

EMPLOYEES' RETIREMENT ASSOCIATION
OF THE
COUNTY OF FRESNO

Actuarial Report
Prepared for the Board of Retirement
as of June 30, 1986



**COATES
HERFURTH &
ENGLAND, INC.**
ACTUARIES AND CONSULTANTS

March 9, 1987

Board of Retirement
County Employees' Retirement Association
County of Fresno
Fresno, California

Ladies and Gentlemen:

Pursuant to our agreement, we have completed an actuarial valuation and investigation of the County's Retirement System as of June 30, 1986. We are pleased to hand you herewith our report on the results of the survey.

This report describes in detail both the results and the recommendations arising from our study. It also compares these results with two additional valuations made based on economic assumptions which are different than those of the main study.

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

Respectfully submitted,

COATES, HERFURTH & ENGLAND, INC.
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Enclosure

EMPLOYEES' RETIREMENT ASSOCIATION
OF THE
COUNTY OF FRESNO
June 30, 1986
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REPORT ANALYSIS

SECTION I

EMPLOYEES' RETIREMENT ASSOCIATION
OF THE
COUNTY OF FRESNO

Introduction

We were requested to perform an actuarial investigation and valuation of the Retirement System as of June 30, 1986, using the latest statistical information available as to the active, inactive and retired membership.

The results presented herein are based upon the unaudited data as supplied to Coates, Herfurth & England, Inc. by the Retirement Office and the benefits for General and Safety members under Sections 31676.12 and 31664, respectively, of the County Employees Retirement Law of 1937.

The valuation results have been calculated under varying sets of salary scale and interest assumptions in order to point out the effects of inflation upon the contribution requirements of the System.

The ratio of the assets of the System to its obligation for benefits earned to the date of the valuation is being provided on a plan termination basis, as well as the basis of FASB Statement #35 and NCGA #6. We believe that the use of either ratio is a good measure of the funding progress of the Plan.

We believe that the information included in this report will be of help to all parties in our mutual effort to assure the actuarial soundness and funding adequacy of the Retirement System.

COUNTY OF FRESNOHighlights of Actuarial Data

Our July 1, 1986 and July 1, 1984 actuarial valuations of your System were based on the following data:

	<u>July 1, 1986</u>	<u>July 1, 1984</u>	<u>Percentage increase du- ring the two year period</u>
<u>General</u>			
Number	5,300	4,934	7%
Total annual payroll	\$122,183,000	\$102,559,000	19%
Average monthly salary	\$ 1,921	\$ 1,732	11%
<u>Safety</u>			
Number	462	464	-
Total annual payroll	\$ 14,639,000	\$ 13,211,000	11%
Average monthly salary	\$ 2,641	\$ 2,373	11%
<u>Active Members</u>			
Number	5,762	5,398	7%
Total annual payroll	\$136,822,000	\$115,770,000	18%
Average monthly salary	\$ 1,979	\$ 1,787	11%
<u>Retired Members</u>			
Number	1,918	1,780	8%
Total annual pension roll (basic)	\$ 11,557,000	\$ 9,818,000	18%
Average monthly allowance (basic)	\$ 502	\$ 460	9%
Total annual pension roll (basic and C.O.L.)	\$ 14,264,000	\$ 11,678,000	22%
Average monthly allowance (basic and C.O.L.)	\$ 620	\$ 547	13%
<u>Inactive Vested Members</u>			
Number	351	337	4%
<u>Assets</u>			
Total assets at Book Value	\$320,606,000	\$245,564,000	31%

EXPERIENCE ANALYSIS

SECTION II

EMPLOYEES' RETIREMENT ASSOCIATION
OF THE
COUNTY OF FRESNO

Non-economic Actuarial Assumptions

Probabilities of Separation From Service Prior to Retirement

An analysis was made, based upon each member's classification, sex, and attained age as of the valuation date, to determine the probability of members leaving the System because of non-vested withdrawal, death, disability retirement, service retirement, and vested withdrawal.

First, the probabilities of each of these were developed to reflect the actual experience that took place during the 2-year investigation period, July 1, 1984 through June 30, 1986. Then, a comparison was made between the probabilities of separation used in the previous valuation and those developed for the current study and all necessary adjustments were made.

The findings and adjustments made with regard to these rates are discussed in the following paragraphs.

