	71,627,310
51	233	183	191	231	255	272	28	1,393	68,393,138
52	206	196	179	232	234	241	66	1,354	67,754,381
53	213	167	187	215	234	236	81	1,333	66,651,331
54	191	154	186	199	179	184	111	1,204	61,998,282
55	225	162	177	192	183	193	126	1,258	63,612,373
56	177	138	162	163	160	140	105	1,045	52,901,672
57	161	166	160	184	149	141	108	1,069	54,564,472
58	123	89	111	118	98	74	55	668	33,756,875
59	119	90	101	104	88	52	60	614	29,623,133
60	90	64	86	100	80	42	59	521	27,023,389
61	98	83	88	95	72	42	39	517	23,757,695
62	73	64	78	67	50	40	39	411	20,323,221
63	52	60	46	50	49	31	19	307	14,498,311
64	42	47	40	30	27	15	17	218	10,526,384
65	48	42	23	25	24	17	18	197	8,733,776
66	37	29	21	26	15	6	9	143	6,020,392
67	30	14	15	11	11	11	7	99	4,459,005
68	39	12	11	14	7	5	6	94	3,469,046
69	30	15	5	11	5	8	4	78	2,470,924
70 & Over	163	61	46	24	22	13	31	360	9,385,312
Totals	19,039	8,658	6,929	6,412	4,772	2,986	1,074	49,870	\$1,998,548,002

STATE DIVISION
FEMALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION
DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Total Number	Payroll
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
15-19	838							838	\$ 4,573,140
20-24	5,278	21						5,299	57,738,611
25-29	3,866	645	18					4,529	119,073,822
30-34	2,807	1,804	577	22				5,210	175,841,257
35-39	2,341	1,629	1,594	786	25			6,375	237,709,182
40-44	2,238	1,608	1,567	1,836	1,013	103		8,365	334,863,008
45-49	2,127	1,549	1,560	1,557	1,675	1,079	36	9,583	395,472,170
50	396	287	288	312	283	270	50	1,886	79,925,775
51	337	274	335	283	245	284	65	1,823	77,192,782
52	322	239	298	271	261	278	82	1,751	75,535,732
53	304	237	262	292	224	265	77	1,661	71,599,606
54	251	223	267	258	241	201	80	1,521	64,730,241
55	263	208	269	274	186	185	85	1,470	62,570,447
56	214	167	231	296	180	163	75	1,326	54,944,944
57	214	203	244	272	221	148	70	1,372	56,731,568
58	125	124	157	190	132	90	48	866	35,505,543
59	122	110	138	187	138	95	43	833	34,119,927
60	101	92	103	147	122	84	29	678	27,471,969
61	109	88	95	146	133	80	34	685	27,527,511
62	75	65	77	108	80	72	29	506	20,704,214
63	53	47	64	88	76	45	18	391	15,665,236
64	49	45	61	61	41	40	21	318	12,230,846
65	31	27	38	57	41	32	15	241	9,741,541
66	27	20	38	41	40	28	15	209	7,926,497
67	24	23	29	28	20	20	14	158	5,606,647
68	25	10	15	18	22	13	10	113	3,806,566
69	16	4	10	17	15	12	8	82	3,023,574
70 & Over	79	29	31	43	32	34	42	290	8,341,265
Totals	22,632	9,778	8,366	7,590	5,446	3,621	946	58,379	\$2,080,173,621



SECTION IV



Local Government Division



LOCAL GOVERNMENT DIVISION

Data on active, inactive, retired and money purchase members that was used in the valuation is tabulated briefly below.

Defined Benefit Active Members in Valuation December 31, 2003

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	109,131	\$3,320,882,920	\$30,430	43.3	9.2
Women	127,951	3,381,173,720	26,426	42.3	8.6
Totals	237,082	\$6,702,056,640	\$28,269	42.8	8.9

Also included in the valuation were 184,852 inactive members eligible for deferred retirement allowances or contribution refunds and 9,728 members active in the money purchase plan.

Retired Members in Valuation December 31, 2003

Fund / Type of Allowance	Number	Current Monthly Benefits	Actuarial Liabilities
A & PR Fund			
Superannuation Retirement	70,463	\$ 82,889,448	\$10,205,258,685
Disability Retirement	10,298	15,938,169	2,137,763,093
Money Purchase	614	162,230	15,924,100
Total A & PR Fund	81,375	98,989,847	12,358,945,878
Total SBF	9,705	6,592,728	727,699,056
Grand Total	91,080	\$105,582,575	\$13,086,644,934

**LOCAL GOVERNMENT DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 2003**

Allocation by Entry Age		(1) Total Actuarial Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)	Actuarial Present Value
					Actuarial Present Value
		\$12,358,945,878	\$ -	\$12,358,945,878	Allowances currently being paid from the Annuity & Pension Reserve Fund
		727,699,056	-	727,699,056	Allowances currently being paid from the Survivors Benefit Fund
		19,196,217,757	4,698,831,384	14,497,386,373	Age and service allowances based on service rendered before and likely to be rendered after valuation date
		2,554,415,395	1,200,513,815	1,353,901,580	Disability allowances likely to be paid present active members who become permanently disabled
		652,821,198	264,646,178	388,175,020	Survivor benefits likely to be paid to spouses and children of present active members who die before retiring
		3,399,126,372	1,993,638,050	1,405,488,322	Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members
		\$38,889,225,656	\$8,157,629,427	\$30,731,596,229	Total
				26,234,657,777	Actuarial Value of Assets
				\$ 4,496,938,453	Unfunded Actuarial Accrued Liability

LOCAL GOVERNMENT DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
COMPARATIVE STATEMENT
(\$ IN MILLIONS EXCEPT AVERAGES)

Dec. 31	Defined Benefit Active Payroll		Active and Inactive Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed Total	Valuation Assets	Unfunded	Amort. Years	
	Total	Average					
1990@	\$ 3,379	\$19,506	\$ 6,666	\$ 4,335	\$2,331	37	0.69
1991&	3,789	17,884	7,479	5,181	2,298	36	0.61
1992	3,953	18,109	8,147	6,046	2,101	27	0.53
1993	4,159	18,869	9,291	7,147	2,144	26	0.52
1994	4,366	19,666	9,894	7,814	2,080	28	0.48
1995	4,555	20,384	10,630	8,856	1,774	21	0.39
1996@	4,792	20,839	11,286	9,940	1,346	15	0.28
1997	4,976	21,481	11,973	11,218	755	5	0.15
1998	5,240	22,334	12,912	13,135	(223)	0	0.00
1999#	5,586	23,276	14,643	14,498	145	2	0.03
2000	5,999	24,401	15,881	16,131	(250)	0	0.00
2001@	6,451	26,526	15,983	16,651	(668)	-	-
2002	6,721	27,171	16,710	12,682	4,028	25	0.60
2003##	6,702	28,269	17,645	13,148	4,497	27	0.67

After benefit changes.

@ Revised actuarial assumptions.

& Reflects inclusion of part-time, seasonal, and temporary employees in compliance with OBRA 90 and revised actuarial assumptions.

Includes Combined Plan.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll ("UNFUNDED / PAYROLL" above) is significant. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan's capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength, and vice-versa.

**LOCAL GOVERNMENT DIVISION
MALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION
DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE**

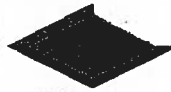
Attained Ages	Years of Service to Valuation Date						Payroll		
	0-4	5-9	10-14	15-19	20-24	25-29		30+	Total Number
15-19	5,385	7,706	154					5,385	\$ 30,038,807
20-24								7,860	100,505,017
25-29	5,735	1,303	46					7,084	172,848,971
30-34	5,232	3,064	1,004	25				9,325	284,365,179
35-39	4,496	2,974	2,465	914	26			10,875	367,012,798
40-44	4,501	2,988	2,704	1,195	113			13,999	500,266,898
45-49	4,228	2,988	2,701	2,321	1,705	83		16,559	622,019,969
50	772	528	499	391	419	489	92	3,190	119,253,328
51	724	472	518	427	366	539	126	3,172	121,043,496
52	691	438	458	401	332	496	151	2,967	117,314,002
53	743	442	432	376	369	442	206	3,010	116,127,232
54	661	391	457	368	290	369	193	2,729	106,809,990
55	665	381	416	341	311	322	205	2,641	98,979,120
56	649	415	353	339	262	289	206	2,513	92,522,036
57	694	387	397	349	257	260	180	2,524	91,452,794
58	467	222	253	224	171	156	105	1,598	54,475,736
59	440	247	216	238	167	134	104	1,546	51,807,157
60	422	266	175	175	144	113	79	1,374	43,179,459
61	434	296	250	210	151	112	81	1,534	47,382,256
62	398	227	199	154	125	89	78	1,270	38,326,352
63	336	205	159	123	78	70	47	1,018	27,901,362
64	297	158	123	105	72	43	51	849	21,756,406
65	312	148	99	67	62	56	37	781	18,604,535
66	294	131	99	75	55	44	23	721	15,300,654
67	272	122	79	48	28	24	23	596	10,101,774
68	260	107	77	36	27	28	27	562	9,567,153
69	257	93	61	35	21	8	20	495	7,753,306
70 & Over	1,385	701	410	172	115	72	99	2,954	34,167,133
Totals	48,456	19,848	14,650	10,624	7,364	5,973	2,216	109,131	\$3,320,882,920

LOCAL GOVERNMENT DIVISION
FEMALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION
DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Total Number	Payroll
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
15-19	6,289							6,289	\$ 30,397,423
20-24	8,292	210						8,502	102,508,895
25-29	7,828	1,747	90					9,665	229,694,909
30-34	6,760	4,157	1,284	68				12,269	336,584,639
35-39	6,095	3,557	2,817	1,192	66			13,727	395,417,616
40-44	6,512	3,920	2,883	2,435	1,307	131		17,188	503,396,901
45-49	6,185	4,195	3,271	2,429	2,045	1,462	79	19,666	597,068,917
50	1,068	693	663	491	333	359	93	3,700	116,063,787
51	974	695	650	462	344	335	99	3,559	112,326,415
52	907	680	653	487	330	345	103	3,505	110,793,266
53	909	636	580	474	345	281	103	3,328	103,747,469
54	722	566	591	493	296	272	138	3,078	96,511,899
55	759	564	569	498	291	278	118	3,077	95,072,039
56	702	546	555	499	367	260	113	3,042	92,737,166
57	682	502	592	530	359	211	109	2,985	87,502,904
58	465	350	381	334	229	137	47	1,943	57,274,133
59	364	364	361	346	230	143	66	1,874	54,859,705
60	344	290	334	311	211	160	47	1,697	48,407,443
61	344	301	324	252	246	145	68	1,680	47,560,613
62	263	219	250	236	154	117	54	1,293	36,808,430
63	230	175	195	175	106	81	30	992	25,500,232
64	218	164	145	148	97	79	33	884	22,656,412
65	161	150	112	95	83	56	27	684	16,873,614
66	154	110	106	79	67	57	27	600	13,883,663
67	151	87	69	54	55	29	26	471	9,817,032
68	113	70	68	63	40	25	24	403	8,269,962
69	99	52	44	46	34	23	18	316	6,172,806
70 & Over	511	300	229	180	115	106	93	1,534	23,265,430
Totals	58,101	25,300	17,816	12,377	7,750	5,092	1,515	127,951	\$3,381,173,720



SECTION V



Law Division



LAW DIVISION

This Benefit Group consists of Law Enforcement Members and Public Safety Members. Data on active, inactive, retired and money purchase members that was used in the valuation is tabulated briefly below.

Active Members in Valuation December 31, 2003

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	7,302	\$342,377,360	\$46,888	39.6	12.3
Women	951	42,010,395	44,175	39.0	11.0
Totals	8,253	\$384,387,755	\$46,576	39.6	12.2

Also included in the valuation were 857 inactive members eligible for deferred retirement allowances or contribution refunds and 63 members active in the money purchase plan.

