

REPORT ON
ACTUARIAL INVESTIGATION
AND VALUATION
OF THE
CITY EMPLOYEES' RETIREMENT SYSTEM
OF THE
CITY OF LOS ANGELES
AS OF
JUNE 30, 1974

January 24, 1975

COATES AND CRAWFORD

CONSULTING ACTUARIES

301 EAST COLORADO BOULEVARD

PASADENA, CALIFORNIA 91101

(213) 681-4455

January 24, 1975

PASADENA
SAN FRANCISCO

EDWARD L. CHAPIN
HARRY M. CHURCH
BARRETT N. COATES, JR.
ANGUS L. CRAWFORD
ROBERT H. LITTLE

Board of Administration
City Employees' Retirement System
Room 505, City Hall South
111 East 1st Street
Los Angeles, California 90012

Gentlemen:

We are pleased to transmit herewith our Report on the Actuarial Investigation and Valuation of your Retirement System made as of June 30, 1974.

We will be most happy to meet with you at your convenience to discuss the items contained in this Report.

Very truly yours,

COATES AND CRAWFORD
Consulting Actuaries

By 
Harry M. Church

HMC:th

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REPORT ON
ACTUARIAL INVESTIGATION AND VALUATION
OF THE
CITY EMPLOYEES' RETIREMENT SYSTEM
OF THE
CITY OF LOS ANGELES
AS OF
JUNE 30, 1974

SECTION I
INTRODUCTION

In accordance with our agreement we have completed the actuarial investigation and valuation of the City Employees' Retirement System as of June 30, 1974.

In order to complete this study, the office of the Retirement System furnished us with a magnetic tape which contains all of the pertinent information for each active member of the System as of June 30, 1974, including such information as current compensation, years of service credited, rates of contribution, and accumulated contributions. In addition to the above information on active members, we were also furnished a tape for each person currently receiving an allowance from the Retirement System, together with such data as was necessary to determine the value of the allowance already entered upon. We were also furnished magnetic tapes containing

records of all active members and retired members who terminated during the five-year period ending June 30, 1974.

A summary of the active and retired membership of the System as of June 30, 1974 is shown in the following table.

SUMMARY OF MEMBERSHIP OF SYSTEM
AS OF JUNE 30, 1974

ACTIVE MEMBERS

	<u>Number</u>	<u>Annual Salary</u>	<u>Age</u>	<u>Average Monthly Salary</u>
Males	14,642	\$212,142,658	43.4	\$1,207
Females	<u>5,165</u>	<u>54,049,632</u>	36.4	872
Total June 30, 1974	19,807	\$266,192,290	41.6	1,120
Total June 30, 1973	19,827	\$245,298,770	41.5	1,031
Percentage Increase	-.001%	8.5%	-	8.6%

BENEFICIARIES

	<u>Number</u>	<u>Annual Basic Retirement Allowances</u>	<u>Youngest Age</u>	<u>Oldest Age</u>	<u>Average Monthly Basic Allowance</u>
Service Retirement*					
Males	2,492	\$11,373,047.16	53	98	\$380
Females	<u>1,316</u>	<u>3,718,164.24</u>	43	98	235
Total	3,808	\$15,091,211.40	43	98	330

*Including survivors under options.

Disability Retirements

Males	261	\$ 711,794.28	26	87	227
Females	<u>99</u>	<u>190,187.04</u>	32	96	160
Total	360	\$ 901,981.32	26	96	209

Survivorships

Male	5	\$ 20,280.72	56	80	338
Female	<u>212</u>	<u>646,562.40</u>	37	93	254
Total	217	\$ 666,843.12	37	93	256

Grand Total June 30, 1974	<u>4,385</u>	<u>\$16,660,035.84</u>	26	98	317
Grand Total June 30, 1973	4,050	\$12,301,010.88	25	97	253
Percentage Increase	8.3%	35.4%	-	-	25.3%

The investigation phase of the assignment is required to be conducted at least once every five years. An investigation consists of an analysis of the experience of the members during the period since the last investigation with respect to rates of separation from active service and salary progression scales for active members and mortality rates among retired members. This analysis permits the actuary to develop appropriate assumptions with respect to each of these contingencies for use in the valuation phase of the assignment. The last such investigation was carried out as of June 30, 1969.

The valuation phase of the assignment consists of computing the actuarial assets and liabilities of the System on the basis of the actuarial assumptions developed during the course of the investigation together with the interest rate assumption.

The following Section II contains the results of the investigation. Section III sets forth our conclusions regarding member contributions and Section IV contains the results of the valuation. Section V sets forth our recommendations and Section VI contains certain statistical schedules developed during the course of our work.

SECTION II

RESULTS OF ACTUARIAL INVESTIGATION

In order to carry out an actuarial valuation of the assets and liabilities of your Retirement System the actuary must first adopt assumptions with respect to the following items:

1. Interest earnings that will be realized on the fund over many years in the future.
2. The relative increases in the salary of a member from the date of the valuation to the date of separation from active service.
3. The mortality rates to be experienced among persons retired for service.
4. The mortality rates to be experienced among persons retired for disability.
5. The probabilities of members separating from active service on account of:
 - a) Withdrawal
 - b) Death
 - c) Disability
 - d) Service Retirement

We have examined the experience of the members of your Retirement System during the five-year period ending June 30, 1974. We set forth in the following paragraphs of this Section, a discussion of the items entering into the investigation.

INTEREST RATE

Your Board authorized the use of a 5% interest rate assumption.