Non-Vested Withdrawal

As a result of the active investigation, it was found that the actual number of non-vested withdrawals for General male members was higher than expected for all ages. For General female members, the actual withdrawal was higher than expected for ages over 30, but lower than expected for ages under 30. The rates of withdrawal were adjusted for this group to reflect this experience.

For Safety members, no adjustments were required in the rates of withdrawal at this time.

Service Retirement

The investigation of the System's actual experience indicated a continuing trend toward earlier retirement for the General males resulting in a higher rate of service retirements at the younger ages than previously expected. For female members the actual number was lower than expected. The rates of service retirement were adjusted to reflect this experience.

For Safety members service retirement was lower than expected, resulting in a reduction in the service retirement rates.

Disability Retirement

During the investigation period, the incidence of duty disability closely reflected the expected levels for both General and Safety members. Based on this experience, no adjustments were made in duty disability rates.

No changes were needed in the ordinary disability rates for General members. However, during the investigation period there was one Safety member retiring for ordinary disability. Based on this experience, ordinary disability rates for Safety members were introduced.

Death Before Retirement

The incidence of ordinary death, duty death, and death while eligible was consistent with that expected for both General and Safety members. As a result, all rates for active death remained unchanged.

Vested Withdrawal

The experience analysis showed that the probabilities of vested withdrawal with or without reciprocities for the General members were lower than expected for both the males and the females. The rates were reduced to reflect this experience.

For Safety members, rates of deferred retirement were increased to reflect the higher number of vested withdrawals which took place during the investigation period.

Summary of Probabilities of Separation

The rates of separation from active service have been discussed in the foregoing paragraphs. However, it is difficult to obtain the meaning of the various changes in the probabilities of separation by examining each one of them separately. This is because each of the probabilities depends on the others. For example, if there is more turnover, there will be fewer retirements. Because of this interdependency, it is helpful to develop another table which takes this into account. Tables 1 and 2 at the end of this Section show for both General and Safety members the expected number of present active members who will eventually separate from the System for each of the various causes of termination based on the old and the new sets of assumptions. These tables make it much easier to visualize the meaning of the probabilities of separation from the System. The rates used to develop the numbers in Table 2 are summarized in Section IV (v) of this report.

Mortality after Service Retirement

At the time of the last actuarial study of the Retirement System, the 1971 Group Annuity Mortality Table with no age setback for males and a one-year setback for females was used as the basis for mortality after service retirement. Based on these tables, we found the number of expected deaths lower than the number of actual deaths during the two-year investigation period. During the two years prior to the investigation period, the number of expected and actual deaths were very closely related.

Based on this experience and on that of the other Counties we serve, we have continued using the current mortality tables. The life expectancies based on these tables are shown in Section IV (ix).

Mortality after Disability Retirement

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

The expected number of deaths of retired disabled members for the two years under investigation was exactly the same as the actual number of deaths for both General and Safety Members. Based on this experience, we have continued to use the 1981 Disability Mortality Table for both General and Safety members. The life expectancies based on this table are shown in Section IV (x).

Mortality Basis For Employee Contribution Rates

In accordance with the 1937 County Retirement Act, we calculated basic contribution rates under benefit Section 31676.12 for General members using the 1971 Group Annuity Mortality male table with a 4-year setback to reflect a sex independent mortality table.

The Safety members' unisex rates continue to be based on the 1971 Group Annuity Morality male table without any setback.

EMPLOYEES' RETIREMENT ASSOCIATION

TABLE 1

OF THE
COUNTY OF FRESNO

Expected Number to Eventually Separate for Indicated Cause
(Based on Old Assumption)

GENERAL MALE MEMBERS

Present Age	Number of Actives	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Death	Duty Disability	Terminated Vested
20-24	30	24	0	0	4	0	0	0	2
25-29	170	115	2	2	33	1	0	1	16
30-34	338	173	4	7	100	3	1	3	47
35-39	494	180	8	13	200	5	1	5	82
40-44	407	91	7	14	220	5	1	5	64
45-49	209	25	4	8	143	3	0	3	23
50-54	193	13	3	7	153	2	0	2	13
55-59	138	4	2	4	121	1	0	1	5
60-64	46	0	1	1	43	0	0	0	1
65 & OVER	14	0	0	0	14	0	0	0	0
TOTAL	2,039	625 (30.7%)	31 (1.5%)	56 (2.7%)	1,031 (50.6%)	20 (1.0%)	3 (.1%)	20 (1.0%)	253 (12.4%)

