REPORT ON

ACTUARIAL VALUATION OF THE

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

JUNE 30, 1984

TOWERS, PERRIN, FORSTER & CROSBY

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October 25, 1984

Board of Administration City Employees' Retirement System Room 505, City Hall South 111 East First Street Los Angeles CA 90012

Members of the Board:

We are pleased to enclose our report setting forth the results of the valuation of your Retirement System as of June 30, 1984.

The valuation is based on financial statements and employee data furnished by the Retirement Office.

We would like to take this opportunity to express our appreciation for the courtesy and cooperation accorded us by the Retirement Office during the course of our work.

Respectfully submitted,

TOWERS, PERRIN, FORSTER & CROSBY

Jon L. King, F.S.

Principal

JLK/msw Enclosure

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REPORT ON ACTUARIAL VALUATION OF THE LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

SECTION I

INTRODUCTION

In accordance with our agreement we have completed the actuarial valuation of the Los Angeles City Employees' Retirement System as of June 30, 1984.

To complete this valuation, the Retirement System Office furnished us with a magnetic tape containing all the pertinent information for each active member of the System as of June 30, 1984, including such information as current compensation, years of service credited, rates of contribution and accumulated contributions. The System also furnished a tape for persons currently receiving an allowance from the Retirement System, together with the data necessary to determine the value of the allowance.

A summary of the active and retired membership of the System as of June 30, 1984 is shown in the following table. More detailed charts showing the distribution of active members by age and service and the distribution of pensioners by age and year of retirement are in Section VI.

SUMMARY OF MEMBERSHIP OF SYSTEM AS OF JUNE 30, 1984

ACTIVE MEMBERS

			Average	
	<u>Number</u>	Annual Salary	Age	Monthly Salary
Total 6-30-84	18,111	\$ 472,772,622	42.4·	\$ 2,175~
Total 6-30-83	17,997	442,654,872	42.5	2,050
Percent Increase	+ 0.6%	+ 6.8%		+ 6.1%

PENSIONERS

	Number	Annual Allowance	Average Monthly Allowance
Total 6-30-84	8,827	\$ 86,950,640	\$ 821
Total 6-30-83	8,497	79,355,408	778
Percent Increase	+ 3.9%	+ 9.6%	+ 5.5%

The Retirement Office also furnished us with an accounting balance sheet setting forth the assets and liabilities of the System as of June 30, 1984. We did no physical audit of these assets and our calculations are based on the balance sheet as submitted.

SECTION II

MEMBER CONTRIBUTIONS

Sections 4.1031 and 4.1040(C) of the Administrative Code specify the basis for normal, survivor, and cost-of-living member contribution rates. However, Los Angeles City also enters into collective bargaining agreements with its employees regarding the level of member contributions. The resulting rates need not be those indicated by the code formulas and the current assumptions. To reflect this situation accurately in the current valuation, we have been directed by the Board of Administration to assume that members who have entered the System before February 1, 1983 will contribute at the employee contribution rates specified in the June 30, 1977 valuation report. If certain members contribute at a lower rate through a collective bargaining agreement, the City should contribute 67.18% of the amount of contribution "forgiven" the member.

A complete list of member contribution rates from the June 30, 1977 valuation report is also in Section VI. The following table illustrates these rates:

Member Rates of Contribution Including 15% Factor for COL

<u>Age</u>	<u>Normal</u>	Continuance	<u>Total</u>
20	8.20%	.44%	8.64%
25	8.58	.63	9.21
30	9.06	.75	9.81
35	9.61	. 83	10.44
40	10.19	. 91	11.10
45	10.76	. 97	11.73
50	11.34	1.03	12.37
55	11.85	1.09	12.94

In addition, members who enter the System on or after February 1, 1983 contribute at a rate of 6%.

The monthly contribution of \$5.14 per participating member should be con- has there tinued for Family Death Benefits until modified by future study.

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SECTION III

RESULTS OF THE ACTUARIAL VALUATION

Introduction

The purpose of the actuarial valuation is to analyze the financial condition of the System and to recommend any necessary changes in City contributions. In this section we describe the funding method of the System and give the resulting actuarial balance sheet as of June 30, 1984. Section IV gives the recommended City contributions called for by the funding method. Section V presents various views of the funding progress of the System, including the change in accrued liability over the year as defined by the Financial Accounting Standards Board. Throughout the report, all calculations are based on the actuarial assumptions as discussed in Section VI. The "Beta" formula was applied to all active members.

Funding Method

The primary funding method of the Los Angeles City Retirement System is the Projected Unit Credit Cost funding method. This method defines the Normal Cost as the present value, based on each member's attained age, of that portion of the total projected benefits deemed to be earned during the current year. The City's Normal Cost is the excess of the Normal Cost over members' contributions. The Actuarial Accrued Liability is equal to the present value of all benefits allocated to years prior to the current year. The excess of the Actuarial Accrued Liability over the assets is called the Unfunded Actuarial Accrued Liability (UAAL). The Unfunded Actuarial Accrued Liability is amortized over a fixed period of years by City contributions in addition to Normal Cost. Most of the Unfunded Actuarial Accrued Liability is amortized over the period ending

June 30, 2004 by contributions that will increase in accordance with the salary scale, i.e., 5-3/4% per year. Certain small liabilities are amortized over shorter periods by level dollar amounts.

The Projected Unit Credit Cost Method is used to fund all benefits except Family Death Benefits. For Family Death Benefits, the amount contributed in any one year is the present value of expected claims arising during the year. This method is called the Term Cost Funding Method. Traditionally, the required contribution has been reviewed biennially following the valuation.

Accounting Balance Sheet

Our valuation of the Retirement System as of June 30, 1984 was based on the accounting balance sheet furnished by the Retirement Office as shown on the following page. We accepted this statement of assets without audit.