SALARY SCALES

For the purpose of determining the present value of future contributions as well as the present value of future benefits, salary scales are prepared to measure the relative increases in salaries that members will experience as they advance in age toward retirement. These salary scales are based on average salaries developed separately for males and females by age. From such averages, index numbers are developed which reflect the increases in salary that a member could expect to receive over his future working lifetime. It should be noted that salary scales developed in the manner just described reflect only increases due to merit, promotion and service. They do not reflect across the board increases due to inflationary pressures. We previously discussed our reasons for advocating non-inflationary salary scales and we will be happy to review the matter with you at your convenience.

An examination of the data developed as of June 30, 1974 shows that the salary scales previously adopted continue to be appropriate and such scales were applied in the current valuation made as of June 30, 1974.

The salary scales are set forth in detail in Section VI of this report.

MORTALITY AFTER SERVICE RETIREMENT

The following schedule shows a comparison of the deaths which actually occurred among members retired for service and the number expected by the mortality table currently in use, which is referred to as the 1951 Group Annuity Mortality Table and the number expected by the 1971 Group Annuity Mortality Table.

	<u>MORTALITY AFTER SERVICE RETIREMENT</u>		
		<u>Deaths Expected by:</u>	
	<u>Actual Deaths</u>	<u>1951 Group Annuity Mortality Table</u>	<u>1971 Group Annuity Mortality Table</u>
Male	649	816	728
Female	<u>161</u>	<u>218</u>	<u>170</u>
Total	810	1,034	898

We believe the foregoing results clearly establishes the necessity of adopting the 1971 Group Annuity Mortality Table and we so recommend. This Table was used in the current valuation summarized in Section IV of this Report.

Schedules showing the 1971 Group Annuity Mortality Table are included in Section VI of this Report. The following shows a comparison of the 1951 GA life expectancies with the 1971 GAM life expectancies:

<u>Age</u>	<u>Years of Complete Life Expectancy</u>					
	<u>Single Life</u>			<u>Continuance to Surviving Beneficiary</u>		
	<u>1951 GA</u>	<u>1971 GAM</u>	<u>Ratio</u>	<u>1951 GA</u>	<u>1971 GAM</u>	<u>Ratio</u>
	<u>Male Member With Wife 4 Years Younger</u>					
55	21.51	22.71	1.06	10.30	11.47	1.11
60	17.72	18.76	1.06	9.46	10.77	1.14
65	14.21	15.11	1.06	8.49	9.95	1.17
70	11.12	11.91	1.07	7.38	8.93	1.21
75	8.49	9.24	1.09	6.13	7.70	1.26
80	6.37	7.00	1.10	4.95	6.47	1.31
85	4.84	5.34	1.10	3.85	5.22	1.36
90	3.70	4.08	1.10	2.90	4.04	1.39
	<u>Female Member With Husband 4 Years Older</u>					
55	25.49	27.78	1.09	2.61	2.66	1.02
60	21.15	23.53	1.11	2.43	2.40	.99
65	17.10	19.53	1.14	2.21	2.14	.97
70	13.37	15.81	1.18	2.00	1.88	.94
75	10.18	12.51	1.23	1.76	1.62	.92
80	7.68	9.74	1.27	1.49	1.36	.91
85	5.75	7.41	1.29	1.23	1.16	.94
90	4.20	5.63	1.34	.99	.93	.94

It is to be noted that the adoption of the 1971 GAM Table acts to increase the liabilities for service retirement, particularly for cost of living and continuance benefits, and is one of the principal factors acting to increase City contributions.

MORTALITY AFTER DISABILITY RETIREMENT

The following schedule shows a comparison of the deaths which actually occurred among members retired for disability and the number expected by the mortality table currently in use, which is referred to as the 1943 Disability Mortality Table, and the number expected by the 1973 Disability Mortality Table:

	<u>Actual Deaths</u>	<u>Deaths Expected by:</u>	
		<u>1943 Disability Mortality Table</u>	<u>1973 Disability Mortality Table</u>
Male	43	58	48
Female	<u>13</u>	<u>29</u>	<u>25</u>
Total	56	87	73

We have used the 1973 Disability Mortality Table in the current valuation and recommend it be adopted. The new Table acted to increase City contributions.

RATES OF SEPARATION FROM ACTIVE SERVICE

The results of the investigation with respect to rates of separation from active service are summarized in the following table. The "Old Expected Separations" are based on the rates developed as of June 30, 1969 which were used in the valuations of your Retirement System as of June 30, 1969, 1970, 1971, 1972 and 1973. The "New Expected Separations" are based on the rates developed by the current investigation covering the experience of your members from July 1, 1969 through June 30, 1974.

SUMMARY OF ACTUARIAL INVESTIGATION
WITH RESPECT TO RATES OF SEPARATION
FROM ACTIVE SERVICE

	<u>Actual Separations</u>	<u>"Old" Expected Separations</u>	<u>"New" Expected Separations</u>
	<u>Withdrawal Without Vesting*</u>		
Male	1,410	1,663	1,495
Female	<u>946</u>	<u>1,365</u>	<u>1,105</u>
Total	2,356	3,028	2,600
	<u>Death</u>		
Male	331	286	286
Female	<u>44</u>	<u>39</u>	<u>39</u>
Total	375	325	325
	<u>Disability Retirement</u>		
Male	159	76	150
Female	<u>12</u>	<u>18</u>	<u>18</u>
Total	171	94	168
	<u>Service Retirement</u>		
Male	923	842	923
Female	<u>287</u>	<u>296</u>	<u>296</u>
Total	1,210	1,138	1,219

*Based on experience of members after completing 3 years of service.

