

ACTUARIAL REPORT  
EMPLOYEES ' RETIREMENT ASSOCIATION  
OF THE  
COUNTY OF FRESNO

Made to the Board of Retirement

As of October 31, 1974

COATES, HERFURTH & ENGLAND

CONSULTING ACTUARIES

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March 11, 1975

Board of Retirement  
Employees' Retirement Association  
County of Fresno  
P. O. Box 747  
Fresno, California 94712

Gentlemen:

Pursuant to our agreement with you, we have completed an actuarial investigation and valuation of the County's Retirement System as of October 31, 1974. We are pleased to hand you herewith our report on the results of the valuation and our recommendations with respect to both the present system and certain proposals which you have asked us to study.

We wish to express our appreciation for the cooperation extended to us during the course of this survey.

Respectfully submitted,

COATES, HERFURTH & ENGLAND  
Consulting Actuaries

By Robert D. Drisko  
Robert D. Drisko

RDD/dch

Enclosure

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

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ACTUARIAL REPORT  
EMPLOYEES' RETIREMENT ASSOCIATION  
COUNTY OF FRESNO  
AS OF OCTOBER 31, 1974

SECTION I

INTRODUCTION

Section 31453 of the County Employees Retirement Law of 1937 provides as follows:

"An actuarial valuation shall be made within one year after the date on which any system established under this chapter becomes effective, and thereafter at not to exceed five-year intervals. The valuation shall be conducted under the supervision of an actuary and shall cover the mortality, service, and compensation, experience of the members and beneficiaries, and shall evaluate the assets and liabilities of the retirement fund. Upon the basis of the investigation, valuation, and recommendation of the actuary, the board of retirement shall recommend to the board of supervisors such changes in the rates of interest, in the rates of contribution of members, and in county and district appropriations as are necessary .... No adjustment shall be included in the new rates for time prior to the effective date of the revision."

The last investigation and valuation of the System was made as of June 30, 1972. In accordance with the foregoing provisions of the law and at the request of the Board of Retirement we have completed an investigation into the mortality, service and compensation experience of members and beneficiaries under the System during the two years from November 1, 1972 through October 31, 1974. Based upon the assumptions derived from this investigation and the rate of interest of 5% per annum, we have completed an actuarial valuation of the prospective assets and liabilities of the System as of October 31, 1974.



In the valuation of the System the members' rates of contribution make up the first element to be determined. These rates are dependent only upon:

1. An interest assumption.
2. Expected compensation experience among active members.
3. The rate of mortality expected among members retired for service.

Next, an actuarial valuation must be made of that portion of the total anticipated liabilities of the System which will not be funded by member contributions or County funds currently on hand. In this way the total remaining net liability falling against the County is determined and this is the basis of the County rates. It should be noted that the County rates are therefore dependent upon all actual experience of both the active and retired members and upon the interest earnings of the fund.

The report follows a format similar to that used previously, it has been assembled in sections dealing with the following:

1. Major provisions of the present System
2. Data upon which the actuarial survey was based
3. Determination of member contributions
4. Valuation of the assets and liabilities of the System
5. Our recommendations
6. Cost of Living Program
7. Proposed Changes
8. Statistical Section

SECTION II  
MAJOR PROVISIONS  
OF THE PRESENT SYSTEM

Briefly summarized below are the major provisions of the County Employees Retirement Law of 1937, as amended through October 31, 1974, and as adopted by Fresno County.

1. Membership

Each person entering County employ becomes a member on the first day of the calendar month after entrance into service.

2. Return of Contributions

If a member should resign or die before becoming eligible for retirement, his contributions plus interest will be refunded.

3. Death Benefit

Before Retirement

In addition to the return of contributions, a death benefit is payable to the member's beneficiary or estate equal to one month's salary for each completed year of service under the retirement system, based on his final year's average salary, but not to exceed six (6) month's salary.

If a member dies while eligible for service retirement or non service connected disability, his spouse receives 60% of the allowance the member would have received for retirement on the day of his death.

If a member dies in the performance of duty, his spouse receives 50% of the member's final average salary.

After Retirement

If the retirement was for service connected disability, 100% of the member's allowance as it was at death is continued to his surviving spouse for life.

#### 4. Disability Benefit

Members with 5 years of service, regardless of age, are eligible for non-service connected disability. The benefit is  $1\frac{1}{2}\%$  (1.8% for safety members), of final average salary for each year of service. If this benefit does not equal  $\frac{1}{3}$  of final average salary, the benefit is increased by this same percentage of final average salary for the years which would be creditable to age 65 (age 55 for safety members), but the total benefit in this case would not be more than  $\frac{1}{3}$  of final average salary.

If the disability is service connected, the member may retire regardless of length of service, and the benefit is 50% of final average salary.

#### 5. Service Retirement Benefit

##### Miscellaneous Members

Members with 10 years of service, who have attained the age of 50, are eligible to retire. Members with 30 years of service, regardless of age, are eligible to retire. Retirement is compulsory on the first day of the month following that in which a member reaches the age of 70.

##### Safety Members

Members with 10 years of service, who have attained the age of 50, are eligible to retire. Members with 25 years of service, regardless of age, are eligible to retire. Retirement is compulsory on the first day of the month following that in which a member reaches the age of 60.

##### Benefit

A fraction of  $\frac{1}{60}$  ( $\frac{1}{50}$  for safety members) of final average salary per year of service, depending on age at retirement as illustrated below for typical ages.

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Safety</u>
50	.6852	.7091	1.000
55	.8779	.8954	1.3099
60	1.1500	1.1500	1.3099
65	1.4525	1.4593	-

6. Cost of Living

A portion of the contributions for retirement withheld from compensation is for cost of living adjustments after retirement. These contributions are refundable if the employee terminates employment before retirement. The County contributes an equal amount of cost of living contributions. The current maximum increase in retirement allowance is 3% a year based on the Cost of Living Index for the year ending December 31st.

7. Basic Contributions

Member

Rates are based on the age nearest birthday at entry into the System, and on sex for Miscellaneous Members. The rates are such as will provide an average annuity at age 60 of 1/120 of final average salary for Miscellaneous Members, and at age 50 of 1/100 of final average salary for Safety Members.

County

The County rate is the percentage of salary necessary, upon an actuarial basis, to provide for payment of the benefits promised. These rates are changed in accordance with each actuarial study.



SECTION III

DATA FURNISHED

The Retirement System furnished us with the following information on each member of the System who was active on October 31, 1974.

1. Name
2. Sex
3. Date of birth
4. Date of membership
5. Rate of contribution
6. Monthly compensation earnable
7. Accumulated contributions as of October 31, 1974
8. Classification (general or safety)
9. Integration (modified or unmodified)

In addition to the above, we were furnished with the following data on each person receiving an allowance from the Retirement System as of October 31, 1974:

1. Name
2. Sex
3. Class
4. Date of birth
5. Date of retirement
6. Type of retirement
7. Option selected
8. Accumulated contributions at date of retirement
9. Monthly annuity
10. Current service pension
11. Prior service pension
12. "Cost-of-Living" pension
13. Beneficiary's date of birth, sex and marital relation, if any, to member

In addition to the above information on retired persons, we were furnished with similar information on all retired members who had died between July 1, 1972, and October 31, 1974, or had been reinstated from retirement status. Similar information was also given on all employees who had been active members of the System at any time during this period and who withdrew, died in service, or retired for either disability or service within the period.

## Accounting Balance Sheet

The Retirement Board furnished us with a financial statement of the System as of October 31, 1974. This statement of assets was accepted by us without audit and used in the determination of the net liabilities under the System. We have produced an abbreviated version of the balance sheet as of October 31, 1974, on page 9.

Of the reserves now held by the Retirement System, Item 4 is the amount credited to active members' accounts, representing contributions for service to date and cost-of-living contributions, plus interest credited at the rates prescribed by the Retirement Board. Item 5 is the amount of accumulated contributions made by the County for current service benefits accrued to date for present active members. Item 6 and 7 show the balances in the funds set aside for retired members to provide for current service pensions and annuities now in effect. Item 8 represents the net contributions made to date by the County to provide for prior service pensions accrued by members not yet retired and Item 9 for prior service pensions now in effect. The County is amortizing all prior service liabilities by regular contributions which are credited to the County Advance Reserve, Prior Service. When a member retires, the full actuarial value of his prior service pension is transferred from this reserve to the Pension Reserve. A deficit in this reserve, as currently exists for the safety members means that the actuarial value of all the prior service pensions granted to date exceeds the County prior service contributions to date. The actual prior service pension payments, however, have not exceeded the County contributions.

Item 10 is the reserve set aside to provide allowances for the survivors of deceased members who died while in active service.

Item 11 is the reserve set aside for the purpose of providing future cost-of-living benefits to current and future pensioners.



Item 12 is the excess of interest earned over interest credited to the various reserve accounts. A part of this is to be used as a contingency reserve if needed in the future because of adverse experience. The balance is available for additional future benefits to the members.

ACCOUNTING BALANCE SHEET

AS OF

October 31, 1974

ASSETS

1.	Cash on hand	\$ 4,319,910.07
2.	Securities (at cost)	<u>49,630,608.46</u>
3.	Total Assets	<u>\$ 53,950,518.53</u>

LIABILITIES

4.	Members' Deposit Reserve	
	a) Normal contributions	\$17,489,329.68
	b) Cost-of-Living contributions	<u>453,651.74</u>
		\$ 17,942,981.42
5.	Current service advance reserve	8,651,538.78
6.	Current service pension reserve	16,827,933.09
7.	Annuity reserve	5,165,645.73
8.	Prior service advance reserve	891,243.11
9.	Prior service pension reserve	1,192,467.65
10.	Survivors' death benefit reserves	454,840.57
11.	Cost-of-Living adjustment reserve	1,357,797.59
12.	Surplus	<u>1,466,070.59</u>
13.	Total Liabilities	<u>\$ 53,950,518.53</u>

#### SECTION IV

##### MEMBER CONTRIBUTIONS

The 1937 County Law sets forth the basis of determining the normal rates of contribution for miscellaneous members in Section 31621 of Article 6, which reads as follows:

" The normal rates of contribution except for members covered by Article 6.8 shall be such as will provide an average annuity at age 60 equal to one-hundred-twentieth of the final compensation of members not covered by Article 6.8, according to the tables adopted by the board of supervisors, for each year of service rendered after entering the system."

The basis for determining the corresponding normal rates of contribution for safety members is Section 31639.25, of Article 6.8, as follows:

" The normal rates of contributions shall be such as will provide an average annuity at age 50 equal to one one-hundredth of the final compensation of safety members, according to the tables adopted by the board of supervisors, for each year of service rendered after entering the system."

In addition, for members covered under Article 13, Integration with Old Age and Survivors Insurance, Section 31812 of the Law also applies. This section reads as follows:

" Each member shall continue to contribute as provided for in Article 6 or. . . Article 6.8 of this chapter, less an amount equal to one-third of that portion of such contribution which is payable with respect to the first three hundred fifty dollars (\$350) monthly wage. . ."

Section 31620 of the County Law further provides that the contribution rates of members shall be based upon the sex and age at nearest birthday at the time of entrance into the Retirement System. Section 31453 provides for the adjustment in such rates of contribution in the light of changes in the rate of interest and the other factors. It further provides that no adjustment shall be included in the new rates for time prior to the effective date of the

revision. This, in effect, provides that all gains or losses due to actual experience to date fall upon the County.

In order to determine the rates of contribution in accordance with the above provisions of the Law, it is first necessary to adopt assumptions for the following, which are the only three elements which enter into the calculations:

1. The interest rate that may be realized on the investments of the funds of the System.
2. The relative average increases anticipated in the salary of the members as they advance in age to retirement.
3. The mortality to be experienced among members retired for service under the System.

The above three factors and the assumptions made in regard to each of them will be discussed in the paragraphs that follow.

#### Interest Rate

The last actuarial valuation, made in 1972 was completed on the basis of a long-term interest assumption of 4-3/4% per annum, which was justifiable at that time in the light of earnings. Since then, current investments have been made at improved yields, and the interest earned by the retirement fund has increased. Considering this, we agree with the decision of the Retirement Board that it is realistic to recognize these higher earnings. We, therefore, have assumed an interest rate of 5% per annum for the valuation of the prospective assets and liabilities of the fund.

#### Mortality after Service Retirement

In the last actuarial study we recommended, and the Board adopted, the use of a mortality table which anticipated slightly longer life expectancies than the previous table. The present table is the 1951 Group Annuity Table, with a one year age set back for both men and women. We feel this table is



appropriate for Fresno County and for other counties under the 1937 Act as well because it affords a realistic basis and conforms closely with the generally observed trend for longer life expectancies.

We have used the above table in the valuation and we recommend its continued use by your System. The rates of mortality of this table for both men and women are included as Schedule VIIa in Section IX of this report.

Because there were few safety members on retirement to provide a basis for an adequate investigation, we have continued to assume the same mortality standard for them as for other male retired members. We have also combined the experience of beneficiaries with that of service-retired members of the same sex, a practice which has been followed by us in the past. Until revised in the light of future investigations, we feel these assumptions are appropriate.

