

**SAN JOSE FEDERATED CITY
EMPLOYEES' RETIREMENT SYSTEM**

ACTUARIAL REPORT

Prepared for the
Board of Administration
as of
July 1, 1991

W F CORROON



February 3, 1992

Board of Administration
Federated City Employees'
Retirement System
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Ladies and Gentlemen:

Pursuant to our agreement with you, we have completed an actuarial valuation and experience analysis of the Federated City Employees' Retirement System as of July 1, 1991. We are pleased to submit our report on the results of the valuation.

The study was based upon employee data furnished by the Retirement Office.

This report describes in detail both the results and the recommendations arising from the study.

We look forward to discussing this report with the Board and wish to express our appreciation for the cooperation extended to us by the Administrator of the System and the members of his staff during the course of this survey.

Respectfully submitted,

Krystyna H. Upstill, E.A., M.A.A.A.
Vice President and
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KHU:MMO/abd

Enclosure

SAN JOSE FEDERATED CITY
JULY 1, 1991

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SECTION
I

SUMMARY



(i) SUMMARY OF RESULTS AS OF JULY 1, 1991

Demographic Data

Actives:

Number	3,528
Payroll	\$ 135,849,000

Inactives:

Number	146
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Retirees:

Number	1,220
Annual Pension Roll*	\$ 17,353,000

Assets**

Book Value	\$ 417,107,000
Market Value	439,399,000
Adjusted Book Value	428,305,000

Funded Status

GASB #5 Pension Benefit Obligation (PBO)	\$ 470,381,000
Ratio of Net Assets at Book to PBO	88%

Contribution Rates

	<u>City</u>	<u>Employees</u>
Current Contributions:		
Rates	13.92%	6.37%
Annual Amount based on July 1, 1991 Payroll	\$ 18,910,000	\$ 8,654,000
Recommended Contributions:		
Rates	14.37%	6.74%
Annual Amount based on July 1, 1991 Payroll	\$ 19,522,000	\$ 9,156,000

*Includes permanent cost of living.

**Unaudited.



(ii) SUMMARY OF ASSUMPTIONS AND FUNDING METHODS

The funding method and the recommended actuarial assumptions are shown below:

Assumptions

Valuation Interest Rate

8-3/4%

Post-Retirement Mortality	
(a) Service	
Males	1983 Group Annuity Mortality Table for Males
Females	1983 Group Annuity Mortality Table for Females, set forward one year
(b) Disability	
	1981 Disability Mortality Table

Pre-Retirement Mortality

Based upon the 7/1/91 Experience Analysis

Withdrawal Rates

Based upon the 7/1/91 Experience Analysis

Disability Rates

Based upon the 7/1/91 Experience Analysis

Service Retirement Rates

Based upon the 7/1/91 Experience Analysis

Salary Scale

Total increases of 6-1/2% per year (5-1/2% inflation plus merit and longevity scale based on age)

Assets

At Adjusted Book Value

Funding Methods

The City's liability for pension benefits is being funded on a modified Entry Age Normal Method with a Supplemental Present Value. The amortization period for the Supplemental Present Value is 28 years from the July 1, 1991 valuation date except for the portion due to the 1987 Early Retirement Incentive Program which is being funded over 26 years from July 1, 1991.

Liabilities for medical and dental benefits are partially funded. Anticipated costs for the next 15 years are amortized on a level percentage of the next 15-year anticipated payroll.

SECTION
II

STATISTICAL INFORMATION



(i) SUMMARY OF STATISTICAL INFORMATION

A comparison of the unaudited data used for our July 1, 1989 and July 1, 1991 actuarial valuations of your System is shown below:

	July 1, 1989	July 1, 1991	Percentage Increase During the Two-Year Period
Active Members			
Number	3,069	3,528	15%
Total annual payroll*	\$ 105,478,000	\$ 135,849,000	29%
Average monthly salary*	\$ 2,864	\$ 3,209	12%
Retired Members			
Number	1,111	1,220	10%
Total annual pension roll (basic)	\$ 11,984,000	\$ 14,329,000	20%
Average monthly allowance (basic)	\$ 899	\$ 979	9%
Total annual pension roll (basic and COL)	\$ 14,177,000	\$ 17,353,000	22%
Average monthly allowance (basic and COL)	\$ 1,063	\$ 1,185	11%
Inactive Vested Members			
Number	132	146	11%
Assets at Book Value			
Basic Retirement Fund	\$ 265,058,000	\$ 317,904,000**	20%
Cost of Living Fund	<u>76,738,000</u>	<u>99,203,000**</u>	29%
Total Fund	\$ 341,796,000	\$ 417,107,000**	22%

*The salary for part-time employees reflects the actual pay rate multiplied by the average of 24.03 hours worked per biweekly pay period.

**Unaudited.

Exhibits 1 - 5 on the following pages show more detail of the active and retired data.



Exhibit 1
 ANNUAL SALARY* AND MEMBERSHIP DISTRIBUTION
 OF ACTIVE MEMBERS
 AS OF JUNE 30, 1991

MALES

PRESENT AGE	YEARS OF SERVICE							TOTAL
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	
BELOW 20								
20 - 24	51 1,263,410	1 30,701						52 1,294,111
25 - 29	162 5,306,192	54 1,858,549	1 29,682					217 7,194,423
30 - 34	173 6,158,370	111 4,262,812	56 2,176,370					340 12,597,552
35 - 39	112 4,297,859	80 3,368,862	93 3,672,429	35 1,379,710				320 12,718,860
40 - 44	113 4,903,563	84 3,737,305	77 3,390,490	98 4,391,544	19 913,183			391 17,336,085
45 - 49	58 2,607,260	48 2,200,562	40 1,711,283	77 3,807,147	36 1,786,119	14 659,860		273 12,772,231
50 - 54	38 1,686,173	40 1,961,963	30 1,471,249	48 2,207,264	39 2,026,008	35 1,751,528	4 247,125	234 11,351,310
55 - 59	18 674,626	15 610,022	26 1,230,322	27 1,278,268	10 477,902	12 507,834	3 102,898	111 4,881,872
60 - 64	6 261,040	6 302,474	15 586,602	16 796,644	4 169,104	3 164,819	2 79,436	52 2,360,119
65 - 69	2 130,603	2 82,430	2 99,840	9 348,231	1 48,589		1 51,459	17 761,152
70 & OVER	3 86,029			1 45,594	1 11,764		1 48,589	6 191,976
TOTAL	736 27,375,125	441 18,415,680	340 14,368,267	311 14,254,402	110 5,432,669	64 3,084,041	11 529,507	2,013 83,459,691

AVERAGE AGE 41.00
 AVERAGE SERVICE 9.00
 AVERAGE ENTRY AGE 32.00

* The salary for part-time employees reflects the actual rate of pay.



Exhibit 2
 ANNUAL SALARY* AND MEMBERSHIP DISTRIBUTION
 OF ACTIVE MEMBERS
 AS OF JUNE 30, 1991

FEMALES

PRESENT AGE	YEARS OF SERVICE							TOTAL
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	
BELOW 20								
20 - 24	46							46
	1,290,678							1,290,678
25 - 29	141	38	2					181
	4,425,860	1,092,397	68,349					5,586,606
30 - 34	141	58	33	1				233
	4,901,667	1,914,407	1,112,322	41,122				7,969,518
35 - 39	115	72	47	22				256
	3,903,716	2,601,598	1,801,825	693,180				9,000,319
40 - 44	84	73	43	48	11			259
	3,011,839	2,664,979	1,513,018	2,027,942	378,390			9,596,168
45 - 49	60	66	34	37	15	6		218
	1,937,208	2,443,340	1,421,662	1,462,704	615,847	239,949		8,120,710
50 - 54	42	43	24	25	14	6	5	159
	1,322,025	1,548,165	910,668	1,026,791	573,131	226,746	141,744	5,749,270
55 - 59	17	16	27	18	3	5	3	89
	475,716	529,873	880,921	587,281	120,474	181,502	132,372	2,908,139
60 - 64	6	5	10	13	6		2	42
	165,006	142,002	331,387	401,606	214,324		67,350	1,321,675
65 - 69		3	6	12	2			23
		97,240	186,223	310,575	53,040			647,078
70 & OVER	1			5	3			9
	8,528			92,432	98,384			199,344
TOTAL	653	374	226	181	54	17	10	1,515
	21,442,243	13,034,001	8,226,375	6,643,633	2,053,590	648,197	341,466	52,389,505

AVERAGE AGE 41.00
 AVERAGE SERVICE 7.25
 AVERAGE ENTRY AGE 33.75

* The salary for part-time employees reflects the actual rate of pay.



