

REPORT ON  
ACTUARIAL VALUATION  
OF THE  
CITY EMPLOYEES' RETIREMENT SYSTEM  
OF THE  
CITY OF LOS ANGELES  
AS OF  
JUNE 30, 1971

January 19, 1972

OFFICES IN  
SAN FRANCISCO  
DENVER  
PASADENA

COATES, HERFURTH & ENGLAND  
CONSULTING ACTUARIES  
301 EAST COLORADO BLVD.  
PASADENA, CALIFORNIA 91101

TELEPHONE  
AREA CODE 213 681-4455

January 19, 1972

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

Gentlemen:

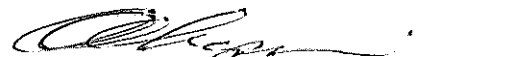
We are pleased to transmit herewith our Report on the Actuarial Valuation of your Retirement System made as of June 30, 1971.

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

Very truly yours,,

COATES, HERFURTH & ENGLAND  
Consulting Actuaries

By



E. L. Chapin

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

In accordance with our agreement we have completed the actuarial valuation of the City Employees' Retirement System as of June 30, 1971.

In order to complete this valuation, the office of the Retirement System furnished us with punched cards which contain all the pertinent information for each member of the System as of June 30, 1971, 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 punched cards 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.

During the year ending June 30, 1971, a net increase of 586 active members of the System occurred. There were also net increases of 90 persons receiving retirement allowances and a net increase of nine persons receiving survivorship allowances.

A summary of the active and retired membership of the System as of June 30, 1971 is shown in the following table. More detailed tables will be found at the end of this report.

SUMMARY OF MEMBERSHIP OF SYSTEM  
AS OF JUNE 30, 1971

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ACTIVE MEMBERS\*

	<u>Number</u>	<u>Annual Salary</u>
Males	13,900	\$165,081,527
Females	<u>4,655</u>	<u>38,349,620</u>
Total	18,555	\$203,431,147

\*Does not include members on military leave or members who terminated with a vested interest.

BENEFICIARIES

	<u>Number</u>	<u>Annual Retirement Allowances</u>
Service Retirement**		
Males	2,147	\$6,916,123.20
Females	<u>1,077</u>	<u>2,383,317.72</u>
Total	3,224	\$9,299,440.92

\*\*Including survivors under options.

Disability Retirements

Males	165	\$ 340,292.40
Females	<u>85</u>	<u>123,556.32</u>
Total	250	\$ 463,848.72

Survivorships

Male	3	\$ 6,762.12
Female	<u>173</u>	<u>398,152.56</u>
Total	176	\$ 404,914.68

<u>Grand Total</u>	3,650	\$10,168,204.32
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## COMPENSATION EXPERIENCE

Since benefits under the System are based upon compensation of members, it is of interest to compare the average monthly compensation from year to year. These averages for the years indicated are as follows:

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Males	\$720	\$753	\$795	\$838	\$916	\$990
Females	<u>529</u>	<u>546</u>	<u>578</u>	<u>604</u>	<u>655</u>	<u>687</u>
Combined	\$674	\$703	\$743	\$781	\$851	\$914

## ACCOUNTING BALANCE SHEET

We have been furnished with an Accounting Balance Sheet of the Retirement System as of June 30, 1971, which shows the distribution of the reserves now held by the System. This statement of assets was used in the completion of the actuarial valuation and no physical audit was required nor has been made by us.

## ACTUARIAL BALANCE SHEET

We have completed a valuation of the actuarial assets and liabilities of the Retirement System as of June 30, 1971, the results of which are shown on the Balance Sheet which follows the Accounting Balance Sheet. This valuation employed the actuarial assumptions adopted and factors developed at the time of the actuarial investigation and valuation made as of June 30, 1969, except that we were directed by the Board to use an interest assumption

of 4-3/4%. It follows that a revision in the member contribution rates is necessary, as discussed in the following paragraph.