WITHDRAWAL

The withdrawal of members with less than three years of service has a relatively minor financial effect on the fund and, also, the experience of members prior to completion of three years of service is not representative of the experience of members that will ultimately receive disability and service retirement benefits from the System. We, therefore, develop withdrawal rates on the basis of the experience of members after completion of three years of service.

The new withdrawal rates used in the current valuation expect about 14% fewer withdrawals than the old rates and act to increase City contributions. The new rates expect about 10% more withdrawals than actually occurred. If the trend continues, a further reduction in the rates can be expected in the future.

DEATH

We have continued to use the old rates of death in active service.

DISABILITY

The new disability rates for males expect almost twice the number of disabilities than the old rates and act to increase City contributions.

SERVICE RETIREMENT

Rates of service retirement are one of the most important elements developed during the course of an actuarial investigation. The liability for service retirement benefits depends to a large extent on the ages at which such benefits commence.

The results of the investigation indicate that the rates of service retirement developed by the June 30, 1969 investigation are no longer appropriate. The rates of service retirement used for the current valuation reflect the actual experience and are about 7% higher than the old rates and act to increase City contributions.

COMMENTS ON INVESTIGATION

There were 19,807 active members as of June 30, 1974. The old rates of separation from active service predict that 10,342 of them will receive monthly benefits under the System and the new rates predict that 11,294 of them will receive monthly benefits - a 9% increase. This increase, coupled with the commencement of benefits at earlier ages, is a major reason for the increase in City contributions developed by the current valuation. Another major reason is the longer lifetimes after commencement of benefits reflected by the new mortality after retirement and disability retirement assumptions recommended herein.

RECOMMENDATIONS ON ACTUARIAL ASSUMPTIONS

Based upon our study and analysis of the information developed by the actuarial investigation of the actual experience of your members during the period July 1, 1969 to June 30, 1974, we respectfully make the following recommendations with respect to the actuarial assumptions to be used for the actuarial valuations to be carried out commencing with the current valuation carried out as of June 30, 1974 which is discussed in the following Section IV of this report:

1. In order to comply with your directive, the actuarial valuations should be carried out on the basis of a 5% interest rate assumption.
2. We recommend the adoption of the 1971 Group Annuity Mortality Table for the mortality after service retirement assumption.
3. We recommend the adoption of the 1973 Disability Mortality Table as the basis of the assumption for mortality after disability retirement.
4. We recommend the continuation of the present salary scales.
5. We recommend the adoption of the rates of separation from active service developed by the current investigation.

Section VI contains schedules showing the salary scales and rates of separation from active service that we recommend be adopted.

SECTION III

MEMBER CONTRIBUTIONS

Section 507 of Article XXXIV of the City Charter sets forth the basis for the determination of the contributions required from members of the System. Section 507 reads in part as follows:

"Each member of said Retirement System shall contribute to said Retirement Fund by salary deduction at the rate of contribution established by the Board of Administration. The rate of such contribution and deduction shall be expressed as a percentage of compensation earnable and shall be a single rate for both sexes based on age at the time of entrance into the System, and shall be such as will accumulate, on the average and on a reserve basis, a sum sufficient for the payment of an annuity of one-one hundredth (1/100th) of final compensation, multiplied by the number of years and parts thereof of city service subsequent to the first day of July, 1937. No adjustment shall be included in the rates adopted subsequent to this amendment because of any time during which members have theretofore contributed at different rates. ---"

Similar language is contained in Section 508.2 regarding the establishment of members' contributions for Continuance to Surviving Spouse benefits. Section 510.1 D provides for Cost of Living contributions from members equal to 15% of the normal and survivor rates already mentioned.

Section 505A(2) provides as follows:

"A. Upon the basis of such investigation and valuation the said Board of Administration shall:

- (2) Revise or change the rates of contribution by members on the basis of such mortality, service and other tables. "

It necessarily follows that when the results of an actuarial investigation indicate a change in the actuarial assumptions underlying the member contribution rates, the rates, themselves, must be redetermined. There are three elements which enter into the determination of member rates of contribution, namely:

1. The interest rate which may be realized on investments of the funds of the System.
2. The relative increases in the salary of a member in the period from the date of the valuation to the date of retirement.
3. The mortality rates to be experienced among persons retired for service under the System.

Each of these elements was discussed in Section II of this report. We recommend no change in the interest rate or salary scales. However, we do recommend that the mortality after service retirement assumption be strengthened by adoption of the 1971 Group Annuity Mortality Table. This change acts to increase member contribution rates. We set forth in the following schedules the member rates of contribution, based upon the new actuarial assumptions, which we recommended be adopted. These rates include cost-of-living contributions at 15% of "basic" contributions. For convenience, we show below a comparison of the present member rates of contribution and

the new recommended rates of contribution for sample ages, including cost-of-living contributions. It should be noted that the new recommended rates of contribution range from 5% to 7% higher than the rates of contribution presently in use.