The total value of applicable assets for this valuation of the Retirement System as of June 30 was determined as follows:

		June 30, 1984	June 30, 1983
1.	Total assets	\$1,278,371,684	\$1,154,388,667.
2.	Less reserves and liabilities established for the following: a. family death benefit insurance b. gain/loss on equities c. 20% of undistributed earnings d. total	\$ 9,841,982 15,627,059 2,028,702 \$ 27,497,743	\$ 9,000,473 12,655,455 1,768,362 \$ 23,424,290
3.	Net applicable assets as of June 30, 1983 (item 1 less item 2(d))	\$1,250,873,941	\$1,130,964,377

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CITY OF LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Preliminary, Unaudited

BALANCE SHEETS

•	Didamos Gubblo	June	30	
· · ·		.984		1983
ASSETS	-			
CASH		\$ 4,112,848		\$ 12,883,983
RECEIVABLES:			•	
Accrued interest and dividend income	\$ 25,347,880		\$ 20,998,822	
Other receivables	2,600,455		1,838,689	
Proceeds from sale of investments	3,568,224	31,516,559	14,564,856 ~	- 37,402,367
•				
INVESTMENTS			4	
Temporary	131,496,198.	•	63,537,239	•
Bonds	807,184,399		792,140,194	
Common stocks	312,541,183	1,251,221,780	252,852,897	1,108,530,330
Total assets		1,286,851,187.		1,158,816,680
LIABILITIES				
UNEARNED PREMIUM FROM SALE OF STOCK AND BOND OPTIONS		(142,616) :		(172,121)
ACCOUNTS PAYABLE AND ACCRUED EXPENSES		(8,336,887)		(4,255,892)
NET ASSETS AVAILABLE FOR PLAN BENEFITS		\$1,278,371,684		\$1,154,388,667
FUND BALANCE				
MEMBERS' CONTRIBUTIONS		\$ 261,142,033_		\$ 250,516,756
RESERVE FOR RETIREMENT ALLOWANCE FOR RETIRED MEMBERS AT ACTUARIAL VALUATION	,	1,085,542,23	8	990,798,766
CITY CONTRIBUTIONS AVAILABLE FOR FUTURE RETIREES (CITY CONTRIBUTIONS REQUIRED TO FUND DEFICIENCY)		(6x,312, 587)		(86,926,855)
Total fund balance	·	\$ <u>1,278,371,684</u>		\$1,154,388,667

- /-

LOS ANGELES CITY EMPLOYEES TRETIREMENT SYSTEM

STATEMENT OF RESERVE AND FUND BALANCE ACCOUNTS

JUNE 30, 1984

	JUNE	30
ACTUARIAL	1984	1983
Member Contributions Annuities Subsequent Service Cost of Living Family Death Benefit Insurance	\$ 261,142,033 177,342,769 571,449,430 232,824,899 9,841,982	\$ 250,516,756 154,617,284 513,932,913 204,823,975 9,000,473
Total Actuarial	\$ <u>1,252,601,113</u>	\$ <u>1,132,891,401</u>
OTHER		
Undistributed Earnings Gain/Loss on Equities Fund Balance	\$ 10,143,512 15,627,059 -0-	8,841,811 12,655,455 —————————————————————————————————
Total Other	\$25,770,571	\$21,497,266
Total Reserves & Fund Balance	\$ <u>1,278,371,684</u> .	\$ 1,154,388,667

Actuarial Balance Sheet

This actuarial valuation of the Retirement System as of June 30, 1984 is based on demographic assumptions developed during the June 30, 1983 investigation and on an 8% interest assumption, a 5-3/4% salary increase assumption, and a 3% future cost-of-living increase. The resulting values of assets and liabilities developed by the valuation are set forth in the following Actuarial Balance Sheet.

ACTUARIAL BALANCE SHEET

AS OF JUNE 30, 1984

ASSETS

1. Total Applicable Assets

\$1,250,873,941

2. Present Value of Future Contributions of Members

362,128,900

- 3. Present Value of Future Contributions by the City on Account of:
 - a. Basic Pensions:

i. Normal Cost

\$201,397,437

- ii. Amortization of Certain
 Liabilities:
 - Prior Service Pensions \$ 7,334,348
 - Increase due to 1965 Amendments

2,804,364

- Remaining Unfunded Actuarial Accrued Liability

378,040,596 388,179,308

- b. Cost-of-Living Pensions:
 - i. Normal Cost

104,348,363

- ii. Amortization of Certain
 Liabilities:
 - Increase due to 1967 Amendments

14,199,505

- Remaining Unfunded
Actuarial
Accrued Liability

309,417,984 323,617,489 1,017,542,597

4. Total Assets

2,630,545,438

ACTUARIAL BALANCE SHEET

AS OF JUNE 30, 1984

LIABILITIES

5. Present Value of Benefits Already Granted:

a. Basic

\$ 698,013,929

b. Cost-of-Living

387,528,309

\$1,085,542,238

6. Present Value of Benefits to Be Granted:

a. Basic

\$1,202,146,000

b. Cost-of-Living

342,857,200

1,545,003,200

7. Total Liabilities

\$2,630,545,438

TPF&C prepared the actuarial balance sheet in a condensed format using terminology we hope will aid in its review and discussion.

"Cost-of-Living Pensions" are the postretirement increases provided by Section 510.1 of Article XXXIV of the City Charter and related ordinances.

"Basic Pensions" are all benefits other than "Cost-of-Living Pensions" and Family Death Benefits provided by Article XXXIV of the City Charter and related ordinances.

"Amortization of Certain Past Service Liabilities" refers to those liabilities of the System amortized over fixed periods of time pursuant to the Charter, ordinance, or Board authorization.