Exhibit 3
 SUMMARY OF MEMBERS ON PENSION ROLL
 AND AMOUNTS OF ALLOWANCES BY TYPE OF RETIREMENT
 AS OF JUNE 30, 1991

<u>Option</u>	<u>Number</u>	<u>Basic Monthly Allowance</u>	<u>Cost of Living</u>		<u>Total Monthly Allowance</u>
			<u>Regular</u>	<u>Permanent</u>	
<u>SERVICE RETIREMENT</u>					
1	94	\$ 65,692	\$ 16,102	\$ 3,321	\$ 85,115
2	31	9,253	3,971	820	14,044
3	11	4,289	3,053	977	8,319
4	4	3,334	3,141	817	7,292
5	792	922,106	166,157	1,544	1,089,807
8	0	0	0	0	0
9	23	5,852	4,211	1,034	11,097
Total	955	\$1,010,526	\$ 196,635	\$ 8,513	\$1,215,674
<u>DISABILITY RETIREMENT</u>					
1	12	\$ 17,785	\$ 1,388	\$ 0	\$ 19,173
2	0	0	0	0	0
3	1	204	170	61	435
4	0	0	0	0	0
5	127	105,086	24,827	292	130,205
8	2	720	651	131	1,502
9	0	0	0	0	0
Total	142	\$ 123,795	\$ 27,036	\$ 484	\$ 151,315
<u>BENEFICIARIES</u>					
Total	123	\$ 59,747	\$ 17,233	\$ 2,136	\$ 79,116
Grand Total	1,220	\$1,194,068	\$ 240,904	\$ 11,133	\$1,446,105
	=====	=====	=====	=====	=====



Exhibit 4
 ANNUAL BENEFIT AND MEMBERSHIP DISTRIBUTION*
 OF RETIRED MEMBERS AND BENEFICIARIES
 AS OF JUNE 30, 1991

MALES

PRESENT AGE	YEARS OF RETIREMENT							TOTAL
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	
BELOW 45	1 10,509	4 37,197	2 8,968			1 7,833		8 64,507
45 - 49	8 154,782	1 11,680	2 12,691					11 179,153
50 - 54	17 464,578	5 54,821	2 17,151					24 536,550
55 - 59	114 2,499,645	9 164,363	1 8,007	1 8,183				125 2,680,198
60 - 64	52 1,146,726	93 1,552,675	13 289,834	2 12,211				160 3,001,446
65 - 69	50 1,002,999	47 843,905	86 1,253,394	5 56,233				188 3,156,531
70 - 74	16 277,085	33 581,452	57 756,441	26 303,419	1 5,097			133 1,923,494
75 - 79	2 12,515	13 171,891	29 325,384	23 319,728	5 20,685	1 4,587		73 854,790
80 - 84			4 38,942	12 149,878	7 60,901	3 35,813		26 285,534
85 - 89		1 3,374	1 1,285		1 11,259			3 15,918
90 - 94						1 31,397		1 31,397
95 & OVER								
TOTAL	260 5,568,839	206 3,421,358	197 2,712,097	69 849,652	14 97,942	6 79,630		752 12,729,518

AVERAGE AGE 65.75
 AVERAGE YEARS RETIRED 8.00
 AVERAGE RETIREMENT AGE 57.75

* Includes permanent cost of living benefits.



Exhibit 5
 ANNUAL BENEFIT AND MEMBERSHIP DISTRIBUTION*
 OF RETIRED MEMBERS AND BENEFICIARIES
 AS OF JUNE 30, 1991

FEMALES

PRESENT AGE	YEARS OF RETIREMENT							TOTAL
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	
BELOW 45	8 156,032	4 40,176	1 14,325					13 210,533
45 - 49	3 31,506	1 9,947	2 12,765	1 4,861				7 59,079
50 - 54	9 165,486	5 37,668	3 19,348					17 222,502
55 - 59	44 603,361	6 54,990	3 32,563					53 690,914
60 - 64	42 506,556	45 541,119	12 106,007	1 8,759	2 12,055			102 1,174,496
65 - 69	47 542,397	32 315,778	41 231,836	2 15,328	1 6,282			123 1,111,621
70 - 74	18 149,163	28 239,027	24 151,890	19 161,619	1 4,440	2 6,687		92 712,826
75 - 79	3 21,475	7 48,565	12 65,112	10 79,154	8 49,682		1 2,789	41 266,777
80 - 84	1 4,975	1 5,221	2 3,887	4 36,722	3 27,630	1 15,636		12 94,071
85 - 89			1 3,039	1 3,912	2 33,579	2 30,803		6 71,333
90 - 94		1 3,225				1 6,301		2 9,526
95 & OVER								
TOTAL	175 2,180,951	130 1,295,716	101 640,772	38 310,355	17 133,668	6 59,427	1 2,789	468 4,623,678

AVERAGE AGE 65.75
 AVERAGE YEARS RETIRED 8.00
 AVERAGE RETIREMENT AGE 57.75

* Includes permanent cost of living benefits.

SECTION
III

EXPERIENCE ANALYSIS



(i) NONECONOMIC ASSUMPTIONS

Probabilities of Separation from Service Prior to Retirement

A study was made, based upon each member's sex and attained age as of the valuation date, to determine the probability of members leaving the System on account of withdrawal, death, disability, deferred vested or service retirement.

First, we compared the expected experience versus the actual that took place during the two year investigation period ending June 30, 1991, based on the probabilities of separation used in the previous valuation. Then, all necessary adjustments were made to develop rates for the current study. As in previous studies, and because of the differences in characteristics, the male and female membership experience was tested separately.

Withdrawal (Refunds)

The rates of withdrawal were lowered, mostly for males at the younger ages, to reflect the actual incidence at these ages.

A reduction in the withdrawal rates increases the total costs to the system.

Service Retirement

The results of the experience analysis show a lower incidence of service retirement for females than expected. The rates were adjusted to more closely reflect the actual experience. The rates for males did not need to be changed at this time.

Fewer service retirements result in lower costs.

Disability Retirement

Based on the results of the active investigation, the disability retirement rates did not need changing at this time.

Death Before Retirement

The rates of death while eligible to retire were increased to more closely reflect the actual experience for both male and female members.

The rates of ordinary death were not changed this time since the actual and expected experience were reasonably close.



Vested Termination

Based upon the results of the experience analysis, probabilities of vested withdrawal were increased for male members for ages 50-54 only. No other adjustments were necessary in the probabilities of vested withdrawals at this time.

Summary of Probabilities of Separation

The changes in the rates of separation from active service resulting from the experience analysis have been discussed in the foregoing paragraphs. However, it is difficult to obtain the meaning of the various changes in the probabilities of separation by examining each one of them separately. This is because these probabilities are interdependent. For example, if there is more turnover, there will be fewer retirements. Because of this interdependency, it is helpful to develop another table which takes this into account.

Exhibits 6 and 7 show, for each of the groups, the expected number of present active members who will separate in the future for each of the various causes of termination. Exhibit 6 is based on the current assumptions and Exhibit 7 reflects the new set. Exhibit 8 offers a graphic comparison of the expected separations based on the current and new assumptions. For purposes of this graph, we have combined the following:

- service retirement and terminated vested into Service Retirement,
- ordinary and duty disabilities into Disability, and
- ordinary death and death while eligible into Death.

By referring to these exhibits, it is easier to see the effects of the recommended changes in the probabilities of separation from the System. The probabilities used to develop Exhibit 7 are the new recommended rates shown in Exhibits 9 and 10.

Mortality after Service Retirement

At the time of the last actuarial study of the Retirement System, the bases for mortality after service retirement were the 1983 Male Group Annuity Mortality Table and the 1983 Female Group Annuity Mortality Table.

During the two years prior to the valuation date, 35 members who had retired for service died. Based upon the mortality tables used in the last actuarial study, 33 deaths were expected. Based on this experience, the large number of female deaths since June 1991, and the experience of the other public systems we serve, we believe that the 1983 Male Group Annuity Mortality Table and the Female Table set forward one year are more appropriate for your group. The expected number of deaths based on the current Male Table and new Female Table was 34. This compares more favorably with the actual number of deaths.



The life expectancies under the new and the old table for members retired for service are as follows:

Age	CURRENT		NEW	
	Male	Female	Male	Female
50	29.18	34.91	29.18	33.97
60	20.64	25.67	20.64	24.78
70	13.18	17.13	13.18	16.34
80	7.64	10.20	7.64	9.63

The life expectancies based on these tables are shown in Exhibit 11.

Mortality after Disability Retirement

At the time of the last actuarial study, the 1981 Disability Mortality Table was used to measure mortality after disability retirement for both males and females.

During the last two years 10 members who were retired for disability died. Based on the current mortality table, the number expected was also 10.

Because the disability experience for your System corresponds so closely to the 1981 table, we recommend continuing the use of this table at this time. The life expectancies based on this table are shown in Exhibit 12.