#### MEMBER CONTRIBUTIONS

Sections 507, 508.2 and 510.1 D of Article XXXIV of the City Charter describe the basis on which the contributions required from members of the System are to be determined. The quoted references, taken in conjunction with Section 505 of Article XXXIV clearly indicate that the change in the interest assumption authorized by the Board requires a recalculation of the member contribution rates. We have set forth in Schedules 1(a), 1(b) and 1(c) the member contribution rates which entered into our June 30, 1971 cost calculations and which we recommend be adopted by the Board to be payable by members beginning July 1, 1972. For convenience, we show below a comparison of the member rates currently in force and the new recommended rates for sample ages, neither including cost of living contributions.

Comparison of Present and Recommended  
Member Rates of Contribution

<u>Age</u>	<u>Present Rate</u>			<u>Recommended 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	4.19%	.12%	4.31%	3.48%	.10%	3.58%	83%
25	4.41	.28	4.69	3.73	.24	3.97	85
30	4.74	.39	5.13	4.08	.34	4.42	86
35	5.16	.47	5.63	4.51	.41	4.92	87
40	5.68	.52	6.20	5.04	.45	5.49	89
45	6.26	.57	6.83	5.62	.50	6.12	90
50	6.88	.62	7.50	6.29	.56	6.85	91
55	7.54	.67	8.21	6.99	.59	7.58	92
59	8.15	.70	8.85	7.57	.59	8.16	92

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACCOUNTING BALANCE SHEET  
AS OF  
JUNE 30, 1971

ASSETS

FUNDS:

Cash in City Treasury	\$ 676,665.94	
Cash on Hand	50.00	
TOTAL CASH		\$ 676,715.94

RECEIVABLES:

Accrued Interest on Bonds	\$ 3,417,451.57	
Dividends Declared and Payable	85,098.80	
Due from other Funds	6,122.28	
TOTAL RECEIVABLES		\$ 3,508,672.65

INVESTMENTS:

Bonds on Hand - Par Value	\$259,925,960.81	
Less Bond Discount/Premium Unamortized (Net)	(2,521,725.01)	
Bonds on Hand at Book Value	\$257,404,235.80	
Bonds in Transit	1,000,000.00	
Stocks on Hand at Cost	30,256,959.39	
TOTAL INVESTMENTS		288,661,195.19
TOTAL ASSETS		<u>\$292,846,583.78</u>

LIABILITIES

Accounts Payable		\$ 20,773.26
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RESERVES:

Accumulated Contributions of Members	\$113,772,079.10	
Annuities and Interest Thereon	29,273,557.92	
Prior Service	5,202,706.76	
Subsequent Service	116,672,052.57	
Disability Allowances	4,692,579.02	
Death Benefits	11,464,842.82	
Cost of Living (Section 510.1)	9,597,645.76	
Family Death Benefit Insurance	1,086,737.06	
TOTAL RESERVES		\$291,762,201.01

SURPLUS:

Undistributed Interest	\$ 101,365.10	
Reserve for Investment Fluctuation	919,409.24	
Surplus	42,835.17	
TOTAL SURPLUS		<u>\$ 1,063,609.51</u>

TOTAL LIABILITIES		<u>\$292,846,583.78</u>
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LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET

ACTUARIAL VALUATION OF ASSETS AND LIABILITIES  
AS OF JUNE 30, 1971

ASSETS

1. Total Assets from Accounting Balance Sheet		\$292,846,583.78
2. Present Value of Future Contributions of Members		99,301,589.00
3. Present Value of Future Contributions by the City on Account of:		
(a) Subsequent Service Pensions and Continuance to Eligible Spouse Future Service Benefits	\$98,606,961.51	
(b) Disability Pensions	3,839,247.98	
(c) Death Benefits	2,594,914.23	
(d) Prior Service Pensions and Minimum Pensions	7,988,430.24	
(e) Continuance to Eligible Spouse Prior Service Benefits	7,482,972.00	
(f) Cost of Living Pensions, Service Prior to July 1, 1967	26,504,812.00	
(g) Cost of Living Pensions, Future Service	<u>16,529,424.24</u>	<u>163,546,762.20</u>
4. TOTAL ASSETS		<u>\$555,694,934.98</u>

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET  
(Continued)