SECTION IV

RECOMMENDED CITY CONTRIBUTIONS

Based on the actuarial valuation of the Retirement System as of June 30, 1984, we respectfully submit the following recommendations in accordance with the provisions of Article XXXIV of the City Charter and related ordinances.

Based on the Projected Unit Credit Cost funding method and the assumption that all members will contribute on the basis of the full rates recommended in Section II, we recommend that City contributions for fiscal year 1985-1986 be as follows:

		Recommended City Contributions For 1985-1986	
		Percentage of Salary plu	
a.	For Basic Pensions:		
	i. Normal Cost	3.58%	
	ii. Prior Service-Minimum Pensions (Charter-Period ending June 30, 1997)		\$ 927,955
	iii. Increase due to 1965 Amendments (Charter-Period ending June 30, 1990)		606,627
	<pre>iv. Unfunded Supplemental Present Value</pre>	4.95%	
	v. Total Basic Pensions	8.53%	\$ 1,534,582

		Recommended City Contributions For 1985-1986	
b.	For Cost-of-Living Pensions:	Percentage of Salary plu	Fixed-Dollar Amount
	i. Normal Cost	1.85%	
	ii. Increase due to 1967 Amendment (Charter-Period ending June 30, 1997)		\$ 1,796,547
	iii. Unfunded Supplemental Present Value (Period ending June 30, 2004)	4.05%	
	<pre>iv. Total Cost-of-Living Pensions</pre>	5.90%	\$ 1,796,547
С.	Total Basic and Cost-of-Living Pensions	14.43%	\$ 3,331,129

d. For Family Death Benefits:

\$5.14 per month for each participating member in the Family Death Benefit Insurance Plan.

An ordinance effective in October 1975 permits the City to "subsidize" a portion of employee contributions. Since the portion subsidized by the City will not be refunded to the member upon employment termination before retirement, the City does not have to pay the total amount of employee contributions it subsidizes. Based on the actuarial valuation as of June 30, 1984, we recommend the City contribute to the System 67.18% of subsidized employee contributions, i.e., for each \$10,000 the City subsidizes, it should contribute \$6,718. We note the amount the City subsidizes is the difference between members' actual contributions and the amount of contributions if they contribute at the levels shown in Section VI.

The following table compares present City percentage of salary contribution rates with those proposed.

	City Percentage of Salary Contributions		
	Proposed	Present	Ratio
Normal Cost	5.43%	5.46%	0.995
Amortization of UAAL	9.00%	9.01%	0.999
Total	14.43%	14.47%	0.997

As indicated, the City contribution rates remained essentially unchanged from last year.

We believe if the recommendations contained herein are adopted, the System will be maintained on a sound basis in accordance with the actuarial assumptions and funding methods underlying the calculations.

SECTION V

MEASURES OF FUNDING PROGRESS

Several measures can be used to evaluate the funding progress of a retirement system. In this Section we discuss five of these measures to provide several views of the funding progress of the Los Angeles City Retirement System.

Unfunded Actuarial Accrued Liability (UAAL)

A common method of measuring funding progress is to compare the change in the UAAL from one year to another. Last year the UAAL was \$695,364,489. This year the UAAL increased to \$711,796,797. Because of inherent characteristics of the amortization method, the UAAL is expected to increase for several more years before it begins to decrease.

We believe the UAAL is a misleading measure of funding progress because it depends heavily on the particular funding method used and, in particular, on the definition of Normal Cost. Thus, we recommend considering other measures of funding progress which are independent of the funding method.

Traditional Funding Ratio

The schedule below compares the assets on hand with the present value of benefits earned to date. This method has been specified by the National Council for Governmental Accounting as the appropriate method for disclosure. We have shown figures for the current and previous valuations to acquaint you with the funding progress.

A funding ratio of over 100% would mean that monies had already been paid for benefits yet to be earned, and this may not be appropriate in a public retirement system.

The present value of benefits earned to date is calculated on the basis of an ongoing system, i.e., reflecting all actuarial assumptions including future salary increases. Death and disability benefits are prorated by years of service to normal retirement age. This is sometimes referred to as the "Plan Continuation Liability."

Cor	itinuation Liability."	June 30, 1984	June 30, 1983
1.	Present Value of Benefits Earned to Valuation Date		
	(a) Basic Benefits	\$1,376,684,029	\$1,282,028,418
	(b) Cost-of-Living Benefits	585, 986, 709	544,300,448
	(c) Total	1,962,670,738	1,826,328,866
2.	Applicable Assets on Hand		
	(a) Basic Benefits	988,504,721	898,536,433
	(b) Cost-of-Living Benefits	262,369,220	232,427,944
	(c) Total	\$1,250,873,941	\$1,130,964,377
3.	Funding Ratio		
	(a) Basic Benefits	71.8%	70.1%
	(b) Cost-of-Living Benefits	44.8%	42.7%
	(c) Total	63.7%	61.9%

The increase in funding ratios is roughly what was expected, which indicates the actuarial assumptions were approximately realized over the last year.

Vested Liability

We estimate that the liability for vested benefits as of June 30, 1984 amounts to \$1,944,865,030. At the request of the Retirement Board's Auditor, this calculation was done on the basis of projected salaries as described under "funding ratio." Applicable assets on hand amount to \$1,250,873,941. Thus, as of June 30, 1984, there was an excess of vested liability over applicable assets on hand amounting to \$693,991,089. Note that applicable assets on hand amount to 64.3% of the vested liability. The corresponding figure for June 30, 1983 was 63.3%.

Financial Accounting Standards Board Accrued Liability

Another measure of funding progress has recently been introduced by the Financial Accounting Standards Board (FASB) in its Opinion No. 35. The FASB has decided that if the Plan's financial statement is to be compiled in accordance with generally accepted accounting principles (GAAP), the statement must contain the "present value of accumulated benefits" determined in accordance with FASB No. 35.