#### Salary Scales

For the purposes of calculating member contribution rates and also to determine the value of benefits that are based upon final compensation, salary scales were developed, based upon the membership data, to measure the relative increases in salaries that would be anticipated, on the average, as members advance in age under the system. It should be understood that no attempt is made, in determining the salary scales, to anticipate changes in the general level of compensation that may result because of changing economic conditions, i.e., inflation. These scales are used in the valuation and in the determination of contribution rates to indicate the average relationship existing between compensation at different ages, on the average, in accordance with the present level of salaries. The inflation that has already occurred is reflected at the time of each valuation.

### Member Contribution Rates

Because of the changes in the interest rate and the salary scales, the newly calculated rates of contribution for Miscellaneous members are higher at the younger ages and slightly less at the older ages than the present member rates. This is due to the interaction of the increase in both the interest rate and the salary scales. The change from a 4-3/4% interest assumption to 5% tends to reduce the contribution rates while the salary scale increase tends to increase the contribution rates. For the Safety members the rates of contributions are slightly lower at all ages since the interest rate increase more than offset the slight increase in the salary scale.

Although the 1937 County Law does not specify the particular date upon which changes in contribution rates should be made effective, we would suggest that any revision of contribution rates for members be put into effect as soon as possible, but upon a date which would be convenient from the administrative viewpoint.

Complete schedules of the recommended new rates are shown on the following pages and, in our opinion, are the rates which comply with the provisions of Section 31621, 31639.25 and 31812 of the Law and the assumptions adopted as discussed in the preceding paragraphs. For members not integrated with Social Security in accordance with Article 13, the applicable contribution rate should be read from the column captioned "Excess of Monthly Compensation Over \$350", and applied to the total monthly salary.



EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates  
Section 31676.1

Male Members

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
16	2.73%	4.09%
17	2.75	4.13
18	2.78	4.17
19	2.81	4.21
20	2.83	4.25
21	2.86	4.29
22	2.89	4.34
23	2.93	4.39
24	2.97	4.45
25	3.01	4.52
26	3.05	4.58
27	3.11	4.66
28	3.16	4.74
29	3.23	4.84
30	3.29	4.94
31	3.36	5.04
32	3.43	5.15
33	3.51	5.27
34	3.59	5.39
35	3.68	5.52
36	3.76	5.64
37	3.84	5.76
38	3.93	5.89
39	4.02	6.03

Female Members

Contribution Rate Applicable to:

<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
3.11%	4.66%
3.15	4.73
3.20	4.80
3.25	4.87
3.29	4.94
3.34	5.01
3.39	5.09
3.45	5.18
3.51	5.26
3.57	5.35
3.63	5.44
3.69	5.54
3.75	5.63
3.82	5.73
3.89	5.84
3.97	5.95
4.04	6.06
4.11	6.17
4.19	6.29
4.27	6.41
4.36	6.54
4.44	6.66
4.53	6.79
4.61	6.92

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates

Section 31676.1

(continued)

Male Members

Female Members

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
40	4.11%	6.16%	4.71%	7.06%
41	4.20	6.30	4.80	7.20
42	4.29	6.44	4.89	7.34
43	4.39	6.58	4.99	7.49
44	4.48	6.72	5.09	7.64
45	4.57	6.86	5.19	7.78
46	4.67	7.01	5.29	7.94
47	4.77	7.16	5.40	8.10
48	4.88	7.32	5.51	8.26
49	4.98	7.47	5.62	8.43
50	5.08	7.62	5.73	8.60
51	5.19	7.78	5.85	8.77
52	5.29	7.94	5.96	8.94
53	5.41	8.11	6.08	9.12
54	5.52	8.28	6.21	9.31
55	5.63	8.45	6.33	9.50
56	5.75	8.62	6.45	9.68
57	5.85	8.78	6.59	9.88
58	5.97	8.96	6.72	10.08
59 & Over	6.09	9.14	6.85	10.28

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Safety Members' Contribution Rates  
Section 31664

Contribution Rate Applicable to:

<u>Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Compensation Over \$350</u>
21	5.16%	7.74%
22	5.26	7.89
23	5.36	8.04
24	5.46	8.19
25	5.57	8.35
26	5.67	8.51
27	5.79	8.68
28	5.90	8.85
29	6.02	9.03
30	6.14	9.21
31	6.27	9.40
32	6.39	9.59
33	6.52	9.78
34	6.65	9.98
35 & Over	6.79	10.19

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates  
Section 31676.12

Male Members

Female Members

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
16	3.27%	4.91%	3.73%	5.60%
17	3.30	4.95	3.79	5.68
18	3.33	5.00	3.84	5.76
19	3.37	5.05	3.89	5.84
20	3.40	5.10	3.95	5.93
21	3.43	5.15	4.01	6.01
22	3.47	5.21	4.07	6.11
23	3.51	5.27	4.15	6.22
24	3.56	5.34	4.21	6.31
25	3.61	5.42	4.28	6.42
26	3.67	5.51	4.35	6.53
27	3.73	5.60	4.43	6.64
28	3.79	5.69	4.51	6.76
29	3.87	5.81	4.59	6.88
30	3.95	5.93	4.67	7.01
31	4.03	6.05	4.76	7.14
32	4.12	6.18	4.85	7.27
33	4.21	6.32	4.94	7.41
34	4.31	6.47	5.03	7.55
35	4.41	6.62	5.12	7.68
36	4.51	6.77	5.23	7.84
37	4.61	6.91	5.33	8.00
38	4.71	7.07	5.43	8.15
39	4.83	7.24	5.54	8.31

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates

Section 31676.12

(Continued)

Male Members

Female Members

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
40	4.93%	7.39%	5.65%	8.48%
41	5.04	7.56	5.76	8.64
42	5.15	7.72	5.87	8.80
43	5.26	7.89	5.99	8.98
44	5.38	8.07	6.11	9.16
45	5.49	8.24	6.23	9.34
46	5.61	8.42	6.35	9.53
47	5.73	8.60	6.48	9.72
48	5.85	8.78	6.61	9.91
49	5.97	8.96	6.74	10.11
50	6.10	9.15	6.88	10.32
51	6.23	9.34	7.02	10.53
52	6.35	9.53	7.15	10.73
53	6.49	9.73	7.29	10.94
54	6.62	9.93	7.45	11.17
55	6.76	10.14	7.60	11.40
56	6.89	10.34	7.75	11.63
57	7.03	10.54	7.91	11.86
58	7.17	10.75	8.07	12.10
59 & Over	7.31	10.97	8.23	12.34



## SECTION V

### VALUATION OF RETIREMENT SYSTEM

To determine the actuarial value of the liabilities with respect to the present membership on account of benefits that are anticipated as payable, and to determine the value of the future contributions expected to be made by members, it is first necessary to study the experience under the System with respect to such contingencies as withdrawal, death, disability, and service retirement. Also, a standard of mortality must be adopted for members after retirement for service and disability. Assumptions are then made, based upon past experience, to develop actuarial factors to be applied to the present membership data, the fundamental assumption being that the experience to be anticipated in the future will follow that of the past.

#### Mortality after Service Retirement

This has already been discussed on page 11 , in conjunction with the computation of member contribution rates.

#### Mortality after Disability Retirement

Having related your experience to that available among the other counties and other public systems, we are of the opinion that adoption of a new mortality table for disabled lives is justified. This table has been designated as the 1973 Disability Mortality Table and the rates of death assumed in it are included in the schedules at the end of this report.

#### Withdrawal

In studying the turnover experience under the System during the period, it was found that the number of male miscellaneous members that withdrew was quite close to the number expected by the probabilities of withdrawal. However,



actual withdrawals were less than that anticipated for female miscellaneous members and safety members. Therefore, for this valuation, no change has been made in withdrawal probabilities for male miscellaneous members but, both the female miscellaneous members and the safety members withdrawal probabilities have been reduced.

The effect of a reduction in the withdrawal probabilities is to increase the liabilities, since it anticipates a larger portion of the members will either die or retire, thereby becoming eligible for an allowance; conversely, an increase in the probabilities would tend to decrease the liabilities.

Turnover among the members with the least amount of service is usually higher than that among the longer service members and therefore tends to raise the aggregate level of the probability of withdrawal. However, less than a proportionate share of the present value of the prospective liability is usually attributable to the shorter service members. Therefore, in an attempt to not overestimate the impact the experience of the short service members has on the total prospective liability, the withdrawal probabilities are based only upon the turnover experience of members with three or more years of service.

#### Death before Retirement

The experience under the System has indicated that, for both male and female miscellaneous members, the number of total actual deaths was less than the number anticipated. This is a continuation of the trend noted in the last study. We have therefore reduced the total probabilities of death while in service. The probabilities of death were determined in total; probabilities of ordinary death, death while eligible and accidental death were then apportioned based on the experience.

For Safety members the probabilities of death were not changed.

### Disability Retirement

The large increase in disability retirements among miscellaneous members during the period studied indicates the probabilities should again be increased significantly. We are finding that several counties are experiencing a similar situation in regard to disability cases. However, for safety members our study indicates that the previous probabilities are still appropriate.

### Service Retirement

There continues to be a significant increase in the percentage of employees retiring before age 65. However, there is still a tendency for some male employees to delay retirement well beyond age 65. For both males and females miscellaneous members, therefore, adjustments in the assumed probabilities of retirement were made to reflect the pattern that the investigation showed, and a slightly younger average age of retirement resulted.

For safety members, on the other hand, the experience indicates that the actual age of service retirement is older than previously assumed. Based on this experience the rates have been shifted toward the higher ages.

### Deferred Retirement

With the increasing number of deferred retirements among the miscellaneous members it is thought advisable to provide explicitly for this contingency. Therefore, in this valuation, for the first time the probability of miscellaneous members electing a deferred retirement has been estimated. The experience, however, did not justify the establishment of such probabilities for safety members.

### Probabilities of Separation

Schedule IV of Section IX of this report demonstrate the relative effects of the basic causes of separation. The new assumptions anticipate approximately 11% more service retirements (including vested terminations) and 27% more

disability retirements among male employees than previously assumed, approximately 14% more service retirements (including vested terminations) and 41% more disability retirements for females and approximately 17% more service retirements and 25% more disability retirements for safety members.

#### Actuarial Valuation

On the basis of the various actuarial assumptions discussed above and in the previous section of this report, as well as the statement of assets furnished us, a complete actuarial valuation was made with respect to the present membership of the Retirement System. The resulting values of prospective assets and liabilities are set forth on the following page in the form of an actuarial balance sheet.



ACTUARIAL BALANCE SHEET

AS OF

October 31, 1974

ASSETS

1.	Total assets from accounting balance sheet		\$ 53,950,519
2.	Present value of future contributions from members		21,360,987
3.	Present value of future contributions from County for:		
	a) Current service pensions	\$ 48,878,655	
	b) Salary death benefits	509,684	
	c) Prior service	<u>-0-</u>	<u>49,388,339</u>
4.	Total Assets		<u>\$124,699,845</u>

LIABILITIES

5.	Present value of retirement allowances payable to retired members:		
	a) Annuity	\$ 5,302,918	
	b) Current service	15,205,938	
	c) Prior service and minimum	<u>1,711,305</u>	\$ 22,220,161
6.	Present value of service retirement allowances payable to presently active and inactive members:		
	a) Annuity and current service pensions	\$ 78,125,882	
	b) Prior service and minimum	<u>111,388</u>	\$ 78,237,270
7.	Present value of disability retirement allowances payable to presently active and inactive members:		
	a) Annuity and current service pensions	\$ 8,689,788	
	b) Prior service and minimum	<u>8,361</u>	\$ 8,698,149
8.	Present value of death benefits payable on behalf of presently active members:		
	a) 6 months' salary benefit	\$ 509,684	
	b) Death while eligible to retire	541,295	
	c) Duty death	<u>811,102</u>	\$ 1,862,081
9.	Present value of contributions returned to active and inactive members a/c withdrawal or death		10,404,663
10.	Surplus		1,466,071
11.	Cost-of-living adjustment reserve		1,357,798
12.	Members Cost-of-Living Contributions		<u>453,652</u>
13.	Total Liabilities		<u>\$124,699,845</u>

### Comments on Actuarial Balance Sheet

The actuarial balance sheet has basically the same form as the one presented in our last report. On the liability side, Item 5 is the actuarial present value of the allowances which have already been entered upon on account of service and disability retirements and deaths of active members. This item has been broken down to show the value of the annuity portion of the allowances, as well as the two pension portions which were derived from County contributions. The actuarial value of annuities now in effect (Item 5a) is slightly greater than the corresponding ledger reserve in the Accounting Balance Sheet (Item 7). On the other hand, the total of the actuarial values of the current service and prior service pensions, as well as the survivors' death benefits now in effect (Item 5(b) and (c)), are somewhat less than the total of the corresponding ledger reserves (Items 6, 9 and 10 respectively). The net effect being that the total ledger reserves for retirement allowances payable to currently retired members slightly exceeds the actuarial liability for these allowances. This result is primarily because the rate of interest earned on invested funds of the System has been continuously increasing. Using the higher interest assumption of 5% per annum permits a greater discount to be made on the future liabilities of the present retired membership. Any differences between the actuarially determined present values and the ledger reserves as shown in the Accounting Balance Sheet are reflected in the recommended County contribution rates.