GENERAL FEMALE MEMBERS

20-24	129	118	1	0	6	0	0	0	4
25-29	491	401	3	3	54	1	0	1	28
30-34	643	435	6	7	138	2	0	1	54
35-39	643	335	7	11	222	2	0	2	64
40-44	456	169	6	9	223	2	0	1	46
45-49	308	70	4	7	201	2	0	1	23
50-54	249	32	3	5	196	1	0	1	11
55-59	215	12	2	3	191	1	0	1	5
60-64	104	1	1	1	100	0	0	0	1
65 & OVER	23	0	0	0	23	0	0	0	0
TOTAL	3,261	1,573 (48.2%)	33 (1.0%)	46 (1.4%)	1,354 (41.5%)	11 (.4%)	0 (.0%)	8 (.3%)	236 (7.2%)

SAFETY MEMBERS

20-24	7	3	0	0	3	0	0	1	0
25-29	66	23	1	0	32	0	1	5	4
30-34	99	22	2	0	60	1	1	8	5
35-39	132	17	2	0	94	1	1	11	6
40-44	94	6	1	0	75	1	1	8	2
45-49	35	1	0	0	31	0	0	3	0
50-54	23	0	0	0	21	0	0	2	0
55 & OVER	6	0	0	0	6	0	0	0	0
TOTAL	462	72 (15.6%)	6 (1.3%)	0 (.0%)	322 (69.7%)	3 (.6%)	4 (.9%)	38 (8.2%)	17 (3.7%)

EMPLOYEES' RETIREMENT ASSOCIATION

TABLE 2

OF THE
COUNTY OF FRESNO
Expected Number to Eventually Separate for Indicated Cause
(Based on New Actuarial Assumption)

GENERAL MALE MEMBERS

Present Age	Number of Actives	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Death	Duty Disability	Terminated Vested
20-24	30	25	0	0	3	0	0	0	2
25-29	170	123	2	2	29	1	0	1	12
30-34	338	190	4	7	96	2	1	3	35
35-39	494	206	7	13	198	5	1	5	59
40-44	407	117	7	13	218	5	1	5	41
45-49	209	36	4	7	143	3	0	3	13
50-54	193	19	3	7	153	2	1	2	6
55-59	138	8	2	4	120	1	0	1	2
60-64	46	1	1	1	43	0	0	0	0
65 & OVER	14	0	0	0	14	0	0	0	0
TOTAL	2,039	725 (35.6%)	30 (1.5%)	54 (2.6%)	1,017 (49.9%)	19 (.9%)	4 (.2%)	20 (1.0%)	170 (8.3%)

GENERAL FEMALE MEMBERS

20-24	129	118	0	0	7	0	0	0	4
25-29	491	405	3	3	53	1	0	0	26
30-34	643	446	6	7	133	1	0	1	49
35-39	643	352	7	11	214	2	0	2	55
40-44	456	182	6	9	214	2	0	1	42
45-49	308	76	4	7	195	2	0	1	23
50-54	249	37	3	6	190	1	0	1	11
55-59	215	18	2	4	185	1	0	0	5
60-64	104	3	1	1	98	0	0	0	1
65 & OVER	23	0	0	0	23	0	0	0	0
TOTAL	3,261	1,637 (50.2%)	32 (1.0%)	48 (1.5%)	1,312 (40.2%)	10 (.3%)	0 (.0%)	6 (.2%)	216 (6.6%)

SAFETY MEMBERS

20-24	7	3	0	0	3	0	0	1	0
25-29	66	23	1	1	31	0	1	5	4
30-34	99	22	1	2	58	1	1	8	6
35-39	132	17	2	2	91	1	2	11	6
40-44	94	6	1	1	74	1	1	8	2
45-49	35	1	0	1	30	0	0	3	0
50-54	23	0	0	0	21	0	0	2	0
55 & OVER	6	0	0	0	6	0	0	0	0
TOTAL	462	72 (15.6%)	5 (1.1%)	7 (1.5%)	314 (68.0%)	3 (.6%)	5 (1.1%)	38 (8.2%)	18 (3.9%)

COUNTY OF FRESNOEconomic Actuarial AssumptionsInterest Rate and Salary Scale Assumptions

To assist in the selection of an appropriate interest assumption, we utilized financial information showing the Retirement Fund's investment earnings.