Retired Members in Valuation December 31, 2003

Fund / Type of Allowance	Number	Current Monthly Benefits	Actuarial Liabilities
A & PR Fund			
Superannuation Retirement	1,401	\$3,162,838	\$474,139,585
Disability Retirement	1,072	2,492,788	372,806,753
Money Purchase	0	0	0
Total A & PR Fund	2,473	5,655,626	846,946,338
Total SBF	320	258,414	34,850,148
Grand Total	2,793	\$5,914,040	\$881,796,486

**LAW DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
RETIREMENT ALLOWANCES
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL**

Contributions for		Total Employer Contribution Rate	
2003@	2002@	12.70 %	12.70 %
Contributions Computed December 31			
Normal Cost		11.37 %	11.51 %
Age and Service Allowances		4.69 %	4.43 %
Disability Allowances		0.54 %	0.54 %
Survivor's Benefits		2.13 %	2.37 %
Separation Benefits		18.73 %	18.85 %
Total Normal Cost		10.08 %	10.08 %
(Member Current Contributions)		8.65 %	8.77 %
Employer Normal Cost		41	36
Unfunded Actuarial Accrued Liabilities		4.05 %	3.93 %
Financing Years*			
Total Available Contribution			

* The period sufficient to produce the Total Employer Contribution Rate for retirement allowances and survivor benefits.

@ Weighted average between Public Safety and Law Enforcement.

**LAW DIVISION
COMPARATIVE STATEMENT**

Valuation Date December 31	Active Members in Valuation			Computed Employer Contributions as % of Payroll as a Result of the Actuarial Valuation					
	No.	Total (\$thousands)	Annual Payroll Average	Increase	Normal Cost	Unfunded Accrued Liability	Pension Total	Retiree Health	Grand Total
1990@	5,804	\$156,339	\$26,936	5.4 %	9.52 %	1.29 %	10.81 %	5.19 %	16.00 %
1991	6,088	169,008	27,761	3.1 %	9.32 %	1.49 %	10.81 %	5.89 %	16.70 %
1992	5,852	169,337	28,937	4.2 %	9.65 %	1.16 %	10.81 %	5.89 %	16.70 %
1993	6,032	182,576	30,268	4.6 %	9.53 %	1.28 %	10.81 %	5.89 %	16.70 %
1994	6,252	196,467	31,425	3.8 %	9.71 %	1.10 %	10.81 %	5.89 %	16.70 %
1995	6,605	214,273	32,441	3.2 %	9.69 %	1.12 %	10.81 %	5.89 %	16.70 %
1996@	6,742	229,138	33,987	4.8 %	10.50 %	0.74 %	11.24 %	5.46 %	16.70 %
1997	7,256	258,897	35,680	5.0 %	10.49 %	2.01 %	12.50 %	4.20 %	16.70 %
1998	7,507	277,239	36,931	3.5 %	10.48 %	2.02 %	12.50 %	4.20 %	16.70 %
1999#	7,766	299,040	38,506	4.3 %	11.54 %	0.86 %	12.40 %	4.30 %	16.70 %
2000	8,045	324,918	40,387	4.9 %	11.59 %	0.81 %	12.40 %	4.30 %	16.70 %
2001@	7,892	335,432	42,503	5.2 %	8.88 %	2.82 %	11.70 %	5.00 %	16.70 %
2002	8,030	356,694	44,420	4.5 %	8.77 %	3.93 %	12.70 %	4.00 %	16.70 %
2003	8,253	384,388	46,576	4.9 %	8.65 %	4.05 %	12.70 %	4.00 %	16.70 %

After benefit changes.

@ Revised actuarial assumptions.

**LAW DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 2003**

Allocation by Entry Age		(1) Total Actuarial Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
\$ 846,946,338	-	\$ 846,946,338	-	\$ 846,946,338
34,850,148	-	34,850,148	-	34,850,148
912,743,75	433,343,391	1,346,087,147	433,343,391	912,743,75
201,350,369	176,015,801	377,366,170	176,015,801	201,350,369
25,437,999	19,714,843	45,152,842	19,714,843	25,437,999
30,738,997	81,189,898	111,928,895	81,189,898	30,738,997
\$2,052,067,607	\$710,263,933	\$2,762,331,540	\$710,263,933	\$2,052,067,607
1,720,507,542				1,720,507,542
\$ 331,560,064				\$ 331,560,064

Actuarial Present Value

Unfunded Actuarial Accrued Liability

Actuarial Value of Assets

Total

Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members

Survivor benefits likely to be paid to spouses and children of present active members who die before retiring

Disability allowances likely to be paid to present active members who become permanently disabled

Age and service allowances based on service rendered before and likely to be rendered after valuation date

Allowances currently being paid from the Survivors Benefit Fund

Allowances currently being paid from the Annuity & Pension Reserve Fund

LAW DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
COMPARATIVE STATEMENT
(\$ IN MILLIONS EXCEPT AVERAGES)

Dec. 31	Active Payroll		Active and Inactive Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed Total	Valuation Assets	Unfunded	Amort. Years	
	Total	Average					
1990@	\$156	\$26,936	\$ 388	\$ 341	\$ 47	32	0.30
1991	169	27,761	438	399	39	19	0.23
1992	169	28,937	467	452	15	8	0.09
1993	183	30,268	533	512	21	10	0.11
1994	196	31,425	580	555	25	13	0.13
1995	214	32,441	638	612	26	12	0.12
1996@	229	33,987	711	676	35	30	0.15
1997	259	35,680	821	773	48	10	0.19
1998	277	36,931	914	895	19	5	0.07
1999#	299	38,506	1,080	1,038	42	20	0.14
2000	325	40,387	1,175	1,137	38	18	0.12
2001@	335	42,503	1,071	1,149	(78)	-	-
2002	357	44,420	1,135	854	281	36	0.79
2003	384	46,576	1,170	838	332	41	0.86

After benefit changes.

@ Revised actuarial assumptions.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll ("UNFUNDED / PAYROLL" above) is significant. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan's capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength, and vice-versa.

LAW DIVISION
MALE ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Total	Payroll
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
15-19	145	2						147	\$ 4,662,791
20-24	562		6					903	35,518,936
25-29	393	878	312	4				1,587	69,947,098
30-34	174	397	524	187	5			1,287	60,850,990
35-39	83	165	297	384	171	6		1,106	54,227,264
40-44	47	101	135	197	387	175	4	1,046	54,509,399
45-49	9	14	21	33	48	50	4	179	9,277,735
50	6	9	19	23	41	38	7	143	7,530,673
51	9	8	9	19	41	38	7	143	7,530,673
52	8	8	9	19	42	44	13	135	7,306,014
53	5	12	22	21	31	34	14	139	7,218,101
54	3	6	14	12	22	22	15	94	4,951,672
55	5	3	16	12	20	18	19	93	4,731,124
56	6	4	7	13	15	15	10	70	3,645,287
57	5	3	16	12	14	24	14	88	4,398,486
58	3	3	12	9	14	8	4	53	2,537,917
59	4	4	7	11	4	8	6	44	2,136,515
60	2		1	12	9	9	5	38	2,064,324
61	6	1	6	4	5	3	7	32	1,450,393
62	2	3	1	3	10	3	7	29	1,461,006
63	2	2	3	2	2	4	6	21	1,008,134
64		1	2	5	6	4	3	21	1,101,978
65	3	2	2	1	2	3	3	16	637,832
66	3	3	2	3	1	3	3	16	637,832
67	3	1	1	3	1	1	2	8	351,450
68		2		1	1		2	5	301,109
69									190,600
70	1			1	1	1	1	1	91,519
71	1							8	269,013
Totals	1,469	1,960	1,437	969	851	469	147	7,302	\$342,377,360

LAW DIVISION
FEMALE ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Total Number	Payroll
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
20-24	20	1						21	\$ 617,244
25-29	94	45						139	5,426,959
30-34	50	112	32	2				196	8,622,779
35-39	29	61	49	22	1			162	7,268,924
40-44	19	34	37	48	21			159	7,320,262
45-49	11	23	30	28	31	18	1	142	6,590,362
50		2	3	3	1	6	1	16	825,701
51	2	1	4	5	5	1		18	780,662
52	2	2	1	3	6	1	1	16	768,026
53	1		1	1	7	3	1	14	650,652
54		2	3	3	2	3	1	14	741,834
55		2	3	5	2	1		13	619,036
56	1		5	1	4	3		14	643,633
57			1	1	2	2		6	243,826
58				3	1			4	187,464
59				2	3	1		6	267,940
60			1	1	2		1	5	207,115
61					1	1		2	66,870
62					1			1	43,238
63					2			2	65,233
64									
65									
66									
67									
68									
69									
70									
71					1			1	52,635
Totals	229	285	170	128	93	40	6	951	\$42,010,395

SECTION VI



**Allowances Being Paid to
Retirees & Beneficiaries**



**MONTHLY ALLOWANCES OF RETIRED LIVES
BY YEAR OF RETIREMENT
AS OF DECEMBER 31, 2003**

Year of Retirement	No.	Initial	Post-Ret. Increase	Total	Average
2003	7,892	\$ 13,626,441	\$ 52,102	\$ 13,678,543	\$1,733
2002	9,463	15,906,788	540,404	16,447,192	1,738
2001	7,979	12,512,664	796,388	13,309,052	1,668
2000	7,777	11,312,949	1,006,262	12,319,211	1,584
1999	6,861	9,527,721	1,007,664	10,535,385	1,536
1998	6,881	8,761,781	1,087,550	9,849,331	1,431
1997	6,632	8,556,805	1,284,730	9,841,535	1,484
1996	6,589	7,901,073	1,411,531	9,312,604	1,413
1995	6,020	6,972,995	1,426,905	8,399,900	1,395
1990-1994	24,964	24,382,873	7,215,850	31,598,723	1,266
1985-1989	23,177	18,527,200	8,607,342	27,134,542	1,171
1980-1984	16,586	8,606,442	6,061,280	14,667,722	884
1975-1979	9,762	3,590,995	4,522,189	8,113,184	831
1970-1974	3,345	792,448	1,655,356	2,447,804	732
1965-1969	938	191,882	554,619	746,501	796
1960-1964	314	67,853	208,901	276,754	881
Before 1960	83	16,141	63,341	79,482	958
TOTAL	145,263	\$151,255,051	\$37,502,414	\$188,757,465	\$1,299

**MONTHLY ALLOWANCES OF RETIRED LIVES
BY YEARS OF SERVICE
AS OF DECEMBER 31, 2003**

Years of Service	No.	Initial	Post-Ret. Increase	Total	Average
<5 or n/a	4,571	\$ 1,091,211	\$ 395,416	\$ 1,486,627	\$325
5	4,146	1,096,097	305,980	1,402,077	338
6	3,220	914,934	274,424	1,189,358	369
7	3,056	875,275	287,609	1,162,884	381
8	2,824	835,754	284,512	1,120,266	397
9	2,202	685,339	259,714	945,053	429
10	7,882	2,776,366	744,371	3,520,737	447
11	4,710	1,781,804	547,255	2,329,059	494
12	4,703	1,917,155	591,955	2,509,110	534
13	4,402	2,037,067	618,023	2,655,090	603
14	4,210	2,072,246	639,436	2,711,682	644
15	4,624	2,505,929	753,207	3,259,136	705
16	4,555	2,678,632	782,870	3,461,502	760
17	4,118	2,664,588	795,091	3,459,679	840
18	4,181	2,916,024	862,518	3,778,542	904
19	3,992	2,919,388	843,329	3,762,717	943
20	4,754	3,834,853	1,083,235	4,918,088	1,035
21	4,119	3,614,327	994,665	4,608,992	1,119
22	3,831	3,611,695	969,991	4,581,686	1,196
23	3,668	3,756,316	949,877	4,706,193	1,283
24	3,478	3,778,872	975,561	4,754,433	1,367
25	6,327	7,788,928	1,861,097	9,650,025	1,525
26	4,146	5,596,730	1,343,287	6,940,017	1,674
27	4,130	6,091,837	1,394,531	7,486,368	1,813
28	4,223	7,141,095	1,442,362	8,583,457	2,033
29	3,729	6,566,263	1,320,980	7,887,243	2,115
30	12,804	24,106,865	4,721,296	28,828,161	2,251
31	4,534	8,480,363	1,928,705	10,409,068	2,296
32	3,673	6,973,676	1,694,131	8,667,807	2,360
33	2,834	5,622,831	1,372,019	6,994,850	2,468
34	2,379	4,754,925	1,187,340	5,942,265	2,498
35	2,285	4,656,026	1,216,222	5,872,248	2,570
36	1,688	3,501,954	881,863	4,383,817	2,597
37	1,320	2,744,762	732,304	3,477,066	2,634
38	1,029	2,113,756	575,717	2,689,473	2,614
39	885	1,887,715	485,385	2,373,100	2,681
40 & Over	2,031	4,863,453	1,386,136	6,249,589	3,077
TOTAL	145,263	\$151,255,051	\$37,502,414	\$188,757,465	\$1,299