Item 6 in the actuarial balance sheet represents the present value of the service retirement allowances that is anticipated will be paid to present members who will retire in the future, while Item 7 represents the present value of the disability retirement allowances. In Items 5, 6 and 7, the cost of the automatic 60% continuance to the spouse after the death of the

retired member is included with the liability for current service pensions. Item 8 represents the present value of all death benefits anticipated as payable on behalf of the present active members. This item does not include the return of members' contributions on death. Item 9 is the present value of the contributions anticipated as refundable to those presently active and inactive members (or their beneficiaries) who are expected to die or withdraw from the System in the future. Item 10 represents the contingency reserve available in case of adverse experience in the future unless part of this sum is used for other Retirement System purposes at a later date. Item 11 is the cost-of-living adjustment reserve providing for cost-of-living benefits. Item 12 is the accrued active employee contributions to be applied toward cost-of-living benefits.

On the asset side of the balance sheet, the first item represents the funds on hand as taken from the Accounting Balance Sheet. The second item is the actuarial present value of the contributions that will be made in the future by present active members before separation from the System, assuming the revised rates are adopted. The third item indicates the present value of the future contributions that must be made by the County in order to fund the benefits that have already been entered upon or will be entered upon in the future. This item has been shown divided into three components referred to in Section 31587 of the County Law; namely, current service pensions, death benefits, and prior service pensions. Total prior service assets currently exceed the actuarial value of the prior service benefits, therefore no future contributions on behalf of prior service are anticipated.

In the next section of this report, we shall deal with the recommendations which we believe would be advisable to fund these County liabilities.



SECTION VI  
RECOMMENDATIONS

As a result of the current actuarial investigation and valuation of the Fresno County Employees' Retirement System, as of October 31, 1974, we have the following recommendations to make in accordance with the provisions of the 1937 County Employees' Retirement Law:

Interest Rate - We recommend that for the purposes of determining member contribution rates and as a basis of other actuarial tables necessary in connection with the operation of the System, an interest assumption of 5%, compounded annually, be used. We further recommend that, in accordance with Section 31591 of the Law, interest at the rate of at least 5% be credited on members' and County contributions semiannually, as provided in said section.

Mortality after Retirement - We recommend that the rates of mortality for pensioners retired due to disability be in accordance with Section V. The recommended schedules of these mortality rates are included at the end of the report.

Members' Basic Contributions - We recommend that the schedule of basic rates of contribution contained in Section IV of this report be made effective, but upon a date convenient to the administration of the System.

County Basic Contributions - We recommend that, until revised by subsequent actuarial valuations, the County basic contributions to the System, as provided for in Section 31582 and Section 31587, should be set at and apportioned as follows:

	<u>Percentage of Monthly Salaries</u>			
	<u>Safety Members</u>		<u>Miscellaneous Members</u>	
	<u>Not Over \$350</u>	<u>Excess Salary</u>	<u>Not Over \$350</u>	<u>Excess Salary</u>
Current service	16.44%	24.66%	7.80%	11.70%
Death	0.02	0.03	0.06	0.09
Prior service	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>
Total rate	16.46%	24.69%	7.86%	11.79%

The above rates applied to the annual salaries used in the valuation as of October 31, 1974, produce the following results:

	<u>Safety</u>	<u>Miscellaneous</u>	<u>Total</u>
Payroll	\$ 4,684,542	\$ 44,845,904	\$ 49,530,446
County Contribution	1,045,589	4,592,221	5,637,810

Based on the County's present contribution rates, the corresponding figures would be \$1,143,155 and \$4,015,354 for the Safety and Miscellaneous members respectively, producing a total County annual contribution of \$5,158,509.

The above rates take into account the fact that the County is amortizing the increase in liabilities due to the adoption of Section 31676.1, over the remainder of the 30 years commencing January 1, 1970, as adopted by the Board in accordance with Section 31454. Also, it can be seen that, at this time, no contribution is needed by the County for prior service. This is because, as of the valuation date, the total prior service assets available to pay for benefits somewhat exceed all prior service liability. However, each year the actual mortality of those pensioners with prior service may be better or worse than we are expecting for that year. This means that, at some future date, a prior service contribution rate by the County could again be required. To avoid this possible fluctuation, we recommend the prior service assets and reserves be combined with the current service assets and reserves, respectively. If this is done, we recommend that all changes in what is now

the prior service net liability because of gains or losses due to mortality on pensioners with prior service credits be combined with the current service liabilities and be funded by the method described above.

If the above suggestion is acceptable, at the time of the next actuarial study, we would determine only two types of County rates of contribution. One would be for retirement benefits and would cover all service (prior service and current service). The other would provide for the lump sum death benefit to active members.

We further recommend that, inasmuch as Section 31587 provides that the appropriation for death benefits during each fiscal year shall be equal to the payments made during the year for death benefits, any balance which may remain in the County Advance Reserve for Death Benefits at the end of each fiscal year be transferred to the combined County Advance Reserve for Current and Prior Service. If the death benefits paid during any year are in excess of the amount available in the County Advance Reserve for Death Benefits, the additional amounts required should be transferred from the combined County Advance Reserve for Current and Prior Service Benefits.

In order to facilitate distribution of the full County contributions, we suggest that the following percentages of each such contribution be credited to the County Advance Reserve accounts.

	<u>Safety</u>	<u>Miscellaneous</u>
Current Service	99.9%	99.2%
Death Benefit	<u>0.1</u>	<u>0.8</u>
Total	100.0%	100.0%

In our opinion, with the adoption by the County of recommendations made in this section, the System will continue to be maintained on a sound actuarial basis, in accordance with the provisions of the 1937 County Law.



### Comments on the Changes in Rate

On the basis of the salaries in effect on October 31, 1974, application of the split percentages results in an aggregate County rate of 22.32% for Safety members, and 10.24% for Miscellaneous members, as compared with present aggregate County rates of 24.40% for Safety members and 8.95% for Miscellaneous members.

The increase in the interest rate assumption from 4-3/4% to 5% has tended to bring the County's contribution rate down on account of the greater earnings that are anticipated in the future. (In general, for each 1/4% increase in the interest rate assumption the expected ultimate contributions required are reduced by approximately 6%.) However, the adjustments made in the probabilities with respect to such contingencies as withdrawal, death, disability, and service retirement as discussed earlier in this Section have tended to increase the contribution rates. Also, the rate of assumed salary increases with age have been increased and, in addition the average salary of the members has continued to rise; these two factors also tend to increase the contribution rates. Therefore, the overall result is an increase in the miscellaneous members' rate of approximately 14% and a reduction in the safety members rate of about 9%.



## SECTION VII

### COST OF LIVING ADJUSTMENT PROGRAM

As part of our overall assignment, we have reviewed your program for automatic adjustment of retirement allowances which result from changes in the Consumer Price Index. This study assumes a 3% maximum change in cost of living allowance per year. The Retirement Board has selected the refundable basis of cost of living contributions and a basis by which the contributions are related to the sex and age of the member.

Our cost calculations in this study have used the same methods as were used in the original study. Calculations were made on a "partial funding" basis, using an estimated projection of the pension roll over the next ten years based on the pension roll of the last ten years. Based upon our calculations of the total dollar contributions needed from the members for the cost of living benefit, these contributions are equivalent to 18.99% of the total employee normal contributions compared to the 16.10% currently being made to the Retirement System.

The change from 16.10% to 18.99% is an increase of approximately 18%. However, since the basic contribution rates to which 18.99% is applied has also changed an individual's actual contribution rate may have increased by more or less than this rate depending upon the individual's age at entry into the system, sex and employment as either a miscellaneous or safety member.

Therefore, on the following five pages, we have shown the tables of member contribution rates for the cost of living benefit on the 3% maximum basis for Section 31676.1, Section 31664, and Section 31676.12 (if this Section is adopted by the County).

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members

Cost of Living Contribution Rates  
Section 31676.1

Male Members Contribution Rate Applicable to:			Female Members Contribution Rate Applicable to:	
<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
16	.52%	.78%	.59%	.88%
17	.52	.78	.60	.90
18	.53	.79	.61	.91
19	.53	.80	.61	.92
20	.54	.81	.63	.94
21	.55	.82	.63	.95
22	.55	.82	.65	.97
23	.55	.83	.65	.98
24	.56	.84	.67	1.00
25	.57	.86	.68	1.02
26	.58	.87	.69	1.03
27	.59	.88	.70	1.05
28	.60	.90	.71	1.07
29	.61	.92	.73	1.09
30	.63	.94	.74	1.11
31	.64	.96	.75	1.13
32	.65	.98	.77	1.15
33	.67	1.00	.78	1.17
34	.68	1.02	.79	1.19
35	.70	1.05	.81	1.22
36	.71	1.07	.83	1.24
37	.73	1.09	.84	1.26
38	.75	1.12	.86	1.29
39	.76	1.14	.87	1.31

Three percent maximum increase per annum.

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members

Cost of Living Contribution Rates

Section 31676.1

(Continued)

Male Members Contribution Rate Applicable to:			Female Members Contribution Rate Applicable to:	
Entry Age	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350
40	.78%	1.17%	.89%	1.34%
41	.80	1.20	.91	1.37
42	.81	1.22	.93	1.39
43	.83	1.25	.95	1.42
44	.85	1.28	.97	1.45
45	.87	1.30	.99	1.48
46	.89	1.33	1.01	1.51
47	.91	1.36	1.03	1.54
48	.93	1.39	1.05	1.57
49	.95	1.42	1.07	1.60
50	.97	1.45	1.09	1.63
51	.99	1.48	1.11	1.66
52	1.01	1.51	1.13	1.70
53	1.03	1.54	1.15	1.73
54	1.05	1.57	1.18	1.77
55	1.07	1.60	1.20	1.80
56	1.09	1.64	1.23	1.84
57	1.11	1.67	1.25	1.88
58	1.13	1.70	1.27	1.91
59 & Over	1.16	1.74	1.30	1.95

Three percent maximum increase per annum.

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Safety Members

Cost of Living Contribution Rates  
Section 31664

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
21	.98%	1.47%
22	1.00	1.50
23	1.02	1.53
24	1.04	1.67
25	1.06	1.59
26	1.08	1.62
27	1.10	1.65
28	1.12	1.68
29	1.15	1.72
30	1.17	1.75
31	1.19	1.78
32	1.21	1.82
33	1.23	1.86
34	1.27	1.90
35 & Over	1.29	1.94

Three percent maximum increase per annum.



EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members

Cost of Living Contribution Rates  
Section 31676.12

MALE

FEMALE

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
16	.62%	.93%	.71%	1.06%
17	.63	.94	.72	1.08
18	.63	.95	.73	1.09
19	.64	.96	.74	1.11
20	.65	.97	.75	1.13
21	.65	.98	.76	1.14
22	.66	.99	.77	1.16
23	.67	1.00	.79	1.18
24	.67	1.01	.80	1.20
25	.69	1.03	.81	1.22
26	.70	1.05	.83	1.24
27	.71	1.06	.84	1.26
28	.72	1.08	.85	1.28
29	.73	1.10	.87	1.31
30	.75	1.13	.89	1.33
31	.77	1.15	.91	1.36
32	.78	1.17	.92	1.38
33	.80	1.20	.94	1.41
34	.82	1.23	.95	1.43
35	.84	1.26	.97	1.46
36	.86	1.29	.99	1.49
37	.87	1.31	1.01	1.52
38	.89	1.34	1.03	1.55
39	.92	1.38	1.05	1.58

Three percent maximum increase per annum.

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members

Cost of Living Contribution Rates

Section 31676.12

(Continued)

MALE

FEMALE

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 Of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
40	.93%	1.40%	1.07%	1.61%
41	.96	1.44	1.09	1.64
42	.98	1.47	1.11	1.67
43	1.00	1.50	1.13	1.70
44	1.02	1.53	1.16	1.74
45	1.04	1.56	1.18	1.77
46	1.07	1.60	1.21	1.81
47	1.09	1.63	1.23	1.85
48	1.11	1.67	1.25	1.88
49	1.13	1.70	1.28	1.92
50	1.16	1.74	1.31	1.96
51	1.18	1.77	1.33	2.00
52	1.21	1.81	1.36	2.04
53	1.23	1.85	1.39	2.08
54	1.26	1.89	1.41	2.12
55	1.29	1.93	1.44	2.16
56	1.31	1.96	1.47	2.21
57	1.33	2.00	1.50	2.25
58	1.36	2.04	1.53	2.30
59 & Over	1.39	2.08	1.56	2.34

Three percent maximum increase per annum.

SECTION VIII  
PROPOSED CHANGES

We were further asked to determine the costs involved if the following proposed changes were made in the County Retirement System.

1. An increase in the 3% maximum Cost of Living provision.
2. Adoption by the County of Section 31676.12 of the County Law.
3. Permitting the purchase of credit for public service.
4. Adoption by the County of Sections 31789 and 31790 of the County Law.
5. Changing from Section 31462 of the County Law to Section 31462.1.

Proposal #1 - Increase in Maximum Cost of Living

We were requested to study the effect on costs if the maximum cost of living increase to retired members is changed from the present level of 3% to 5% as permitted under Section 31874.2 of the County Law.

When Fresno County first adopted its 3% cost of living program, our report on costs went into detail as to the methods and assumptions we are using in determining these costs. Because the County now is contemplating a possible increase in this cost of living level, we feel we should again bring to the attention of the Retirement Board certain general information in regard to the cost of living program.