Comparison of Present and Recommended
Member Rates of Contribution

<u>Age</u>	<u>Recommended Rate</u>			<u>Present Rate</u>			<u>Ratio of Total Rates</u>
	<u>Normal</u>	<u>Continuance</u>	<u>Total</u>	<u>Normal</u>	<u>Continuance</u>	<u>Total</u>	
20	4.67%	.16%	4.83%	4.38%	.13%	4.51%	107%
25	4.99	.31	5.30	4.74	.30	5.04	105
30	5.50	.45	5.95	5.21	.41	5.62	106
35	6.12	.56	6.68	5.81	.52	6.33	106
40	6.84	.67	7.51	6.56	.58	7.14	105
45	7.68	.77	8.45	7.39	.68	8.07	105
50	8.65	.86	9.51	8.31	.77	9.08	105
55	9.71	.95	10.66	9.29	.83	10.12	105
59	10.43	1.02	11.45	10.07	.87	10.94	105

SCHEDULE 1(a)

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

RECOMMENDED MEMBER NORMAL PLUS NORMAL PORTION OF COST
OF LIVING RATES OF CONTRIBUTION BASED ON 5% INTEREST RATE
ASSUMPTION AND 1971 GROUP ANNUITY MORTALITY

<u>Age</u>	<u>"Normal" Contribution</u>	<u>Age</u>	<u>"Normal" Contribution</u>
16	4.21%	40	6.84%
17	4.32	41	7.00
18	4.44	42	7.18
19	4.55	43	7.35
		44	7.51
20	4.67	45	7.68
21	4.72	46	7.88
22	4.77	47	8.07
23	4.84	48	8.27
24	4.91	49	8.49
		50	8.65
25	4.99	51	8.86
26	5.08	52	9.07
27	5.19	53	9.29
28	5.29	54	9.50
29	5.38		
		55	9.71
30	5.50	56	9.90
31	5.61	57	10.09
32	5.73	58	10.28
33	5.85	59	10.43
34	5.98		
35	6.12		
36	6.24		
37	6.38		
38	6.52		
39	6.67		

Effective July 1, 1975

SCHEDULE 1(b)

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

RECOMMENDED MEMBER SURVIVOR PLUS SURVIVOR PORTION OF
COST OF LIVING RATES OF CONTRIBUTION BASED ON 5% INTEREST
RATE ASSUMPTION AND 1971 GROUP ANNUITY MORTALITY

<u>Age</u>	<u>"Survivor" Contribution Rate</u>	<u>Age</u>	<u>"Survivor" Contribution Rate</u>
16	.12%	45	.77%
17	.13	46	.78
18	.14	47	.81
19	.15	48	.83
		49	.84
20	.16		
21	.20	50	.86
22	.22	51	.89
23	.25	52	.90
24	.28	53	.92
		54	.94
25	.31		
26	.35	55	.95
27	.37	56	.98
28	.40	57	1.00
29	.43	58	1.01
		59 and Over	1.02
30	.45		
31	.48		
32	.51		
33	.52		
34	.54		
35	.56		
36	.59		
37	.61		
38	.63		
39	.64		
40	.67		
41	.69		
42	.70		
43	.72		
44	.75		

Effective July 1, 1975

SCHEDULE 1(c)

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

RECOMMENDED MEMBER NORMAL PLUS SURVIVOR PLUS COST OF
LIVING RATES OF CONTRIBUTION BASED ON 5% INTEREST RATE
ASSUMPTION AND 1971 GROUP ANNUITY MORTALITY

Applicable Only to Employees Whose Normal and Survivor
Contribution Rates Are Assigned By The Same Age

<u>Age</u>	<u>Total Contribution Rate</u>	<u>Age</u>	<u>Total Contribution Rate</u>
16	4.33%	40	7.51%
17	4.45	41	7.69
18	4.58	42	7.88
19	4.70	43	8.07
		44	8.26
20	4.83	45	8.45
21	4.92	46	8.66
22	4.99	47	8.88
23	5.09	48	9.10
24	5.19	49	9.33
25	5.30	50	9.51
26	5.43	51	9.75
27	5.56	52	9.97
28	5.69	53	10.21
29	5.81	54	10.44
30	5.95	55	10.66
31	6.09	56	10.88
32	6.24	57	11.09
33	6.37	58	11.29
34	6.52	59	11.45
35	6.68		
36	6.83		
37	6.99		
38	7.15		
39	7.31		

Effective July 1, 1975

SECTION IV

RESULTS OF ACTUARIAL VALUATION

Our valuation of the Retirement System as of June 30, 1974 was based upon the following Accounting Balance Sheet furnished by the Retirement Office. This statement of assets and liabilities of the System was accepted by us without audit and it should be noted that investments are shown at "Book Value".

The current valuation reflects the following major amendments that became effective during the fiscal year ending June 30, 1974:

- a) Members retiring prior to March 29, 1973 were granted a 15% increase in basic and cost-of-living allowances. Certain disability retirees were also granted increases.
- b) Members who retired prior to July 1, 1965 were granted automatic 50% continuance benefits.

An actuarial valuation of the City Employees' Retirement System of the City of Los Angeles was carried out as of June 30, 1974 on the basis of the actuarial assumptions developed during the course of the investigation and which are discussed in Section II of this report. The Actuarial Balance Sheet which follows the Accounting Balance Sheet sets forth the assets and liabilities developed by this valuation.

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACCOUNTING BALANCE SHEET
AS OF
JUNE 30, 1974

ASSETS

CASH:

In City Treasury	\$ 406,008.88
Health Insurance Trust Fund	145,920.73
On Hand	<u>100.00</u>

TOTAL CASH \$ 552,029.61

RECEIVABLES:

Accrued Interest	\$ 4,511,649.91
Dividends Receivable	228,132.50
Due from Other Funds	<u>853,289.38</u>

TOTAL RECEIVABLES \$ 5,593,071.79

INVESTMENTS:

Temporary Investments - (Par)	\$ 16,800,000.00
Bonds (Par)	301,748,054.33
Mortgages (Par)	3,399,592.34
Premium on Investments	702,822.56
Discount on Investments	(4,632,181.89)
Stock @ Cost	<u>71,690,081.91</u>

TOTAL INVESTMENTS \$389,708,369.25

TOTAL ASSETS \$395,853,470.65

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACCOUNTING BALANCE SHEET
AS OF
JUNE 30, 1974