The investment yields of the Fund over the past five years were as follows:

<u>Year Ended</u>	<u>Yield</u>
June 30, 1982	9.8%
June 30, 1983	10.4%
June 30, 1984	10.2%
June 30, 1985	9.8%
June 30, 1986	12.9%

The 5-year average is approximately 10.6%. Based on this figure, the current investment policy, and including a certain amount of conservatism, the current $8\frac{1}{2}\%$ long term interest rate assumption was still deemed appropriate.

In order to correlate the recommended long term investment return with the corresponding appropriate rate of inflation, we again have used the statistical procedures set forth in a University of Chicago study. This study, Stocks, Bonds, Bills and Inflation: Simulations of the Future (1976-2000), by Roger E. Ibbotson and Rex A. Sinquefeld) analyzes the long term rates of investment return in relation to various levels of inflation, using results actually achieved during the period 1926-1974.

Based on the above study as it applies to your County, the "real" rate of return has been set at $2\frac{1}{2}\%$, which is the difference between the $8\frac{1}{2}\%$ interest assumption and 6% inflation. In this valuation we have increased the real rate of return to $2\frac{3}{4}\%$ to reflect the higher proportion of stocks in your investment portfolio. The $8\frac{1}{2}\%$ rate of return less the $2\frac{3}{4}\%$ real rate of return results in a long term inflation assumption of $5\frac{3}{4}\%$.

In addition to the inflation assumption, merit and longevity increases ranging from 5% to $1\frac{1}{2}\%$ per year (depending on the member's classification, age and service) are included in our salary projections. The effect of the merit and longevity increase is to add an increase of about 1% per year to the salary projections.

Multiple Studies

In connection with this survey, we have again performed more than one valuation of the System by varying the interest rates and the corresponding inflation components of the salary scales used. The purpose of this was to analyze the effect of these changes on the

County and member contribution rates. The following three studies were performed by us:

- Study #1 - A valuation using 8-1/2% interest and 7% salary scale assumptions. Of the projected salary increase, 1% is for merit and longevity and 6% is for inflation. This set of economic assumptions is currently in effect.
- Study #2 - A valuation using 8-1/2% interest and 6-3/4% salary scale assumptions. Of the projected salary increase, 1% is for merit and longevity and 5-3/4% is for inflation.
- Study #3 - A valuation using 8% interest and 6-1/4% salary scale assumptions. Of the projected salary increase, 1% is for merit and longevity and 5-1/4% is for inflation.

We show in Section IV(viii) a detailed listing of each of the above salary scales.

VALUATION RESULTS

SECTION III

EMPLOYEES' RETIREMENT ASSOCIATION
OF THE
COUNTY OF FRESNO

Contribution Rates

A comparison of County and employee total (basic and cost of living) rates on a group basis follows. This comparison shows rates currently contributed as well as rates resulting from our new study. The annual amounts are based on the June 30, 1986 payroll.

	Composite Contribution Rates and Annual Amounts*			
	County		Employee	
	<u>% of</u> <u>Payroll</u>	<u>Annual</u> <u>Amount</u>	<u>% of</u> <u>Payroll</u>	<u>Annual</u> <u>Amount</u>
Current rates @ 8-1/2% interest and 7% salary scale	13.02%	\$17,819,000	5.65%	\$7,730,000
Recalculated rates @ 8-1/2% interest and 7% salary scale (Study #1)	13.02%	\$17,816,000	5.67%	\$7,758,000
Study #2 rates @ 8-1/2% interest and 6-3/4% salary scale	12.67%	\$17,331,000	5.49%	\$7,512,000
Study #3 rates @ 8% interest and 6-1/4% salary scale	13.81%	\$18,892,000	5.78%	\$7,908,000

*Contribution rates are based upon benefit Section 31676.12 for General members and Section 31664 for Safety members and the fact that the County pays half of the member basic rates.

In comparing the current rates with those recalculated by this study (Study #1), each based on the 8-1/2% assumption, we note that the composite County rate remains the same and the member rate increases slightly.

Although the recalculated Study #1 composite County contribution rate remained unchanged, this was a net result of a higher Safety contribution rate and a lower General rate, as shown in Table B following this Section. The increase in the Safety rate was due mostly to a decrease in the number of active members, introduction of nonservice connected disability rates and a higher future expected number of vested withdrawals. The decrease in the General contribution rate reflects a 7% increase in the number of active members during the last two years.