For retirement age 65, the cost of a 1% cost of living program, if the 1% increase is paid every year, is approximately equivalent to the cost of raising the level lifetime benefit by 10%. Accordingly, if the cost of living changes in the future were large enough every year so that the retired member received 3%, 4%, 5% or 6% increases, this would be the equivalent costwise of providing approximately a 30%, 40%, 50% or 60% increase in the lifetime basic benefit

level. Examples of this are shown below using an initial \$400 per month level lifetime retirement allowance:

<u>Maximum Cost of Living Percentage</u>	<u>Approximate Equivalent Level Lifetime Monthly Allowance</u>
0%	\$ 400.00
3%	520.00
4%	560.00
5%	600.00
6%	640.00

On page 39 we show a graph indicating for each year the effect on the size of a \$400 monthly allowance of a member retiring at age 65, assuming a 3%, 4%, 5% or 6% maximum cost of living benefit. It should be noted that these amounts shown assume that the maximum level would be paid each year. Whether it is, of course, would depend on whether or not the C. P. I. increase each year is large enough. We feel that if the cost of living does go up enough to require the 4%, 5% or 6% increases each year, the investment earnings in the future will likely also climb to an extent as to help pay for these larger cost of living benefits. If the higher cost of living payments do materialize each year, it should also be kept in mind that the dollars of contributions needed each year for cost of living are dollars of less value than today's dollar.

The cost of living contributions required by the County and the members for the 3% maximum cost of living level is 18.99% of the member's normal contribution as discussed in Section VII, on the 5% basis the rate increases to 28.86% of the normal contribution as on the following page in abbreviated form.



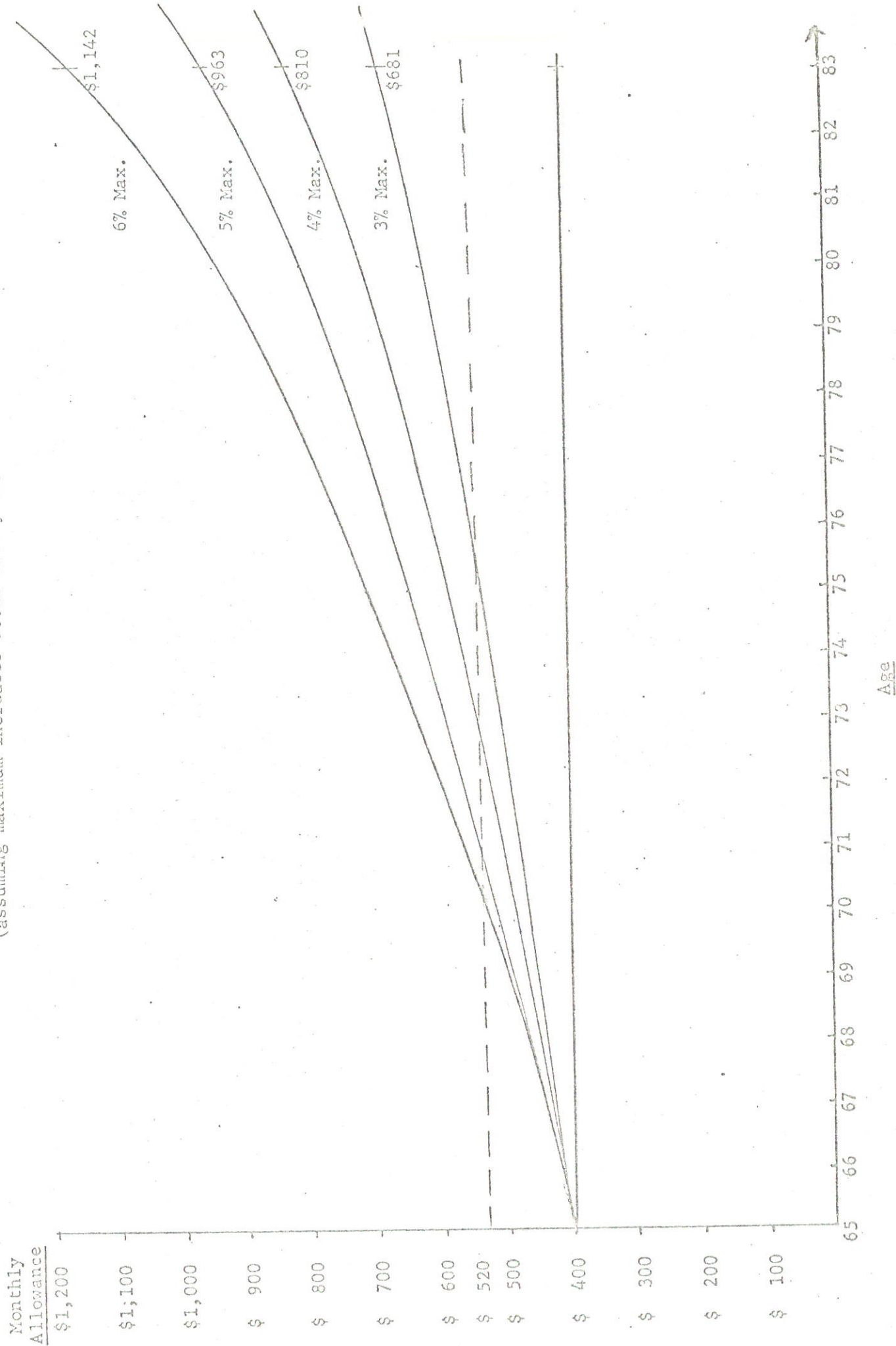
COST OF LIVING CONTRIBUTION RATES OF MEMBERS

(ON EXCESS OVER \$350)

Five Percent Maximum Increase Per Annum

<u>Age</u>	<u>Present</u>	<u>Three Year Final Average Salary</u>		<u>One Year Final Average Salary</u>	
A.	Male Members (31676.1)	<u>31676.1</u>	<u>31676.12</u>	<u>31676.1</u>	<u>31676.12</u>
20	.67%	1.23%	1.47%	1.24%	1.49%
25	.72	1.30	1.56	1.32	1.58
30	.79	1.43	1.71	1.44	1.73
35	.87	1.59	1.91	1.61	1.93
40	.98	1.78	2.13	1.80	2.15
45	1.10	1.98	2.38	2.00	2.40
50	1.23	2.20	2.64	2.22	2.67
55	1.38	2.44	2.92	2.46	2.96
B.	Female Members (31676.1)	<u>31676.1</u>	<u>31676.12</u>	<u>31676.1</u>	<u>31676.12</u>
20	.76%	1.43%	1.71%	1.44%	1.73%
25	.83	1.54	1.85	1.56	1.87
30	.92	1.69	2.02	1.70	2.04
35	1.02	1.85	2.22	1.87	2.24
40	1.13	2.04	2.45	2.06	2.47
45	1.26	2.25	2.70	2.27	2.72
40	1.40	2.48	2.98	2.51	3.01
55	1.56	2.74	3.29	2.77	3.32
C.	Safety Members (31664)	<u>Rate</u>	<u>Rate</u>	<u>Rate</u>	<u>Rate</u>
21	1.29%	2.23%	2.26%		
25	1.40	2.41	2.43		
30	1.54	2.66	2.68		
35	1.70	2.94	2.97		

EFFECT OF COST OF LIVING ADJUSTMENT  
(assuming maximum increases occur each year)



Proposal #2 - Adoption of Section 31676.12

This section discusses the possible adoption of Section 31676.12 which affects Miscellaneous Members. For the benefit of the Retirement Board, the results of the present system valuation are also summarized. Calculations are based on a 5% per annum interest assumption.

Brief Description of Provisions of Section 31676.12

The three principal features of Section 31676.12 of the 1937 County Retirement Law are as follows:

1. Miscellaneous Members will be compulsorily retired on the later of:
  - a. January 1, 1975
  - b. Three years after the adoption of the provisions of Section 31676.12; or
  - c. Attainment of age 67.
2. The following table shows a comparison of the percentage credit per year of service used in determining service retirement benefits for Miscellaneous Members under Section 31676.1 and Section 31676.12:

<u>Age at Retirement</u>	<u>Section 31676.1</u>		<u>Section 31676.12</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	1.14%	1.18%	1.29%	1.34%
51	1.20	1.24	1.37	1.41
52	1.27	1.30	1.46	1.49
53	1.33	1.36	1.55	1.58
54	1.39	1.43	1.64	1.67
55	1.46	1.49	1.75	1.77
56	1.54	1.56	1.87	1.88
57	1.62	1.64	2.00	2.00
58	1.71	1.73	2.09	2.09
59	1.81	1.82	2.21	2.21
60	1.92	1.92	2.33	2.34
61	1.99	1.99	2.46	2.47
62	2.09	2.09	2.60	2.62
63	2.19	2.20	2.60	2.62
64	2.30	2.31	2.60	2.62
65	2.42	2.43	2.60	2.62
66	2.42	2.43	2.60	2.62
67	2.42	2.43	2.60	2.62

A comparison of the foregoing factors will indicate the following increases in the size of benefits if Section 31676.12 is adopted.

<u>Age at Retirement</u>	<u>Male</u>	<u>Female</u>
50	13%	14%
55	20	19
60	21	22
65	7	8

3. Miscellaneous Members will be required to contribute on the basis of providing a retirement allowance at age 60 equal to 1% of their final compensation for each year of service rendered after entering the System. This results in a 20% increase in member contribution rates at all ages as compared to member contribution rates under Section 31676.1.



#### Member Rates of Contribution

In calculating the new rates of contribution for members under the Present System, we have used the interest assumption of 5% and the salary scales as discussed in Section IV . No change was needed in the mortality after service retirement assumption. The two changes indicated led to contribution rates for Miscellaneous members which are slightly higher at the young to middle ages and slightly less at the older ages. For Safety members the rates are slightly less at all ages than presently.

In Table A, attached, we show for representative ages the present members rates of contribution, the rates of contribution using the new assumptions, and also (using the new assumptions) the member contribution rates if Section 31676.12 is adopted for Miscellaneous members

#### County Rate of Contribution

In general, the change in assumptions has the same effect on the County rate of contribution as on the employees' rates. However, the County rates are also affected by a number of other important factors such as the higher salary levels and the rates of withdrawal, death, disability and service retirement. The changes made in all of these actuarial assumptions taken together produce the final net effect on the County rate of contribution.

In Table B, attached, we show the County's contribution rates which are comparable to the employee rates shown in Table A.

#### General Remarks

We would like to make the following general remarks in connection with the attached Table B County rates of contribution:

1. Present System

The rate of contribution of the County has increased over the present contribution rate. This is because the increase in average salary, the change in the rate of assumed salary increases with age, and the adjustments made in the probabilities with respect to such contingencies as withdrawal, death, disability, and service retirement more than offset the reduction caused by the increase in interest assumption.

2. Proposed System

Because the benefit level for Miscellaneous members under Section 31676.12 is substantially higher than the present level, this results in increasing the County contribution rate approximately 28% over the current contribution rate, or about 16% over rates for the present plan based on the new assumptions. Although some of the cost of this benefit change is paid for by the increased contribution rates of the members, all benefits to date as well as all future benefits will be at the higher level and the employee will only be paying a higher contribution on behalf of the higher credit for future service.

TABLE A-1

## CONTRIBUTION RATES OF MEMBERS

(Three Year Final Average Salary)

Safety Members

Age	31664 (Present Assumptions)		31664 (New Assumptions)		
	1st \$350	Excess	1st \$350	Excess	%Change
21	5.36%	8.04%	5.16%	7.74%	-4%
25	5.79	8.68	5.57	8.35	-4
30	6.38	9.57	6.14	9.21	-4
35	7.05	10.57	6.79	10.19	-4

Miscellaneous Male Members

Age	31676.1 (Present Assumptions)		31676.1 (New Assumptions)			31676.12 (New Assumptions)		
	1st \$350	Excess	1st \$350	Excess	%Change	1st \$350	Excess	%Change
20	2.79%	4.18%	2.83%	4.25%	2%	3.40%	5.10%	22%
25	2.98	4.47	3.01	4.52	1	3.61	5.42	21
30	3.27	4.90	3.29	4.94	1	3.95	5.93	21
35	3.62	5.43	3.68	5.52	2	4.41	6.62	22
40	4.05	6.07	4.11	6.16	1	4.93	7.39	22
45	4.54	6.81	4.57	6.86	1	5.49	8.24	21
50	5.11	7.66	5.08	7.62	-1	6.10	9.15	19
55	5.73	8.60	5.63	8.45	-2	6.76	10.14	18

Miscellaneous Female Members

Age	31676.1 (Present Assumptions)		31676.1 (New Assumptions)			31676.12 (New Assumptions)		
	1st \$350	Excess	1st \$350	Excess	%Change	1st \$350	Excess	%Change
20	3.15%	4.72%	3.29%	4.94%	5%	3.95%	5.93%	26%
25	3.44	5.16	3.57	5.35	5	4.28	6.42	24
30	3.79	5.69	3.89	5.84	3	4.67	7.01	23
35	4.21	6.31	4.27	6.41	2	5.12	7.68	22
40	4.68	7.02	4.71	7.06	1	5.65	8.48	21
45	5.21	7.82	5.19	7.78	-1	6.23	9.34	19
50	5.81	8.72	5.73	8.60	-1	6.88	10.32	18
55	6.48	9.72	6.33	9.50	-2	7.60	11.40	17

TABLE A-2

CONTRIBUTION RATES OF MEMBERS (ON EXCESS OVER \$350)