Exhibit 6
 EXPECTED NUMBER TO EVENTUALLY SEPARATE
 FOR INDICATED CAUSE
 (BASED ON CURRENT ASSUMPTIONS)

MALE MEMBERS

Present Age	Number of Actives	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Disability	Terminated Vested
20-24	52	40	0	1	8	0	1	2
25-29	217	130	3	4	57	3	6	14
30-34	340	145	5	9	132	7	13	29
35-39	320	85	6	10	166	8	15	30
40-44	391	63	7	14	246	11	21	29
45-49	273	26	5	10	198	8	15	11
50-54	234	11	3	8	191	6	13	2
55-59	111	2	1	4	95	2	7	0
60-64	52	0	0	2	46	1	3	0
65 & OVER	23	0	0	0	23	0	0	0
TOTAL	2,013	502 (24.9%)	30 (1.5%)	62 (3.1%)	1,162 (57.7%)	46 (2.3%)	94 (4.7%)	117 (5.8%)

FEMALE MEMBERS

20-24	46	38	0	0	5	0	1	2
25-29	181	132	1	2	30	1	2	13
30-34	233	142	2	4	60	2	3	20
35-39	256	118	3	6	98	3	5	23
40-44	259	82	3	8	135	4	6	21
45-49	218	42	2	8	144	4	6	12
50-54	159	16	1	6	125	3	5	3
55-59	89	3	1	4	77	1	3	0
60-64	42	0	0	2	38	1	1	0
65 & OVER	32	0	0	0	32	0	0	0
TOTAL	1,515	573 (37.8%)	13 (.9%)	40 (2.6%)	744 (49.1%)	19 (1.3%)	32 (2.1%)	94 (6.2%)



Exhibit 7
 EXPECTED NUMBER TO EVENTUALLY SEPARATE
 FOR INDICATED CAUSE
 (BASED ON NEW ASSUMPTIONS)

MALE MEMBERS

Present Age	Number of Actives	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Disability	Terminated Vested
20-24	52	39	0	1	8	1	1	2
25-29	217	127	3	4	58	4	6	15
30-34	340	140	5	9	134	8	13	31
35-39	320	81	6	10	167	10	15	31
40-44	391	60	7	14	246	13	20	31
45-49	273	24	4	10	199	9	15	12
50-54	234	8	3	9	192	7	13	2
55-59	111	1	1	4	95	3	7	0
60-64	52	0	0	2	46	1	3	0
65 & OVER	23	0	0	0	23	0	0	0
TOTAL	2,013	480 (23.9%)	29 (1.4%)	63 (3.1%)	1,168 (58.0%)	56 (2.8%)	93 (4.6%)	124 (6.2%)

FEMALE MEMBERS

20-24	46	38	0	0	5	0	1	2
25-29	181	132	1	2	30	1	2	13
30-34	233	140	2	4	60	3	4	20
35-39	256	116	3	6	99	4	5	23
40-44	259	78	3	8	136	6	7	21
45-49	218	38	2	8	146	5	7	12
50-54	159	14	2	6	126	3	5	3
55-59	89	2	1	4	77	2	3	0
60-64	42	0	0	2	38	1	1	0
65 & OVER	32	0	0	0	32	0	0	0
TOTAL	1,515	558 (36.8%)	14 (.9%)	40 (2.7%)	749 (49.4%)	25 (1.7%)	35 (2.3%)	94 (6.2%)



Exhibit 8
EXPECTED PERCENTAGE TO EVENTUALLY SEPARATE
FOR INDICATED CAUSE
(BASED ON CURRENT AND NEW ASSUMPTIONS)

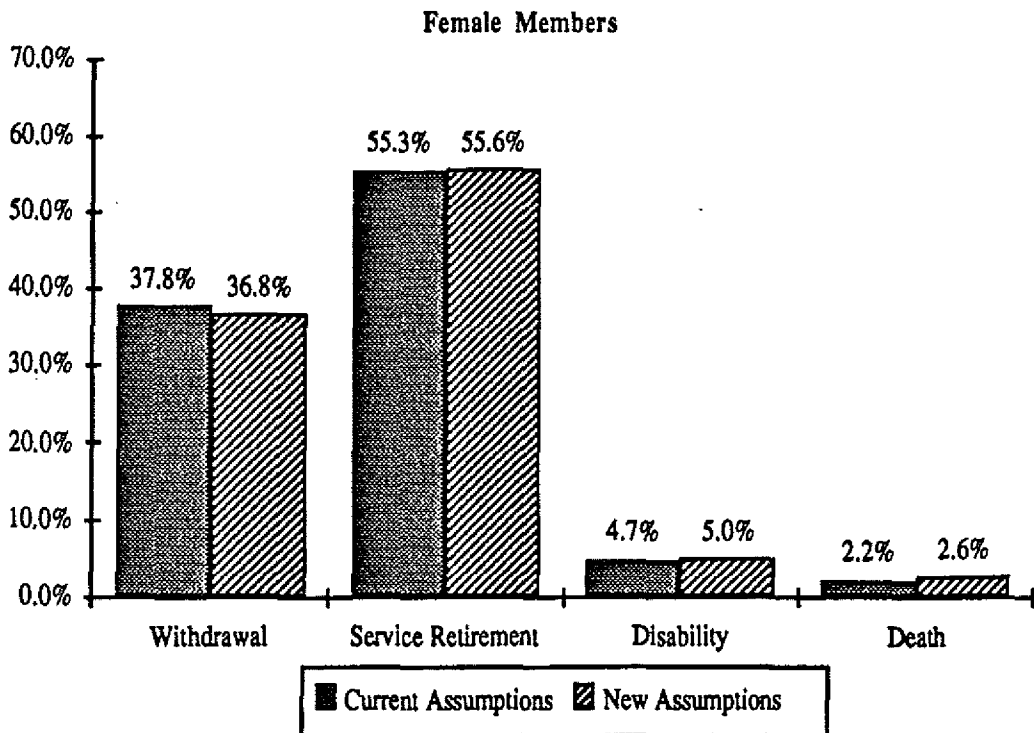
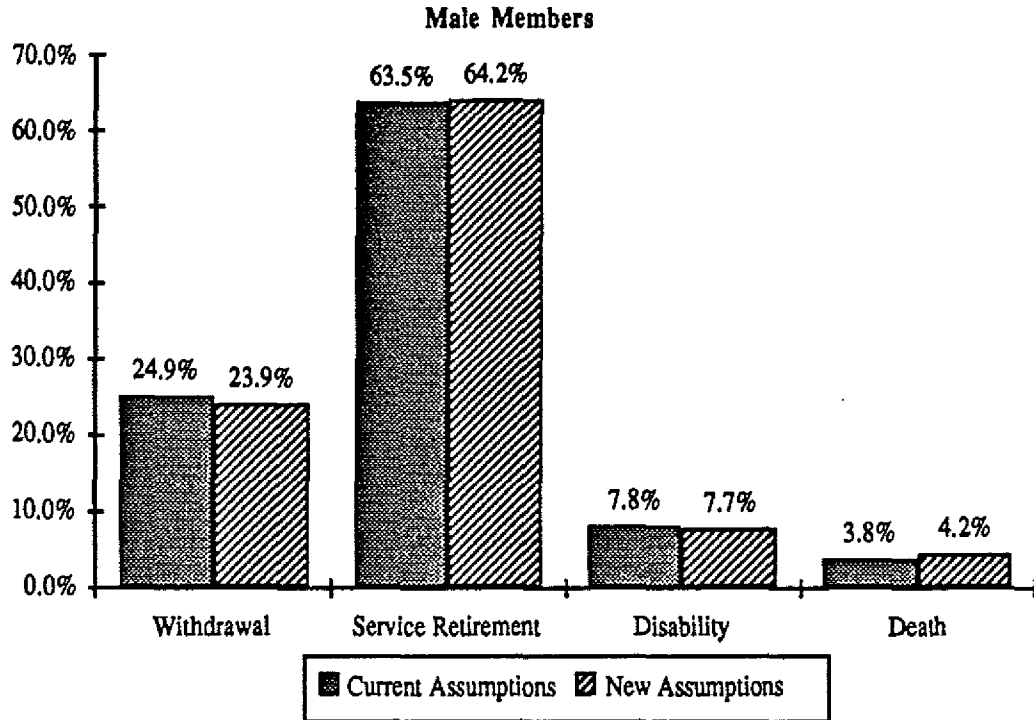




Exhibit 9
PROBABILITIES OF SEPARATION
PRIOR TO RETIREMENT

MALES

<u>Age</u>	<u>Withdrawal</u>	<u>Ordinary Death</u>	<u>Ordinary Disability</u>	<u>Service</u>	<u>Death While Eligible</u>	<u>Duty Disability</u>	<u>Terminated Vested</u>
20	.1250	.0003	.0000	.0000	.0000	.0000	.0005
21	.1190	.0003	.0000	.0000	.0000	.0000	.0005
22	.1130	.0003	.0000	.0000	.0000	.0000	.0005
23	.1070	.0003	.0000	.0000	.0000	.0000	.0005
24	.1010	.0003	.0000	.0000	.0000	.0000	.0005
25	.0950	.0003	.0002	.0000	.0002	.0000	.0005
26	.0900	.0003	.0002	.0000	.0002	.0000	.0006
27	.0850	.0003	.0002	.0000	.0002	.0000	.0006
28	.0800	.0004	.0002	.0000	.0002	.0000	.0007
29	.0750	.0004	.0002	.0000	.0002	.0000	.0007
30	.0700	.0004	.0002	.0000	.0002	.0000	.0007
31	.0650	.0004	.0002	.0000	.0002	.0000	.0007
32	.0590	.0004	.0002	.0000	.0002	.0000	.0007
33	.0530	.0005	.0002	.0000	.0003	.0000	.0007
34	.0470	.0005	.0002	.0000	.0003	.0000	.0008
35	.0420	.0005	.0003	.0000	.0003	.0000	.0008
36	.0380	.0005	.0003	.0000	.0004	.0000	.0008
37	.0340	.0006	.0004	.0000	.0004	.0000	.0008
38	.0300	.0006	.0005	.0000	.0004	.0000	.0009
39	.0270	.0006	.0005	.0000	.0005	.0000	.0009
40	.0240	.0007	.0006	.0000	.0005	.0000	.0009
41	.0220	.0007	.0006	.0000	.0006	.0000	.0010
42	.0200	.0007	.0006	.0000	.0006	.0000	.0010
43	.0190	.0007	.0006	.0000	.0007	.0000	.0010
44	.0170	.0008	.0007	.0000	.0009	.0000	.0010
45	.0160	.0008	.0008	.0000	.0011	.0000	.0010
46	.0150	.0008	.0009	.0000	.0013	.0000	.0011
47	.0140	.0009	.0009	.0000	.0015	.0000	.0012
48	.0130	.0009	.0010	.0000	.0017	.0000	.0013
49	.0120	.0010	.0012	.0000	.0019	.0000	.0014
50	.0100	.0011	.0014	.0100	.0021	.0000	.0016
51	.0080	.0012	.0017	.0050	.0023	.0000	.0020
52	.0070	.0013	.0019	.0050	.0025	.0000	.0024
53	.0060	.0014	.0024	.0050	.0027	.0000	.0030
54	.0050	.0015	.0029	.0100	.0029	.0000	.0037
55	.0050	.0015	.0034	.2500	.0031	.0000	.0044
56	.0050	.0016	.0040	.0800	.0033	.0000	.0052
57	.0050	.0017	.0047	.0900	.0035	.0000	.0062
58	.0050	.0018	.0055	.1000	.0037	.0000	.0075
59	.0050	.0019	.0064	.1000	.0040	.0000	.0093
60	.0000	.0020	.0074	.1000	.0043	.0000	.0115
61	.0000	.0021	.0085	.1100	.0046	.0000	.0138
62	.0000	.0022	.0097	.3500	.0049	.0000	.0166
63	.0000	.0023	.0110	.1200	.0052	.0000	.0202
64	.0000	.0024	.0125	.1500	.0055	.0000	.0244
65	.0000	.0025	.0140	.2000	.0058	.0000	.0290
66	.0000	.0026	.0000	.4000	.0061	.0000	.0000
67	.0000	.0027	.0000	.4000	.0064	.0000	.0000
68	.0000	.0028	.0000	.4500	.0067	.0000	.0000
69	.0000	.0029	.0000	.5000	.0070	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000