The increase in the member composite rate is due to an increase in the future cost of living liabilities, of which the members are paying half.

Study #2 results in lower composite County and member contribution rates due to the lower expected future salary increases, whereas Study #3 results in higher rates reflecting the lower anticipated future investment earnings offset to some extent by the lower salary increases.

A more detailed comparison of the basic and cost of living contribution rates calculated in Studies #1, #2 and #3, as well as previously developed rates, are shown in Tables A and B

following this Section. Table A shows a comparison of the member contribution rates; Table B shows a similar comparison of the County contribution rates.

Member contributions are payable over the employee's future working lifetime. The County rates reflect the Entry Age Normal Funding method. Under this method, part of the liability is being paid over the future working lifetimes of the members. The remaining supplemental past service liability is being amortized over 24 years from the valuation date.

Recommendations

We recommend that the Retirement Board adopt the Employee and County contribution rates resulting from Study #2. Study #2 assumes a long term interest rate of 8-1/2%, along with a 6-3/4% per year salary scale reflecting merit, longevity and long term inflation.

In this Section, we have pointed out for comparison purposes some of the corresponding costs if alternative economic assumptions are used. In addition, we have included (in Section III (ii)) the funding test (funding progress ratio). We look forward to meeting with the Board and discussing the various topics covered in this report.

COUNTY OF FRESNOCOMPARISON OF EMPLOYEE CONTRIBUTION RATES*
(Using percentage of monthly salary in excess of \$350)Current Rates (Before Study)

8-1/2% interest and 7% salary scale assumptions							
General Members				Safety Members			
Entry Age	Basic	C.O.L.	Total	Entry Age	Basic	C.O.L.	Total
25	3.32%	2.35%	5.67%	21	3.89%	2.75%	6.64%
35	3.61	2.55	6.16	25	3.98	2.81	6.79
45	3.98	2.81	6.79	30	4.13	2.92	7.05

Rates Updated by 6/30/86 Study

Study #1 - 8-1/2% interest and 7% salary scale assumptions							
General Members				Safety Members			
Entry Age	Basic	C.O.L.	Total	Entry Age	Basic	C.O.L.	Total
25	3.32%	2.36%	5.68%	21	3.89%	2.77%	6.66%
35	3.61	2.57	6.18	25	3.98	2.83	6.81
45	3.98	2.83	6.81	30	4.13	2.94	7.07

Study #2 - 8-1/2% interest and 6-3/4% salary scale assumptions							
General Members				Safety Members			
Entry Age	Basic	C.O.L.	Total	Entry Age	Basic	C.O.L.	Total
25	3.18%	2.28%	5.46%	21	3.75%	2.69%	6.44%
35	3.50	2.51	6.01	25	3.86	2.77	6.63
45	3.91	2.80	6.71	30	4.03	2.89	6.92

Study #3 - 8% interest and 6-1/4% salary scale assumptions							
General Members				Safety Members			
Entry Age	Basic	C.O.L.	Total	Entry Age	Basic	C.O.L.	Total
25	3.30%	2.43%	5.73%	21	3.91%	2.87%	6.78%
35	3.64	2.68	6.32	25	4.03	2.96	6.99
45	4.07	2.99	7.06	30	4.21	3.10	7.31

* These rates reflect the fact that the County pays half of the members' basic rates.

COUNTY OF FRESNOCOMPARISON OF EMPLOYER CONTRIBUTION RATESCurrent Rates (Before Study)8-1/2% interest and 7% salary scale assumptions

	General		Safety	
	<u>% of Payroll</u>	<u>Annual Amount*</u>	<u>% of Payroll</u>	<u>Annual Amount*</u>
Basic	9.46%	\$11,559,000	13.60%	\$1,991,000
COL	3.12	3,812,000	3.12	457,000
Total	12.58%	\$15,371,000	16.72%	\$2,448,000

Average Rate for the total group = 13.02%Rates Updated by 6/30/86 StudyStudy #1 -8-1/2% interest and 7% salary scale assumptions

	General		Safety	
	<u>% of Payroll</u>	<u>Annual Amount*</u>	<u>% of Payroll</u>	<u>Annual Amount*</u>
Basic	9.27%	\$11,326,000	14.71%	\$2,153,000
COL	3.17	3,873,000	3.17	464,000
Total	12.44%	\$15,199,000	17.88%	\$2,617,000