Age	Present	<u>Three Year Final Average Salary</u>				<u>One Year Final Average Salary</u>			
		<u>31676.1</u>	<u>%Change</u>	<u>31676.12</u>	<u>%Change</u>	<u>31676.1</u>	<u>%Change</u>	<u>31676.12</u>	<u>%Change</u>
Male Members (31676.1)									
20	4.18%	4.25%	+2%	5.10%	+22%	4.29%	+3%	5.15%	+23%
25	4.47	4.52	+1	5.42	+21	4.56	+2	5.47	+22
30	4.90	4.94	+1	5.93	+21	4.99	+2	5.99	+22
35	5.43	5.52	+2	6.62	+22	5.59	+3	6.68	+23
40	6.07	6.16	+1	7.39	+22	6.22	+2	7.46	+23
45	6.81	6.86	+1	8.24	+21	6.93	+2	8.32	+22
50	7.66	7.62	-1	9.15	+19	7.70	+1	9.24	+21
55	8.60	8.45	-2	10.14	+18	8.53	-1	10.24	+19
		<u>31676.1</u>	<u>%Change</u>	<u>31676.12</u>	<u>%Change</u>	<u>31676.1</u>	<u>%Change</u>	<u>31676.12</u>	<u>%Change</u>
Female Members (31676.1)									
20	4.72%	4.94%	+5%	5.93%	+26%	4.99%	+6%	5.99%	+27%
25	5.16	5.35	+4	6.42	+24	5.40	+5	6.48	+26
30	5.69	5.84	+3	7.01	+23	5.90	+4	7.08	+24
35	6.31	6.41	+2	7.68	+22	6.47	+3	7.76	+23
40	7.02	7.06	+1	8.48	+21	7.13	+2	8.56	+22
45	7.82	7.78	-1	9.34	+19	7.86	+1	9.43	+21
50	8.72	8.60	-1	10.32	+18	8.68	-0	10.42	+19
55	9.72	9.50	-2	11.40	+17	9.59	-1	11.51	+18
Safety Members (31664)		<u>Rate</u>	<u>%Change</u>			<u>Rate</u>	<u>%Change</u>		
21	8.04%	7.74%	-4%			7.82%	-3%		
25	8.68	8.35	-4			8.43	-3		
30	9.57	9.21	-4			9.30	-3		
35	10.57	10.19	-4			10.29	-3		



TABLE B

CONTRIBUTION RATE OF COUNTYSafety Members

	31664			31664		
	(Present Assumptions)			(New Assumptions)		
	1st \$350	Excess	Aggregate	1st \$350	Excess	Aggregate
% of Salary	10.31%	26.99%	24.40%	16.46%	24.69%	22.32%
Annual Contribution*	-	-	\$1,143,155	-	-	\$1,045,589
						-9%

Miscellaneous Members

	31676.1			31676.1			31676.12		
	(Present Assumptions)			(New Assumptions)			(New Assumptions)		
	1st \$350	Excess	Aggregate	1st \$350	Excess	Aggregate	1st \$350	Excess	Aggregate
% of Salary	6.87%	10.31%	8.95%	7.86%	11.79%	10.24%	9.50%	14.21%	12.35%
Annual Contribution*	-	-	\$4,015,354	-	-	\$4,592,221	-	-	\$5,533,985
									38%

\*Based on total annual salaries of \$44,845,904 for Miscellaneous members and \$4,684,542 for Safety members.

Proposal #3 - Purchase of Credit for Public Service

We were also asked to study the effect on costs if the purchase of credit for public service is permitted in the County.

For purposes of our study we were provided with certain information on each individual who would be eligible to purchase public service credit from the County. This information included the following: classification (miscellaneous or safety), sex, date of birth, current salary, years of public service to be purchased and the member's rate of contribution and salary at the time he entered the Fresno County Retirement System. Our cost determination assumed that members would contribute toward the public service credit in accordance with Section 31641.2 of the County Law.

There are approximately 575 members who are contemplating the purchase of Public Service Credit under the System.

Based upon the present Retirement System (Section 31676.1 and Section 31664), we show below a brief summary of the effect on County costs of this purchase of Public Service Credit:

	<u>Safety</u>	<u>Miscellaneous</u>
Estimated liability resulting from the purchase	\$ 854,697	\$ 3,977,440
Estimated total contributions to be made by members to obtain this credit	<u>297,735</u>	<u>2,661,413</u>
Net liability falling on the County	\$ 556,962	\$ 1,316,027

If the above liabilities are assumed by the County, its contribution rates would be increased as follows:

	<u>Safety Members</u>		<u>Miscellaneous Members</u>	
	<u>Not Over</u>	<u>Excess</u>	<u>Not Over</u>	<u>Excess</u>
	<u>\$350</u>	<u>Salary</u>	<u>\$350</u>	<u>Salary</u>
Additional Contribution rate	.57%	.85%	.15%	.22%
Additional Annual Contribution	- \$36,232 -		- \$85,612 -	
	- 47 -			

Proposal #4 - Adoption of Section 31789 and 31790

Section 31789 provides a death benefit of \$750 upon the death of any member after retirement and while receiving a retirement allowance from the System. Section 31790 provides a death benefit of \$750 upon the death of a member before retirement, with at least 10 years of credited service.

These provisions would not affect the employees' rates of contribution. Our current valuation indicates the County's contributions would increase by the following amounts.

	<u>Safety</u>			<u>Miscellaneous</u>		
	<u>1st \$350</u>	<u>Excess</u>	<u>Aggregate</u>	<u>1st \$350</u>	<u>Excess</u>	<u>Aggregate</u>
Section 31789	.07%	.11%	-	.14%	.21%	-
Section 31790	<u>.01</u>	<u>.02</u>	<u>-</u>	<u>.01</u>	<u>.02</u>	<u>-</u>
Total	.08%	.13%	.12%	.15%	.23%	.20%
Annual Contributions*	-	-	\$5,622	-	-	\$89,692

\*Based on total annual salaries of \$4,684,452 for Safety members and \$44,845,904 for Miscellaneous members.

Proposal #5 - Changing from Section 31462 to Section 31462.1

Section 31462 defines Final Compensation as the average annual compensation during a three year period while Section 31462.1 defines it as the annual compensation during a one year period.

Normally, the highest months of compensation occur during an employee's last few years of service. Essentially, therefore, we are comparing an employee's compensation during his last year of service to his average compensation during his last three years. The effect of this change does not lend itself to precise determination. However, if across-the-board increases in salary are received during this three years, retirement allowances based on such a final average will be higher than those based on a three-year average.

If the final average salary basis is changed from three years to one year, we recommend that the contribution rates for the County and for the members be changed as follows:

Members

That the total contribution rates of the members as recommended in Section IV for the three year final average salary basis all be increased by 1% of themselves. The members' contribution rates under the present plan, Section 31676.1 and 31664, and under Section 31676.12 are shown on the following ten pages on the final one year basis.

County

The County's contribution rates (based on the new assumptions) would increase by the following amounts:

	Safety			Miscellaneous		
	1st \$350	Excess	Aggregate	1st \$350	Excess	Aggregate
% of Salary	0.19%	0.28%	0.25%	0.09%	0.14%	0.12%
Annual Contribution*	-	-	\$11,711	-	-	\$53,815

\*Based on total annual salaries of \$4,684,542 for Safety members and \$44,845,904 for Miscellaneous members.



EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates  
Section 31676.1

One Year Final Average Salary

Male Members

Female Members

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
16	2.75%	4.13%	3.14%	4.71%
17	2.78	4.17	3.19	4.78
18	2.81	4.21	3.23	4.85
19	2.83	4.25	3.28	4.92
20	2.86	4.29	3.33	4.99
21	2.89	4.33	3.37	5.06
22	2.92	4.38	3.43	5.14
23	2.95	4.43	3.49	5.23
24	2.99	4.49	3.54	5.31
25	3.04	4.56	3.60	5.40
26	3.09	4.63	3.66	5.49
27	3.14	4.71	3.73	5.59
28	3.19	4.79	3.79	5.69
29	3.26	4.89	3.86	5.79
30	3.33	4.99	3.93	5.90
31	3.39	5.09	4.01	6.01
32	3.47	5.20	4.08	6.12
33	3.55	5.32	4.15	6.23
34	3.63	5.44	4.23	6.35
35	3.71	5.57	4.31	6.47
36	3.80	5.70	4.40	6.60
37	3.88	5.82	4.49	6.73
38	3.97	5.95	4.57	6.86
39	4.06	6.09	4.66	6.99

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates

Section 31676.1

One Year Final Average Salary

(Continued)

Male Members

Female Members

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
40	4.15%	6.22%	4.75%	7.13%
41	4.24	6.36	4.85	7.27
42	4.33	6.50	4.94	7.41
43	4.43	6.64	5.04	7.56
44	4.53	6.79	5.14	7.71
45	4.62	6.93	5.24	7.86
46	4.72	7.08	5.35	8.02
47	4.82	7.23	5.45	8.18
48	4.92	7.39	5.56	8.34
49	5.03	7.54	5.67	8.51
50	5.13	7.70	5.79	8.68
51	5.24	7.86	5.91	8.86
52	5.35	8.02	6.02	9.03
53	5.46	8.19	6.14	9.21
54	5.57	8.36	6.27	9.40
55	5.69	8.53	6.39	9.59
56	5.80	8.70	6.52	9.78
57	5.91	8.87	6.65	9.98
58	6.03	9.05	6.79	10.18
59 & Over	6.15	9.23	6.92	10.38

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Safety Members' Rate of Contribution

Section 31664

One Year Final Average Salary

Contribution Rate Applicable to:

<u>Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Compensation Over \$350</u>
21	5.21%	7.82%
22	5.31	7.97
23	5.41	8.12
24	5.51	8.27
25	5.62	8.43
26	5.73	8.59
27	5.84	8.76
28	5.96	8.94
29	6.08	9.12
30	6.20	9.30
31	6.33	9.49
32	6.45	9.68
33	6.59	9.88
34	6.72	10.08
35 & Over	6.86	10.29

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates

Section 31676.12

One Year Final Average Salary

Male Members

Female Members

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
16	3.31%	4.96%	3.77%	5.65%
17	3.33	5.00	3.83	5.74
18	3.37	5.05	3.88	5.82
19	3.40	5.10	3.93	5.90
20	3.43	5.15	3.99	5.99
21	3.47	5.20	4.05	6.07
22	3.51	5.26	4.11	6.17
23	3.55	5.32	4.19	6.28
24	3.59	5.39	4.25	6.37
25	3.65	5.47	4.32	6.48
26	3.71	5.56	4.39	6.59
27	3.77	5.65	4.47	6.71
28	3.83	5.75	4.55	6.83
29	3.91	5.87	4.63	6.95
30	3.99	5.99	4.72	7.08
31	4.07	6.11	4.81	7.21
32	4.16	6.24	4.89	7.34
33	4.25	6.38	4.99	7.48
34	4.35	6.53	5.08	7.62
35	4.45	6.68	5.17	7.76
36	4.56	6.84	5.28	7.92
37	4.65	6.98	5.39	8.08
38	4.76	7.14	5.49	8.23
39	4.87	7.31	5.59	8.39



EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Contribution Rates  
Section 31676.12

One Year Final Average Salary  
(Continued)

Male Members

Female Members

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
40	4.97%	7.46%	5.71%	8.56%
41	5.09	7.63	5.81	8.72
42	5.20	7.80	5.93	8.89
43	5.31	7.97	6.05	9.07
44	5.43	8.15	6.17	9.25
45	5.55	8.32	6.29	9.43
46	5.67	8.50	6.41	9.62
47	5.79	8.68	6.55	9.82
48	5.91	8.87	6.67	10.01
49	6.03	9.05	6.81	10.21
50	6.16	9.24	6.95	10.42
51	6.29	9.43	7.09	10.63
52	6.41	9.62	7.23	10.84
53	6.55	9.83	7.37	11.05
54	6.69	10.03	7.52	11.28
55	6.83	10.24	7.67	11.51
56	6.96	10.44	7.83	11.74
57	7.09	10.64	7.99	11.98
58	7.24	10.86	8.15	12.22
59 & Over	7.39	11.08	8.31	12.46

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Cost of Living Contribution Rates  
Section 31676.1

One Year Final Average Salary

MALE

FEMALE

Contribution Rate Applicable to:

Contribution Rate Applicable to:

Entry Age	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350
16	.52%	.78%	.59%	.89%
17	.53	.79	.61	.91
18	.53	.80	.61	.92
19	.54	.81	.62	.93
20	.55	.82	.63	.95
21	.55	.82	.64	.96
22	.55	.83	.65	.98
23	.56	.84	.66	.99
24	.57	.85	.67	1.01
25	.58	.87	.68	1.02
26	.59	.88	.69	1.04
27	.59	.89	.71	1.06
28	.61	.91	.72	1.08
29	.62	.93	.73	1.10
30	.63	.95	.75	1.12
31	.65	.97	.76	1.14
32	.66	.99	.77	1.16
33	.67	1.01	.79	1.18
34	.69	1.03	.81	1.21
35	.71	1.06	.82	1.23
36	.72	1.08	.83	1.25
37	.74	1.11	.85	1.28
38	.75	1.13	.87	1.30
39	.77	1.16	.89	1.33

Three percent maximum increase per annum.