FASB No. 35 requires a straightforward determination of the present value of accrued benefits similar to our traditional approach. However, they require one change to that definition; namely, no projection of future salary increases is made. Thus, while the traditional accrued liability is calculated on the basis of an ongoing system, the FASB accrued liability is more appropriate if

no future salary increases are made. Using the FASB approach, we have determined the following:

mined the following.	June 30, 1984	June 30, 1983
(1) Present Value of Accrued Benefits	\$1,712,159,938	\$1,590,856,266
(2) Assets	1,250,873,941	1,130,964,377
(3) Percent Funded (2)/(1)	73.1%	71.1%

As in our discussions of the traditional funding ratio, the increase is in line with expectations. The above results are based on the actuarial assumptions as described in Section II, including an interest rate of 8%. The 8% may be judged low by FASB standards, which require realistic returns based on a market valuation of assets. We believe 8% is appropriate when the comparison is made with the book value of assets.

Quick Liability

A simple measure of a plan's condition is to compare the liability for inactive members plus deposits of active members with accumulated assets. We have termed this liability the "Quick Liability." The comparison with assets is as follows:

	June 30, 1984	June 30, 1983
(1) Liability for Retired and Vested Terminations	\$1,085,542,238	\$ 990,798,766
(2) Accumulated Active Member Deposits with Interest	255,726,200	242,290,200
(3) Total (1)+(2)	1,341,268,438	1,233,088,966
(4) Assets	1,250,873,941	1,130,964,377
(5) Percent Funded (4)/(3)	93.3%	91.7%

In a well-funded system, the assets would at least equal the liability for members no longer providing services plus the active members' "own" money.

To summarize, there are two basic considerations in contemplating the funding status of a system. The first is the assets accumulated to pay benefits and how they compare with the current liability for benefits already earned. The various funding measures presented above are intended to evaluate this aspect of funding. However, the second consideration is normally more important: what is the financial commitment of the plan sponsor to continue to fund both benefits earned to date and benefits to be earned in the future, and does the plan sponsor have the financial resources to meet future budgetary obligations, as recommended in Section IV?

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SECTION VI

STATISTICAL INFORMATION

- o Summary of Actuarial Assumptions
- o Mortality after Service Retirement Schedule 1
- o Mortality after Disability Retirement Schedule 2
- o Probability of Occurrence (of Decrements from Active Service)
 - Schedule 3

Male

Female

- o Member Contribution Rates
- o Distribution of Active Members by Age and Service
- o Distribution of Pensioners by Age and Year of Retirement
- o Summary of Major Plan Provisions

SUMMARY OF ACTUARIAL ASSUMPTIONS

The Projected Unit Credit Cost Method was used in conjunction with the following actuarial assumptions:

- 1. Interest: 8.0% per annum.
- 2. Salary Scale: 5.75% per annum.
- 3. Spouses and Dependents: 80% of male employees and 50% of female employees assumed married at retirement, with wives assumed four years younger than husbands.
- 4. Rehire of Former Employees: Assumed not to be rehired.
- Asset Valuation: Asset values taken directly from statements furnished by the City.
- 6. Rates of Termination of Employment: As shown on the following pages titled "Probability of Occurrence."
- 7. Probabilities of Mortality after Retirement: As shown in table that follows (Schedule 1).
- 8. Probabilities of Mortality after Disability: As shown in table that follows (Schedule 2).
- 9. Cost-of-Living Increases: 3.0% per annum, compounded annually.

SCHEDULE 1

EXPECTATION OF LIFE

1971 Group Annuity*

<u>Age</u>	<u>Male</u>	<u>Female</u>
15	60.13 years	65.97 years
20	55.26	61.10
25	50.40	56.23
30	45.57	51.37
35	40.76	46.53
40	36.01	41.72
45	31.36	36.96
46 47 48 49 50	30.45 29.55 28.66 27.78 26.91	36.01 35.07 34.13 33.20 32.28
51 52 53 54 55	26.05 25.20 24.36 23.53 22.71	31.36 30.45 29.55 28.66 27.78
56 57 58 59 60	21.90 21.10 20.31 19.53 18.76	26.91 26.05 25.20 24.36 23.53
61 62 63 64 65	18.00 17.26 16.53 15.81 15.00	22.71 21.90 21.10 20.31 19.53
66 67 68 69 70	14.43 13.77 13.13 12.50 11.91	18.76 18.00 17.26 16.53 15.81

^{*} This table was used with a two-year age setback.

SCHEDULE 1 (continued)

EXPECTATION OF LIFE

1971 Group Annuity* (x-0) (x-6)

<u>Age</u>	<u>Male</u>	<u>Female</u>	
71	11.33	years 15.11	years
72	10.79	14.43	
73	10.26	13.77	
74	9.74	13.13	
75	9.24	12.50	
76	8.76	11.91	
77	8.28	11.33	
78	7.83	10.79	
79	7.41	10.26	
80	7.00	9.74	
81	6.63	9.24	
82	6.27	8.76	
83	5.94	8.28	
84	5.63	7.83	
85	5.34	7.41	
86	5.06	7.00	
87	4.80	6.63	
88	4.55	6.27	
89	4.31	5.94	
90	4.08	5.63	
91	3.87	5.34	
92	3.66	5.06	
93	3.46	4.80	
94	3.26	4.55	
95	3.07	4.31	
96	2.89	4.08	
97	2.71	3.87	
98	2.54	3.66	
99	2.37	3.46	
100	2.20	3.26	
101	2.04	3.07	
102	1.88	2.89	
103	1.72	2.71	
104	1.55	2.54	
105	1.38	2.37	

^{*} This table was used with a two-year age setback.