LIABILITIES

5.	Accounts Payable		\$ 20,773.26
6.	Limited Pensions Payable		136,431.05
7.	Death Benefits Payable		17,500.00
8.	Service Retirement Allowances Now Being Paid:		
	(a) Annuities	\$ 23,503,892.00	
	(b) Subsequent Service Pensions	49,734,899.00	
	(c) Prior Service Pensions and Minimum Pensions	11,750,110.00	
	(d) Cost of Living Pensions	<u>8,947,513.00</u>	93,936,414.00
9.	Disability Allowances Now Being Paid:		
	(a) Annuities	\$ 995,658.00	
	(b) Disability Pensions and Minimum Pensions	3,282,423.00	
	(c) Cost of Living Pensions	<u>381,548.00</u>	4,659,629.00
10.	Survivorship Death Allowances Now Being Paid:		
	(a) Annuities	\$ 1,145,283.00	
	(b) Survivorship Pensions	3,021,292.00	
	(c) Cost of Living Pensions	<u>566,746.00</u>	4,733,321.00
11.	Service Retirement Allowances to be Granted in the Future For:		
	(a) Subsequent Service	\$304,168,790.00	
	(b) Prior Service and Minimum	<u>1,265,661.00</u>	305,434,451.00

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET  
(Continued)

LIABILITIES (Continued)

12.	Cost of Living Pensions to be Granted in the Future For:		
	(a) Active Members	\$ 43,628,975.00	
	(b) Retired Members	<u>11,766,426.00</u>	\$ 55,395,401.00
13.	Disability Allowances to be Granted in the Future		10,871,454.00
14.	Death Benefits to be Granted in the Future		31,793,461.93
15.	Contributions to be Returned upon Withdrawal:		
	(a) Past	\$ 24,007,500.00	
	(b) Future	<u>21,108,332.00</u>	45,115,832.00
16.	Investment Reserve, Undistributed Interest, and Surplus		1,063,609.51
17.	Contributions of Inactive Members		1,429,920.17
18.	Family Death Benefit Insurance Reserve		<u>1,086,737.06</u>
19.	TOTAL LIABILITIES		<u>\$555,694,934.98</u>

## COMMENTS ON ACTUARIAL BALANCE SHEET

The Actuarial Balance Sheet has been prepared in the same form as was used for the valuation made as of June 30, 1970. Item 3 on the asset side of the balance sheet shows the present value of the future contributions to be made by the City on account of (a) Subsequent Service Pensions and Continuance to Eligible Spouse Future Service Benefits, (b) Disability Pensions, (c) Death Benefits, (d) Prior Service Pensions and Minimum Pensions, (e) Continuance to Eligible Spouse Prior Service Benefits and (f) and (g) Cost of Living Pensions, corresponding to the various rates which are recommended in this report.

Items 8 through 15 show the actuarially computed present values of all future benefits to be paid by the System on behalf of all presently retired and active members, while item 16 sets forth the surplus which is shown on the Accounting Balance Sheet.

## RECOMMENDATIONS

Based upon the valuation described herein, we recommend the following contributions which, in our opinion, are in accordance with the provisions of the Charter and are adequate to maintain the System on a sound actuarial basis:

1. That members contribute at the rates recommended in an earlier section of this Report, effective July 1, 1972.
2. That City contributions for the fiscal year 1972-1973 be made up as follows:

- (a) For subsequent service pensions, continuance to eligible spouse future service benefits, disability pensions, death benefits and cost of living future service pensions, 6.532% of the compensation of members covered by the System, which may be broken down as follows:

Subsequent Service Pensions and Continuance to Eligible Spouse Benefits	5.299%
Disability Pensions	.206%
Death Benefits	.139%
Cost of Living Future Service	<u>.888%</u>
Total	6.532%

- (b) For prior service pensions and minimum pensions; \$541,471.00. Annual contributions of this amount will liquidate the unfunded liability of \$7,988,430.24 for such pensions by June 30, 1997.
- (c) For continuance to eligible spouse benefits applicable to service rendered to June 30, 1965; \$606,627.00. Annual contributions of this amount will liquidate the unfunded liability of \$7,482,972.00 for such benefits over the period ending June 30, 1990.
- (d) For Cost of Living Benefits, Service to June 30, 1967; \$1,796,547.00. Annual contributions of this amount will liquidate the unfunded liability of \$26,504,812.00 for such benefits over the period ending June 30, 1997.
- (e) For the Family Death Benefit Insurance Plan; \$2.94 per month for each participating member.