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Cost of Living Contribution Rates  
Section 31676.1

One Year Final Average Salary  
(Continued)

MALE

FEMALE

<u>Entry</u> <u>Age</u>	<u>Contribution Rate Applicable to:</u>		<u>Contribution Rate Applicable to:</u>	
	<u>First \$350</u> <u>of Monthly</u> <u>Compensation</u>	<u>Excess of</u> <u>Monthly</u> <u>Compensation</u> <u>Over \$350</u>	<u>First \$350</u> <u>of Monthly</u> <u>Compensation</u>	<u>Excess of</u> <u>Monthly</u> <u>Compensation</u> <u>Over \$350</u>
40	.79%	1.18%	.90%	1.35%
41	.81	1.21	.92	1.38
42	.82	1.23	.94	1.41
43	.84	1.26	.96	1.44
44	.86	1.29	.97	1.46
45	.88	1.32	.99	1.49
46	.89	1.34	1.01	1.52
47	.91	1.37	1.03	1.55
48	.93	1.40	1.05	1.58
49	.95	1.43	1.08	1.62
50	.97	1.46	1.10	1.65
51	.99	1.49	1.12	1.68
52	1.01	1.52	1.15	1.72
53	1.04	1.56	1.17	1.75
54	1.06	1.59	1.19	1.78
55	1.08	1.62	1.21	1.82
56	1.10	1.65	1.24	1.86
57	1.12	1.68	1.27	1.90
58	1.15	1.72	1.29	1.93
59 & Over	1.17	1.75	1.31	1.97

Three percent maximum increase per annum.

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Safety Members Cost of Living Contribution Rates  
Section 31664

One Year Final Average Salary

Contribution Rate Applicable to:

<u>Age</u>	<u>First \$350 of Monthly Compensation</u>	<u>Excess of Monthly Compensation Over \$350</u>
21	.99%	1.48%
22	1.01	1.51
23	1.03	1.54
24	1.05	1.57
25	1.07	1.60
26	1.09	1.63
27	1.11	1.66
28	1.13	1.70
29	1.15	1.73
30	1.18	1.77
31	1.20	1.80
32	1.23	1.84
33	1.25	1.88
34	1.27	1.91
35 & Over	1.30	1.95

Three percent maximum increase per annum.



EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members' Cost of Living Contribution Rates  
Section 31676.12

One Year Final Average Salary

MALE

FEMALE

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry</u> <u>Age</u>	<u>First \$350</u> <u>of Monthly</u> <u>Compensation</u>	<u>Excess of</u> <u>Monthly</u> <u>Compensation</u> <u>Over \$350</u>	<u>First \$350</u> <u>of Monthly</u> <u>Compensation</u>	<u>Excess of</u> <u>Monthly</u> <u>Compensation</u> <u>Over \$350</u>
16	.63%	.94%	.71%	1.07%
17	.63	.95	.73	1.09
18	.64	.96	.73	1.10
19	.65	.97	.75	1.12
20	.65	.98	.76	1.14
21	.66	.99	.77	1.15
22	.67	1.00	.78	1.17
23	.67	1.01	.79	1.19
24	.68	1.02	.81	1.21
25	.69	1.04	.82	1.23
26	.71	1.06	.83	1.25
27	.71	1.07	.85	1.27
28	.73	1.09	.87	1.30
29	.75	1.12	.88	1.32
30	.76	1.14	.89	1.34
31	.77	1.16	.91	1.37
32	.79	1.18	.93	1.39
33	.81	1.21	.95	1.42
34	.83	1.24	.97	1.45
35	.85	1.27	.98	1.47
36	.87	1.30	1.00	1.50
37	.89	1.33	1.02	1.53
38	.91	1.36	1.04	1.56
39	.93	1.39	1.06	1.59

Three percent maximum increase per annum.

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Miscellaneous Members Cost of Living Contribution Rates  
Section 31676.12

One Year Final Average Salary  
(Continued)

MALE

FEMALE

Contribution Rate Applicable to:

Contribution Rate Applicable to:

<u>Entry</u> <u>Age</u>	<u>First \$350</u> <u>of Monthly</u> <u>Compensation</u>	<u>Excess of</u> <u>Monthly</u> <u>Compensation</u> <u>Over \$350</u>	<u>First \$350</u> <u>of Monthly</u> <u>Compensation</u>	<u>Excess of</u> <u>Monthly</u> <u>Compensation</u> <u>Over \$350</u>
40	.95%	1.42%	1.09%	1.63%
41	.97	1.45	1.11	1.66
42	.99	1.48	1.13	1.69
43	1.01	1.51	1.15	1.72
44	1.03	1.55	1.17	1.76
45	1.05	1.58	1.19	1.79
46	1.07	1.61	1.22	1.83
47	1.10	1.65	1.24	1.86
48	1.12	1.68	1.27	1.90
49	1.15	1.72	1.29	1.94
50	1.17	1.76	1.32	1.98
51	1.19	1.79	1.35	2.02
52	1.22	1.83	1.37	2.06
53	1.25	1.87	1.40	2.10
54	1.27	1.90	1.43	2.14
55	1.29	1.94	1.46	2.19
56	1.32	1.98	1.49	2.23
57	1.35	2.02	1.52	2.28
58	1.37	2.06	1.55	2.32
59 & Over	1.40	2.10	1.58	2.37

Three percent maximum increase per annum.

#### Possible changes in Rates of Contribution

If any of the proposals discussed are adopted certain changes in the rates of contributions recommended in Section IV, VI and VII of this report will be required for the members and the County as noted above. After the decision has been made as to changes, if any, we will provide the recommended revised contribution rates.

## SECTION IX

### STATISTICAL SECTION

#### List of Schedules

I.	Number of active members and total annual salaries by attained age:	
a.	Miscellaneous male and female members	S-1
b.	Safety members	S-3
II.	Age and service distribution of active members:	
a.	Miscellaneous male members	S-5
b.	Miscellaneous female members	S-6
c.	Safety members	S-7
III.	Number of retired members and beneficiaries with annual basic allowance being paid:	
a.	Miscellaneous members	S-8
b.	Safety members	S-9
IV.	Number by quinquennial age range anticipated, by old and new actuarial assumptions, to eventually separate for indicated cause:	
a.	Miscellaneous male members	S-10
b.	Miscellaneous female members	S-11
c.	Safety members	S-12
V.	Ratio of current compensation to compensation anticipated at compulsory retirement age:	
a.	Miscellaneous male members	S-13
b.	Miscellaneous female members	S-14
c.	Safety members	S-15
VI.	Probabilities before retirement:	
a.	Miscellaneous male members	S-16
b.	Miscellaneous female members	S-18
c.	Safety members	S-20
VII.	Rates of mortality after retirement:	
a.	Service retirement	S-22
b.	Disability retirement	S-24



SCHEDULE Ia

MISCELLANEOUS MEMBERS

Number of Active Members and Total Annual Salaries

by Sex and Attained Age as of October 31, 1974

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>
20	7	\$ 42,569	56	\$ 325,464	63	\$ 368,033
21	8	60,459	53	342,309	61	402,768
22	17	131,840	65	463,753	82	595,593
23	30	252,941	109	843,646	139	1,096,584
24	55	499,953	104	813,700	159	1,313,640
25	56	537,840	112	936,602	168	1,474,419
26	61	605,425	120	1,036,061	181	1,641,456
27	92	988,463	113	1,026,556	205	2,014,975
28	106	1,237,846	106	1,021,760	212	2,259,606
29	89	1,047,647	68	634,747	157	1,682,363
30	97	1,136,135	67	656,834	164	1,792,942
31	65	736,095	57	574,115	122	1,310,198
32	73	973,872	53	531,182	126	1,505,040
33	63	800,245	44	413,749	107	1,213,988
34	44	594,736	62	576,377	106	1,171,108
35	37	453,170	38	348,245	75	801,415
36	44	596,010	32	291,817	76	887,827
37	58	821,792	38	350,429	96	1,172,217
38	30	403,685	36	345,593	66	749,278
39	50	675,478	41	389,643	91	1,065,120
40	53	658,185	31	322,709	84	980,894
41	42	567,198	35	327,780	77	894,977
42	29	489,707	35	327,052	64	816,758
43	44	632,155	38	375,211	82	1,007,366
44	44	593,303	58	567,406	102	1,160,704
45	31	435,972	35	314,471	66	750,443
46	29	405,974	32	277,618	61	683,591
47	43	629,579	53	480,912	96	1,110,489
48	35	483,385	46	450,726	81	934,111
49	31	454,832	44	426,567	75	881,399

SCHEDULE Ia

MISCELLANEOUS MEMBERS

Number of Active Members and Total Annual Salaries

by Sex and Attained Age as of October 31, 1974  
(Continued)

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>
50	34	\$ 481,567	46	\$ 463,859	80	\$ 945,426
51	36	524,760	46	465,107	82	989,866
52	39	520,495	62	614,213	101	1,134,704
53	35	480,758	50	488,484	85	969,242
54	29	395,590	46	483,986	75	879,575
55	32	457,071	41	426,855	73	883,926
56	39	536,618	38	355,769	77	892,386
57	21	245,582	34	338,649	55	584,231
58	27	365,223	36	346,840	63	712,063
59	31	385,352	25	241,551	56	626,903
60	21	264,268	33	321,643	54	585,911
61	21	288,489	24	220,097	45	508,586
62	17	204,154	24	235,179	41	439,333
63	13	145,674	14	141,747	27	287,422
64	4	35,834	10	124,661	14	160,494
65	7	83,983	4	49,486	11	133,468
66	7	150,612	5	50,838	12	201,450
67	5	80,144	2	21,245	7	101,390
68	1	14,094	4	33,207	5	47,301
69	1	8,035	0	0	1	8,035
70	1	15,550	1	14,432	2	29,983
Total	1,884	\$ 23,621,680	2,326	\$ 21,224,224	4,210	\$ 44,845,904

SCHEDULE 1b

SAFETY MEMBERS

Number of Active Members and Total Annual Salaries  
by Attained Age as of October 31, 1974

<u>Age</u>	<u>No.</u>	<u>Salary</u>
20	0	\$ 0
21	1	11,312
22	1	11,312
23	4	45,896
24	7	79,507
25	11	137,904
26	16	204,188
27	16	210,352
28	25	337,707
29	19	272,250
30	16	227,993
31	22	311,949
32	10	149,927
33	13	180,922
34	7	106,820
35	8	121,957
36	11	157,680
37	3	43,544
38	7	106,868
39	10	149,316
40	7	110,101
41	6	93,226
42	9	134,129
43	8	123,613
44	6	88,403
45	8	123,077
46	8	127,679
47	12	202,519
48	6	107,474
49	6	96,711

SCHEDULE 1b

SAFETY MEMBERS

Number of Active Members and Total Annual Salaries

by Attained Age as of October 31, 1974  
(Continued)

<u>Age</u>	<u>No.</u>	<u>Salary</u>
50	8	\$ 117,746
51	8	134,937
52	2	34,767
53	4	64,601
54	8	126,639
55	2	29,983
56	1	13,756
57	1	15,160
58	1	16,331
59	1	14,432
60	2	41,864
Total	321	\$ 4,684,552



## MISCELLANEOUS ACTIVE MALE MEMBERS

Present Age	Years of Service							Over 39	TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34		
19 & Below	2								2
20 - 24	437	2							115
25 - 29	705	864							404
30 - 34	357	47							342
35 - 39	895	1,023	13	1					219
40 - 44	204	124	1,072	1,040	3				212
45 - 49	980	1,117	44	14	1,140	9			169
50 - 54	92	66	1,232	1,115	1,275	30			173
55 - 59	1,065	1,129	50	38	1,080	21	1		150
60 - 64	71	44	1,272	1,257	1,218	21	1,612	1	76
65 - 69	994	1,183	23	33	1,276	21	1,780	1	21
70 & Over	38	36	1,164	1,245	1,275	6	3,044		1
TOTAL	948	414	203	140	116	57	5	1	1,884

Coates, Herfurth & England, Consulting Actuaries

SCHEDULE IIb

MISCELLANEOUS ACTIVE FEMALE MEMBERS

Average Monthly Salary and Membership Distribution  
as of October 31, 1974

Present Age	Years of Service							Over 39	TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	
19 & Below	29 464								29
20 - 24	347	11							358
25 - 29	610	658							519
	400	118	1						283
30 - 34	732	798	669						185
	158	93	27	5					197
35 - 39	757	898	822	767					210
	97	51	23	13	1				250
40 - 44	700	836	921	870	654				174
	95	61	17	10	13	1			105
45 - 49	735	864	940	939	866	756			15
	85	68	32	10	14	1			1
50 - 54	685	832	833	694	940	942			1
	62	77	41	31	33	4	1		1
55 - 59	759	821	884	876	903	887	1,735	738	1
	31	45	29	42	16	8	2	1	1
60 - 64	699	788	881	859	830	991	885	654	1
	8	19	30	24	18	4	1	1	1
65 - 69	771	824	828	817	869	773	756	1,146	1
	1	6	4	2					1
70 & Over	793	964	823	653				1,066	1
		1							
		1,202							
TOTAL	1,313	550	204	138	95	18	4	1	2,326

Average Attained Age 37.40  
Average Length of Service 5.70  
Average Entry Age 31.70  
Other Members 0