Average Rate for the total group = 13.02%Study #2 - 8-1/2% interest and 6-3/4% salary scale assumptions

	General		Safety	
	<u>% of Payroll</u>	<u>Annual Amount*</u>	<u>% of Payroll</u>	<u>Annual Amount*</u>
Basic	8.98%	\$10,972,000	14.19%	\$2,077,000
COL	3.13	3,824,000	3.13	458,000
Total	12.11%	\$14,796,000	17.32%	\$2,535,000

Average Rate for the total group = 12.67%Study #3 - 8% interest and 6-1/4% salary scale assumptions

	General		Safety	
	<u>% of Payroll</u>	<u>Annual Amount*</u>	<u>% of Payroll</u>	<u>Annual Amount*</u>
Basic	9.64%	\$11,778,000	15.51%	\$2,271,000
COL	3.54	4,325,000	3.54	518,000
Total	13.18%	\$16,103,000	19.05%	\$2,789,000

Average Rate for the total group = 13.81%

* Contributions are based on annual salaries on valuation date of \$122,183,000 for General and \$14,639,000 for Safety members.

COUNTY OF FRESNOFunding Progress of the SystemFunding Ratio - "Plan Termination" Assumption

A comparison of the measurement of the funding progress of the System in successive valuations is an important criteria for determining the soundness of a pension system. There are various methods of measuring the progress of the System's funding, but we believe the most useful measure is the ratio of the System's assets to its obligation for benefits earned to date. Unless amendments are made to the System, in any soundly funded System the assets should be increasing at a greater rate than the liabilities for benefits earned to date. This will have the effect of increasing the funding progress ratio in future years.

At the time of the last valuation we computed the ratio of the assets of the System to the obligation for benefits earned to date based on a Plan Termination assumption. We believe that this measure will help the Board to monitor the progress of the funding status of the System. To this end, we include below a comparison of the previously calculated and recalculated funding ratios based on the recommended $8\frac{1}{2}\%$ interest rate assumption.

	<u>June 30, 1984</u>	<u>June 30, 1986</u>
(1) Assets at Book Value	\$239,286,000	\$320,606,000
(2) Present Value of Benefits*	\$234,612,000	\$287,670,000
(3) Funding Ratio (1) \div (2)	102%	111%

*Includes accounts payable.

The present value figure includes all liabilities of the System for basic and cost-of-living benefits granted to members and beneficiaries already on the pension roll. All basic and cost of living liabilities of active and vested inactive members are also included for every year of service already earned at the valuation date. Liabilities are based on the salaries of the members as of June 30, 1986. In calculating the funding progress of the System, we have used all of the assets, including all undistributed earnings.

The funding ratio at the recommended $8\frac{1}{2}\%$ interest rate assumption of 111% as developed in this study is very high compared to the funding ratios of most public retirement plans. However, a funding ratio of 100% or more at a valuation date does not mean that future contributions are unnecessary. It does mean that if the System were to terminate as of that date, there would be more than enough money on hand to pay off all of the obligations incurred through that date.

FASB #35 - "Plan Continuation" Assumption

In addition to the Funding Progress Ratio, we have also developed a funding ratio based on the actuarial liabilities as defined by the Financial Accounting Standards Board Statement #35 (FASB 35). The FASB 35 liabilities assume an ongoing plan, i.e., they include future

withdrawals and disability retirements, whereas the Funding Progress "Plan Termination" liabilities exclude these. All of the other assumptions used are the same under both ratios. It should be noted that Public Plans are now exempt from FASB 35 reporting requirements.

The previously calculated and the recalculated FASB 35 liabilities and funding ratios, based on the 8½% interest rate assumption, are as follows:

(1)	FASB 35 present value of benefits	<u>June 30, 1984</u>	<u>June 30, 1986</u>
	a. Retired members	\$129,918,000	\$ 156,547,000
	b. Vested active & inactive members	107,993,000	131,881,000
	c. Non-vested active members*	<u>3,145,000</u>	<u>4,783,000</u>
	d. Total	\$241,056,000	\$ 293,211,000
(2)	Assets @ Book Value	\$239,286,000	\$ 320,606,000
(3)	Funding ratio (2) ÷ (1)	99%	109%

NCGA #6 - "Plan Continuation" Assumption With Future Salary Increases

A new measurement of assets to liabilities is shown here. The difference between National Council of governmental Accounting Statement #6 liabilities and those of FASB 35 is that the NCGA #6 liabilities use salaries projected into the future reflecting our actuarial assumptions.