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Number of Active Members and Total Monthly Salary  
By Sex and Nearest Age

Age	Male		Female		Total	
	Number	Salary	Number	Salary	Number	Salary
20 and under	72	\$ 40,682	301	\$ 161,951	373	\$ 202,633
21	75	46,505	215	117,034	290	163,539
22	89	59,881	237	136,063	326	195,944
23	171	125,600	220	130,143	391	255,743
24	242	184,522	229	144,776	471	329,298
25	287	240,999	213	141,568	500	382,567
26	281	242,049	167	111,430	448	353,479
27	296	262,088	169	111,934	465	374,022
28	330	299,742	131	87,394	461	387,136
29	345	325,296	128	87,166	473	412,462
30	268	251,757	109	82,478	377	334,235
31	293	271,793	102	74,904	395	346,697
32	279	260,788	85	60,491	364	321,279
33	334	317,682	77	56,500	411	374,182
34	332	310,738	89	64,954	421	375,692
35	287	266,719	74	54,819	361	321,538
36	333	319,661	70	48,064	403	367,725
37	348	334,237	66	47,968	414	382,205
38	350	343,826	49	39,597	399	383,423
39	325	312,252	59	44,168	384	356,420
40	338	338,202	77	55,501	415	393,703
41	333	322,617	87	64,516	420	387,133
42	337	347,685	76	59,927	413	407,612
43	335	341,525	86	60,860	421	402,385
44	373	395,675	73	52,812	446	448,487
45	378	385,740	90	65,219	468	450,959
46	454	490,645	71	52,619	525	543,264
47	401	431,163	91	65,480	492	496,643
48	431	459,915	96	74,411	527	534,326
49	450	486,396	73	52,773	523	539,169

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Number of Active Members and Total Monthly Salary  
By Sex and Nearest Age

Age	Male		Female		Total	
	Number	Salary	Number	Salary	Number	Salary
50	442	\$ 474,538	95	\$ 66,640	537	\$ 541,178
51	407	427,061	78	58,655	485	485,716
52	389	401,078	75	56,705	464	457,783
53	375	397,414	74	53,434	449	450,848
54	359	386,809	82	64,237	441	451,046
55	365	385,182	66	49,038	431	434,220
56	294	324,588	86	62,783	380	387,371
57	310	313,188	63	50,196	373	363,384
58	300	307,497	52	40,276	352	347,773
59	254	254,442	55	42,173	309	296,615
60	187	201,335	70	53,068	257	254,403
61	215	216,856	48	34,212	263	251,068
62	175	174,156	32	22,324	207	196,480
63	164	167,045	39	30,213	203	197,258
64	137	136,971	32	24,906	169	161,877
65	104	108,689	29	23,029	133	131,718
66	72	73,150	20	16,264	92	89,414
67	76	74,820	17	14,010	93	88,830
68	54	58,424	17	13,020	71	71,444
69	35	36,114	11	10,494	46	46,608
70 and over	19	21,057	4	2,605	23	23,662
	13,900	\$13,756,794	4,655	\$3,195,802	18,555	\$16,952,596

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Number and Amount of Retirement Allowances In Effect