SCHEDULE 1 (continued)

EXPECTATION OF LIFE

 $\frac{1971 \text{ Group Annuity}}{(\text{x-0}) \text{ (x-6)}}$

<u>Age</u>	<u>Male</u>	<u>Female</u>
106	1.21 years	2.20 years
107	1.04	2.04
108	.88	1.88
109	.71	1.72
110	.50	1.55

^{*} This table was used with a two-year age setback.

SCHEDULE 2

1981 DISABILITY MORTALITY TABLE

Age	General	Safety	Age	General	Safety
20	.0066	.0019	65	.0379	.0368
21	.0074	.0020	66	.0390	.0385
22	.0080	.0021	67	.0400	.0400
23	.0085	.0022	68	.0411	.0411
24	.0091	.0023	69	.0422	.0422
25	.0096	.0024	70	.0437	.0437
26	.0100	.0026	71	.0454	.0454
27	.0106	.0027	72	.0472	.0472
28	.0106	.0028	73	.0496	.0496
29	.0112	.0030	74	.0526	.0526
30	.0122	.0031	75	.0553	.0553
31	.0127	.0033	76	.0601	.0601
32	.0132	.0034	77	.0659	.0659
33	.0137	.0036	78	.0726	.0726
34	.0143	.0038	79	.0797	.0797
35	.0148	.0040	80	.0874	.0874
36	.0154	.0042	81	.0955	.0955
37	.0159	.0044	82	.1037	.1037
38	.0165	.0046	83	.1123	.1123
39	.0170	.0049	84	.1211	.1211
40	.0176	.0051	85	.1301	.1301
41	.0182	.0054	86	.1393	.1393
42	.0188	.0057	87	.1487	.1487
43	.0194	.0060	88	.1585	.1585
44	.0201	.0064	89	.1687	.1687
45	.0208	.0067	90	.1795	.1795
46	.0215	.0071	91	.1905	.1905
47	.0222	.0076	92	.2017	.2017
48	.0229	.0081	93	.2123	.2123
49	.0236	.0086	94	.2265	.2265
50	.0244	.0092	95	.2412	.2412
51	.0252	.0099	96	.2562	.2562
52	.0259	.0107	97	.2725	.2725
53	.0267	.0117	98	.2902	.2902
54	.0275	.0130	99	.3091	.3091
55	.0284	.0150	100	.3298	.3298
56	.0293	.0177	101	.3525	.3525
57	.0303	.0210	102	.3772	.3772
58	.0312	.0236	103	.4062	.4062
59	.0321	.0260	104	.4415	.4415
60 61 62 63 64	.0330 .0339 .0348 .0358 .0369	.0280 .0298 .0315 .0332 .0350	105 106 107 108 109 110	.4852 .5393 .6061 .6874 .7856 1.0000	.4852 .5393 .6061 .6874 .7856

SCHEDULE 3

RATES OF TERMINATION OF EMPLOYMENT

The following pages indicate the probability of termination of employment for each of nine separate sources of termination:

- o ordinary withdrawal: member terminates and elects refund of member contributions.
- o vested withdrawal: member terminates and contributions are left on deposit.
- o ordinary death: member dies prior to eligibility for retirement; death not employment-related.
- o ordinary disability: member receives disability retirement where the member's disability is not employment-related.
- o service retirement: member retires after satisfaction of requirements of age and/or service for reasons other than disability.
- o service disability: member receives disability retirement as the result of employment-related disability.
- o service death: member dies prior to retirement as the result of performance of assigned duties.
- O DWE Service Retirement: member dies prior to retirement but after satisfaction of age and/or service requirements for service retirement.
- O DWE Disability Retirement: member dies prior to retirement but after satisfaction of age and/or service requirements for disability retirement.

The probabilities shown for each cause of termination represent the probability that a given member will terminate at a particular age for the indicated reason. For example, if the probability of ordinary withdrawal at age 25 is .1000, then we are assuming that 10% of the active members at age 25 will terminate without vested rights during the next year.

LOS ANGELES CITY EMPLOYEES MALE GENERAL MEMBERS PROBABILITY OF OCCURRENCE(!NCLUDING ELIGIBILITY)