Exhibit 10
 PROBABILITIES OF SEPARATION
 PRIOR TO RETIREMENT

FEMALES

<u>Age</u>	<u>Withdrawal</u>	<u>Ordinary Death</u>	<u>Ordinary Disability</u>	<u>Service</u>	<u>Death While Eligible</u>	<u>Duty Disability</u>	<u>Terminated Vested</u>
20	.1250	.0001	.0000	.0000	.0000	.0000	.0003
21	.1200	.0001	.0000	.0000	.0000	.0000	.0003
22	.1160	.0001	.0000	.0000	.0000	.0000	.0003
23	.1130	.0001	.0000	.0000	.0000	.0000	.0003
24	.1100	.0001	.0000	.0000	.0000	.0000	.0003
25	.1060	.0001	.0002	.0000	.0001	.0000	.0003
26	.1010	.0001	.0002	.0000	.0001	.0000	.0003
27	.0960	.0001	.0002	.0000	.0001	.0000	.0003
28	.0910	.0002	.0002	.0000	.0001	.0000	.0003
29	.0860	.0002	.0002	.0000	.0001	.0000	.0004
30	.0820	.0002	.0002	.0000	.0001	.0000	.0004
31	.0790	.0002	.0002	.0000	.0001	.0000	.0004
32	.0760	.0002	.0002	.0000	.0001	.0000	.0004
33	.0730	.0003	.0002	.0000	.0001	.0000	.0004
34	.0700	.0003	.0002	.0000	.0001	.0000	.0004
35	.0670	.0003	.0002	.0000	.0001	.0000	.0004
36	.0640	.0003	.0002	.0000	.0002	.0000	.0005
37	.0600	.0003	.0002	.0000	.0002	.0000	.0005
38	.0560	.0004	.0002	.0000	.0002	.0000	.0005
39	.0530	.0004	.0002	.0000	.0002	.0000	.0005
40	.0500	.0004	.0002	.0000	.0002	.0000	.0005
41	.0470	.0004	.0002	.0000	.0003	.0000	.0005
42	.0440	.0005	.0002	.0000	.0004	.0000	.0005
43	.0410	.0005	.0003	.0000	.0005	.0000	.0005
44	.0390	.0005	.0003	.0000	.0006	.0000	.0005
45	.0330	.0006	.0003	.0000	.0007	.0000	.0005
46	.0300	.0006	.0004	.0000	.0008	.0000	.0006
47	.0270	.0007	.0004	.0000	.0009	.0000	.0006
48	.0240	.0007	.0005	.0000	.0010	.0000	.0007
49	.0210	.0007	.0005	.0000	.0011	.0000	.0007
50	.0180	.0008	.0006	.0025	.0012	.0000	.0008
51	.0160	.0008	.0008	.0025	.0013	.0000	.0009
52	.0140	.0008	.0011	.0025	.0014	.0000	.0010
53	.0130	.0009	.0015	.0025	.0015	.0000	.0012
54	.0120	.0009	.0020	.0025	.0016	.0000	.0015
55	.0120	.0009	.0026	.1250	.0018	.0000	.0018
56	.0120	.0010	.0033	.0650	.0020	.0000	.0022
57	.0120	.0010	.0041	.0650	.0022	.0000	.0027
58	.0120	.0011	.0050	.0800	.0024	.0000	.0033
59	.0120	.0011	.0060	.0900	.0026	.0000	.0040
60	.0000	.0012	.0071	.0900	.0028	.0000	.0048
61	.0000	.0012	.0083	.0800	.0030	.0000	.0060
62	.0000	.0013	.0096	.2350	.0032	.0000	.0073
63	.0000	.0013	.0110	.0550	.0034	.0000	.0089
64	.0000	.0014	.0125	.0750	.0036	.0000	.0120
65	.0000	.0015	.0140	.2500	.0038	.0000	.0160
66	.0000	.0016	.0000	.2000	.0040	.0000	.0000
67	.0000	.0017	.0000	.3500	.0042	.0000	.0000
68	.0000	.0018	.0000	.3000	.0045	.0000	.0000
69	.0000	.0019	.0000	.4000	.0048	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000



Exhibit 11
YEARS OF LIFE EXPECTANCY AFTER SERVICE RETIREMENT

Age	Male	Female	Age	Male	Female
50	29.18	33.97	80	7.64	9.63
51	28.30	33.03	81	7.21	9.09
52	27.42	32.10	82	6.91	8.57
53	26.55	31.16	83	6.43	8.06
54	25.68	30.23	84	6.07	7.58
55	24.82	29.31	85	5.73	7.11
56	23.97	28.39	86	5.41	6.66
57	23.13	27.48	87	5.10	6.23
58	22.29	26.57	88	4.82	5.81
59	21.46	25.67	89	4.54	5.40
60	20.64	24.78	90	4.28	5.02
61	19.83	23.89	91	4.04	4.66
62	19.02	23.01	92	3.80	4.31
63	18.23	22.15	93	3.58	3.98
64	17.45	21.28	94	3.37	3.67
65	16.69	20.43	95	3.16	3.37
66	15.95	19.59	96	2.98	3.10
67	15.23	18.76	97	2.80	2.84
68	14.52	17.94	98	2.62	2.59
69	13.84	17.13	99	2.45	2.36
70	13.18	16.34	100	2.28	2.14
71	12.54	15.56	101	2.11	1.93
72	11.92	14.81	102	1.95	1.74
73	11.31	14.08	103	1.78	1.55
74	10.72	13.37	104	1.61	1.37
75	10.15	12.69	105	1.43	1.19
76	9.60	12.03	106	1.26	1.03
77	9.08	11.39	107	1.09	.87
78	8.57	10.78	108	.92	.71
79	8.10	10.20	109	.74	.50
			110	.50	—

1983 GA (x) (y + 1)



Exhibit 12
YEARS OF LIFE EXPECTANCY AFTER DISABILITY RETIREMENT

<u>Age</u>	<u>Male & Female</u>	<u>Age</u>	<u>Male & Female</u>	<u>Age</u>	<u>Male & Female</u>
20	38.73	50	21.08	80	7.00
21	37.98	51	20.59	81	6.63
22	37.26	52	20.11	82	6.27
23	36.56	53	19.63	83	5.94
24	35.87	54	19.16	84	5.63
25	35.19	55	18.68	85	5.34
26	34.53	56	18.21	86	5.06
27	33.87	57	17.75	87	4.80
28	33.23	58	17.29	88	4.55
29	32.60	59	16.83	89	4.31
30	31.98	60	16.37	90	4.09
31	31.37	61	15.91	91	3.87
32	30.76	62	15.45	92	3.66
33	30.17	63	14.99	93	3.46
34	29.58	64	14.53	94	3.26
35	29.00	65	14.07	95	3.07
36	28.43	66	13.60	96	2.89
37	27.87	67	13.13	97	2.71
38	27.31	68	12.66	98	2.54
39	26.76	69	12.18	99	2.37
40	26.21	70	11.70	100	2.20
41	25.67	71	11.21	101	2.04
42	25.14	72	10.72	102	1.88
43	24.61	73	10.22	103	1.72
44	24.09	74	9.73	104	1.55
45	23.57	75	9.24	105	1.38
46	23.06	76	8.76	106	1.21
47	22.56	77	8.28	107	1.04
48	22.06	78	7.83	108	.88
49	21.57	79	7.41	109	.71

1981 Disability Table



(ii) ECONOMIC ASSUMPTIONS

Interest Rate Assumption

Economic theory holds that the total nominal rate of return on an investment is comprised of two components:

- Inflation
- Real rate of return

In order for an investment to be marketable, it must be expected to provide a hedge against inflation. In addition, there must be some premium reflective of the risk that the investor takes in holding the security.