ANNUITY AND PENSION RESERVE FUND
ANNUAL ALLOWANCE, REPORTED ASSETS AND ACTUARIAL LIABILITIES
COMPARATIVE STATEMENT
(\$ MILLIONS)

Valuation Date	Annual Allowances			Reported Assets*	Actuarial Liabilities	Ratio of Assets to Liabilities	Ratio of DB Active to Retired
	No.	\$ Millions	% of DB Payroll#				
6/30/1972	36,314	\$ 74	4.7 %	\$ 769	\$ 741	103.7 %	5.7
6/30/1973	38,940	83	4.9 %	871	831	104.7 %	5.5
6/30/1974	41,453	92	4.6 %	984	933	105.5 %	6.4
6/30/1975	45,197	115	5.4 %	1,162	1,111	104.7 %	5.2
6/30/1976	48,675	129	5.5 %	1,294	1,253	103.2 %	4.9
6/30/1977	52,240	150	5.6 %	1,513	1,478	102.3 %	5.2
6/30/1978	55,827	169	5.5 %	1,724	1,698	101.5 %	4.9
6/30/1979	59,303	190	5.9 %	2,007	1,973	101.7 %	4.4
12/31/1979	60,887	207	6.4 %	2,209	2,154	102.6 %	4.3
12/31/1980	64,231	231	6.7 %	2,477	2,424	102.2 %	4.0
12/31/1981@	68,089	272	8.2 %	3,084	2,994	103.0 %	3.7
12/31/1982@	71,253	299	8.2 %	3,173	3,068	103.4 %	3.5
12/31/1983	74,442	333	8.7 % **	3,554	3,428	103.7 %	3.3
12/31/1984	77,493	386	9.5 % **	3,993	3,993	100.0 %	3.2
12/31/1985	80,999	429	10.0 % **	4,498	4,456	100.9 %	3.1
12/31/1986	84,892	474	10.4 % **	4,965	4,935	100.6 %	3.0
12/31/1987	86,924	518	10.6 % **	5,485	5,437	100.9 %	3.0
12/31/1988	89,972	581	10.9 % **	6,182	6,173	100.1 %	2.9
12/31/1989@	92,504	661	12.4 % **	6,985	6,911	101.1 %	2.9
12/31/1990	94,088	706	11.7 % **	7,438	7,338	101.4 %	3.0
12/31/1991	95,843	762	11.5 % **	8,014	7,904	101.4 %	3.4
12/31/1992	98,609	835	12.1 % **	8,814	8,692	101.4 %	3.4
12/31/1993	100,651	901	12.5 % **	9,390	9,356	100.4 %	3.4
12/31/1994	102,587	958	12.6 % **	9,964	9,893	100.7 %	3.3
12/31/1995	104,806	1,036	13.0 % **	10,808	10,737	100.7 %	3.3
12/31/1996@	107,617	1,141	13.7 % **	11,819	11,762	100.5 %	3.3
12/31/1997	110,470	1,233	14.3 % **	12,843	12,755	100.7 %	3.2
12/13/1998	113,000	1,327	14.7 % **	13,885	13,751	101.0 %	3.1
12/31/1999+	115,431	1,530	16.1 % **	14,978	16,139	92.8 %	3.1
12/31/2000	118,620	1,641	16.1 % **	16,980	16,980	100.0 %	3.1
12/31/2001@	121,875	1,775	16.5 % **	18,001	18,001	100.0 %	3.0
12/31/2002	126,409	1,958	17.5 % **	20,085	20,085	100.0 %	2.9
12/31/2003	130,433	2,136	19.1 % **	22,535	22,535	100.0 %	2.7

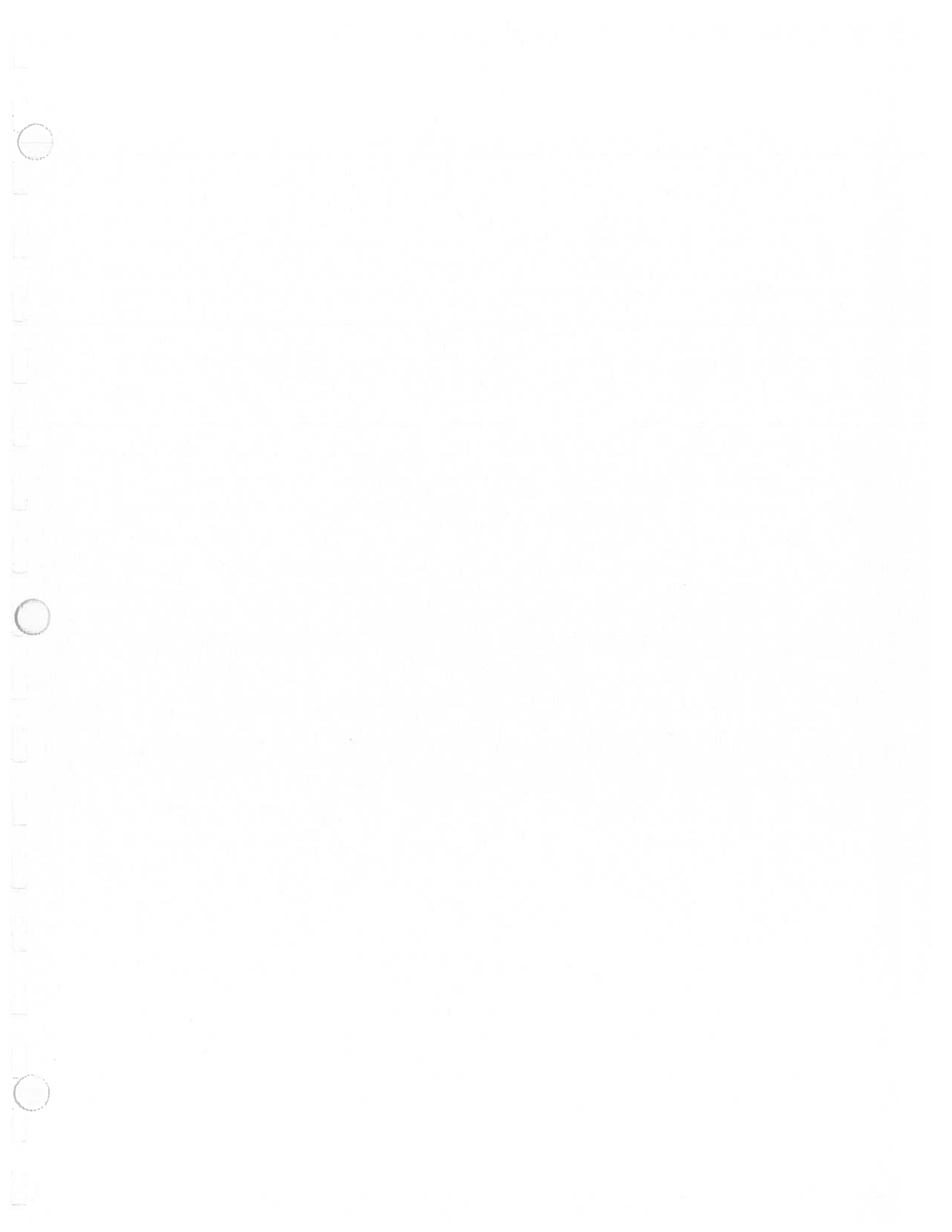
- * Including certain recommended transfers and accrued transfers.
- # Through 1979, June allowances are compared to December payroll.
- @ Revised actuarial assumptions.
- ** Excluding health insurance and Medicare payments.
- + Including estimated effect of legislated benefit changes.

**ANNUITY AND PENSION RESERVE FUND
 RETIREES AND BENEFICIARIES DECEMBER 31, 2003
 TYPE OF BENEFIT, MONTHLY AMOUNT AND ACTUARIAL LIABILITIES**

Type of Allowance	Number	Current Total \$	Actuarial Liabilities
Superannuation Retirement			
Plan A - Joint & 50%	16,893	\$ 27,579,347	\$ 3,655,108,870
Plan B - Straight Life	53,575	67,054,318	7,481,981,983
Plan C - Special Joint & Survivor	9,166	16,271,904	2,353,723,944
Plan D - Joint & 100%	15,488	23,843,828	3,698,263,245
Plan E - Life & 0 to 5 Years Guaranteed	325	349,475	35,541,958
- Life & 6 to 10 Years Guaranteed	454	526,703	51,534,295
- Life & 11 to 15 Years Guaranteed	679	741,292	68,301,218
- Life & 16 to 20 Years Guaranteed	22	29,588	4,267,553
Money Purchase			
Survivor Beneficiary - Life Benefit	836	241,819	23,529,036
Survivor Beneficiary - Temporary Benefit	14,594	11,354,753	1,065,683,280
Total Superannuation	112,127	\$148,101,025	\$18,442,310,695
Disability Retirement	18,306	\$ 29,916,937	\$ 4,092,864,376
Total PFA & PR	130,433	\$178,017,962	\$22,535,175,071

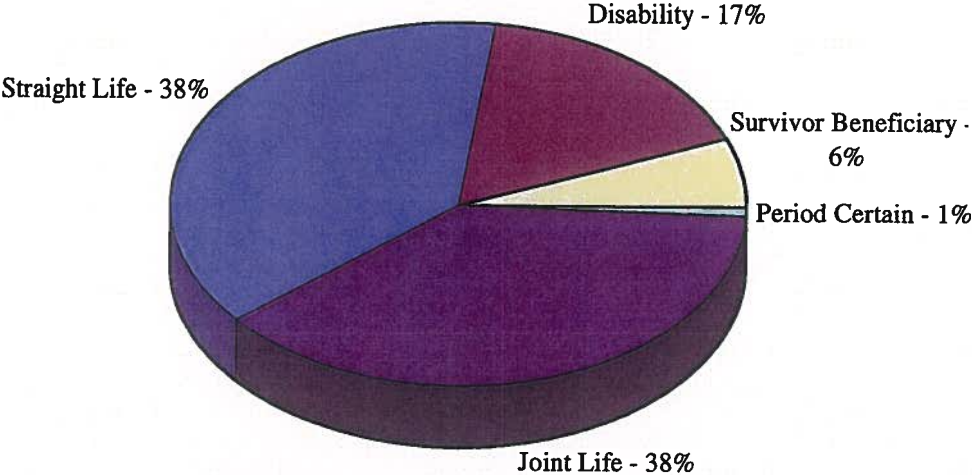
**ANNUITY AND PENSION RESERVE FUND
 RETIREES AND BENEFICIARIES DECEMBER 31, 2003
 TYPE OF BENEFIT AND AMOUNT BY GENDER OF RECIPIENT**