SCHEDULE IIc

SAFETY ACTIVE MEMBERS

Average Monthly Salary and Membership Distribution  
as of October 31, 1974

<u>Present Age</u>	<u>Years of Service</u>							<u>TOTAL</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>Over 39</u>
19 & Below								
20 - 24	13							13
	948							
25 - 29	68	19						87
	1,093	1,186						
30 - 34	25	39	4					68
	1,103	1,242	1,354					
35 - 39	4	16	19					39
	1,114	1,235	1,266					
40 - 44		10	22	4				36
		1,219	1,253	1,506				
45 - 49		2	6	22	10			40
		1,146	1,341	1,334	1,508			
50 - 54		3	4	7	11	5		30
		1,214	1,216	1,232	1,415	1,435		
55 - 59				3	2	1		6
				1,222	1,253	1,295		
60 - 64				1				1
				1,263				
65 - 59								
70 & Over								
TOTAL	110	89	55	37	23	6		320

Average Attained Age 36.26  
Average Length of Service 8.80  
Average Entry Age 27.45  
Other Members 1

SCHEDULE IIIa

MISCELLANEOUS RETIRED MEMBERS

Summary of Monthly Basic Allowances  
Being Paid as of October 31, 1974

<u>Service Retirements</u>	<u>Number</u>	<u>Monthly Allowance</u>
Unmodified	356	\$ 75,643.60
Option 1	268	47,291.28
Option 2	18	1,660.64
Option 3	<u>30</u>	<u>5,843.69</u>
Total	672	\$ 130,439.21

<u>Disability Retirements</u>	<u>Number</u>	<u>Monthly Allowance</u>
Unmodified	67	\$ 12,700.69
Option 1	22	2,969.87
Option 2 & Duty Disability	13	3,670.98
Option 3	<u>-</u>	<u>-</u>
Total	102	\$ 19,341.54

Beneficiaries	<u>62</u>	<u>\$ 8,636.60</u>
Grand Total	836	\$ 158,417.35



SCHEDULE IIIb

SAFETY RETIRED MEMBERS

Summary of Monthly Basic Allowances  
Being Paid as of October 31, 1974

<u>Service Retirements</u>	<u>Number</u>	<u>Monthly Allowance</u>
Unmodified	35	\$ 17,192.40
Option 2	<u>1</u>	<u>355.09</u>
Total	36	\$ 17,547.49
 <u>Disability Retirements</u>	 <u>Number</u>	 <u>Monthly Allowance</u>
Unmodified	3	\$ 1,493.63
Option 1	<u>1</u>	<u>218.43</u>
Total	4	\$ 1,712.06
Beneficiaries	4	837.13
 Grand Total	 44	 \$ 20,096.68

SCHEDULE IVa

MISCELLANEOUS MALE MEMBERS

Number by Quinquennial Age Range Anticipated, by Old and New Actuarial Assumptions\*, to Eventually Separate for Indicated Cause

<u>Age Range</u>	<u>Withdrawal</u>		<u>Ordinary** Death</u>		<u>Ordinary Disability</u>		<u>Service</u>		<u>Eligible Death</u>		<u>Duty Death</u>		<u>Duty Disability</u>		<u>Vested Termination</u>		<u>Number of Active Members</u>
	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	
Under 25	98	94	4	2	2	2	13	11	0	0	0	0	0	0	0	8	117
25 - 29	278	266	26	13	10	12	86	72	1	1	1	0	2	3	0	37	404
30 - 34	187	177	30	16	12	15	108	92	1	2	1	1	3	3	0	36	342
35 - 39	88	83	24	13	10	13	93	82	1	1	1	1	2	3	0	23	219
40 - 44	60	57	26	14	12	15	109	100	1	2	1	1	3	3	0	20	212
45 - 49	31	30	22	12	10	13	102	97	1	1	1	0	2	3	0	13	169
50 - 54	19	18	21	12	9	12	120	117	1	2	1	0	2	3	0	9	173
55 - 59	5	6	16	9	6	8	120	120	1	1	1	0	1	2	0	4	150
60 - 64	0	0	6	4	1	2	68	70	0	0	0	0	1	0	0	0	76
Over 65	0	0	1	1	0	0	21	21	0	0	0	0	0	0	0	0	22
TOTAL	766	731	176	96	72	92	840	782	7	10	7	3	16	20	0	150	1,884

\*Old Actuarial Assumptions implemented in valuation as of June 30, 1972  
 New Actuarial Assumptions implemented in valuation as of October 31, 1974

\*\*Ordinary Death is death not entitling the beneficiary to an allowance.

SCHEDULE IVb

MISCELLANEOUS FEMALE MEMBERS

Number by Quinquennial Age Range Anticipated, by Old and New Actuarial Assumptions\*, to Eventually Separate for Indicated Cause

Age Range	Withdrawal		Ordinary*** Death		Ordinary Disability		Service		Eligible Death		Duty Death		Duty Disability		Vested Termination		Number of Active Members
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
Under 25	376	360	2	1	1	2	8	10	0	0	0	0	0	0	0	14	387
25 - 29	476	443	5	4	5	7	33	37	0	0	0	0	0	0	0	28	519
30 - 34	226	202	6	4	5	7	46	49	0	0	0	0	0	0	0	21	283
35 - 39	117	101	6	4	5	8	56	55	0	0	0	0	1	1	0	16	185
40 - 44	88	75	8	5	8	11	92	88	0	0	0	0	1	1	0	17	197
45 - 49	61	51	10	6	9	13	129	124	0	0	0	0	1	1	0	15	210
50 - 54	39	32	11	7	11	15	188	182	0	0	0	0	1	1	0	13	250
55 - 59	8	7	7	4	6	9	152	148	0	0	0	0	1	1	0	5	174
60 - 64	0	0	3	2	2	3	100	100	0	0	0	0	0	0	0	0	105
Over 65	0	0	0	0	0	0	16	16	0	0	0	0	0	0	0	0	16
TOTAL	1,391	1,271	58	37	52	75	820	809	0	0	0	0	5	5	0	129	2,326

\*Old Actuarial Assumptions implemented in valuation as of June 30, 1972  
 New Actuarial Assumptions implemented in valuation as of October 31, 1974

\*\*Ordinary Death is death not entitling the beneficiary to an allowance.

SCHEDULE IVC

SAFETY MEMBERS

Number by Quinquennial Age Range Anticipated, by Old and New Actuarial Assumptions\*, to Eventually Separate for Indicated Cause

Age Range	Withdrawal		Ordinary** Death		Ordinary Disability		Service		Eligible Death		Duty Death		Duty Disability		Vested Termination		Number of Active Members
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
Under 25	11	7	0	0	0	0	2	5	0	0	0	0	0	1	0	0	13
25 - 29	57	39	1	1	0	0	23	38	1	2	2	2	3	5	0	0	87
30 - 34	32	23	1	1	0	0	28	36	1	1	2	2	4	5	0	0	68
35 - 39	10	8	1	0	0	0	23	26	1	1	1	1	3	3	0	0	39
40 - 44	4	4	1	0	0	0	26	27	1	1	1	1	3	3	0	0	36
45 - 49	1	2	0	0	0	0	35	34	1	1	1	1	2	2	0	0	40
50 - 54	0	0	0	0	0	0	29	29	0	0	0	0	1	1	0	0	30
55 - 59	0	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	6
60 - 64	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Over 65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	115	83	4	2	0	0	173	202	5	6	7	7	16	20	0	0	320

\*Old Actuarial Assumptions implemented in valuation as of June 30, 1972  
 New Actuarial Assumptions implemented in valuation as of October 31, 1974

\*\*Ordinary Death is death not entitling the beneficiary to an allowance.



SCHEDULE V a

MISCELLANEOUS MALE MEMBERS

Ratio of Current Compensation  
to Compensation Anticipated at Age 70

(Longevity and Promotion Only)

<u>Age</u>	<u>Ratio</u>	<u>Age</u>	<u>Ratio</u>
20	.390	45	.780
21	.420	46	.788
22	.449	47	.795
23	.477	48	.803
24	.504	49	.811
25	.530	50	.820
26	.555	51	.828
27	.579	52	.836
28	.602	53	.844
29	.624	54	.853
30	.645	55	.861
31	.665	56	.870
32	.684	57	.879
33	.692	58	.887
34	.699	59	.896
35	.706	60	.905
36	.713	61	.914
37	.720	62	.923
38	.727	63	.933
39	.735	64	.942
40	.742	65	.951
41	.749	66	.961
42	.757	67	.971
43	.764	68	.980
44	.772	69	.990
		70	1.000

SCHEDULE Vb

MISCELLANEOUS FEMALE MEMBERS

Ratio of Current Compensation  
to Compensation Anticipated at Age 70

(Longevity and Promotion Only)

<u>Age</u>	<u>Ratio</u>	<u>Age</u>	<u>Ratio</u>
20	.441	45	.761
21	.457	46	.772
22	.472	47	.782
23	.487	48	.792
24	.502	49	.802
25	.516	50	.812
26	.530	51	.822
27	.544	52	.832
28	.558	53	.842
29	.571	54	.852
30	.584	55	.861
31	.597	56	.870
32	.610	57	.879
33	.623	58	.887
34	.635	59	.896
35	.647	60	.905
36	.659	61	.914
37	.671	62	.923
38	.683	63	.933
39	.695	64	.942
40	.706	65	.951
41	.717	66	.961
42	.728	67	.971
43	.739	68	.980
44	.750	69	.990
		70	1.000

SCHEDULE Vc

SAFETY MEMBERS

Ratio of Current Compensation  
to Compensation Anticipated at Age 60

(Longevity and Promotion Only)

<u>Age</u>	<u>Ratio</u>	<u>Age</u>	<u>Ratio</u>
21	.599	40	.820
22	.615	41	.828
23	.630	42	.836
24	.644	43	.844
		44	.853
25	.657	45	.861
26	.670	47	.870
27	.682	47	.879
28	.694	48	.887
29	.706	49	.896
30	.717	50	.905
31	.728	51	.914
32	.739	52	.923
33	.750	53	.933
34	.760	54	.942
35	.770	55	.951
36	.780	56	.961
37	.790	57	.971
38	.800	58	.980
39	.811	59	.990
		60	1.000

SCHEDULE VIA  
MISCELLANEOUS MALE MEMBERS  
Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Disability	Service	Death While Eligible	Duty Death	Duty Disability	Vested Termination
20	.2025	.0005	.0000	.0000	.0000	.0000	.0000	.0051
21	.1884	.0005	.0000	.0000	.0000	.0000	.0000	.0053
22	.1743	.0005	.0000	.0000	.0000	.0000	.0000	.0054
23	.1601	.0005	.0000	.0000	.0000	.0000	.0000	.0055
24	.1460	.0006	.0000	.0000	.0000	.0000	.0000	.0056
25	.1319	.0005	.0001	.0000	.0001	.0000	.0000	.0057
26	.1178	.0005	.0001	.0000	.0001	.0000	.0000	.0058
27	.1036	.0005	.0001	.0000	.0001	.0000	.0000	.0059
28	.0942	.0005	.0001	.0000	.0001	.0000	.0000	.0060
29	.0848	.0006	.0001	.0000	.0001	.0000	.0000	.0061
30	.0754	.0006	.0002	.0000	.0001	.0000	.0001	.0062
31	.0659	.0007	.0002	.0000	.0001	.0000	.0001	.0063
32	.0584	.0007	.0002	.0000	.0001	.0000	.0001	.0064
33	.0528	.0007	.0003	.0000	.0001	.0000	.0001	.0065
34	.0490	.0007	.0003	.0000	.0001	.0000	.0001	.0066
35	.0462	.0008	.0003	.0000	.0001	.0000	.0001	.0067
36	.0443	.0009	.0005	.0000	.0001	.0000	.0001	.0067
37	.0424	.0009	.0005	.0000	.0001	.0000	.0001	.0068
38	.0405	.0011	.0005	.0000	.0001	.0000	.0001	.0068
39	.0386	.0012	.0006	.0000	.0001	.0000	.0001	.0068
40	.0330	.0013	.0007	.0000	.0001	.0000	.0002	.0069
41	.0314	.0014	.0008	.0000	.0002	.0001	.0002	.0069
42	.0297	.0015	.0011	.0000	.0002	.0001	.0002	.0069
43	.0280	.0017	.0013	.0000	.0002	.0002	.0003	.0069
44	.0263	.0020	.0016	.0000	.0002	.0001	.0004	.0070



SCHEDULE VIA  
MISCELLANEOUS MALE MEMBERS  
Probabilities of Separation Prior to Retirement

(Continued)