(Continued)

LIABILITIES, RESERVES AND FUND BALANCE

CURRENT LIABILITIES:

Accrued Benefits Payable	\$ 154,223.90
Accounts Payable	27,081.74
Due on Securities	140,775.00
Due Insurance Carriers	<u>145,920.73</u>

TOTAL CURRENT LIABILITIES \$ 468,001.37

RESERVES:

Actuarial:

Accumulated Contributions of Members	\$146,285,193.20
Annuities	43,809,497.66
Prior Service	2,769,742.89
Subsequent Service	176,986,217.32
Cost of Living (Sec. 510.1)	19,725,620.95
Family Death Benefit Insurance	<u>1,885,631.30</u>

TOTAL ACTUARIAL RESERVES \$391,461,903.32

Others:

Undistributed Earnings	98,190.23
Reserve for Gain or Loss on Investments:	
Bonds	\$ 136,826.84
Stocks	<u>2,915,688.54</u>
	3,052,515.38
Reserve for Encumbrances	<u>91,008.70</u>

TOTAL RESERVES \$394,703,617.63

FUND BALANCE 681,851.65

TOTAL LIABILITIES, RESERVES AND FUND BALANCE \$395,853,470.65

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET

ACTUARIAL VALUATION OF ASSETS AND LIABILITIES
AS OF JUNE 30, 1974

ASSETS

1. Total Assets from Accounting Balance Sheet			\$ 395,853,471
2. Present Value of Future Contributions of Members			149,687,184
3. Present Value of Future Contributions by the City on Account of:			
(a) Basic Pensions:			
i) Future Service Liabilities		\$243,152,655	
ii) Amortization of Certain Past Service Liabilities:			
Prior Service Pensions	\$ 9,286,123		
Increase due to 1965 Amendments	6,574,484		
Increase due to 1973 Amendments	39,790,575		
Increase due to 1974 Amendments	<u>24,918,518</u>	80,569,700	
(b) Cost of Living Pensions:			
i) Future Service Liabilities		80,948,241	
ii) Amortization of Certain Past Service Liabilities:			
Increase due to 1967 Amendments	\$24,232,857		
Increase due to 1973 Amendments	34,211,937		
Increase due to 1974 Amendments	<u>6,144,872</u>	<u>64,589,666</u>	<u>469,260,262</u>
4. Total Assets			<u>\$1,014,800,917</u>

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET

(Continued)

LIABILITIES

5. Accounts Payable		\$	468,001
6. Present Value of Benefits Already Granted:			
(a) Basic	\$175,074,780		
(b) Cost of Living	<u>67,921,003</u>		242,995,783
7. Present Value of Benefits to be Granted:			
(a) Basic	\$646,322,465		
(b) Cost of Living	<u>119,205,471</u>		765,527,936
8. Investment Reserve, Undistributed Earnings and Fund Balance			3,923,566
9. Family Death Benefit Insurance Reserve			<u>1,885,631</u>
10. Total Liabilities			<u>\$1,014,800,917</u>

COMMENTS ON ACTUARIAL BALANCE SHEET

The Actuarial Balance Sheet has been prepared in a condensed format and we have utilized some terminology that we hope will aid in its review and discussion.

"Cost of Living Pensions" are the post retirement 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 being amortized over fixed periods of time pursuant either to Charter, Ordinance, or Board authorization.

"Future Service Liabilities" refers to all liabilities of the System other than "Amortization of Certain Past Service Liabilities" and liabilities for Family Death Benefits.

SECTION V

RECOMMENDATIONS

Based on the actuarial investigation and valuation of the Retirement System as of June 30, 1974, we respectfully submit the following recommendations in accordance with the provisions of Article XXXIV of the City Charter.

1. Interest Rate

We concur with the Board of Administration in its authorization to us to use an interest rate of 5% per annum, compounded annually.

2. We recommend that the Retirement Board adopt operating tables for use in the administration of the System, to be furnished by the actuary, based upon the above mentioned interest rate and on the table of mortality for service retirement set forth in Schedules 2 and 3 of Section VI of this report and the table of mortality for disability retirement set forth in Schedule 4 of said Section VI.

3. Contribution of Members

As we indicated in Section II of this report, the change in actuarial assumptions necessitates a change in member rates of contribution. The recommended member rates of contribution are set forth in Section II of this report.

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Based on the entry age normal cost funding method (30-year funding of resulting unfunded past service liability) and 5-1/4% interest assumption, we recommend that the City contributions for the fiscal year 1975-1976 be made up as follows:

		Recommended City Contributions For 1975-1976	
		<u>Percentage of Salary</u>	<u>Fixed Dollar Amount</u>
a)	For Basic Pensions:		
i)	Normal Cost	3.64%	\$ -
ii)	Prior Service-Minimum Pensions (Charter-Period ending June 30, 1997)	-	654,022
iii)	Increase due to 1965 Amendments (Charter-Period ending June 30, 1990)	-	606,627
iv)	Unfunded Past Service Liability (Period ending June 30, 2004)	<u>4.83%</u>	<u>-</u>
v)	Total Basic Pensions	8.47%	\$1,260,649
b)	For Cost of Living Pensions:		
i)	Normal Cost	.64%	\$ -
ii)	Increase due to 1967 Amendment (Charter-Period ending June 30, 1997)		1,796,547
iii)	Unfunded Past Service Liability (Period Ending June 30, 2004)	<u>2.36%</u>	<u>-</u>
iv)	Total Cost of Living Pensions	3.00%	\$1,796,547
c)	Total Basic and Cost of Living Pensions	11.47%	\$3,057,196
d)	For Family Death Benefits:		

\$4.50 per month for each participating member to the Family Death Benefit Insurance Plan.