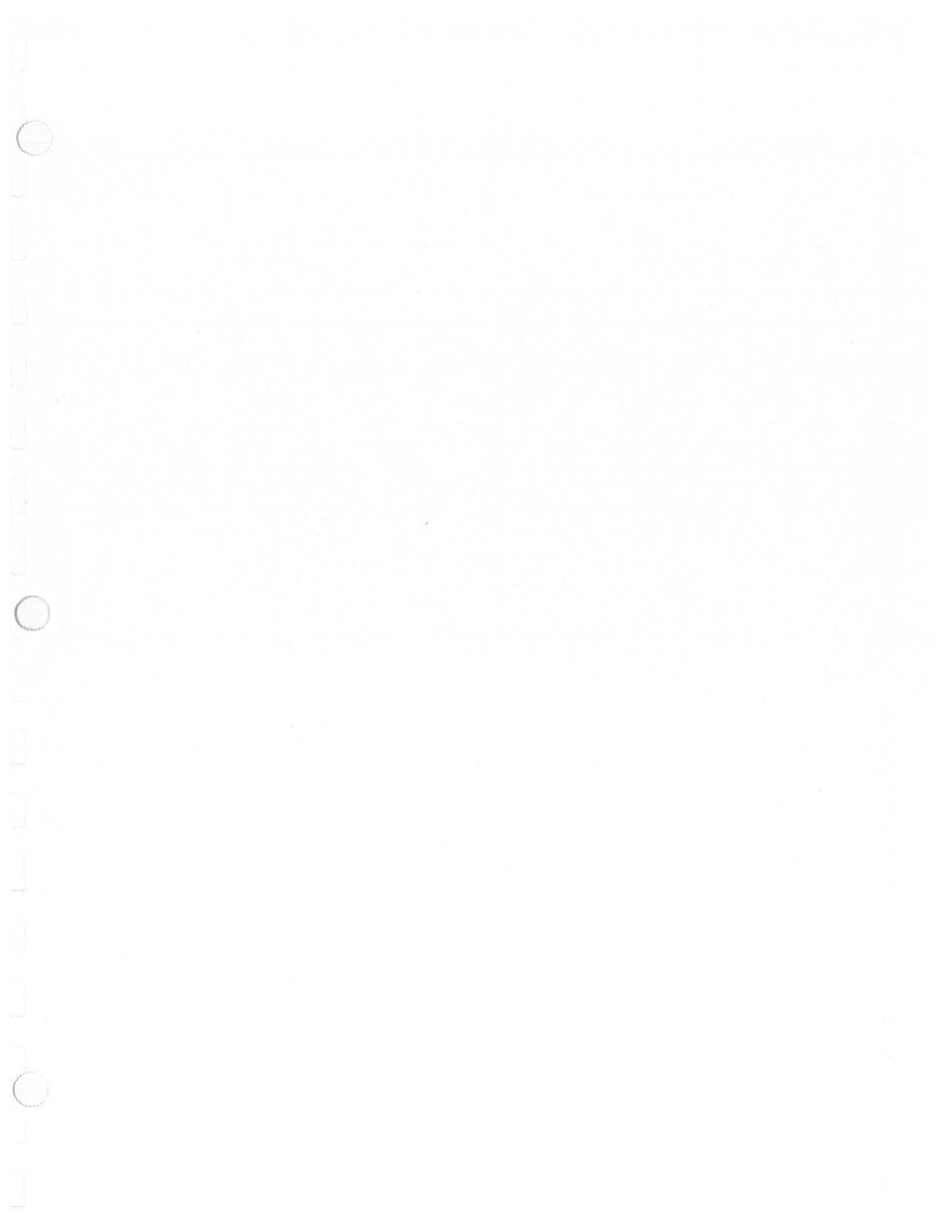
Type of Allowance	Men		Women		Total	
	Number	Monthly Allowances	Number	Monthly Allowances	Number	Monthly Allowances
Superannuation Retirement						
Plan A - Joint & 50%	12,745	\$22,101,908	4,148	\$ 5,477,439	16,893	\$ 27,579,347
Plan B - Straight Life	16,460	24,703,622	37,115	42,350,696	53,575	67,054,318
Plan C - Special Joint & Survivor	4,198	9,240,132	4,968	7,031,772	9,166	16,271,904
Plan D - Joint & 100%	13,381	21,545,218	2,107	2,298,610	15,488	23,843,828
Plan E - Life & 0 to 5 Years Guaranteed	164	193,710	161	155,765	325	349,475
- Life & 6 to 10 Years Guaranteed	276	345,167	178	181,536	454	526,703
- Life & 11 to 15 Years Guaranteed	467	557,322	212	183,970	679	741,292
- Life & 16 to 20 Years Guaranteed	15	21,782	7	7,806	22	29,588
Money Purchase	615	204,961	221	36,858	836	241,819
Survivor Beneficiary - Life Benefit	901	469,805	13,693	10,884,948	14,594	11,354,753
Survivor Beneficiary - Temporary Benefit	24	27,804	71	80,194	95	107,998
Total Superannuation	49,246	\$79,411,431	62,881	\$ 68,689,594	112,127	\$ 148,101,025
Disability Retirement	9,578	\$17,327,949	8,728	\$ 12,588,988	18,306	\$ 29,916,937
Total from A & PR	58,824	\$96,739,380	71,609	\$81,278,582	130,433	\$178,017,962



**ANNUITIES BEING PAID BY TYPE
DECEMBER 31, 2003**

Annuity and Pension Reserve Fund



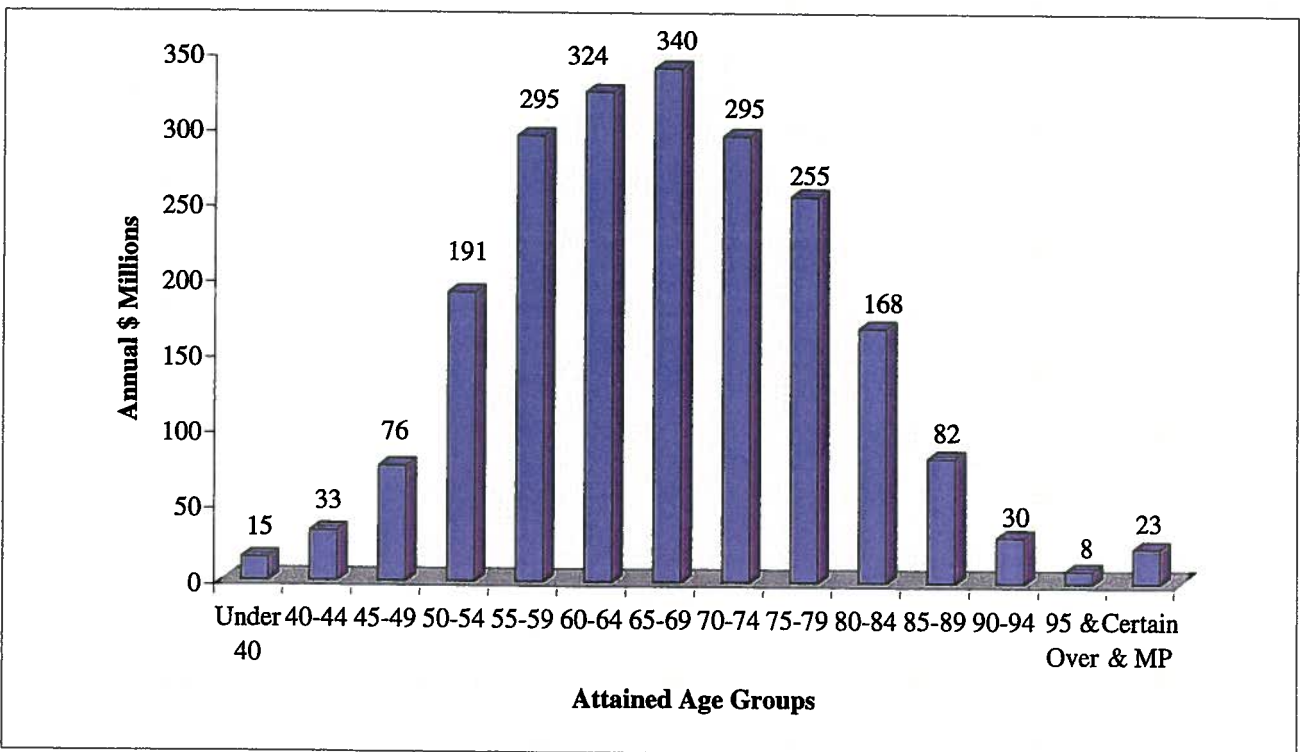
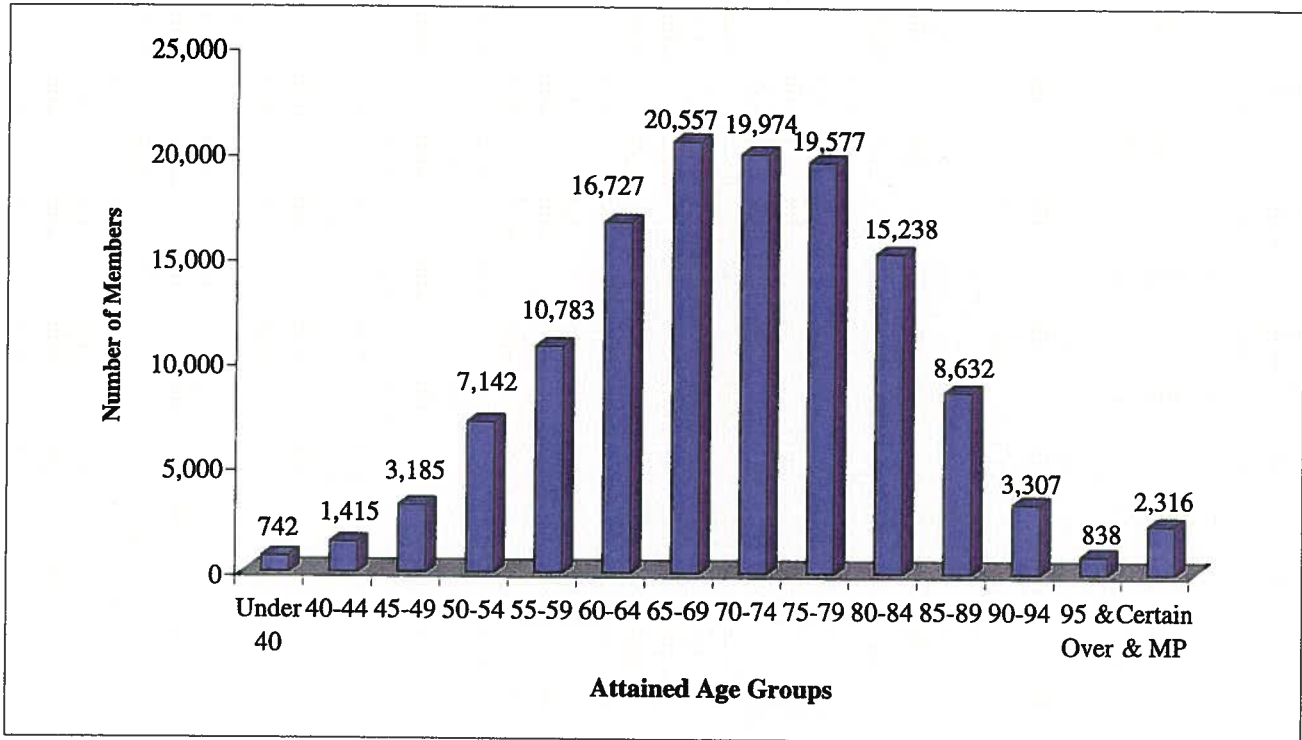


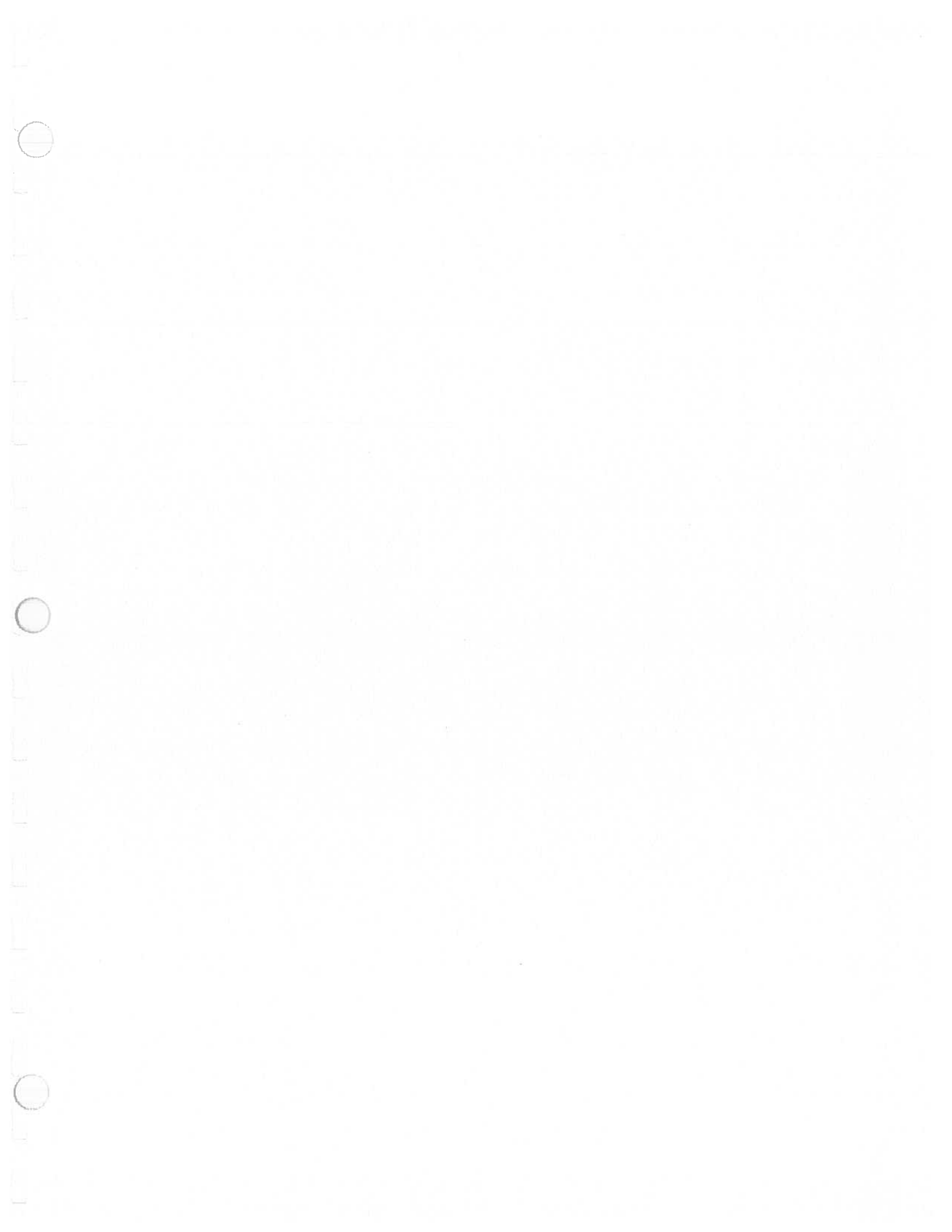
**ANNUITY AND PENSION RESERVE FUND
RETIREES AND BENEFICIARIES DECEMBER 31, 2003
CURRENT MONTHLY TOTAL \$ BY ATTAINED AGES**