AGE NEAREST	ORDINARY WITHDRAW	VESTED WITHDRAW	ORDINARY DEATH	ORDINARY DISABLTY	SERVICE RETIRE	SERVICE DISABLTY	SERVICE DEATH	DWE SVC RET	DWE DIS RET
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.3210	0.0	0.0003	0.0	0.0	0.0	0.0	0.0	0.0
21	0.2960 0.2710	0.0	0.0003	0.0	0.0	0.0	0.0	0.0	0.0
22	0.2710	0.0	0.0004	0.0	0.0	0.0	0.0	0.0	0.0
23 24	0.2500 0.2310	0.0	0.0004	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0 0.0
24 25	0.2140	0.0	0.0004	0.0	0.0	0.0	0.0	0.0	0.0
26	0.1950	0.0	0.0005	0.0002	0.0	0.0	0.0	0.0	0.0
27	0.1790	0.0	0.0005	0.0002	0.0	0.0	0.0	0.0	0.0
28	0.1790	0.0	0.0006	0.0003	0.0	0.0	0.0	0.0	0.0
29	0.1520	0.0	0.0000	0.0004	0.0	0.0	0.0	0.0	0.0
30	0.1410	0.0	0.0007	0.0005	0.0	0.0	0.0	0.0	0.0
31	0.1280	0.0	0.0007	0.0000	0.0	0.0	0.0	0.0	0.0
32	0.1150	0.0	0.0009	0.0000	0.0	0.0	0.0	0.0	0.0
33	0.1080	0.0	0.0009	0.0010	0.0	0.0	0.0	0.0	0.0
34	0.0990	0.0	0.0010	0.0011	0.0	0.0	0.0	0.0	0.0
35	0.0910	0.0	0.0011	0.0013	0.0	0.0	0.0	0.0	0.0
36	0.0830		0.0012	0.0014	0.0	0.0	0.0	0.0	0.0
• • •	0.0760	0.0	0.0013	0.0015	0.0	0.0	0.0	0.0	0.0
38	0.0690	0.0	0.0015	0.0016	0.0	0.0	0.0	0.0	0.0
39	0.0640	0.0	0.0016	0.0017	0.0	0.0	0.0	0.0	0.0
40	0.0600	0.0	0.0018	0.0018	0.0	0.0	0.0	0.0	0.0
41	0.0560	0.0	0.0020	0.0018	0.0	0.0	0.0	0.0	0.0
42	0.0510	0.0	0.0021	0.0019	0.0	0.0	0.0	0.0	0.0
43 44	0.0460 0.0420	0.0	0.0022	0.0019	0.0	0.0	0.0	0.0	0.0
45	0.0420	0.0	0.0024	0.0020	0.0	0.0	0.0	0.0	0.0
46	0.0380	0.0	0.0020	0.0020	0.0	0.0	0.0	0.0	0.0
47	0.0360	0.0	0.0029	0.0021	0.0	0.0	0.0	0.0	0.0
48	0.0340	0.0	0.0031	0.0021	0.0	0.0	0.0	0.0	0.0
49	0.0330	0.0	0.0035	0.0022	0.0	0.0	0.0	0.0	0.0
50	0.0310	0.0	0.0041	0.0022	0.0020	0.0	0.0	0.0	0.0
51	0.0290	0.0	0.0044	0.0023	0.0020	0.0	0.0	0.0	0.0
52	0.0280	0.0	0.0048	0.0023	0.0040	0.0	0.0	0.0	0.0
53 54	0.0260	• 0.0	0.0054	0.0023	0.0055	0.0	0.0	0.0	0.0
54	0.0250	0.0	0.0059	0.0023	0.0235	0.0	0.0	0.0	0.0
55	0.0230	0.0	0.0040	0.0024	0.0945	0.0	0.0	0.0026	0.0 0.0 0.0 0.0
56	0.0210	0.0	0.0044	0.0024	0.0675	0.0	0.0	0.0030	0.0
57 58	0.0200	0.0	0.0049	0.0024	0.0785	0.0	0.0	0.0032	0.0
56 59	0.0180 0.0160	0.0	0.0053	0.0024	0.0900	0.0	0.0	0.0036	0.0
60	0.0160	0.0	0.0059	0.0024	0.1000	0.0	0.0	0.0040	0.0
61	0.0120	0.0	0.0000	0.0024	0.1935	0.0	0.0	0.0044	0.0
62	0.0100	0.0	0.0074	0.0024	0.1400	0.0	0.0	0.0049	0.0
63	0.0070	0.0	0.0002	0.0025	0.1500	0.0	0.0	0.0054	0.0
64	0.0030	0.0	0.0100	0.0025	0.1000	0.0	0.0	0.0060	0.0 0.0 0.0 0.0 0.0 0.0
64 65	0.0	Ŏ.Ŏ	0.0110	0.0	0.3500	0.0	0.0	0.0000	0.0
66	0.0	0.0	0.0122	0.0	0.2240	0.0	0.0	0.0074	0.0
67	0.0	0.0	0.0135	0.0	0.2240	$\tilde{0}.\tilde{0}$	0.0	0.0001	0.0
68	0.0	0.0	0.0146	0.0	0.2240	0.0	0.0	0.0097	0.0
69	0.0	0.0	0.0160	0.0	0.2500	0.0	0.0	0.0107	0.0
70	0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0	0.0	1.0000	0.0	0.0	0.0	0.0

LOS ANGELES CITY EMPLOYEES FEMALE GENERAL MEMBERS PROBABILITY OF OCCURRENCE(INCLUDING ELIGIBILITY)

AGE NEAREST	ORDINARY W1THDRAW	VESTED WITHDRAW	ORDINARY DEATH	ORDINARY DISABLTY	SERVICE RETIRE	DISABLTY		DWE SVC RET	DWE DIS RET
NEAREST 18901234567890123345678901234556789	W1THDRAW 0.0 0.2040 0.2040 0.1970 0.1880 0.1880 0.1730 0.1670 0.1610 0.1530 0.1480 0.1480 0.1410 0.1360 0.1300 0.1230 0.1160 0.1000 0.0900 0.0830 0.0780 0.0780 0.0710 0.0680 0.0650 0.0650 0.0650 0.0650	WITHDRAW 0.0	DEATH 0.0 0.0 0.0002 0.0002 0.0002 0.0003 0.0004 0.0005 0.0005 0.0006 0.0007 0.0007 0.0007 0.0008 0.0009 0.0010 0.0011 0.0011 0.0012 0.0015 0.0015 0.0015 0.0015 0.0015	DISABLTY 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0	DISABLTY 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	SERVICE DEATH	SVC RET 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	DIS RET
	0.0230 0.0230 0.0220 0.0210 0.0200 0.0150 0.0070 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0043 0.0047 0.0052 0.0057 0.0065 0.0073 0.0081 0.0091 0.0105 0.0121 0.0139 0.0159	0.0040 0.0040 0.0 0.0 0.0 0.0 0.0 0.0 0.	0.0400 0.0650 0.1850 0.1100 0.1250 0.1350 0.1500 0.2500 0.1700 0.1850 0.2150 0.2800	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0