Inflation

The inflationary component provides a measure of the anticipated debasement of the dollar. It affects benefit amounts in the form of salary increases and cost of living adjustments.

Inflationary salary and wage increases are granted to maintain the purchasing power of salaries and wages earned by employees over time. Since retirement benefits are linked to compensation, inflationary increases affect the projected amount of benefit an employee will receive upon retirement.

Pension benefits for members are automatically adjusted for at least a portion of the increases that occur in the Consumer Price Index (CPI) after retirement up to a maximum of 3% annually. These cost-of-living adjustments directly impact the amount of benefits paid from the System, thus they must be anticipated in the actuarial valuation process.

As an illustration of the historical inflation rates exhibited by the U.S. economy, Table 1, shown below, provides the average compound rates of increase in the Consumer Price Index (CPI) over selected periods.

TABLE 1
Historical CPI Increases
(All Urban Consumers - U.S. City Average)

Period	Average
Last 90 Years	3.1%
Last 70 Years	3.0%
Last 50 Years	4.7%
Last 30 Years	5.2%
Last 20 Years	6.3%
Last 10 Years	4.5%



As you can see from Table 1, there appeared to be a trend toward higher inflation during the more recent time periods until the 1980's. This trend has abated during the last decade. As a result, we believe it is appropriate to look towards long term historical averages in setting our long term inflation rate assumption.

The inflationary salary assumptions used by the 1937 Act Counties are shown below in Table 2. As can be seen in Table 2, the average assumption is 5.14%.

TABLE 2
Current Long-Term Inflationary Assumptions
Used by 1937 Act Counties
(As of December 31, 1991)

<u>Retirement System</u>	<u>Salary</u>
Alameda	5.50%
Contra Costa	5.50%
Fresno	5.00%
Imperial	3.50%
Kern	4.00%
Los Angeles	5.00%
Marin	5.00%
Mendocino	5.75%
Merced	5.50%
Orange	4.50%
Sacramento	5.25%
San Bernardino	5.00%
San Diego	5.00%
San Joaquin	5.50%
San Mateo	5.50%
Santa Barbara	5.50%
Sonoma	5.50%
Stanislaus	5.50%
Tulare	5.50%
Ventura	5.25%
Average	5.14%

Rate of Return

In order to develop an appropriate real (inflation free) rate of return, it is first necessary to determine how assets will be allocated among the various investment classes: stocks, bonds and other fixed income, real estate, and cash equivalents.

The target asset allocation presently adopted and the current level utilized by the System are shown in Table 3.



TABLE 3

Federated City Employees' Asset Allocation as of 6/30/91 @ Market Value

	Target	Current
Stocks	40%	35%
Fixed Income/Bonds	50%	53%
Real Estate	10%	7%
Cash	0%	5%

Many empirical studies have been carried out to measure historical real rates of return on various types of investments. One of the most notable is that by Roger Ibbotson and Rex A. Sinquefeld, titled Stocks, Bonds and Inflation: Simulations of the Future. Table 4 provides the Ibbotson - Sinquefeld measure of the real rates of return for the 62 years ending in 1986. Investment consulting firms utilize this and other studies to derive expected long-term real rates of return for use in asset allocation models. These models serve as an aid to retirement plan fiduciaries in determining what proportion of the plans' investment portfolio to place in various classes of securities. In Table 5 we show a range of real rates of return used by some of the large investment firms.

TABLE 4

Ibbotson - Sinquefeld
Real Rates of Return of Investments

	(1925-1986)
Stocks	7.0%
Long-term corporate bonds	2.0%
Long-term government bonds	1.4%
Treasury bills	0.5%

TABLE 5

Real Returns Used by Investment Consultants

Stocks	6.5% to 7.5%
Bonds	2.5% to 3.0%
Real Estate	4.0% to 4.5%
Cash	0.0%

Applying the target asset allocation (Table 3) to the information in Table 5 results in a real rate of return in the range of 4.3% to 5.0%.

Variations in Return Rates - Annual real rates of return have varied substantially over the years. For example, even if we expect the averages displayed in Table 5 to be a reasonable estimate of real returns in the future, we know there is some likelihood that future real rates will fall below historical averages.



In order to quantify this one would need to know what is referred to statistically as the standard error of the estimate. As an approximation of this quantity, we have utilized historical information available as to the expected variation in real rates of return. If we make certain assumptions about the statistical nature of the average real returns, the results are that in order to be about 75% certain that the actual return is no less than our estimate, it would be necessary to use a value about 1% below that derived above. It should be noted that this derived margin is only approximate since the U.S. economy is a complex, dynamic system.

Based on the above and considering published empirical studies* of how real rates of return vary with the level of inflation, we believe that a real rate of return of 3-1/4% is reasonable for use with either a 5-1/4%, 5-1/2% or 5-3/4% inflation rate.

The average net investment yields as well as the rates of return assumed by the Fund over the past twelve years were as follows:

TABLE 6
Federated City Employees' Yields vs Assumed Rates of Return

Year Ended June 30	Net Yield @ Book Value Including Realized Profits & Losses	Assumed Rate of Return
1980	8.0%	7.00%
1981	9.0%	7.00%
1982	10.0%	8.00%
1983	10.0%	8.00%
1984	9.8%	8.50%
1985	11.4%	8.50%
1986	11.0%	9.00%
1987	12.7%	9.00%
1988	9.5%	9.00%
1989	10.4%	9.00%
1990	9.5%	9.00%
1991	7.9%	9.00%
12-year average	9.9%	8.42%

* One such study ("The Impact of Inflation on Returns to Securities," Nicholas A. Michas, Ph.D. and Richard C. Keating) provided an analysis of real rates of return for both equities and corporate bonds over selected ranges of inflation in the period 1900-1980 inclusive. The results show that real rates of return fall appreciably after a particular level of inflation is reached.

Salary Scale Assumption

The salary scale assumption is comprised of two components:

- Inflation
- Merit and Longevity



Inflation

The same factor that has caused interest earnings to rise in the past (inflation) has also caused both the members' salaries and the CPI to rise. We therefore, show in Table 7 a summary of the CPI for San Francisco, Oakland, and San Jose as well as the average increase in members' salaries over the last 12 years.

TABLE 7

Year Ended June 30	Average Annual CPI Index Increase	Average Salary Increase*
1980	11.7%	14.5%
1981	14.5%	14.5%
1982	0.3%	12.5%
1983	4.3%	12.5%
1984	5.0%	6.0%
1985	3.0%	6.0%
1986	1.7%	4.5%
1987	4.8%	4.5%
1988	4.0%	4.5%
1989	5.0%	4.5%
1990	4.1%	6.0%
1991	5.0%	6.0%
12-year average	5.3%	8.0%

*Assumes equal increases for non-valuation years.

Table 7 provides an illustration of inflation and the average salary increase for City employees. Average salary increases reflect changes in the salary structure as well as inflation.

Merit and Longevity Increases

The second component of the salary scale assumption is the merit and longevity increase. Employees receive this increase over their careers as a result of promotions and advances in their pay grades.

For your City the "merit and longevity" increases range from 5% to 1/2% per year depending on the member's age and classification. The effect of the merit and longevity increase is to add an additional 1% per year to the inflationary salary projections.



Adjusted Book Value of Assets

A modified book value of the Fund's assets has been used for purposes of calculating the required contribution rates. Under this approach, more recognition is given each year to total earnings to the Fund.

The approach used for your System is to spread the unrealized gains and losses over five years. In other words, only 20% of unrealized gains and losses are recognized in any one year.

These modified assets, which we called the Adjusted Book Value, were arrived at as follows:

1. Unrealized Gains (Losses):

Fiscal Year End	Increase in Unrealized Gains (Losses)		Number Years to 6/30/91	Total Unrealized Gains (Losses) Recognized to 6/30/91
	100%	20%		
6/30/89	\$ 17,309,000	\$ 3,462,000	3	\$ 10,385,000
6/30/90	\$ 2,141,000	\$ 428,000	2	\$ 856,000
6/30/91	\$ 2,842,000	\$ 568,000	1	\$ 568,000

2. Total Gains (Losses) Recognized to June 30, 1991	\$ 11,809,000
3. Book Value as of June 30, 1991 (less payables)	\$ 411,505,000
4. (2. + 3.)	\$ 423,314,000
5. Corridor Limit: (net assets @ Market Value: \$433,797,000)	
a. 80% of Market Value (less payables)	\$ 347,038,000
b. 120% of Market Value (less payables)	\$ 520,556,000
6. Item 4. After Corridor Applied	\$ 423,314,000
7. Actuarial Book Value Ratio (6./3.)	1.0287

The ratio of 1.0287 is used to adjust only the reserves used in arriving at the Employer contribution rates. The Retirement Fund Contingency Reserve, SRBR and accounts payable are not increased, resulting in a total net Adjusted Book Value of \$428,305,000.

Each year for the next four years, and additional 20% of the fiscal year 6/30/91 unrealized gain, or \$568,000, will be added to your Adjusted Book Value. An additional 20% of the 6/30/90 amount, or \$428,000 will be added for the next three years. An additional 20% of the 6/30/89 amount, or \$3,462,000, will be added for two more years. In addition, 20% of the new unrealized gains or losses will also be recognized from now on under this method.