Attained Ages	Superannuation		Disability		Totals	
	No.	Monthly Total \$	No.	Monthly Total \$	No.	Monthly Total \$
Under 20	8	\$ 2,635			8	\$ 2,635
20-24	5	3,183			5	3,183
25-29	9	4,452	15	\$ 18,619	24	23,071
30-34	14	14,137	134	218,842	148	232,979
35-39	36	21,134	521	988,660	557	1,009,794
40-44	60	42,746	1,355	2,700,271	1,415	2,743,017
45-49	606	1,299,407	2,579	5,038,697	3,185	6,338,104
50-54	3,687	9,454,668	3,455	6,465,123	7,142	15,919,791
55-59	7,249	18,575,128	3,534	6,016,430	10,783	24,591,558
60-64	13,807	22,843,361	2,920	4,174,917	16,727	27,018,278
65-69	18,960	26,290,433	1,597	2,083,806	20,557	28,374,239
70-74	19,010	23,516,096	964	1,049,669	19,974	24,565,765
75-79	18,835	20,540,894	742	718,075	19,577	21,258,969
80-84	14,880	13,690,387	358	336,488	15,238	14,026,875
85-89	8,520	6,732,205	112	91,782	8,632	6,823,987
90-94	3,287	2,482,500	20	15,558	3,307	2,498,058
95 & Over	838	698,782			838	698,782
Period Certain	2,316	1,888,877			2,316	1,888,877
Totals	112,127	\$148,101,025	18,306	\$29,916,937	130,433	\$178,017,962



**ANNUITY AND PENSION RESERVE FUND
BENEFITS BEING PAID BY ATTAINED AGES
DECEMBER 31, 2003**





**ANNUITY AND PENSION RESERVE FUND
PERCENT OF RECIPIENTS
BY AGE GROUPS
AND YEAR**

Attained Age Group	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Under 30	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
30-39	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%
40-49	3.5%	3.5%	3.3%	3.2%	3.1%	2.9%	2.8%	2.7%	2.4%	2.1%
50-59	13.7%	12.9%	11.7%	10.7%	9.8%	9.2%	8.6%	7.9%	7.6%	7.2%
60-69	28.6%	28.3%	28.1%	28.2%	28.9%	29.1%	29.4%	29.9%	30.5%	30.9%
70-79	30.4%	31.5%	32.7%	34.0%	35.5%	36.3%	37.1%	37.7%	38.2%	38.6%
80-89	18.3%	18.4%	18.7%	18.5%	18.7%	18.6%	18.4%	18.2%	17.9%	17.8%
90 & Over	3.2%	3.1%	3.1%	3.0%	3.1%	3.0%	2.9%	2.8%	2.7%	2.7%
Period Certain	1.8%	1.7%	1.8%	1.8%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%
TOTALS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Age	70.6	70.7	71.0	71.2	71.4	71.5	71.6	71.6	71.8	71.4

**STATE DIVISION
SURVIVOR BENEFIT FUND TABULATED BY
TYPE OF BENEFIT BEING PAID AND MONTHLY AMOUNT
DECEMBER 31, 2003**

Group	Number	Current	Actuarial
Liabilities			
S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation			
Men	93	\$ 82,609	\$ 7,785,903
Women	807	920,226	94,761,293
Totals	900	\$1,002,835	\$102,547,196
S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount			
Widower - no child	457	\$ 349,686	\$ 41,466,006
Widower - child	59	44,582	7,231,660
Child's record	130	58,778	3,828,290
Parent	3	2,280	152,746
Other	1	537	29,513
Child only	133	83,346	5,275,286
Subtotals - male	783	539,209	\$ 57,983,501
Widower - no child	2,192	\$1,770,897	\$207,493,899
Widower - child	237	190,875	34,440,990
Child's record	317	138,509	8,451,258
Parent	4	3,332	293,377
Other	1	591	43,546
Child only	116	78,773	5,357,066
Subtotals - female	2,867	2,182,977	256,080,136
Totals	3,650	\$2,722,186	\$314,063,637
Total Benefits Being Paid from Survivor Benefit Fund			
Men	876	621,818	65,769,404
Women	3,674	3,103,203	350,841,429
Totals	4,550	\$3,725,021	\$416,610,833

**LOCAL GOVERNMENT DIVISION
SURVIVOR BENEFIT FUND TABULATED BY
TYPE OF BENEFIT BEING PAID AND MONTHLY AMOUNT
DECEMBER 31, 2003**

Group	Number	Current Total	Actuarial Liabilities
S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation			
Men	136	\$ 101,176	\$ 9,297,217
Women	1,506	1,425,823	152,694,192
Totals	1,642	\$1,526,999	\$161,991,409
S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount			
Widower - no child	758	\$ 440,508	\$ 49,455,616
Widower - child	104	57,261	9,433,505
Child's record	229	80,386	5,511,058
Parent	1	819	56,865
Other	1	440	58,297
Child only	243	138,523	10,057,949
Subtotals - male	1,336	717,937	74,573,290
Widower - no child	4,814	\$3,328,349	\$380,721,435
Widower - child	473	327,676	58,250,006
Child's record	678	261,081	17,702,384
Parent	6	5,194	402,450
Other	1	618	53,601
Child only	187	106,222	6,269,960
Subtotals - female	6,159	4,029,140	463,399,836
Totals	7,495	\$4,747,077	\$537,973,126
Total Benefits Being Paid from Survivor Benefit Fund			
Men	1,472	819,113	83,870,507
Women	7,665	5,454,963	616,094,028
Totals	9,137	\$6,274,076	\$699,964,535

LAW
SURVIVOR BENEFIT FUND TABULATED BY
TYPE OF BENEFIT BEING PAID AND MONTHLY AMOUNT
DECEMBER 31, 2003

Group	Number	Current	Actuarial
Liabilities	Total	Total	Liabilities
S-1 - Survivor Benefit to Beneficiary of Deceased Member			
Joint and Survivor Computation			
Men	0	\$ 0	\$ 0
Women	43	60,850	7,899,419
Totals	43	\$ 60,850	\$ 7,899,419
S-2 - Survivor Benefit to Beneficiary of Deceased Member			
Fixed Rate Amount			
Widower - no child	5	\$ 4,487	\$ 588,280
Widower - child	3	2,352	406,331
Child's record	19	8,884	596,010
Other	0	0	0
Child only	8	5,125	399,474
Subtotals - male	35	20,848	1,990,095
Widower - no child	126	\$ 108,569	\$16,864,778
Widower - child	37	30,448	5,638,851
Child's record	50	18,838	1,088,687
Other	10	7,524	489,006
Child only	0	0	0
Subtotals - female	223	165,379	24,081,322
Totals	258	\$186,227	\$26,071,417
Total Benefits Being Paid from Survivor Benefit Fund			
Men	35	20,848	1,990,095
Women	266	226,229	31,980,741
Totals	301	\$247,077	\$33,970,836

**STATE DIVISION
DEFERRED SURVIVOR BENEFICIARIES
TABULATED BY GENDER AND DEFERRED AGE
DECEMBER 31, 2003**

Group	Number	Current Total	Actuarial Liabilities
Widowers			
Deferred to age 50	0	\$ 0	\$ 0
Deferred to age 62	81	46,654	3,012,271
Deferred to age 65	1	171	12,528
Total	82	46,825	3,024,799
Widows			
Deferred to age 50	4	2,906	383,427
Deferred to age 62	168	112,836	10,557,257
Deferred to age 65	1	773	19,457
Total	173	116,515	10,960,141
Totals	255	\$163,340	\$13,984,940

**LOCAL GOVERNMENT DIVISION
 DEFERRED SURVIVOR BENEFICIARIES
 TABULATED BY GENDER AND DEFERRED AGE
 DECEMBER 31, 2003**

Group	Number	Current Total	Actuarial Liabilities
Widowers			
Deferred to age 50	3	\$ 2,144	\$ 52,988
Deferred to age 62	116	52,067	4,000,804
Deferred to age 65	0	0	0
Total	119	54,211	4,053,792
Widows			
Deferred to age 50	6	4,700	641,797
Deferred to age 62	443	259,741	23,038,932
Deferred to age 65	0	0	0
Total	449	264,441	23,680,729
Totals	568	\$318,652	\$27,734,521

LAW DIVISION
DEFERRED SURVIVOR BENEFICIARIES
TABULATED BY GENDER AND DEFERRED AGE
DECEMBER 31, 2003

Group	Number	Current Total	Actuarial Liabilities
Widowers			
Deferred to age 50	0	\$ 0	\$ 0
Total	0	0	0
Widows			
Deferred to age 50	0	\$ 0	\$ 0
Deferred to age 62	19	11,337	879,312
Total	19	11,337	879,312
Totals	19	\$11,337	\$879,312

**SURVIVOR BENEFIT FUND
REPORTED ASSETS AND LIABILITIES
DIVISIONS COMBINED**

Ratio of Assets to Liabilities	Valuation		Monthly Allowances				Date
	No.	Amount	Deferred		No.	Amount	
			Reported	Actuarial			
\$ Millions		Assets+		Liabilities		Liabilities	
114 %	6,102	\$ 891,467	1,012	\$ 96,003	\$ 144.7	\$ 127.0	6/30/1972
113 %	6,477	1,053,363	1,009	99,678	164.6	146.3	6/30/1973
115 %	6,826	1,136,949	1,037	106,479	181.7	157.5	6/30/1974
115 %	7,346	1,422,944	1,054	113,690	205.3	177.9	6/30/1975
119 %	7,847	1,557,217	991	118,986	224.8	189.4	6/30/1976
126 %	8,153	1,659,897	1,003	125,094	257.0	204.6	6/30/1977
134 %	8,559	1,799,580	1,004	135,944	301.2	224.5	6/30/1978
145 %	8,824	1,914,251	1,039	146,549	355.2	245.1	6/30/1979
148 %	8,971	2,033,403	1,044	155,890	383.0	259.5	12/31/1979
150 %	9,389	2,220,641	1,022	170,246	429.4	285.4	12/31/1980
137 %	9,629	2,468,950	1,045	191,228	460.6	336.0	12/31/1981 @
151 %	9,913	2,654,686	1,006	199,239	499.7	330.6	12/31/1982 @
129 %	10,132	2,812,639	1,020	225,475	454.7	352.8	12/31/1983
109 %	11,819	3,119,531	990	248,373	492.2	451.1	12/31/1984*
113 %	11,889	3,278,253	979	259,842	532.8	469.6	12/31/1985
128 %	12,054	3,489,915	960	268,931	575.5	451.2	12/31/1986
132 %	12,153	3,656,420	933	279,327	626.1	472.9	12/31/1987
100 %	12,237	3,822,085	941	283,026	490.8	490.8	12/31/1988
101 %	12,198	4,177,540	941	320,792	525.3	522.1	12/31/1989 @
101 %	12,182	4,330,622	907	321,218	542.5	537.1	12/31/1990
102 %	12,268	4,528,326	860	314,414	567.9	557.1	12/31/1991
101 %	12,318	4,750,848	852	329,509	589.8	583.3	12/31/1992
102 %	12,437	4,985,681	862	345,937	620.7	607.7	12/31/1993
102 %	12,569	5,207,186	845	347,178	641.5	628.5	12/31/1994
103 %	12,608	5,408,577	866	376,573	668.9	652.4	12/31/1995
100 %	12,724	5,822,113	878	395,594	711.6	710.6	12/31/1996 @
100 %	12,856	6,074,566	932	433,430	743.0	740.5	12/31/1997
100 %	13,079	6,337,739	1,060	500,514	780.2	779.6	12/13/1998
88 %	13,236	7,345,740	989	550,153	801.4	910.9	12/31/1999#
100 %	13,317	9,026,315	666	348,886	1,037.4	1,037.4	12/31/2000
100 %	13,588	9,449,543	993	490,441	1,086.4	1,086.4	12/31/2001 @
100 %	13,708	9,764,826	902	470,284	1,120.2	1,120.2	12/31/2002
100 %	13,988	10,246,174	842	493,329	1,193.1	1,193.1	12/31/2003

@ Revised actuarial assumptions.