The NCGA #6 liability and funding ratio as of June 30, 1986, based on the 8-1/2% interest and 6-3/4% salary scale assumptions, are as follows:

(1)	NCGA #6 present value of benefits	
	a. Retired members	\$156,547,000
	b. Vested active and inactive members	214,698,000
	c. Non-vested active members*	<u>9,225,000</u>
	d. Total	\$380,470,000
(2)	Assets @ book value	\$320,606,000
(3)	Funding ratio (2) ÷ (1)	84%

*Include accounts payable.

The lower percentage funded under this ratio should not be of any concern. This funding ratio is expected to reach 100% in 24 years, which is the amortization period currently used to pay off the unfunded liabilities. A NCGA #6 ratio of 84% compares favorably with those of other public retirement funds.

COUNTY OF FRESNOActuarial Balance Sheet

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

Item #

1. The total assets in the Retirement Fund as of June 30, 1986, taken from the Accounting Balance Sheet.
2. The present value of the contributions that are anticipated will be made by present members after July 1, 1986 until their separation from the System as active members.
3. The present value of future contributions that will be required of the employer in order to fully provide the benefits anticipated on account of present active and retired members.
5. The actuarial present value of the allowances which are currently being paid to retired members and beneficiaries on account of service retirements, disability, and survivor benefits.
6. The present value of retirement allowances for anticipated future service and disability retirements, including continuance to spouses, to active and inactive members.
7. The present value of death benefits payable on account of the death of currently active members.
8. The present value of termination benefits payable on account of the withdrawal (refund) of currently active members.
9. The reserves held for future adverse experience, but sometimes used for other Retirement System purposes.

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE COUNTY OF FRESNO

ACTUARIAL BALANCE SHEET*

As of June 30, 1986

<u>ASSETS</u>			
	<u>Basic</u>	<u>C.O.L.</u>	<u>Total</u>
1. Total assets now held @ Cost Value	\$253,278,190	\$ 67,327,810	\$320,606,000
2. Present value of future contributions by members	43,645,857	31,289,714	74,935,571
3. Present value of future contributions by County	<u>168,993,278</u>	<u>65,570,644</u>	<u>234,563,922</u>
4. Total actuarial assets	\$465,917,325	\$164,188,168	\$630,105,493
<u>LIABILITIES</u>			
	<u>Basic</u>	<u>C.O.L.</u>	<u>Total</u>
5. Present value of retirement allowances payable to present retired members	\$100,093,203	\$ 56,453,396	\$156,546,599
6. Present value of retirement allowances to be granted:			
a) For service retirement	288,007,973	88,069,641	376,077,614
b) For disability retirement	17,644,477	6,198,135	23,842,612
7. Present value of death benefits to be granted:			
a) 6 months' salary death benefit and return of contributions	1,777,705	586,994	2,364,699
b) Death while eligible to retire	1,907,141	658,422	2,565,563
c) Duty death	1,065,438	423,724	1,489,162
8. Present value of members' contributions to be returned upon withdrawal before retirement	20,774,388	11,797,856	32,572,244
9. Contingency reserve	9,568,000	0	9,568,000
10. Accounts payable	1,661,000	0	1,661,000
11. Undistributed earnings	17,053,000	0	17,053,000
12. Retiree health insurance reserve	<u>6,365,000**</u>	<u>0</u>	<u>6,365,000**</u>
13. Total actuarial liabilities	\$465,917,325	\$164,188,168	\$630,105,493

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

**New reserve established by Retirement Board on August 6, 1986.

APPENDIX
SECTION IV

COUNTY OF FRESNO

Major Provisions of the Pension Plan

Benefit Sections 31676.12 and 31664
of the 1937 County Act

Briefly summarized below are the major provisions of the County Employees Retirement Law of 1937, as amended through June 30, 1986, and as adopted by Fresno County.

Membership

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

Return of Contributions

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

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 the final year's average salary, but not to exceed six (6) months' salary.

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

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

Death Benefit - After Retirement

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

If the retirement was for other than service connected disability, 60% of the member's allowance is continued to the spouse for life.