APPLICABLE TO MEMBERS COVERED UNDER "BETA" FORMULA 115% NORMAL CONTRIBUTION RATES

<u>Age</u>	Normal Contribution Rate	Age	Normal Contribution Rate
16 17 18 19	8.00% 8.04 8.08 8.14	40 41 42 43 44	10.19% 10.29 10.41 10.52 10.64
20	8.20	45	10.76
21	8.27	46	10.89
22	8.34	47	11.01
23	8.42	48	11.12
24	8.50	49	11.24
25	8.58	50	11.34
26	8.66	51	11.44
27	8.75	52	11.55
28	8.86	53	11.65
29	8.96	54	11.75
30	9.06	55	11.85
31	9.17	56	11.94
32	9.28	57	12.03
33	9.40	58	12.13
34	9.50	59	12.19
35 36 37 38 39	9.61 9.73 9.84 9.96 10.07		

71 GAM 5-3/4% 3-1/2% S/S

APPLICABLE TO MEMBERS COVERED UNDER "BETA" FORMULA

115% NORMAL CONTRIBUTION RATES

<u>Age</u>	Survivor Contribution Rate	<u>Age</u>	Survivor Contribution Rate
16 17 18 19	.22% .28 .33 .39	40 41 42 43 44	.91% .92 .93 .94 .95
20	. 44	45	.97
21	. 48	46	.98
22	. 53	47	.99
23	. 56	48	1.00
24	. 60	49	1.01
25	.63	50	1.03
26	.66	51	1.05
27	.68	52	1.06
28	.70	53	1.07
29	.72	54	1.08
30	.75	55	1.09
31	.77	56	1.10
32	.79	57	1.12
33	.81	58	1.13
34	.82	59 and over	1.14
35 36 37 38 39	. 83 . 85 . 86 . 87 . 90		

71 GAM 5-3/4% 3-1/2% S/S

APPLICABLE TO MEMBERS COVERED UNDER "BETA" FORMULA 115% NORMAL CONTRIBUTION RATES

Applicable Only to Employees Whose Normal and Survivor Contribution Rates Are Assigned by the Same Age

<u>Age</u>	Total Contribution Rate	<u>Age</u>	Total <u>Contribution Rate</u>
16 17 18 19	8.22% 8.32 8.41 8.53	40 41 42 43 44	11.10% 11.21 11.34 11.46 11.59
20	8.64	45	11.73
21	8.75	46	11.87
22	8.87	47	12.00
23	8.98	48	12.12
24	9.10	49	12.25
25	9.21	50	12.37
26	9.32	51	12.49
27	9.43	52	12.61
28	9.56	53	12.72
29	9.68	54	12.83
30	9.81	55	12.94
31	9.94	56	13.04
32	10.07	57	13.15
33	10.21	58	13.24
34	10.32	59	13.33
35 36 37 38 39	10.44 10.58 10.70 10.83 10.97		

71 GAM 5-3/4%

3-1/2% S/S

AGE/SERVICE DISTRIBUTION TOTAL MEMBERS

							** SER\	/ICE **						
AGE ****		0-1 *****	1 - 2 *****	2 - 3	3-4 *****	4 - 5 *****	5 - 9	10-14 ******	15 - 19 ******	20 - 24 ******	25 - 29 *****	30 - 34 ******	35 - TO	TAL ***
15-19	*NO. * *TOT.AMT* AVE.AMT*	14 183055 13075	2 31868 15934	1 44882 44882	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		17 805 283
20-24	*NO. * *TOT.AMT* AVE.AMT*	342 5764936 16857	132 2370787 17961	108 1944708 18007	178 3358683 18869	63 1226666 19471	5 101903 20381	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 14767	828 683 835
25 - 29	*NO. * *TOT.AMT* AVE.AMT*	457 9040761 19783	224 4605368 20560	205 4432715 21623	417 8982963 21542	230 4835208 21023	345 7422024 21513	18 410214 22790	0 0 0	0 0 0	0 0 0	0 0 0	0 39729	896 253 954
30-34	*NO. * *TOT.AMT* AVE.AMT*	295 6133080 20790	192 4232690 22045	167 3767616 22561	331 7747048 23405	264 6482475 24555	844 21049917 24941	484 11654297 24079	25 589850 23594	0 0	0 0 0	0 0 0	0 61656	602 [.] 973 696
35-39	*NO. * *TOT.AMT* AVE.AMT*	230 4903732 21321	108 2534577 23468	96 2100385 21879	206 5142807 24965	203 5398377 26593	733 20175514 27525	933 26600799 28511	364 10070093 27665	12 336969 28081	0 0 0	0 0 0	0 77263	885 253 781
40-44	*NO. * *TOT.AMT* AVE.AMT*	159 3433552 21595	66 1670986 25318	54 1296672 24012	123 2914895 23698	102 2566083 25158	397 10801910 27209	637 18707405 29368	677 20703453 30581	178 5515809 30988	9 271523 30169	0 0 0	0 67882	402 288 261
45-49	*NO. * *TOT.AMT* AVE.AMT*	73 1544651 21160	45 1116449 24810	32 778224 24320	90 2212914 24588	74 1845218 24935	257 6896349 26834	406 11344694 27943	515 14619526 28387	343 10697739 31189	197 6001764 30466	3 107993 35998	0 57165	035 521 091
50 - 54	*NO. * *TOT.AMT* AVE.AMT*	42 925760 22042	28 640963 22892	33 743410 22528	54 1437163 26614	58 1510320 26040	225 5785612 25714	336 8936000 26595	389 10423914 26797	368 11241371 30547	466 14687181 31518	71 2193745 30898	48678 58574	071 117 283
55 - 59	*NO. * *TOT.AMT* AVE.AMT*	42 929419 22129	23 504299 21926	18 425626 23646	36 883661 24546	43 1142167 26562	204 5172728 25357	281 7 617326 27108	301 8611705 28610	289 8440439 29206	352 10603155 30123	160 5391045 33694	30 / 1 1105190 50826	779 760 570
60-64	*NO. * *TOT.AMT* AVE.AMT*	13 231752 17827	13 356675 27437	12 311442 25954	20 443712 22186	31 770007 24839	154 4007759 26024	191 5328051 27896	234 6389056 27304	152 4203498 27655	166 4598928 27704	84 2903677 34568	57 1 2264042 31808	127 599 224
	*NO. * *TOT.AMT* AVE.AMT*	5 67573 13515	4 66447 16612	3 86254 28751	11 238551 21686	5 267040 53408	87 2342109 26921	92 2395921 26043	88 2402492 27301	77 2283032 29650	51 1296860 25429	20 579527 28976	812564 1,2838	469 370 374
TOTAL	*NO. * *TOT.AMT* AVE.AMT*	1672 33158271 19831	837 18131109 21662	729 15931934 21855	1466 33362397 22757	1073 26043561 24272	3251 83755825 25763	3378 92994707 27530	2593 73810089 28465	1419 42718857 30105	1241 37459411 30185	338 11175987 33065	42304744 7 2772	111 622 104