* Benefits increased.

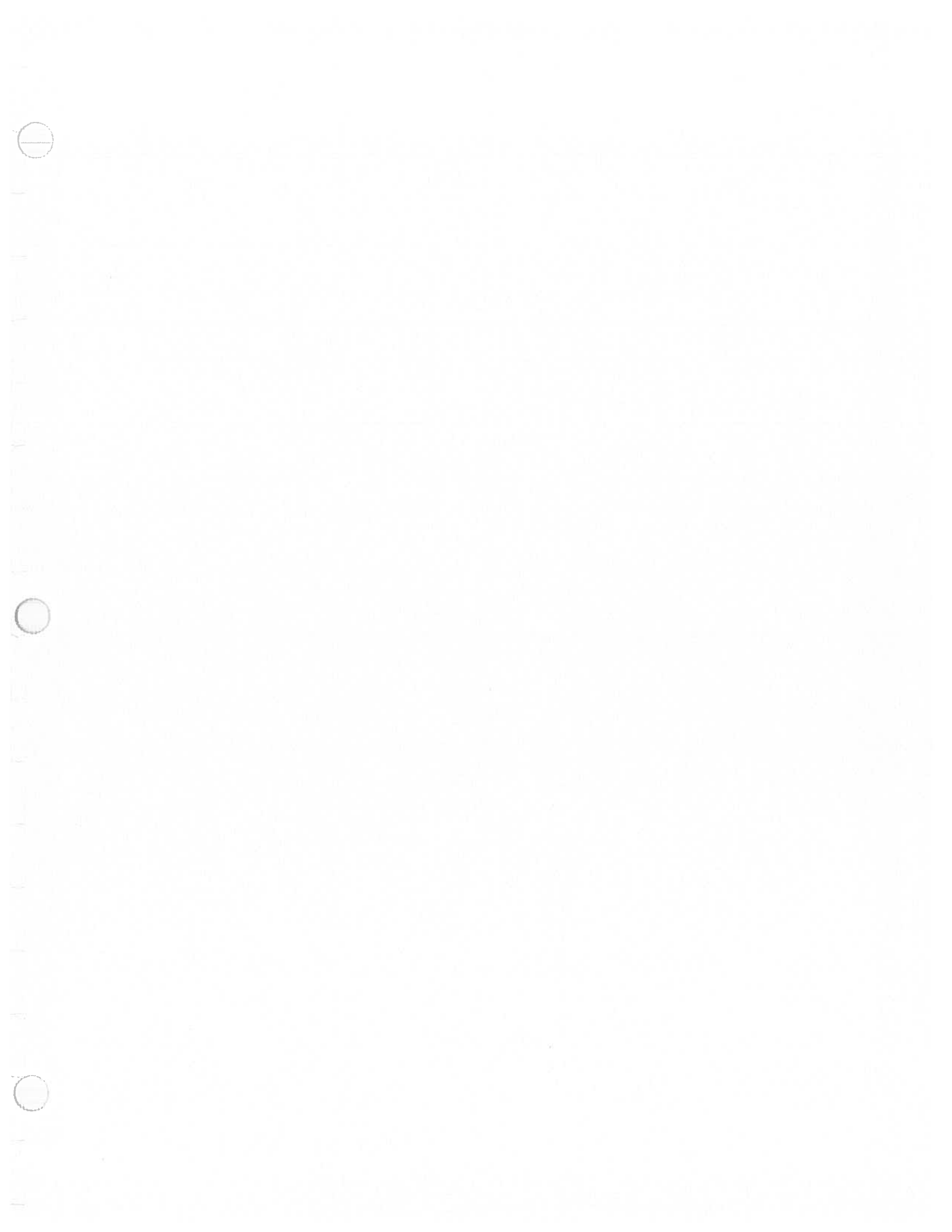
After benefit changes.

+ Includes certain recommended transfers and accrued transfers.

SECTION VII



Actuarial Methods and Assumptions



**SUMMARY OF
ACTUARIAL METHODS AND ASSUMPTIONS USED FOR PERS
ACTUARIAL VALUATIONS
ASSUMPTIONS ADOPTED BY RETIREMENT BOARD
AFTER CONSULTING WITH ACTUARY**

The entry age actuarial cost method of valuation was used in determining liabilities and normal cost. Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce payments (principal & interest) which are level percent of payroll contributions.

The actuarial assumptions used in the valuation are shown in this Section. Both the economic and decrement assumptions were established following the December 31, 2000 actuarial valuations.

ECONOMIC ASSUMPTIONS

The investment return rate used in making the valuations was 8.00% per year, compounded annually (net after administrative expenses). The assumed real rate of return is the portion of total investment return that is more than the assumed total wage growth rate. Considering other financial assumptions, the 8.00% investment return rate translates to an assumed real rate of return of 4.00%.

Pay increase assumptions for individual active members are shown for sample ages on pages VII-5, VII-6, & VII-7. Part of the assumption for each age is for merit and/or seniority increase, and the other 4.00% recognizes wage inflation and overall productivity increases. No specific price inflation assumption is required to perform the actuarial valuation.

The Traditional and Combined Plans active member payroll is assumed to increase 4.00% annually, which is the portion of the individual pay increase assumptions attributable to wage inflation and overall productivity increases.

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

NON-ECONOMIC ASSUMPTIONS

The post-retirement mortality rates used in evaluating age and service survivor benefit allowances to be paid were 90% of rates in the 1971 Group Annuity Mortality Male and Female Tables, projected to 1984. Related values are shown on page VII-8. The mortality rates for disability allowances were 300% of rates in the 1983 Group Annuity Mortality Table for Males, and 400% of rates in the 1983 Group Annuity Mortality Table for Females.

The probabilities of unreduced age and service retirement are shown on page VII-3 and VII-4.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages on pages VII-5, VII-6 & VII-7. For withdrawal from service it was assumed that members terminating before age 35, members terminating with less than 5 years of service, and a percentage of all other members would withdraw their contributions and forfeit their entitlement to an employer financed benefit. The percentage is 100% at age 35 and is reduced for each year of age after 35, becoming 0% at age 55 (age 45 for law members).

For purposes of death and disability benefits, it is assumed that Combined Plan members will take a benefit from the Traditional Plan, unless a Lump Sum distribution from the combined plan would have a greater value.

Member Directed Accounts under the Combined Plan are assumed to earn 8% per year.

The Funding Value of Defined Benefit Assets recognizes assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed 4 year period. Funding value is not permitted to deviate from market value by more than 12%. Member assets in both the Combined Plan and Member Directed Plan are included at Market Value.

Present assets (cash & investments) at funding value are shown on pages 8 and 9.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.). Great care was taken in the production of this report, but there may be cases where schedules do not add, or where they do not exactly balance to other related schedules due to rounding.

Probabilities of Unreduced Age and Service Retirement

Ages	Percent of Eligible Active Members Retiring Within Next Year					
	State		Local Government		Public Safety	Law Enforcement
	Men	Women	Men	Women		
48						22%
49						22%
50	40%	30%	35%	30%		22%
51	40%	30%	35%	30%		22%
52	40%	30%	35%	30%	22%	22%
53	40%	30%	35%	30%	22%	22%
54	40%	30%	35%	30%	22%	22%
55	25%	30%	30%	30%	15%	15%
56	25%	30%	25%	30%	15%	15%
57	25%	30%	25%	30%	15%	15%
58	25%	30%	25%	30%	18%	18%
59	25%	40%	25%	40%	18%	18%
60	30%	50%	25%	50%	18%	18%
61	25%	35%	25%	30%	18%	18%
62	25%	35%	40%	30%	30%	30%
63	30%	35%	40%	30%	25%	25%
64	40%	35%	30%	30%	15%	15%
65	50%	50%	25%	25%	20%	20%
66	25%	25%	20%	25%	20%	20%
67	25%	25%	20%	15%	15%	15%
68	25%	25%	20%	15%	15%	15%
69	25%	20%	20%	15%	15%	15%
70	25%	20%	20%	15%	100%	100%
71	25%	20%	20%	15%	100%	100%
72	25%	20%	20%	15%	100%	100%
73	25%	20%	20%	15%	100%	100%
74	25%	20%	20%	15%	100%	100%
75	25%	20%	20%	15%	100%	100%
76	25%	20%	20%	15%	100%	100%
77	25%	20%	20%	15%	100%	100%
78	25%	20%	20%	15%	100%	100%
79	25%	20%	20%	15%	100%	100%
80	100%	100%	100%	100%	100%	100%
Ref	751	752	753	754	755	755

<i>Probabilities of Reduced Retirement</i>					
Ages	Percent of Eligible Active Members Retiring Within Next Year				
	State		Local Government		Public Safety
	Men	Women	Men	Women	
48	12%	14%	10%	12%	3%
49	12%	14%	10%	12%	3%
50	12%	14%	10%	12%	7%
51	12%	14%	10%	12%	7%
52	12%	14%	10%	12%	
53	12%	14%	10%	12%	
54	12%	14%	10%	12%	
55	12%	14%	10%	12%	
56	12%	20%	10%	18%	
57	12%	14%	10%	12%	
58	12%	14%	10%	12%	
59	12%	14%	10%	18%	
60	12%	20%	10%	18%	
61	12%	14%	10%	15%	
62	18%	14%	15%	15%	
63	18%	14%	15%	15%	
64	15%	14%	12%	12%	
Ref	756	757	758	759	515

STATE
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT
& INDIVIDUAL PAY INCREASE ASSUMPTIONS

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Employee			
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year	
		Men	Women	Men	Women	Men	Women				
	0			38.00%	36.00%						
	1			18.00%	19.00%						
	2			14.00%	15.00%						
	3			10.00%	12.00%						
	4			8.00%	9.00%						
25	5 & Over	0.03%	0.02%	6.00%	7.80%	0.09%	0.07%	4.30%	4.00%	8.30%	
30		0.04%	0.02%	5.20%	7.00%	0.13%	0.14%	3.00%	4.00%	7.00%	
35		0.05%	0.03%	4.30%	5.60%	0.24%	0.25%	2.20%	4.00%	6.20%	
40		0.07%	0.04%	3.50%	4.20%	0.41%	0.36%	1.80%	4.00%	5.80%	
45		0.13%	0.06%	2.70%	3.40%	0.61%	0.56%	1.40%	4.00%	5.40%	
50		0.23%	0.10%	2.20%	3.10%	0.86%	0.88%	1.20%	4.00%	5.20%	
55		0.37%	0.15%	2.10%	2.80%	1.31%	1.30%	0.90%	4.00%	4.90%	
60		0.55%	0.25%	2.10%	2.70%	1.86%	1.56%	0.70%	4.00%	4.70%	
Ref		#30x0.6sb0	#31x0.6sb0	371 #571x1	372 #572x1	#331x1	#332x1	301			

The pay increase assumptions are age based only, and not service based.