4. City Contributions

Based on the present funding method, we recommend that the City contributions for the fiscal year 1975-1976 be made up as follows:

		Recommended City Contributions For 1975-1976	
		Percentage of Salary	Fixed Dollar Amount
a)	For Basic Pensions:		
i)	Future Service	10.01%	\$ -
ii)	Prior Service-Minimum Pensions (Period ending June 30, 1997)	-	688,444
iii)	Increase due to 1965 Amendments (Period ending June 30, 1990)	-	606,627
iv)	Increase due to 1973 Amendments (Period ending June 30, 2003)	-	2,627,989
v)	Increase due to 1974 Amendments (Period ending June 30, 1989)	-	<u>2,400,707</u>
vi)	Total Basic Pensions	10.01%	\$ 6,323,767
b)	For Cost of Living Pensions:		
i)	Future Service	3.33%	\$ -
ii)	Increase due to 1967 Amendment (Period ending June 30, 1997)	-	1,796,547
iii)	Increase due to 1973 Amendment (Period ending June 30, 2003)	-	2,259,545
iv)	Increase due to 1974 Amendment (Period ending June 30, 1989)	-	<u>592,011</u>
v)	Total Cost of Living Pensions	3.33%	\$ 4,648,103
c)	Total Basic and Cost of Living Pensions	13.34%	\$10,971,870
d)	For Family Death Benefits:		
	\$4.73 per month for each participating member to the Family Death Benefit Insurance Plan.		

We propose that the recommendations outlined above be made effective as of July 1, 1975. We believe this to be necessary in order to provide

adequate time for the preparation of the operating tables and to make the necessary administrative changes in order to put the recommendations into effect.

In our opinion, if the above recommendations are adopted, the Retirement System will be maintained on a sound actuarial basis and in accordance with Article XXXIV of the City Charter.

COMMENTS ON RECOMMENDATIONS

Based on the annual salary as of June 30, 1974, the June 30, 1973 valuation developed annual City contributions of \$30,711,970 whereas the June 30, 1974 valuation develops annual City contributions of \$46,481,916 an increase of \$15,769,946. The increase may be allocated approximately as follows:

1. 1973-74 Amendments	\$ 3.0 million
2. 8-1/2% Increase in Average Salary	1.8 million
3. Change in Actuarial Assumptions	<u>11.0 million</u>
4. Total	\$15.8 million

The increase due to the change in actuarial assumptions is magnified due to the fact that the increase in past service liabilities as well as the increase in future service liabilities are funded, under the present funding method, over the future working lifetimes of presently active members which is comparable to about a 12-1/2 year funding period. This is a conservative funding period.

The foregoing recommended City contributions developed on the basis of the present funding method, represent a substantial increase over present contributions. The following two techniques have been utilized by some other systems to offset the impact of such a large increase in contributions:

1. Adopt the "Entry Age Normal Cost" funding method with the resulting unfunded past service liability funded over a 30-year period.

You will recall that we previously discussed this funding method with you. Adoption of this funding method would act to reduce City contributions by about \$10,000,000.

2. Spread the increase over a period of five years by equal annual steps - i. e., $1/5$ th of the total increase the first year, $2/5$ ths the second year, etc.

We actually believe the first method (Entry Age Normal Cost Funding Method) is the preferable technique and we would be happy to determine City contributions on the basis of that funding method if you so desire.

SECTION VI

STATISTICAL INFORMATION

LIST OF SCHEDULES

Schedule

1. Family Death Benefits Payable 1975-76.
2. Rates of Mortality after Service Retirement - Male Members.
3. Rates of Mortality after Service Retirement - Female Members.
4. Rates of Mortality after Disability Retirement.
5. Salary Scales.
6. Rates of Withdrawal, Mortality, Disability, Service Retirement - Male Members.
7. Rates of Withdrawal, Mortality, Disability, Service Retirement - Female Members.
8. Number of Active Members and Total Monthly Salary By Sex and Attained Age.

SCHEDULE 1

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

FAMILY DEATH BENEFITS PAYABLE 1975-76

<u>Years</u>	(1) <u>Number</u>	(2) <u>Taxable Wages</u>	<u>(1) x (2)</u>
1965	1	\$ 4,800	\$ 4,800
1966-67	2	6,600	13,200
1968-71	4	7,800	31,200
1972	1	9,000	9,000
1973	1	10,800	10,800
1974	<u>1</u>	13,200	<u>13,200</u>
	10	13,200	\$82,200

Average Monthly Wage (AME) = $\frac{82200}{120}$ = \$685 (Nearest dollar)

Primary Insurance Amount (PIA) from 1974 Amendment = \$376.20

Mother (75%) \$282.15

Child (75%) 282.15

Each of 2 Parents (75%) 282.15

Sole Parent (82-1/2%) 310.37

Maximum Family 658.40

Widow or Dependent Widow at Age:

60 (71.5%) 268.98

61 (77.2%) 290.43

62 (82.9%) 311.87

63 (88.6%) 333.31

64 (94.3%) 354.76

65 (100%) 376.20

Note: The above figures do not include any amount for the cost of living provision of OASDI.