AVERAGE AGE # 42.4 # AVERAGE SERVICE # 10.9 #

SUMMARY OF MAJOR PLAN PROVISIONS

1. Membership Requirements

First of month following employment.

2. Final Monthly Compensation

Highest 12-month average salary.

3. Service Retirement

A. Eligibility

Ten years of service and age 55, or 30 years of service any age, or age 70.

B. Allowance

"Beta" Formula - 2.16% of final monthly compensation for each year of service (reduced if retirement before age 60); however, member may retire on full accrued pension if he or she has completed at least 30 years of service and has attained age 55.

<u>Prior Formula</u> - 2% of final monthly compensation for each year of service (reduced if retirement before age 58-3/4).

C. Form of Payment

Monthly allowance payable for life with 50% continuance to eligible spouse. Larger continuance available as option with reduced allowance.

4. Disability Retirement

A. Eligibility

Five or more years of continuous service and physically or mentally incapacitated so unable to perform duties of position.

B. Allowance

1/70 of final monthly compensation for each year of continuous service. If service is less than 23-1/3 years, then service is projected to retirement, with a maximum total service (actual plus projected) of 23-1/3 years.

C. Form of Payment

Monthly allowance payable for life, with 50% continuance to eligible surviving spouse if employee had that coverage at time of retirement.

5. <u>Deferred Service Retirement</u>

A. <u>Eligibility</u>

Terminate City service with five or more years of retirement credit, apply in writing within three years after termination, and agree to leave accumulated contributions on deposit.

Application required for retirement at any time after attaining age 55, provided at least 10 years have elapsed when employee first became a member, or at age 70 without any elapsed time requirement.

B. Allowance

Same as service retirement.

C. Form of Payment

Same as service retirement.

6. Death Prior to Retirement

A. Not Eligible to Retire

The sum of:

- i. accumulated contributions,
- ii. a monthly pension to the surviving spouse, minor children, or dependent parents of the deceased member, payable for a period equal to two months times the number of completed years of service credit to a maximum period of 12 months at the rate of 1/2 of the average monthly salary for the year before death, and
- iii. if deceased member was a qualified member of the Family Death

 Benefit Insurance Plan, such benefits as are payable under that

 Plan.

B. Eligibility for Disability Retirement or Duty-Related Death

The sum of the following:

i. 60% of the allowance the member would have received if he or she had been granted a disability retirement allowance the day before he or she died, payable for the lifetime of the member's surviving spouse, and ii. if the deceased member was a qualified member of the Family Death Benefit Insurance Plan, such benefits as are payable under the Plan.

C. Eligible for Retirement

Surviving spouse receives a lifetime survivorship allowance based on an actuarially computed percentage of the retirement allowance the member would have been entitled to if he or she had been granted an Option 1 service retirement the day before he or she died. Benefits under the Family Death Benefit Insurance Plan, if any, are not payable. The surviving spouse may elect A or B in lieu of C.

7. Death After Retirement

- A. 50% continuance to surviving eligible spouse, if covered under the plan.
- B. Upon the death of both the member and surviving spouse, designated beneficiary receives any unused contributions which may remain (provided the normal cash refund annuity was selected) and any accrued but unpaid retirement allowance due at time of death.
- C. \$500 death benefit paid to designated beneficiary of deceased member for assumption of obligation to pay burial expense.

8. Postretirement Cost-of-Living Benefits

As of each July 1, benefits being paid increased (proportionately if paid less than 12 months) by increase in Consumer Price Index (to a maximum of 3%). Increases in CPI above 3% are "banked" to apply in years when CPI increase is less than 3%.

9. Employee Contributions

For purposes of this valuation each member who entered the plan before February 1, 1983 is assumed to contribute to the System at the rates specified previously in the Section. These rates were recommended in our 1977 valuation and adopted through union negotiations; they are being phased in and are assumed to be totally effective after June 30, 1981. To the extent that members contribute less than the full rates, the City should make compensating contributions as discussed in Section V. Contribution rates for members not covered by the BETA formula are 8% less than rates for members covered by the BETA formula. Members who entered the plan on or after February 1, 1983 are assumed to contribute at the rate of 6%.

10. Family Death Benefit Insurance Plan

A. <u>Eligibility</u>

Employee may <u>elect</u> coverage after 18 months of City retirement service credit.

B. Benefits

Benefits similar to those provided by Survivors' Insurance under Social Security payable if member dies in active service after 18 months of plan membership.

C. Cost

Member and City share cost of plan (currently \$5.14 per month contribution for each).