**LOCAL GOVERNMENT
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT
& INDIVIDUAL PAY INCREASE ASSUMPTIONS**

Sample Ages	Years of Service	Percent of Active Members						Pay Increase Assumptions			
		Separating Within the Next Year		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year	
		Men	Women	Men	Women	Men	Women				
	0			34.00%	32.00%						
	1			17.00%	18.00%						
	2			12.00%	13.00%						
	3			10.00%	10.00%						
5 & Over	4			9.00%	9.00%						
				6.40%	8.00%	0.13%	0.12%	4.30%	4.00%	8.30%	
				5.40%	6.90%	0.17%	0.13%	3.00%	4.00%	7.00%	
				4.10%	5.40%	0.28%	0.21%	2.20%	4.00%	6.20%	
25			0.03%	0.02%							
30			0.04%	0.02%							
35			0.05%	0.03%							
40			0.07%	0.04%							
45			0.13%	0.06%							
50			0.23%	0.10%							
55			0.37%	0.15%							
60			0.55%	0.25%							
Ref		#30x0.6sb0	#31x0.6sb0	373 #573x1	374 #574x1	#333x1	#334x1	301			

The pay increase assumptions are age based only, and not service based.

LAW
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT
& INDIVIDUAL PAY INCREASE ASSUMPTIONS

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year								Pay Increase Assumptions For An Individual Employee			
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year			
		Men	Women	Men	Women	Men	Women						
	0			15.00%	15.00%								
	1			9.00%	9.00%								
	2			7.00%	7.00%								
	3			5.00%	5.00%								
	4			5.00%	5.00%								
25	5 & Over	0.03%	0.02%	3.80%	3.80%	0.27%	0.27%	0.27%	6.30%	4.00%	10.30%		
30		0.04%	0.02%	2.90%	2.90%	0.37%	0.37%	0.37%	4.00%	4.00%	8.00%		
35		0.05%	0.03%	2.30%	2.30%	0.67%	0.67%	0.67%	1.60%	4.00%	5.60%		
40		0.07%	0.04%	1.50%	1.50%	0.95%	0.95%	0.95%	0.85%	4.00%	4.85%		
45		0.13%	0.06%	1.30%	1.30%	1.47%	1.47%	1.47%	0.60%	4.00%	4.60%		
50		0.23%	0.10%	1.20%	1.20%	2.03%	2.03%	2.03%	0.50%	4.00%	4.50%		
55		0.37%	0.15%	1.20%	1.20%	2.50%	2.50%	2.50%	0.50%	4.00%	4.50%		
60		0.55%	0.25%	1.20%	1.20%	2.88%	2.88%	2.88%	0.50%	4.00%	4.50%		
Ref		#30x0.6sb0	#31x0.6sb0	375	375	#335x1	#335x1	#335x1	303				
				#575x1	#575x1								

The pay increase assumptions are age based only, and not service based.

Sample Ages Attained	Present Value of \$1 Monthly for Life Increasing 3.0% Annually (First Increase After 1 Year)		Future Life Expectancy (years)	
	Males	Females	Males	Females
50	\$165.46	\$181.30	28.55	34.58
55	152.90	171.13	24.26	29.89
60	138.21	158.37	20.19	25.31
65	121.58	142.99	16.40	20.92
70	104.05	124.89	13.02	16.76
75	87.04	105.31	10.17	13.03
80	70.51	86.11	7.75	9.89
Ref	#68x0.9sb0	#69x0.9sb0		

Single Life Retirement Values

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

DECEMBER 31, 2003

Marriage Assumption:	80% of males and 80% of females are assumed to be married for purposes of death-in-service benefits for State and Local members. 90% of males and 90% of females are assumed to be married for purposes of death-in-service benefits for Law Enforcement members. Male spouses are assumed to be three years older than female spouses for active member valuation purposes. In retired or inactive cases where spouse information is needed, but not available, the three year age difference is also assumed.
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.
Pay Annualization:	Reported Pay for members with less than twelve contributing months was annualized by the ratio of 12 to the number of contributing months in the year.
Final Average Salary:	For present value of future benefit purposes, final average salary was calculated in accordance with pay increase assumptions, but was not permitted to fall below the final average salary reported in the data.
Decrement Timing:	Decrements are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on 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.
Death after Disability:	Death after disability benefits were approximated by assuming that the disability benefit would be paid as a joint and 35% survivor benefit for people in the original disability plan and as a joint and 20% survivor benefit for people in the post 1992 plan.

**MISCELLANEOUS AND TECHNICAL ASSUMPTIONS
DECEMBER 31, 2003 (CONCLUDED)**

Service Credit Accruals:

It is assumed that members accrue one year of service credit per year. A (0.80)% factor is applied to State active member liabilities (other than for refunds) and a (1.00)% factor is applied to Local active member liabilities (other than for refunds) to recognize that a portion of the membership is part time.

Miscellaneous Loads:

A 0.85% factor is applied to unreduced retirement and reduced retirement liabilities to recognize subsidized service purchases. Law active accrued liabilities for retirement are reduced by 10% to recognize that total service reported is not entirely Law service, and that non-Law service cannot be used to satisfy Law eligibility conditions.

Incidence of Contributions:

Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

Benefit Service:

Exact fractional service is used to determine the amount of benefit payable.

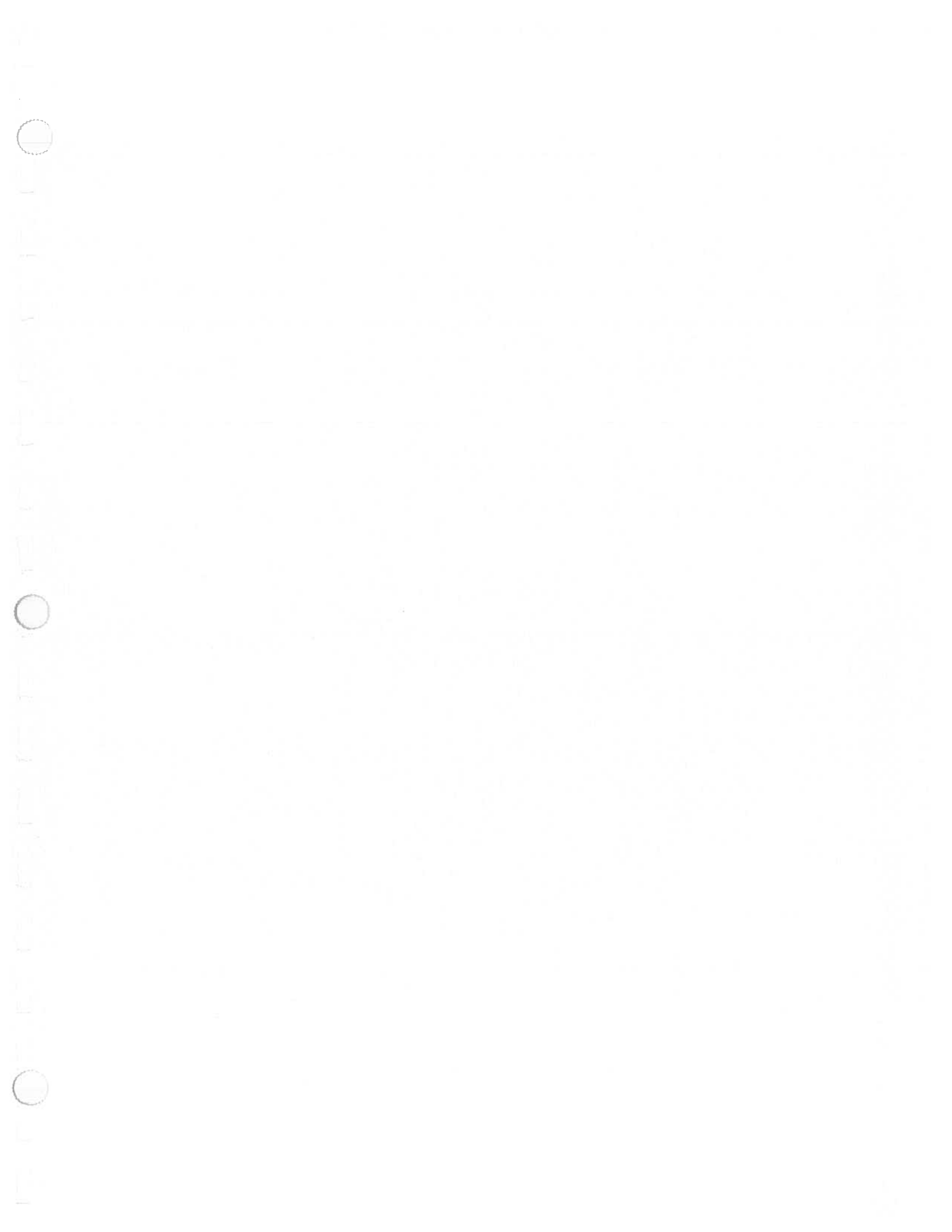
Normal Form of Benefit:

The assumed normal form of benefit is a straight life benefit, except where otherwise noted.

SECTION VIII



Financial Principles



FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES OF PERS

Promises Made, and To Be Paid For. As each year is completed, OPERS in effect hands an "IOU" to each member then acquiring a year of service credit --- the "IOU" says: "The Ohio Public Employees Retirement System owes you one year's worth of retirement benefits, payments in cash commencing when you qualify for retirement."

The related *key financial questions* are:

Which generation of taxpayers contributes the money to cover the IOU?

The present taxpayers, who receive the benefit of the member's present year of service? Or the future taxpayers, who happen to be in Ohio at the time the IOU becomes a cash demand, years and often decades later?

The law governing OPERS financing intends that this year's taxpayers contribute the money to cover the IOUs being handed out this year. With this financial objective, the employer contribution rate is expected to remain approximately level from generation to generation of taxpayers.

There are systems which have a design for deferring contributions to future taxpayers. Lured by a lower contribution rate now, they put aside the consequence that the contribution rate must then relentlessly grow to a level much higher than would be required if a level contribution pattern were followed.

An inevitable by-product of the level-cost design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. *Investment income* becomes *the 3rd and largest contributor* for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

financial position.

PERS copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is *continuing adjustments in* with 100% precision.

Regardless of the skill of the actuary and the many calculations made, the future can not be predicted experience has occurred and has been observed, it will not coincide exactly with assumed experience, *Reconciling Differences Between Assumed Experience and Actual Experience.* Once actual

receiving the advice of the actuary. year and for decades in the future. The assumptions are established by the Retirement Board after In an actuarial valuation, assumptions must be made as to what the above rates will be for the next

retirement. An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets will earn; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual

of an actuarial valuation and a funding method.

employee and asset data, the actuary calculates the contribution rates to support the benefits by means *Computing Contributions to Support Fund Benefits.* From a given schedule of benefits and from

acrued assets of PERS). liabilities are the difference between: liabilities for service already rendered; and the Interest on Unfunded Actuarial Accrued Liabilities (unfunded actuarial accrued ... plus ... Normal Cost (the cost of members' service being rendered this year)

total at least the following:

Translated to actuarial terminology, this level-cost objective means that the contribution rates must

THE ACTUARIAL VALUATION PROCESS

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

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

- A. **Census Data**, including:
 - Retired lives now receiving benefits
 - Former employees with vested benefits not yet payable
 - Active employees

- B. + **Asset data** (cash & investments)

- C. + **Benefit provisions** that establish eligibility and amounts of payments to members

- D. + **Assumptions concerning future experience** in various risk areas

- 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/or
 - New Employer Contribution Rate

Actuary. A person who is trained in the applications of probability and compound interest to problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries. The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation A.S.A. and ultimately to Fellowship with the designation F.S.A.

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.

Funding Value of Assets. The value of current plan assets recognized for valuation purposes. Generally based on a phased-in recognition of all or a portion of market related investment return. Sometimes referred to as Actuarial Value of Assets.

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.

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

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."

MEANING OF "UNFUNDED ACTUARIAL ACCRUED LIABILITIES"

"Actuarial accrued liabilities" are the present value of the portions of promised benefits that are 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.