SCHEDULE 2

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

MALE MEMBERS

Rates of Mortality after Service Retirement

<u>Age</u>	<u>Rate of Mortality</u>	<u>Age</u>	<u>Rate of Mortality</u>
55	.008519	85	.130102
56	.009262	86	.139315
57	.010039	87	.148714
58	.010889	88	.158486
59	.011924	89	.168709
60	.013119	90	.179452
61	.014440	91	.190489
62	.015863	92	.201681
63	.017413	93	.212986
64	.019185	94	.226535
65	.021260	95	.241164
66	.023643	96	.256204
67	.026316	97	.272480
68	.029188	98	.290163
69	.032435	99	.309125
70	.036106	100	.329825
71	.040008	101	.352455
72	.043827	102	.377220
73	.047489	103	.406205
74	.051221	104	.441497
75	.055293	105	.485182
76	.060068	106	.539343
77	.065924	107	.606069
78	.072595	108	.687444
79	.079692	109	.785555
80	.087431	110	.999999
81	.095445		
82	.103691		
83	.112303		
84	.121116		

SCHEDULE 3

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

FEMALE MEMBERS

Rates of Mortality after Service Retirement

<u>Age</u>	<u>Rate of Mortality</u>	<u>Age</u>	<u>Rate of Mortality</u>
55	.004740	85	.079692
56	.005285	86	.087431
57	.005867	87	.095445
58	.006480	88	.103691
59	.007127	89	.112303
60	.007806	90	.121116
61	.008519	91	.130102
62	.009262	92	.139315
63	.010039	93	.148714
64	.010889	94	.158486
65	.011924	95	.168709
66	.013119	96	.179452
67	.014440	97	.190489
68	.015863	98	.201681
69	.017413	99	.212986
70	.019185	100	.226535
71	.021260	101	.241164
72	.023643	102	.256204
73	.026316	103	.272480
74	.029188	104	.290163
75	.032435	105	.309125
76	.036106	106	.329825
77	.040008	107	.352455
78	.043827	108	.377220
79	.047489	109	.406205
80	.051221	110	.441497
81	.055293		
82	.060068		
83	.065924		
84	.072595		

SCHEDULE 4

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

MALE AND FEMALE MEMBERS

Rates of Mortality after Disability Retirement

<u>Age</u>	<u>Rate of Mortality</u>	<u>Age</u>	<u>Rate of Mortality</u>
25	.0149	55	.0353
26	.0150	56	.0365
27	.0151	57	.0377
28	.0153	58	.0389
29	.0155	59	.0401
30	.0158	60	.0413
31	.0162	61	.0425
32	.0167	62	.0438
33	.0172	63	.0452
34	.0177	64	.0467
35	.0182	65	.0482
36	.0188	66	.0497
37	.0194	67	.0514
38	.0200	68	.0533
39	.0207	69	.0554
40	.0214	70	.0577
41	.0221	71	.0601
42	.0228	72	.0628
43	.0236	73	.0660
44	.0244	74	.0700
45	.0252	75	.0745
46	.0261	76	.0795
47	.0270	77	.0847
48	.0279	78	.0903
49	.0288	79	.0964
50	.0298	80	.1029
51	.0308	81	.1100
52	.0319	82	.1180
53	.0330	83	.1274
54	.0341	84	.1371

SCHEDULE 5

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

SALARY SCALES

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>Male</u>	<u>Female</u>
20	603	651	45	917	947
21	620	666	46	925	955
22	641	681	47	932	960
23	659	696	48	938	966
24	677	713	49	944	970
25	694	728	50	950	974
26	710	743	51	956	977
27	725	758	52	962	979
28	740	774	53	966	981
29	753	787	54	970	985
30	765	800	55	975	987
31	778	813	56	978	989
32	790	825	57	981	991
33	802	836	58	984	992
34	814	847	59	988	994
35	824	858	60	991	994
36	836	870	61	993	996
37	846	879	62	996	996
38	857	891	63	997	998
39	866	900	64	999	998
40	874	909	65	1000	1000
41	883	919			
42	892	926			
43	901	934			
44	910	942			

SCHEDULE 6

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

*Rates of Withdrawal, Mortality, Disability, Service Retirement

Male Members

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service Retirement</u>
20	.1440	.0003		
21	.1360	.0003		
22	.1280	.0004		
23	.1200	.0004		
24	.1120	.0004		
25	.1040	.0005	.0001	
26	.0960	.0005	.0001	
27	.0880	.0006	.0001	
28	.0800	.0006	.0001	
29	.0720	.0007	.0002	
30	.0640	.0007	.0003	
31	.0590	.0008	.0003	
32	.0540	.0009	.0004	
33	.0500	.0009	.0005	
34	.0450	.0010	.0006	
35	.0400	.0011	.0007	
36	.0370	.0012	.0008	
37	.0340	.0013	.0009	
38	.0310	.0015	.0010	
39	.0280	.0016	.0011	
40	.0250	.0018	.0013	
41	.0240	.0020	.0014	
42	.0220	.0021	.0015	
43	.0210	.0022	.0017	
44	.0190	.0024	.0018	
45	.0180	.0026	.0020	
46	.0180	.0029	.0022	
47	.0170	.0031	.0024	
48	.0170	.0033	.0026	
49	.0160	.0036	.0028	
50	.0160	.0041	.0030	
51	.0160	.0044	.0032	
52	.0150	.0048	.0034	
53	.0150	.0054	.0036	
54	.0140	.0059	.0039	

SCHEDULE 6

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

*Rates of Withdrawal, Mortality, Disability, Service Retirement

(Continued)

Male Members

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service Retirement</u>
55	.0140	.0066	.0042	.0200
56	.0130	.0074	.0044	.0200
57	.0120	.0081	.0047	.0250
58	.0100	.0089	.0050	.0250
59	.0090	.0099	.0052	.0250
60	.0080	.0110	.0055	.0650
61	.0060	.0123	.0058	.0600
62	.0050	.0136	.0061	.0750
63	.0030	.0150	.0064	.1000
64	.0020	.0166	.0067	.1000
65		.0184		.1850
66		.0203		.1500
67		.0225		.1750
68		.0243		.1950
69		.0267		.4700
70				1,0000

*Probability of Occurrence within one year.