Multiple Studies

In connection with this survey, we are again performing three valuations of the System by varying the interest rates and the corresponding inflation components of the salary scales used. The purpose of this is to analyze the effect of these changes on the City and member contribution rates. The three studies we are proposing are as follows:

- Study #1 — A valuation using 9% interest along with salary scales reflecting merit, longevity, and 5-3/4% inflation. This set of economic assumptions is presently in effect.
- Study #2 — A valuation using 8-3/4% interest along with salary scales reflecting merit, longevity, and 5-1/2% inflation.
- Study #3 — A valuation using 8-1/2% interest along with salary scales reflecting merit, longevity, and 5-1/4% inflation.

We show in Exhibit 13 a detailed listing of each of the above salary scales.

We recommend the Study #2 economic assumptions in order to reflect the trend towards lower inflation rates.



Exhibit 13
RATIO OF CURRENT COMPENSATION TO COMPENSATION
ANTICIPATED AT RETIREMENT AGE

<u>AGE</u>	<u>Study #1</u>	<u>Study #2</u>	<u>Study #3</u>
20	.024	.026	.030
21	.026	.029	.033
22	.029	.032	.036
23	.032	.036	.040
24	.035	.039	.044
25	.039	.043	.048
26	.043	.048	.053
27	.048	.053	.058
28	.052	.058	.064
29	.058	.064	.070
30	.063	.070	.077
31	.069	.076	.084
32	.076	.083	.091
33	.082	.090	.098
34	.089	.097	.106
35	.096	.105	.114
36	.104	.113	.123
37	.113	.122	.132
38	.122	.131	.142
39	.131	.141	.152
40	.142	.152	.163
41	.153	.163	.175
42	.164	.176	.188
43	.177	.189	.201
44	.190	.203	.215
45	.205	.217	.230
46	.220	.232	.246
47	.235	.248	.262
48	.252	.265	.279
49	.269	.283	.297
50	.287	.301	.316
51	.307	.321	.336
52	.327	.341	.356
53	.349	.363	.378
54	.371	.386	.400
55	.395	.409	.424
56	.421	.435	.449
57	.447	.461	.476
58	.476	.490	.504
59	.506	.519	.533
60	.539	.551	.565
61	.573	.586	.598
62	.609	.621	.633
63	.648	.659	.670
64	.690	.700	.710
65	.734	.743	.752
66	.780	.788	.795
67	.830	.836	.842
68	.883	.888	.892
69	.940	.942	.944
70	1.000	1.000	1.000

Study #1 = 9.00% interest with salary scale of merit and longevity plus 5.75% for inflation.
Study #2 = 8.75% interest with salary scale of merit and longevity plus 5.50% for inflation.
Study #3 = 8.50% interest with salary scale of merit and longevity plus 5.25% for inflation.

SECTION

IV

VALUATION RESULTS



(i) CONTRIBUTION RATES

Retirement contribution requirements are divided into two major categories: City and Employee contribution rates. Furthermore, the City of San Jose Municipal Code states that part of the pension liabilities under the System is to be shared by the members and the City on a 3:8 ratio, part is to be shared on a 42:58 ratio, and the balance is the responsibility of the City alone. The requirements are further divided into basic and cost of living and retiree health and dental insurance contribution rates.

A comparison of City and employee total basic, cost of living and health and dental insurance contribution rates follows. This comparison shows rates and annual dollar amounts currently contributed, as well as those resulting from our new study based on three sets of long-term economic assumptions.

	Basic, Cost of Living, and Health & Dental Insurance Contribution Rates			
	CITY		EMPLOYEE	
	% of Payroll	Annual Amount*	% of Payroll	Annual Amount*
Current rates @ 9% interest and 5-3/4% inflationary salary scale assumption	13.92%	\$ 18,910,000	6.37%	\$ 8,654,000
Recalculated rates:				
<u>Study #1</u> rates @ 9% interest and 5-3/4% inflationary salary scale assumption	13.71%	\$ 18,625,000	6.36%	\$ 8,640,000
<u>Study #2</u> rates @ 8-3/4% interest and 5-1/2% inflationary salary scale assumption	14.37%	\$ 19,522,000	6.74%	\$ 9,156,000
<u>Study #3</u> rates @ 8-1/2% interest and 5-1/4% inflationary salary scale assumption	15.03%	\$ 20,418,000	7.13%	\$ 9,686,000

*Based on June 30, 1991 total payroll of \$135,849,000.

In comparing the current rates with those resulting from Study #1, both based on the same economic assumptions, we note a decrease in the City rates and the employee rates. The reductions are due mainly to the shorter female life expectancies and fewer service retirements expected in the future, partially offset by fewer withdrawals and higher health insurance rates.

The rates resulting from Studies 2 and 3 are higher due to the lower investment earnings assumed for the future.



The determination of the City's basic and cost of living contribution rates is made according to the Entry Age Normal Cost actuarial funding method. Under this method, part of the cost of benefits (normal cost) is being paid over the future working lifetimes of the members, and part (the supplemental past service cost) is being amortized over a fixed number of years. The part of the supplemental past service cost for the 1987 Golden Handshake is amortized over 30 years, with 26 years remaining from the valuation date, while the remainder is amortized over 30 years, with 28 years remaining from the valuation date. Member basic and cost of living contributions are payable over the employees' future working lifetimes.

The health insurance premium benefit is being partially funded over the next fifteen years and the cost is shared equally between the City and the employees. The dental insurance premium benefit is also being partially funded over the next fifteen years with costs being shared on a 3:8 basis between the employees and the City.

The Board adopted the economic assumptions of Study #2. As a result, the remainder of this report develops costs and liabilities only under those assumptions.

Recommended Contribution Rates

We recommend that the Study #2 contribution rates be adopted. The total contribution rates resulting from Study #2 are as follows:

	Total Contribution Rates			
	CITY		EMPLOYEE	
	% of Payroll	Annual Amount*	% of Payroll	Annual Amount*
<u>Recommended Study #2 rates</u>				
<u>@ 8-3/4% interest and 5-1/2%</u>				
<u>inflationary salary scale assumption</u>				
a. Basic	8.48%	\$ 11,520,000	3.35%	\$ 4,551,000
b. C.O.L.	3.16	4,293,000	1.41	1,915,000
c. Health Insurance**	1.85	2,513,000	1.77	2,405,000
d. Dental Insurance**	.61	829,000	.21	285,000
e. Early Incentive	.27	367,000	.00	0
f. Total	14.37%	\$ 19,522,000	6.74%	\$ 9,156,000

*Based on June 30, 1991 total payroll of \$135,849,000.

**The City rate for health insurance includes a premium of .04% for the 1987 Golden Handshake while the employee rate for health insurance was reduced by this premium.

Similarly, the rates for dental insurance were adjusted by .01%.

A breakdown of the contribution rates into the various components is shown in Table A on the following page. Tables B and C show the procedure used to arrive at the health and dental insurance premium costs.



TABLE A
Procedure Used in Establishing Contribution Rates

Study #2 - 8-3/4% interest; merit, longevity and 5-1/2% inflation salary scale

Employer:Employee Contribution Basis	Net Present Value (without adjustments)		Contribution Rates Based on Net Present Value (without adjustments)		Contribution Rates (adjusted for future employee withdrawal and 28-year amortization of past liability by the City)	
	EMPLOYER	EMPLOYEE	EMPLOYER	EMPLOYEE	EMPLOYER	EMPLOYEE
<u>58:42</u>						
a. Basic	\$ 1,557,000	\$ 1,127,000	.10%	.07%	.06%	.09%
b. C.O.L.	<u>3,089,000</u>	<u>2,237,000</u>	<u>.20</u>	<u>.15</u>	<u>.12</u>	<u>.17</u>
c. Total (a. + b.)	\$ 4,646,000 ✓	\$ 3,364,000 ✓	.30%	.22%	.18%	.26%
<u>100:0</u>						
a. Basic	\$ 21,457,000	\$ 0	1.40%	0%	.83%	0%
b. C.O.L.	<u>10,136,000</u>	<u>0</u>	<u>.66</u>	<u>0</u>	<u>.39</u>	<u>0</u>
c. Total (a. + b.)	\$ 31,593,000 ✓	\$ 0	2.06%	0%	1.22%	0%
d. Early Incentive	\$ 6,682,000 ✓	\$ 0	.44%	0%	.27%**	0%
<u>8:3</u>						
a. Basic	\$ 113,864,000	\$ 42,699,000	7.43%	2.78%	7.59%	3.26%
b. C.O.L.	<u>43,143,000</u>	<u>16,179,000</u>	<u>2.81</u>	<u>1.06</u>	<u>2.65</u>	<u>1.24</u>
c. Total (a. + b.)	\$ 157,007,000	\$ 58,878,000	10.24%	3.84%	10.24%	4.50%
d. Dental Insurance*	\$ 9,804,000	\$ 3,676,000	.64%	.24%	.61%	.21%
<u>50:50</u>						
a. Health Insurance*	\$ 28,472,000	\$ 28,472,000	1.86%	1.86%	1.85%	1.77%
<u>Total</u>						
a. Basic	\$ 136,878,000	\$ 43,826,000	8.93%	2.85%	8.48%	3.35%
b. C.O.L.	56,368,000	18,416,000	3.67	1.21	3.16	1.41
c. Health Insurance*	28,472,000	28,472,000	1.86	1.86	1.85	1.77
d. Dental Insurance*	9,804,000	3,676,000	.64	.24	.61	.21
e. Early Incentive	<u>6,682,000</u>	<u>0</u>	<u>.44</u>	<u>0</u>	<u>.27**</u>	<u>0</u>
f. Total	\$ 238,204,000	\$ 94,390,000	15.54%	6.16%	14.37%	6.74%

*The Dental and Health Insurance Premium Benefit liability represents level funding of the liability for 15-years' worth of premiums. Thus, figures shown do not reflect the entire liability of the Retirement System.