Age	Withdrawal	Ordinary Death	Disability	Service	Death While Eligible	Duty Death	Duty Disability	Vested Termination
45	.0246	.0022	.0020	.0000	.0002	.0001	.0004	.0070
46	.0229	.0025	.0024	.0000	.0003	.0001	.0005	.0070
47	.0212	.0028	.0027	.0000	.0003	.0001	.0006	.0070
48	.0203	.0031	.0030	.0000	.0003	.0001	.0007	.0070
49	.0195	.0034	.0034	.0000	.0003	.0001	.0007	.0071
50	.0193	.0038	.0054	.0239	.0004	.0001	.0012	.0071
51	.0190	.0041	.0060	.0036	.0004	.0001	.0013	.0071
52	.0188	.0044	.0065	.0036	.0004	.0002	.0014	.0071
53	.0179	.0047	.0069	.0109	.0005	.0002	.0015	.0071
54	.0170	.0051	.0073	.0109	.0005	.0002	.0016	.0071
55	.0160	.0054	.0079	.0511	.0006	.0002	.0017	.0072
56	.0151	.0061	.0084	.0175	.0006	.0002	.0018	.0072
57	.0141	.0065	.0088	.0263	.0007	.0002	.0019	.0072
58	.0132	.0071	.0093	.0263	.0007	.0002	.0021	.0072
59	.0122	.0075	.0098	.0365	.0008	.0003	.0022	.0072
60	.0000	.0081	.0085	.0572	.0008	.0003	.0019	.0072
61	.0000	.0086	.0082	.0858	.0009	.0003	.0018	.0000
62	.0000	.0092	.0079	.1358	.0009	.0003	.0017	.0000
63	.0000	.0099	.0075	.1602	.0010	.0003	.0017	.0000
64	.0000	.0105	.0071	.2002	.0011	.0004	.0016	.0000
65	.0000	.0112	.0000	.2560	.0011	.0004	.0000	.0000
66	.0000	.0120	.0000	.1920	.0012	.0004	.0000	.0000
67	.0000	.0131	.0000	.2560	.0013	.0004	.0000	.0000
68	.0000	.0141	.0000	.3200	.0014	.0005	.0000	.0000
69	.0000	.0152	.0000	.6400	.0015	.0005	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000	.0000

SCHEDULE VIB  
MISCELLANEOUS FEMALE MEMBERS  
Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Disability	Service	Death While Eligible	Duty Death	Duty Disability	Vested Termination
20	.2679	.0001	.0000	.0000	.0000	.0000	.0000	.0051
21	.2516	.0001	.0000	.0000	.0000	.0000	.0000	.0053
22	.2355	.0001	.0000	.0000	.0000	.0000	.0000	.0054
23	.2192	.0001	.0000	.0000	.0000	.0000	.0000	.0055
24	.2070	.0002	.0000	.0000	.0000	.0000	.0000	.0056
25	.1949	.0003	.0001	.0000	.0000	.0000	.0000	.0057
26	.1827	.0003	.0003	.0000	.0000	.0000	.0000	.0058
27	.1705	.0003	.0006	.0000	.0000	.0000	.0000	.0059
28	.1583	.0003	.0006	.0000	.0000	.0000	.0000	.0060
29	.1461	.0003	.0006	.0000	.0000	.0000	.0000	.0061
30	.1340	.0003	.0007	.0000	.0000	.0000	.0000	.0062
31	.1242	.0003	.0007	.0000	.0000	.0000	.0000	.0063
32	.1161	.0003	.0007	.0000	.0000	.0000	.0000	.0064
33	.1080	.0004	.0007	.0000	.0000	.0000	.0000	.0065
34	.0998	.0004	.0007	.0000	.0000	.0000	.0000	.0066
35	.0918	.0004	.0007	.0000	.0000	.0000	.0000	.0067
36	.0836	.0005	.0007	.0000	.0000	.0000	.0000	.0067
37	.0771	.0006	.0007	.0000	.0000	.0000	.0000	.0068
38	.0706	.0007	.0009	.0000	.0000	.0000	.0000	.0068
39	.0658	.0008	.0009	.0000	.0000	.0000	.0000	.0068
40	.0609	.0008	.0009	.0000	.0000	.0000	.0001	.0069
41	.0560	.0009	.0011	.0000	.0000	.0000	.0001	.0069
42	.0512	.0009	.0013	.0000	.0000	.0000	.0001	.0069
43	.0479	.0010	.0015	.0000	.0000	.0000	.0001	.0069
44	.0446	.0010	.0016	.0000	.0000	.0000	.0001	.0070

SCHEDULE VIb  
MISCELLANEOUS FEMALE MEMBERS  
Probabilities of Separation Prior to Retirement

(Continued)

Age	Withdrawal	Ordinary Death	Disability	Service	Death While Eligible	Duty Death	Duty Disability	Vested Termination
45	.0422	.0011	.0021	.0000	.0000	.0000	.0001	.0070
46	.0398	.0012	.0023	.0000	.0000	.0000	.0002	.0070
47	.0373	.0013	.0026	.0000	.0000	.0000	.0002	.0070
48	.0349	.0014	.0030	.0000	.0000	.0000	.0002	.0070
49	.0325	.0015	.0033	.0000	.0000	.0000	.0002	.0071
50	.0300	.0016	.0036	.0114	.0000	.0000	.0003	.0071
51	.0284	.0017	.0039	.0114	.0000	.0000	.0003	.0071
52	.0268	.0018	.0042	.0046	.0000	.0000	.0003	.0071
53	.0243	.0020	.0046	.0046	.0000	.0000	.0003	.0071
54	.0219	.0021	.0051	.0046	.0000	.0000	.0004	.0071
55	.0195	.0023	.0055	.0805	.0000	.0000	.0004	.0072
56	.0170	.0026	.0062	.0264	.0000	.0000	.0005	.0072
57	.0146	.0028	.0069	.0264	.0000	.0000	.0005	.0072
58	.0130	.0029	.0075	.0264	.0000	.0000	.0006	.0072
59	.0114	.0031	.0082	.0402	.0000	.0000	.0006	.0072
60	.0000	.0032	.0088	.0472	.0000	.0000	.0006	.0072
61	.0000	.0034	.0095	.0945	.0000	.0000	.0007	.0000
62	.0000	.0036	.0102	.2376	.0000	.0000	.0007	.0000
63	.0000	.0037	.0108	.1742	.0000	.0000	.0008	.0000
64	.0000	.0038	.0115	.1742	.0000	.0000	.0008	.0000
65	.0000	.0057	.0000	.2446	.0000	.0000	.0000	.0000
66	.0000	.0060	.0000	.2446	.0000	.0000	.0000	.0000
67	.0000	.0065	.0000	.3253	.0000	.0000	.0000	.0000
68	.0000	.0069	.0000	.4879	.0000	.0000	.0000	.0000
69	.0000	.0074	.0000	.8132	.0000	.0000	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000	.0000



SCHEDULE VIC  
SAFETY MEMBERS  
Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Disability	Service	Death While Eligible	Duty Death	Duty Disability	Vested Termination
20	.0615	.0006	.0000	.0000	.0000	.0000	.0005	.0000
21	.0595	.0006	.0000	.0000	.0000	.0000	.0005	.0000
22	.0575	.0006	.0000	.0000	.0000	.0000	.0005	.0000
23	.0555	.0006	.0000	.0000	.0000	.0000	.0006	.0000
24	.0535	.0006	.0000	.0000	.0000	.0000	.0006	.0000
25	.0515	.0001	.0000	.0000	.0005	.0000	.0006	.0000
26	.0495	.0001	.0000	.0000	.0005	.0000	.0007	.0000
27	.0475	.0001	.0000	.0000	.0005	.0000	.0007	.0000
28	.0455	.0001	.0000	.0000	.0005	.0000	.0008	.0000
29	.0435	.0001	.0000	.0000	.0006	.0000	.0008	.0000
30	.0415	.0001	.0000	.0000	.0006	.0000	.0009	.0000
31	.0395	.0001	.0000	.0000	.0006	.0000	.0009	.0000
32	.0375	.0002	.0000	.0000	.0006	.0000	.0010	.0000
33	.0355	.0002	.0000	.0000	.0006	.0000	.0011	.0000
34	.0335	.0002	.0000	.0000	.0006	.0011	.0013	.0000
35	.0315	.0002	.0000	.0000	.0006	.0012	.0015	.0000
36	.0295	.0002	.0000	.0000	.0007	.0012	.0017	.0000
37	.0275	.0002	.0000	.0000	.0008	.0013	.0020	.0000
38	.0260	.0002	.0000	.0000	.0009	.0013	.0023	.0000
39	.0245	.0002	.0000	.0000	.0010	.0015	.0026	.0000
40	.0230	.0003	.0000	.0000	.0010	.0015	.0029	.0000
41	.0215	.0003	.0000	.0000	.0011	.0016	.0032	.0000
42	.0200	.0003	.0000	.0000	.0012	.0017	.0035	.0000
43	.0185	.0003	.0000	.0000	.0013	.0018	.0038	.0000
44	.0170	.0003	.0000	.0000	.0014	.0019	.0042	.0000



SCHEDULE VIC  
SAFETY MEMBERS  
Probabilities of Separation Prior to Retirement

(Continued)

Age	Withdrawal	Ordinary Death	Disability	Service	Death While Eligible	Duty Death	Duty Disability	Vested Termination
45	.0155	.0004	.0000	.0000	.0014	.0019	.0046	.0000
46	.0140	.0004	.0000	.0000	.0015	.0020	.0050	.0000
47	.0125	.0004	.0000	.0000	.0016	.0020	.0054	.0000
48	.0110	.0004	.0000	.0000	.0017	.0021	.0058	.0000
49	.0095	.0004	.0000	.0000	.0018	.0022	.0062	.0000
50	.0000	.0005	.0000	.1000	.0019	.0022	.0066	.0000
51	.0000	.0005	.0000	.0800	.0020	.0023	.0070	.0000
52	.0000	.0005	.0000	.0600	.0022	.0023	.0074	.0000
53	.0000	.0006	.0000	.0800	.0023	.0024	.0078	.0000
54	.0000	.0006	.0000	.1000	.0025	.0025	.0082	.0000
55	.0000	.0007	.0000	.1440	.0026	.0026	.0086	.0000
56	.0000	.0007	.0000	.2160	.0028	.0026	.0090	.0000
57	.0000	.0007	.0000	.2880	.0029	.0028	.0094	.0000
58	.0000	.0007	.0000	.3600	.0030	.0029	.0098	.0000
59	.0000	.0008	.0000	.5400	.0031	.0030	.0102	.0000
60	.0000	.0000	.0000	1.0000	.0000	.0000	.0000	.0000

SCHEDULE VII a

SERVICE RETIREMENT

Rates of Mortality after Service Retirement  
(Per Thousand)

<u>Age</u>	<u>Miscellaneous Male and Safety</u>	<u>Miscellaneous Female</u>
50	5.81	2.81
51	6.48	3.07
52	7.19	3.32
53	7.94	3.60
54	8.73	3.91
55	9.56	4.26
56	10.44	4.65
57	11.35	5.10
58	12.30	5.64
59	13.30	6.26
60	14.38	7.00
61	15.56	7.84
62	16.87	8.79
63	18.35	9.85
64	20.07	11.01
65	22.07	12.26
66	24.42	13.60
67	27.19	14.99
68	30.11	16.46
69	32.99	18.20
70	35.94	20.35
71	39.30	23.10
72	43.18	26.53
73	47.48	30.47
74	52.08	34.78
75	57.08	39.41
76	62.43	44.31
77	68.35	49.51
78	75.13	55.11
79	82.69	61.09
80	90.95	67.46
81	99.68	74.15
82	108.71	81.11
83	117.98	88.37
84	127.44	95.94

SCHEDULE VII a

SERVICE RETIREMENT

Rates of Mortality after Service Retirement  
(Per Thousand)

(Continued)

<u>Age</u>	<u>Miscellaneous Male and Safety</u>	<u>Miscellaneous Female</u>
85	137.07	103.90
86	146.85	112.33
87	156.84	121.30
88	167.12	130.88
89	177.79	141.19
90	188.92	152.30
91	200.59	164.33
92	212.56	177.14
93	225.16	191.10
94	238.52	206.34
95	252.76	223.03
96	268.02	241.34
97	284.46	261.45
98	302.22	283.58
99	321.52	307.95
100	342.53	334.81
101	365.46	364.43
102	390.54	397.10
103	417.98	433.15
104	450.10	472.93
105	489.20	518.16
106	537.60	570.54
107	597.62	631.81
108	671.55	703.68
109	761.72	787.85
110	870.43	886.05
111	1,000.00	1,000.00

SCHEDULE VIIb

DISABILITY RETIREMENT

Rates of Mortality after Disability Retirement  
for Safety and Miscellaneous Male and Female  
 (Per Thousand)

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	14.7	50	29.8	80	102.9
21	14.7	51	30.8	81	110.0
22	14.7	52	31.9	82	118.0
23	14.8	53	33.0	83	127.4
24	14.8	54	34.1	84	137.1
25	14.9	55	35.3	85	146.9
26	15.0	56	36.5	86	156.8
27	15.1	57	37.7	87	167.1
28	15.3	58	38.9	88	177.8
29	15.5	59	40.1	89	188.9
30	15.8	60	41.3	90	200.6
31	16.2	61	42.5	91	212.6
32	16.7	62	43.8	92	225.2
33	17.2	63	45.2	93	238.5
34	17.7	64	46.7	94	252.8
35	18.2	65	48.2	95	268.0
36	18.8	66	49.7	96	284.5
37	19.4	67	51.4	97	302.2
38	20.0	68	53.3	98	321.5
39	20.7	69	55.4	99	342.5
40	21.4	70	57.7	100	365.5
41	22.1	71	60.1	101	390.5
42	22.8	72	62.8	102	418.0
43	23.6	73	66.0	103	450.1
44	24.4	74	70.0	104	489.2
45	25.2	75	74.5	105	537.6
46	26.1	76	79.5	106	597.6
47	27.0	77	84.7	107	671.6
48	27.9	78	90.3	108	761.7
49	28.8	79	96.4	109	870.4
				110	1000.0