SCHEDULE 7

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

*Rates of Withdrawal, Mortality, Disability, Service Retirement

Female Members

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service Retirement</u>
20	.1720	.0002		
21	.1660	.0002		
22	.1600	.0002		
23	.1540	.0002		
24	.1480	.0003		
25	.1420	.0004		
26	.1360	.0004		
27	.1300	.0005		
28	.1240	.0005		
29	.1180	.0006		
30	.1120	.0006	.0001	
31	.1060	.0007	.0001	
32	.0990	.0007	.0001	
33	.0930	.0008	.0001	
34	.0860	.0009	.0001	
35	.0800	.0009	.0002	
36	.0760	.0010	.0002	
37	.0710	.0010	.0002	
38	.0670	.0011	.0003	
39	.0620	.0012	.0003	
40	.0580	.0013	.0004	
41	.0540	.0014	.0005	
42	.0510	.0015	.0006	
43	.0490	.0015	.0008	
44	.0460	.0016	.0010	
45	.0440	.0017	.0012	
46	.0420	.0018	.0014	
47	.0400	.0019	.0014	
48	.0380	.0020	.0016	
49	.0360	.0021	.0018	
50	.0340	.0022	.0020	
51	.0320	.0024	.0024	
52	.0310	.0026	.0028	
53	.0300	.0028	.0032	
54	.0280	.0030	.0036	

SCHEDULE 7

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

*Rates of Withdrawal, Mortality, Disability, Service Retirement

(Continued)

Female Members

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service Retirement</u>
55	.0260	.0033	.0040	.0250
56	.0240	.0036	.0040	.0400
57	.0220	.0039	.0040	.0200
58	.0210	.0043	.0040	.0200
59	.0190	.0047	.0040	.0750
60	.0170	.0052		.1250
61	.0130	.0057		.0900
62	.0100	.0065		.0900
63	.0060	.0073		.1250
64	.0030	.0081		.1350
65		.0091		.1700
66		.0105		.1500
67		.0121		.1500
68		.0139		.1500
69		.0159		.5850
70				1.0000

*Probability of Occurrence Within One Year.

SCHEDULE 8

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Number of Active Members and Total Bi-Weekly Salary
By Sex and Nearest Age

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Salary</u>	<u>Number</u>	<u>Salary</u>	<u>Number</u>	<u>Salary</u>
20 and Under	61	\$ 17,354	175	\$ 52,819	236	\$ 70,173
21	90	28,334	162	50,008	252	78,342
22	134	45,810	223	71,372	357	117,182
23	185	67,144	241	80,094	426	147,238
24	227	87,891	228	81,448	455	169,339
25	255	102,972	265	96,666	520	199,638
26	326	145,473	250	93,720	576	239,193
27	381	177,800	242	95,258	623	273,058
28	394	198,934	221	91,432	615	290,366
29	363	186,177	173	69,700	536	255,877
30	361	190,698	177	73,530	538	264,228
31	377	207,681	133	55,093	510	262,774
32	369	202,608	137	59,018	506	261,626
33	286	158,769	106	45,572	392	204,341
34	344	187,912	115	49,970	459	237,882
35	282	158,596	91	39,154	373	197,750
36	342	192,873	87	35,837	429	228,710
37	339	189,372	106	45,378	445	234,750
38	307	167,261	87	36,056	394	203,317
39	326	185,408	70	30,527	396	215,935
40	347	189,718	71	29,858	418	219,576
41	344	194,545	54	25,512	398	220,057
42	352	198,017	66	30,459	418	228,476
43	345	197,632	81	33,865	426	231,497
44	366	204,997	89	39,371	455	244,368
45	362	215,719	86	38,229	448	253,948
46	349	202,197	98	44,575	447	246,772
47	385	235,055	83	34,064	468	269,119
48	390	229,290	89	39,279	479	268,569
49	468	288,837	75	32,260	543	321,097

SCHEDULE 8

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Number of Active Members and Total Bi-Weekly Salary
By Sex and Nearest Age

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Salary</u>	<u>Number</u>	<u>Salary</u>	<u>Number</u>	<u>Salary</u>
50	408	\$ 250,479	106	\$ 45,284	514	\$ 295,763
51	431	261,617	91	40,334	522	301,951
52	455	284,206	81	35,613	536	319,819
53	458	280,797	94	40,477	552	321,274
54	412	251,661	70	31,049	482	282,710
55	383	225,690	80	34,706	463	260,396
56	368	216,898	71	31,524	439	248,422
57	331	202,860	63	28,214	394	231,074
58	327	193,078	62	29,570	389	222,648
59	262	167,253	82	34,965	344	202,218
60	267	153,864	56	26,200	323	180,064
61	242	139,432	38	16,918	280	156,350
62	200	112,272	42	19,237	242	131,509
63	144	81,025	44	19,478	188	100,503
64	141	79,520	27	10,896	168	90,416
65	116	61,189	20	8,416	136	69,605
66	89	52,747	17	6,996	106	59,743
67	55	31,087	18	8,851	73	39,938
68	48	27,886	12	5,598	60	33,484
69	27	16,670	8	3,678	35	20,348
70 and over	<u>21</u>	<u>14,027</u>	<u>2</u>	<u>704</u>	<u>23</u>	<u>14,731</u>
	14,642	\$8,159,332	5,165	\$2,078,832	19,807	\$10,238,164