The City rate for health insurance includes a premium of .04% for the 1987 Golden Handshake while the employee rate for health insurance is reduced by this premium. Similarly, the rates for dental insurance were adjusted by .01%.

**Reflects 26-year amortization.



TABLE B
RETIREE HEALTH INSURANCE 15-YEAR COST PROJECTION

Year	(1)	(2)	(3)	(4)	(5)		(6)
	Annual Cost Per Retiree	Number of Insured Retirees	Annual Cost (1) x (2)**	Total Covered Payroll	Cost as a Percentage of Payroll (50:50 Basis)		Level Percentage***
					Actual Percentage		
7/1/91	\$ 2,997 *	825	\$ 2,473,000	\$ 135,849,000	.98%		1.85%
7/1/92	3,252	891	2,898,000	143,321,000	1.09%		1.85%
7/1/93	3,528	962	3,394,000	151,204,000	1.21%		1.85%
7/1/94	3,828	1,039	3,977,000	159,520,000	1.35%		1.85%
7/1/95	4,153	1,122	4,660,000	168,294,000	1.49%		1.85%
7/1/96	4,506	1,212	5,461,000	177,550,000	1.66%		1.85%
7/1/97	4,889	1,309	6,400,000	187,315,000	1.84%		1.85%
7/1/98	5,305	1,414	7,501,000	197,617,000	2.05%		1.85%
7/1/99	5,756	1,527	8,789,000	208,486,000	2.27%		1.85%
7/1/00	6,245	1,649	10,298,000	219,953,000	2.53%		1.85%
7/1/01	6,776	1,781	12,068,000	232,050,000	2.81%		1.85%
7/1/02	7,352	1,923	14,138,000	244,813,000	3.12%		1.85%
7/1/03	7,977	2,077	16,568,000	258,278,000	3.46%		1.85%
7/1/04	8,655	2,243	19,413,000	272,483,000	3.84%		1.85%
7/1/05	9,391	2,422	22,745,000	287,470,000	4.27%		1.85%

Actuarial Assumptions

Investment Yield: 8.75% per annum.
 Growth in Covered Payroll: 5.50% per annum.
 Health Premium Cost Increases: 8.50% per year.
 Growth in Retiree Rolls: Based on actual experience.
 Funding: Partial 15-year funding.

*Average cost as of July 1, 1991.

**An estimated reserve of \$8,893,000 of assets is available towards the payment of future health insurance premiums.

***Includes a premium of .04% for the 1987 Golden Handshake.



TABLE C
RETIREE DENTAL INSURANCE 15-YEAR COST PROJECTION

Year	(1) Annual Cost Per Retiree*	(2) Number of Insured Retirees	(3) Annual Cost (1) x (2)**	(4) Total Covered Payroll	(5) Cost as a Percentage of Payroll (3:8 Basis)			
					Actual Percentage		Level Percentage	
					EMPLOYEE	CITY	EMPLOYEE***	CITY***
7/1/91	\$ 564	1,164	\$ 656,000	\$ 135,849,000	.14%	.36%	.23%	.61%
7/1/92	612	1,257	769,000	143,321,000	.15%	.41%	.23%	.61%
7/1/93	664	1,358	902,000	151,204,000	.17%	.45%	.23%	.61%
7/1/94	720	1,467	1,056,000	159,520,000	.19%	.50%	.23%	.61%
7/1/95	781	1,584	1,237,000	168,294,000	.21%	.56%	.23%	.61%
7/1/96	847	1,711	1,449,000	177,550,000	.23%	.62%	.23%	.61%
7/1/97	919	1,848	1,698,000	187,315,000	.26%	.69%	.23%	.61%
7/1/98	997	1,996	1,990,000	197,617,000	.29%	.77%	.23%	.61%
7/1/99	1,082	2,156	2,333,000	208,486,000	.32%	.85%	.23%	.61%
7/1/00	1,174	2,328	2,733,000	219,953,000	.35%	.94%	.23%	.61%
7/1/01	1,274	2,514	3,203,000	232,050,000	.39%	1.05%	.23%	.61%
7/1/02	1,382	2,715	3,752,000	244,813,000	.43%	1.16%	.23%	.61%
7/1/03	1,499	2,932	4,395,000	258,278,000	.48%	1.29%	.23%	.61%
7/1/04	1,626	3,167	5,150,000	272,483,000	.54%	1.43%	.23%	.61%
7/1/05	1,764	3,420	6,033,000	287,470,000	.60%	1.59%	.23%	.61%

Actuarial Assumptions

Investment Yield: 8.75% per annum.
 Growth in Covered Payroll: 5.50% per annum.
 Dental Premium Cost Increases: 8.50% per year.
 Growth in Retiree Rolls: Based on actual experience.
 Funding: Partial 15-year funding.

*Premium amount starts at \$47 per month.

**An estimated reserve of \$3,991,000 of assets is available towards the payment of future dental insurance premiums.

***The employee rate has not been adjusted by .01% for the 1987 Golden Handshake while the City rate has been adjusted.



(ii) FUNDING PROGRESS OF THE SYSTEM

A comparison of the measurement of the funding progress of the System in successive valuations is an important criterion for determining the soundness of a pension system. There are various methods of measuring the progress of the System's funding, but we believe the most useful measure is the ratio of the System's assets to its obligation for benefits earned to date. Unless amendments are made to the System, actuarial assumptions are strengthened, or actuarial losses are incurred, assets typically increase at a greater rate than the liabilities for benefits earned to date. This will have the effect of increasing the funding progress ratio in future years.

Funding Ratio - "Plan Termination" Assumption

At the time of each valuation we compute the ratio of the assets of the System to the obligation for benefits earned to date based on a plan termination assumption. To this end, we include below a comparison of the funding ratios previously calculated and recalculated as of the valuation date based on the current 9% interest rate and recalculated based on the new 8-3/4% interest rate assumptions.

	INTEREST RATE 9%		INTEREST RATE 8-3/4%
	Previously Calculated July 1, 1989	Recalculated July 1, 1991	Recommended July 1, 1991
(1) Assets as of valuation date*	\$338,939,000	\$411,505,000	\$411,505,000
(2) Present value of benefits earned to date assuming immediate 100% vesting	\$270,979,000	\$342,658,000	\$351,797,000
(3) Ratio of assets to benefits earned to date (1) ÷ (2)	125%	120%	117%

*Exclude accounts payable.

The present value figure includes all liabilities of the System for basic and cost of living benefits granted to members and beneficiaries already on the pension roll. All basic and cost of living liabilities are included for every year of service already earned at the valuation date and assume immediate 100% vesting. The recalculated liabilities are based on the salaries of the members as of July 1, 1991. In calculating the funding progress of the System, we have used undistributed earnings.

The decrease in the funding ratio at the 9% interest rate is due mainly to the growth in the number of active members and the large increase in the total active and retired payroll. The ratio at 8-3/4% is lower due to lower expected future earnings.

A funding ratio of 100% or more at a valuation date does not mean that future contributions are unnecessary. It does, however, mean that, if the Plan were to be



terminated as of that date, there would be enough money on hand to pay off all of the obligations accrued through that date.

GASB #5 - "Plan Continuation" Assumption With Future Salary Increases

Reporting requirements were promulgated by the Governmental Accounting Standards Board (GASB) under Statement #5, effective for plan years starting after December 15, 1986. The GASB #5 liabilities assume an ongoing plan, that is, they include future withdrawals, deaths and disability retirements. In addition, future projected salary increases are included in these figures. The pension benefit obligation includes all liabilities of the System for basic and cost of living benefits granted to members and beneficiaries already on the pension roll. All basic and cost of living liabilities of active and vested inactive members are included for every year of service already earned at the valuation date and assume immediate 100% vesting.

The Statement #5 liabilities based on the 9% interest rate and 6-3/4% salary scale assumptions as of July 1, 1989 and July 1, 1991, and on the 8-3/4% interest rate and 6-1/2% salary scale assumptions as of July 1, 1991 are as follows:

	(Previously Calculated) Interest Rate 9% Salary Scale 6-3/4% July 1, 1989	(Recalculated) Interest Rate 9% Salary Scale 6-3/4% July 1, 1991	(Recommended) Interest Rate 8-3/4% Salary Scale 6-1/2% July 1, 1991
(1) Pension Benefit Obligation			
a. Current Retirants and Beneficiaries	\$ 165,370,000	\$ 197,167,000	\$ 201,557,000
b. Terminated Vested Participants	4,145,000	5,624,000	5,785,000
c. Active Participants' Accumulated Contributions	68,697,000	86,084,000	86,084,000
d. Active Participants' Employer Financed Portion:			
Vested	113,054,000	136,757,000	142,696,000
Nonvested	16,388,000	20,393,000	20,956,000
e. Other	<u>5,900,000</u>	<u>13,303,000</u>	<u>13,303,000</u>
f. Total Pension Benefit Obligation	\$ 373,554,000	\$ 459,328,000	\$ 470,381,000
(2) Net assets available at book value*	\$ 338,939,000	\$ 411,505,000	\$ 411,505,000
(3) Funding ratio (2) ÷ (1)	91%	90%	88%

*Exclude accounts payable.