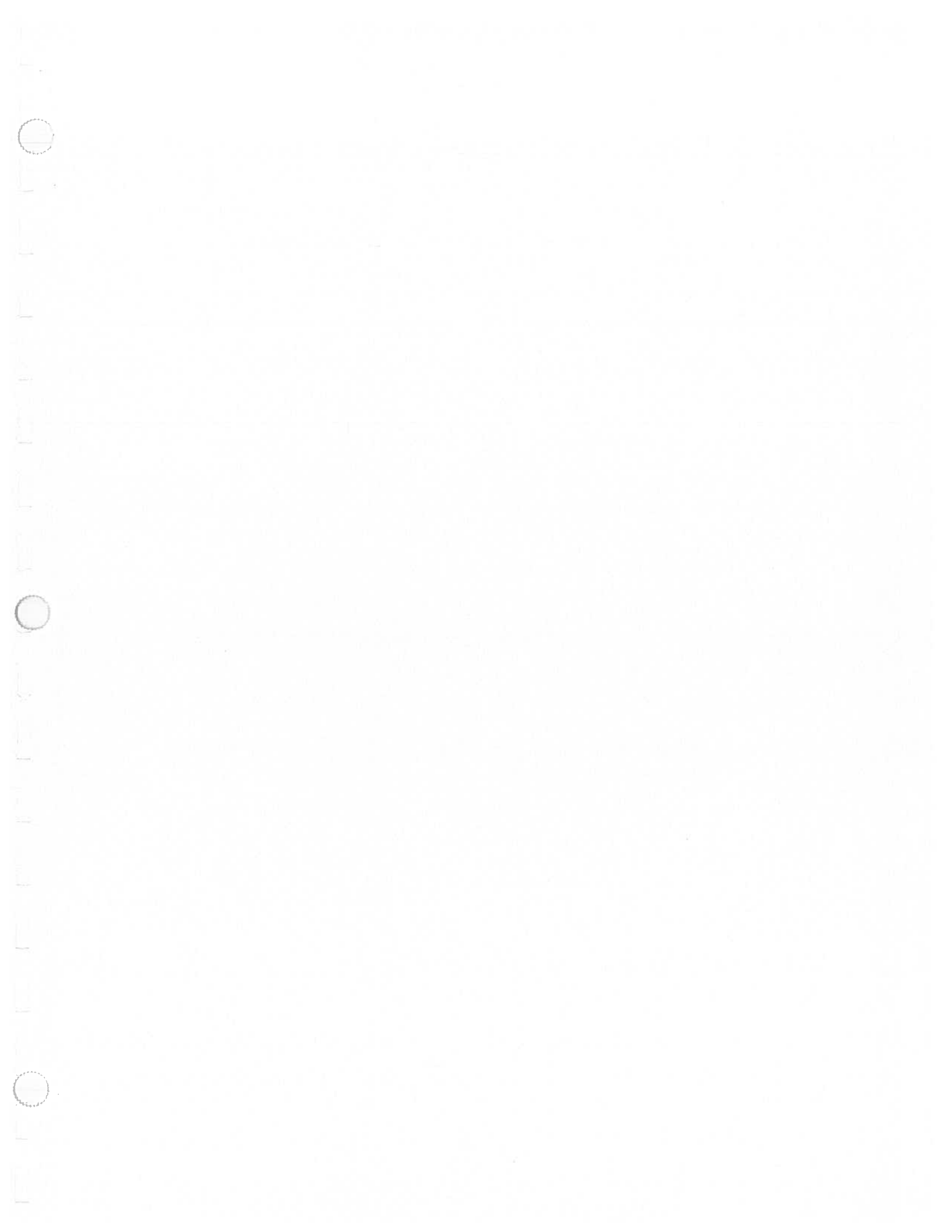
If "actuarial accrued liabilities" at any time exceed the plan's accrued assets (cash & investments), the difference is *"unfunded actuarial accrued liabilities."* This is the common condition. If the plan's assets equaled the plan's "actuarial accrued liabilities", the plan would be termed "fully funded." This is an unusual condition.

Each time a plan adds a new benefit which applies to service already rendered, an "actuarial accrued liability" is created, which is also an "unfunded actuarial accrued liability" because the plan can't print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 15-40 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual plan experience is less favorable than assumed, the difference is added to unfunded actuarial accrued liabilities. For example, in plans where benefits are directly related to an employee's pay near time of retirement, unfunded actuarial accrued liabilities increased rapidly during the 1970's because unexpected rates of pay increase created additional actuarial accrued liabilities which could not be matched by reasonable investment results. Most of the unexpected pay increases were the direct result of inflation, which is a very destructive force on financial stability.

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

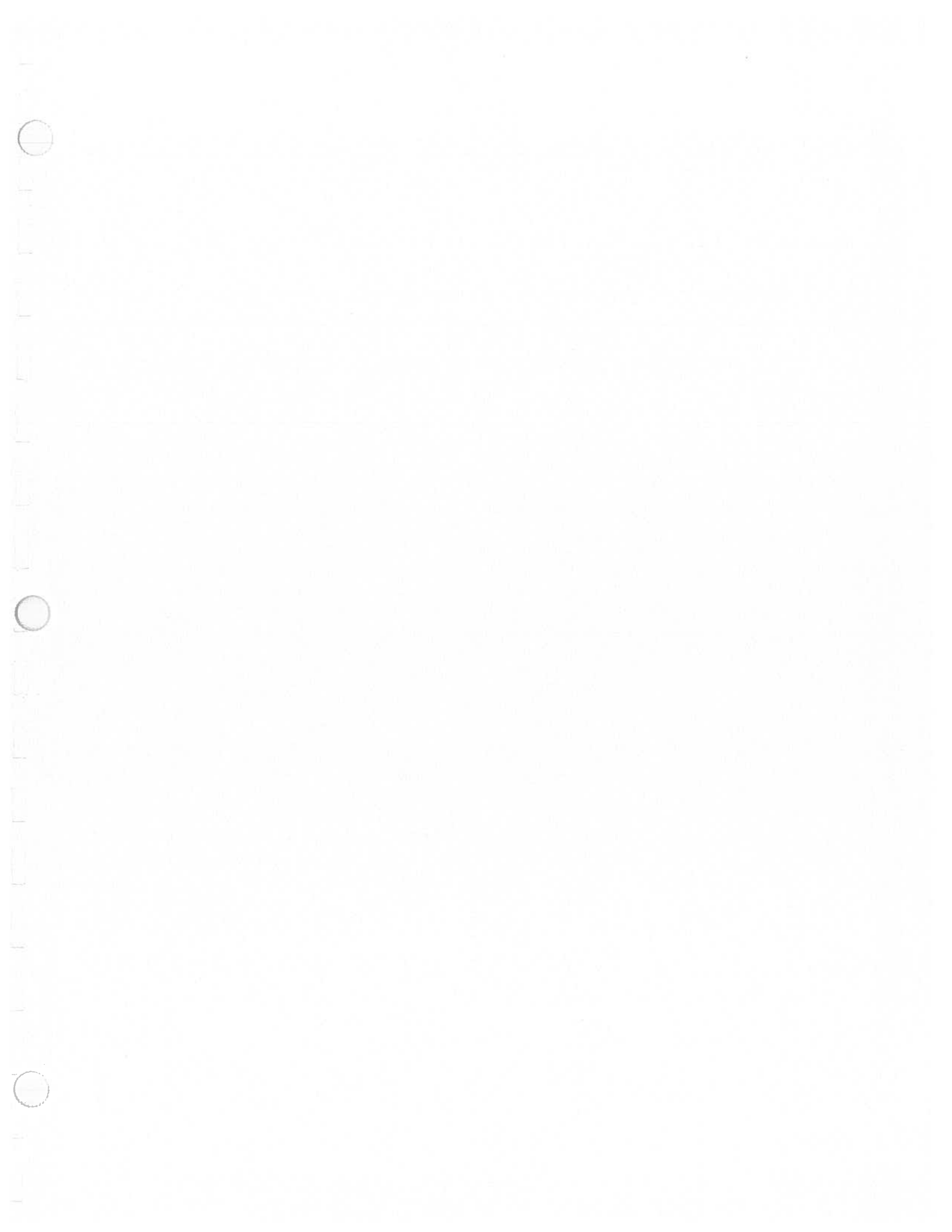
Nor are unfunded actuarial accrued liabilities a bill payable immediately, but it is important that policy-makers prevent the amount from becoming unreasonably high and *it is vital for plans to have a sound method for making payments toward them* so that they are controlled.



SECTION IX



GASB Reporting



**SCHEDULE OF DEFINED BENEFIT FUNDING PROGRESS
FOR COMPLIANCE WITH GASB STATEMENT NO. 25
(\$ AMOUNTS IN MILLIONS)**

The schedule below measures the funding progress with respect to the *retirement allowance* portion of OPERS benefits for compliance with GASB Statement No. 25. Assets and liabilities related to post-employment health care benefits are specifically excluded from the schedule. Assets do, however, include market value adjustments.

Valuation Year	Actuarial Accrued Liabilities (AAL)	Valuation Assets	Unfunded Actuarial Accrued Liabilities (UAAL)	Ratio of Assets to AAL	Active Member Payroll	UAAL as a % of Active Member Payroll
1989	\$18,310	\$14,629	\$3,681	80 %	\$5,597	66 %
1990	20,125	16,245	3,880	81 %	6,036	64 %
1991	22,027	18,108	3,919	82 %	6,651	59 %
1992	23,961	20,364	3,597	85 %	6,889	52 %
1993	26,506	23,063	3,443	87 %	7,236	48 %
1994	28,260	25,066	3,194	89 %	7,625	42 %
1995	30,556	27,651	2,905	90 %	7,973	36 %
1995*	30,224	27,651	2,573	91 %	7,973	32 %
1996	32,631	30,534	2,097	94 %	8,340	25 %
1997	34,971	33,846	1,125	97 %	8,640	13 %
1998	37,714	38,360	(646)	102 %	9,017	0 %
1999	43,070	43,060	10	100 %	9,477	0 %
2000	46,347	46,844	(497)	101 %	10,192	0 %
2001	49,095	48,748	347	99 %	10,782	3 %
2001*	47,492	48,748	(1,256)	103 %	10,782	0 %
2002	50,872	43,706	7,166	86 %	11,207	64 %
2003	54,774	46,746	8,028	85 %	11,165	72 %

* Revised actuarial assumptions.

**SCHEDULE OF EMPLOYER CONTRIBUTIONS*
FOR COMPLIANCE WITH GASB STATEMENT NO. 25**

Traditional Plan

Year Ended December 31	Annual Required Contributions	Percentage Contributed
1989	\$571,866,966	100%
1990	558,119,779	100%
1991	607,811,880	100%
1992	646,170,989	100%
1993	663,680,518	100%
1994	693,802,578	100%
1995	725,893,573	100%
1996	777,781,045	100%
1997	811,485,028	100%
1998	886,684,171	100%
1999	935,429,955	100%
2000	718,807,713	100%
2001	977,289,238	100%
2002	1,109,983,204	100%
2003	1,026,594,836	100%

Combined Plan

Year Ended December 31	Annual Required Contributions	Percentage Contributed
2003	\$8,451,494	100%

* The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

**SCHEDULE OF UNFUNDED ACTUARIAL ACCRUED LIABILITY@
FOR COMPLIANCE WITH GASB STATEMENT NO. 25**

	December 31, 2003			Total
	State Group	Local Group	Law Group	
Accrued Liabilities				
Active and Inactive Members	\$ 12,230,240,472	\$ 17,644,951,296	\$ 1,170,271,120	\$ 31,045,462,888
Retirees and Beneficiaries	9,759,878,628	13,086,644,934	881,796,486	23,728,320,048
Total Accrued Liabilities	\$ 21,990,119,100	\$ 30,731,596,229	\$ 2,052,067,607	\$ 54,773,782,936
Assets				
Active and Inactive Members				
EAF*	\$ 5,944,143,414	\$ 8,445,938,317	\$ 552,928,797	\$ 14,943,010,528
ESF	3,426,743,059	5,153,446,368	316,772,483	8,896,961,910
TP EAF Unallocated	224,470,296	337,578,748	20,750,320	582,799,364
Market Value Adjustment	(565,073,478)	(788,950,590)	(51,740,543)	(1,405,764,611)
Total Active and Inactive Assets	9,030,283,291	13,148,012,843	838,711,057	23,017,007,191
Retirees and Beneficiaries				
A & PR Fund*	9,329,282,855	12,358,945,878	846,946,338	22,535,175,071
SBF Fund*	430,595,773	727,699,056	34,850,148	1,193,144,977
Total R&B Assets	9,759,878,628	13,086,644,934	881,796,486	23,728,320,048
Total Assets	\$ 18,790,161,919	\$ 26,234,657,777	\$ 1,720,507,543	\$ 46,745,327,239
Unfunded Actuarial Accrued Liability	\$ 3,199,957,181	\$ 4,496,938,453	\$ 331,560,064	\$ 8,028,455,697

@ The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

* After reserve transfers.