	<u>Number</u>	<u>Monthly Allowance</u>				<u>Total</u>
		<u>Minimum</u>	<u>Past Service or Disability</u>	<u>Subsequent Service</u>	<u>Annuity</u>	
<u>Service Retirement</u>						
Male	2,147	\$ 8,126.40	\$ 96,072.27	\$336,206.87	\$135,938.06	\$576,343.60
Female	<u>1,077</u>	<u>3,154.04</u>	<u>29,284.72</u>	<u>113,192.19</u>	<u>52,978.86</u>	<u>198,609.81</u>
Total	3,224	\$11,280.44	\$125,356.99	\$449,399.06	\$188,916.92	\$774,953.41
<u>Disability Retirement</u>						
Male	165	\$ 817.91	\$ 21,028.75	\$ 810.71	\$ 5,700.33	\$ 28,357.70
Female	<u>85</u>	<u>309.57</u>	<u>6,079.97</u>	<u>1,629.53</u>	<u>2,277.29</u>	<u>10,296.36</u>
Total	250	\$ 1,127.48	\$ 27,108.72	\$ 2,440.24	\$ 7,977.62	\$ 38,654.06
<u>Survivorship</u>						
Male	3	\$ 7.63	\$ 69.64	\$ 353.24	\$ 133.00	\$ 563.51
Female	<u>173</u>	<u>667.60</u>	<u>5,805.75</u>	<u>18,319.88</u>	<u>8,386.15</u>	<u>33,179.38</u>
Total	176	\$ 675.23	\$ 5,875.39	\$ 18,673.12	\$ 8,519.15	\$ 33,742.89
Grand Total	3,650	\$13,083.15	\$158,341.10	\$470,512.42	\$205,413.69	\$847,350.36



SCHEDULE 1(a)

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

RECOMMENDED MEMBER NORMAL PLUS NORMAL PORTION OF  
COST OF LIVING RATES OF CONTRIBUTION  
BASED ON 4-3/4% INTEREST RATE ASSUMPTION

<u>Age</u>	<u>"Normal" Contribution Rate</u>	<u>Age</u>	<u>"Normal" Contribution Rate</u>
16	3.84%	40	5.80%
17	3.89	41	5.92
18	3.92	42	6.05
19	3.96	43	6.19
20	4.00	44	6.32
21	4.05	45	6.46
22	4.11	46	6.61
23	4.16	47	6.76
24	4.22	48	6.91
25	4.29	49	7.07
26	4.36	50	7.23
27	4.43	51	7.39
28	4.51	52	7.56
29	4.60	53	7.72
30	4.69	54	7.88
31	4.78	55	8.04
32	4.88	56	8.20
33	4.98	57	8.36
34	5.08	58	8.53
35	5.19	59	8.71
36	5.30		
37	5.42		
38	5.54		
39	5.67		

SCHEDULE 1(b)

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

RECOMMENDED MEMBER SURVIVOR PLUS SURVIVOR PORTION OF  
COST OF LIVING RATES OF CONTRIBUTION  
BASED ON 4-3/4% INTEREST RATE ASSUMPTION

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<u>Age</u>	<u>"Survivor" Contribution Rate</u>	<u>Age</u>	<u>"Survivor" Contribution Rate</u>
16	.08%	45	.58%
17	.09	46	.60
18	.10	47	.61
19	.10	48	.62
		49	.63
20	.12		
21	.14	50	.64
22	.17	51	.66
23	.21	52	.66
24	.25	53	.67
		54	.67
25	.28		
26	.30	55	.68
27	.32	56	.68
28	.34	57	.68
29	.37	58	.68
		59 and Over	.68
30	.39		
31	.40		
32	.43		
33	.44		
34	.46		
35	.47		
36	.48		
37	.49		
38	.49		
39	.51		
40	.52		
41	.53		
42	.54		
43	.55		
44	.56		

SCHEDULE 1(c)

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

RECOMMENDED MEMBER NORMAL PLUS SURVIVOR PLUS  
COST OF LIVING RATES OF CONTRIBUTION  
BASED ON 4-3/4% INTEREST RATE ASSUMPTION

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	3.92%	40	6.32%
17	3.98	41	6.45
18	4.02	42	6.59
19	4.06	43	6.74
		44	6.88
20	4.12	45	7.04
21	4.19	46	7.21
22	4.28	47	7.37
23	4.37	48	7.53
24	4.47	49	7.70
25	4.57	50	7.87
26	4.66	51	8.05
27	4.75	52	8.22
28	4.85	53	8.39
29	4.97	54	8.55
30	5.08	55	8.72
31	5.18	56	8.88
32	5.31	57	9.04
33	5.42	58	9.21
34	5.54	59	9.39
35	5.66		
36	5.78		
37	5.91		
38	6.03		
39	6.18		