The decrease in the funding ratio at the 9% interest rate is due mainly to the growth in the number of active members and the large increase in the total active and retired payroll. The ratio at 8-3/4% is lower due to lower expected future earnings, offset somewhat by lower expected future salary increases.

This ratio is expected to reach 100% by the end of the amortization period currently used to pay off the unfunded liability.



(iii) ACTUARIAL BALANCE SHEET

One of the purposes of an Actuarial Balance Sheet is to enable the Board, by reference to periodic statements of this nature, to determine whether or not the contributions are adequate to provide the benefits without impairment to the Fund. The following is a descriptive listing of the items which make up the Actuarial Balance Sheet for basic and cost of living benefits under the System.

Item Number	Explanation
1.	The total assets in the Retirement Fund as of June 30, 1991, at Adjusted Book Value.
2.	The present value of the basic and cost of living pension contributions, as well as the contributions toward health insurance benefits after retirement it is anticipated will be made by present members after July 1, 1991, until their separation from the System as active members.
3.	The present value of future contributions that will be required of the City in order to fully provide the basic and cost of living pension benefits anticipated for present active, inactive, and retired members. The present value of future contributions required of the City to pay for health insurance premiums for current and future retirees over the next 15 years is also included here.
5.	The present value of the basic and cost of living allowances which are currently being paid to retired members and beneficiaries for service and disability retirements and survivor benefits. This includes the value of the \$500 lump sum death benefit after retirement.
6.	The present value of retirement allowances (basic and cost of living) for anticipated future service and disability retirements, to active and inactive members, including continuance to their spouses.
7.	The present value of benefits payable due to the death of currently active or inactive members.
9.	The present value of termination benefits payable due to the withdrawal (refund) of currently active or inactive members.
10.	The reserves held for future adverse experience.



ACTUARIAL BALANCE SHEET*

As of June 30, 1991

ASSETS

	Basic	C.O.L.	Total
1. Total assets now held @ Adjusted Book Value	\$ 326,311,000	\$ 101,994,000	\$ 428,305,000
2. Present value of future contributions by members:			
a) Retirement (Basic 3.35%; C.O.L. 1.41%)	51,371,000	21,622,000	72,993,000
b) Health and dental insurance (1.98%)	32,908,000	0	32,908,000
3. Present value of future contributions by City on account of:			
a) Retirement			
i) Normal cost (Basic 7.83%; C.O.L. 2.40%)	120,070,000	36,803,000	156,873,000
ii) Unfunded supplemental cost (Basic .85%; C.O.L. .83%)	22,560,000	21,131,000	43,691,000
b) Health and Dental insurance (2.46%)	40,885,000	0	40,885,000
4. Total actuarial assets	<u>\$ 594,105,000</u>	<u>\$ 181,550,000</u>	<u>\$ 775,655,000</u>

LIABILITIES

	Basic	C.O.L.	Total
5. Present value of retirement allowances payable to present retired members	\$ 132,108,000	\$ 69,353,000	\$ 201,461,000
6. Present value of retirement allowances to be granted:			
a) Service retirement	297,258,000	89,894,000	387,152,000
b) Ordinary disability	14,401,000	4,227,000	18,628,000
c) Duty disability	18,745,000	5,588,000	24,333,000
7. Present value of death benefits to be granted	13,504,000	4,317,000	17,821,000
8. Present value of members' contributions to be returned upon withdrawal or death before retirement			
a) Past contributions	10,958,000	3,203,000	14,161,000
b) Future contributions	7,079,000	3,033,000	10,112,000
9. Present value health & dental**	88,370,000	0	88,370,000
10. Contingency reserve - undistributed earnings	8,015,000	0	8,015,000
11. Accounts payable	3,667,000	1,935,000	5,602,000
12. Total actuarial liabilities	<u>\$ 594,105,000</u>	<u>\$ 181,550,000</u>	<u>\$ 775,655,000</u>

*Based on 8-3/4% interest and 6-1/2% total salary scale assumptions.

**Includes \$12,884,000 as estimated health and dental reserves.

SECTION
V

APPENDIX



(i) MAJOR PLAN PROVISIONS OF THE PRESENT 1975 SYSTEM

Briefly summarized below are the major provisions of the Federated City Employees' Retirement System, as amended through June 30, 1991.

Return of Contributions

If a member should resign or die without being eligible for an allowance, his or her contributions plus interest will be refunded. A member terminating with at least five years of service may elect to leave his or her contributions and receive a deferred retirement benefit at age 55.

Death Benefit Before Retirement

- a. If the member's death is service connected, or, if nonservice connected, and the member has at least five years of service, the spouse receives an allowance of 2-1/2% times final average salary times years of service (minimum of 40% of final average salary and maximum of 75% of final average salary). If there is no spouse, unmarried children are entitled to the allowance to age 18.
- b. If there are no family members eligible for an allowance, the beneficiary receives the return of the member's contributions plus one month's salary for each year of service up to six years.

Death Benefit After Retirement

- a. If a member dies after retirement, a lump sum amount of \$500 is paid to the beneficiary or estate.
- b. On the death of the retired member, 50% of the member's allowance is continued to the surviving spouse for life. If there is no spouse, 25% of the spouse's benefit is paid to each child under age 18, but the maximum benefit to the children as a group cannot exceed 75% of the spouse's benefit.

Disability Retirement

- a. Requirement
 - (1) Members with at least five years of service are eligible for non-service connected disability.
 - (2) If the disability is service connected, the member may retire regardless of length of service.
- b. Benefit
 - (1) The minimum amount of non-service connected disability benefit is 40% of final average salary, but not less than the service retirement benefit.



The benefit is subject to a reduction equal to 1/2% of final average salary for each year of age (or fraction thereof) under age 55.

- (2) The benefit for service-connected disability is 40% of final average salary, offset by Worker's Compensation benefits.

Service Retirement

a. Requirement

Members with at least 5 years of service, who have attained the age of 55, or at any age with 30 years of service, are eligible to retire.

b. Benefit

The retirement allowance payable is the final average salary (highest three consecutive years) multiplied by 2-1/2% per year. The maximum benefit is 75% of final average salary.

Cost of Living

The maximum increase in retirement allowance is 3% per year, based on the Consumer Price Index for the month of December.

Unbroken Cost of Living to Survivors*

Survivors will receive cost of living increases based on the member's original date of retirement for member deaths on or after June 24, 1988.

July 1, 1988 Special 1% Increase*

An additional 1% increase per benefit year is paid to those retired or in survivor status as of July 1, 1986.

Post-Retirement Health and Dental - Retirements

Post-retirement health and dental insurance benefits are also payable by the City's Retirement Fund. The health benefit provides the retirees with fully paid health insurance premiums for the lowest cost medical plan offered by the City. Only retirees with 15 years of service or those receiving at least 37-1/2% of salary are eligible. The dental insurance is payable to retirees with five or more years of service.

The City and the members each contribute towards the post-retirement health and dental insurance programs.

Post-Retirement Health-Deferred Vested Members*

Deferred vested members with 15 years of service who are in payment status will receive the same health benefits as above.

*Currently paid from SRBR, but payable from employee and employer contributions if not financed through SRBR.



Members' Retirement Contributions

The members' contribution rates are recalculated on an actuarial basis at each actuarial study. The members presently contribute at the rate of 6.37% of pay.

City Retirement Contributions

The City presently contributes at a rate of 13.92% of pay of all members. The City rate is the percentage of salary necessary, on an actuarial basis, to provide for the payment of the benefits promised, also taking into account the contributions being made by the members and the assets on hand. These rates are changed in accordance with the results of each actuarial study.



(ii) ACCOUNTING BALANCE SHEET

As of June 30, 1991
(Unaudited)

Assets

	Basic Retirement Fund	Cost of Living Fund	Eliminations	Combined Retirement System
1. Due from other retirement fund	\$ 152,000	\$ 56,000	\$ 0	\$ 208,000
2. Federated interfund receivable	0	198,000	(198,000)	0
3. Contributions receivable:				
a. Employee	161,000	43,000	0	204,000
b. Employer	347,000	103,000	0	450,000
4. Receivable from brokers	4,381,000	413,000	0	4,794,000
5. Accrued interest receivable and other assets	2,855,000	898,000	0	3,753,000
6. Investments (book value)	<u>310,206,000</u>	<u>97,492,000</u>	<u>0</u>	<u>407,698,000</u>
7. Total assets	\$ 318,102,000	\$ 99,203,000	\$ (198,000)	\$ 417,107,000

Liabilities and Reserves

8. Accounts payable	\$ 3,865,000	\$ 1,935,000	\$ (198,000)	\$ 5,602,000
9. Employee contributions	67,482,000	18,602,000	0	86,084,000
10. Employer contributions	79,700,000	44,634,000	0	124,334,000
11. Retired reserve	126,787,000	4,631,000	0	131,418,000
12. Benefits payable reserve	31,834,000	0	0	31,834,000
13. Supplemental retiree benefit reserve	419,000	0	0	419,000
14. Undistributed earnings*	<u>8,015,000</u>	<u>29,401,000</u>	<u>0</u>	<u>37,416,000</u>
15. Total liabilities and reserves	\$ 318,102,000	\$ 99,203,000	\$ (198,000)	\$ 417,107,000

*All of the undistributed earnings in the Cost of Living Fund only are used as assets in calculating the required contribution rates.