Disability Benefit

Members with 5 years of service, regardless of age, are eligible for non-service connected disability. The benefit is 1.8% of final average salary for each year of service. If this benefit does not equal 1/3 of final average salary, the benefit is increased by the same percentage of final average salary for the years which would have been credited to age 62 (age 55 for Safety members), but the total benefit in this case can not be more than 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.

Service Retirement Benefit

Members with 10 years of service, who have attained the age of 50, are eligible to retire. Members with 30 years of service (20 years for Safety), regardless of age, are eligible to retire.

Benefit

The benefit expressed as a percentage of monthly final average salary per year of service, depending on age at retirement, is illustrated below for typical ages. For members integrated with Social Security, the benefit is reduced by 1/3 of the percentage shown below times the first \$350 of monthly final average salary per year of service after January 1, 1956. Final average salary is based on the highest single year.

<u>Age</u>	<u>General</u>	<u>Safety</u>
50	1.34%	2.00%
55	1.77	2.62
60	2.34	2.62
62 and over	2.62	2.62

Cost of Living

The current maximum increase in retirement allowance is 3% per year for all members. The maximum is based on the change in the Consumer Price Index for the calendar year prior to the April 1 effective date.

Contribution Rates

Member

The basic rates are based on the age nearest birthday at entry into the System. The rates are such as to provide an average annuity at age 60 equal to 1/200 of final average salary for General members and at age 50 equal to 1/200 of final average for Safety members. For members integrated with Social Security, the above contributions payable with respect to the first \$350 of monthly salary are reduced by 1/3. Cost of living rates are designed to pay for one half of the future cost of living costs. Member contributions are refundable upon termination from the System.

County

The County rates are actuarially determined to provide for the balance of the contributions needed to fund the benefits promised under the Retirement System.

COUNTY OF FRESNOSummary of Assumptions and Funding MethodAssumptions

Valuation Interest Rate	8-1/2%
Post-Retirement Mortality	
(a) Service	
Males	1971 Group Annuity Mortality Table with no setback (Male)
Females	1971 Group Annuity Mortality Table with a 1 year setback (Female)
(b) Disability	1981 Disability Mortality Table
(c) For Employee Contribution Purposes	
General	1971 Group Annuity Mortality Table with a 4 year setback (Male)
Safety	1971 Group Annuity Mortality Table with no setback (Male)
Pre-Retirement Mortality	Based upon the Experience Analysis
Withdrawal Rates	Based upon the Experience Analysis
Disability Rates	Based upon the Experience Analysis
Service Retirement Rates	Based upon the Experience Analysis
Salary Scales	Total increases of 6-3/4% per year.
Assets	Valued at Book

Funding Method

The County's liability is currently being funded on the Entry Age Normal method with a Supplemental Present Value. The amortization period for the Supplemental Present Value is 24 years from the June 30, 1986 valuation date.

SECTION IV(iii)

MALE

PRESENT AGE	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	TOTAL
BELOW 20								
20 - 24	27 393,732	3 48,783						30 442,515
25 - 29	125 2,164,001	44 885,646	1 15,576					170 3,065,223
30 - 34	155 3,563,811	138 3,427,536	45 1,057,531					338 8,048,878
35 - 39	136 3,261,098	159 4,401,461	165 4,989,355	33 964,176	1 28,604			494 13,644,694
40 - 44	59 1,546,554	103 3,212,735	137 4,212,448	93 2,854,826	13 426,538	2 41,190		407 12,294,291
45 - 49	26 742,993	26 756,790	55 1,676,361	55 1,652,204	32 1,008,992	15 533,307		209 6,370,647
50 - 54	22 618,095	28 837,993	37 1,061,122	28 846,509	35 1,076,892	31 1,045,505	12 383,247	193 5,869,365
55 - 59	18 399,078	11 295,271	20 585,798	31 918,526	20 590,091	19 617,052	19 665,572	138 4,071,388
60 - 64	5 94,820	5 118,318	10 271,882	11 371,555	6 154,906	4 156,403	5 141,982	46 1,309,866
65 - 69		4 128,224	7 216,244	1 22,259	1 32,635		1 50,344	14 449,706
70 & OVER								
TOTAL	573 12,784,182	521 14,112,757	477 14,086,317	252 7,630,055	108 3,318,658	71 2,393,457	37 1,241,147	2,039 55,566,573

Coates, Herfurth & England, Inc., Actuaries and Consultants

COUNTY OF FRESNO

SECTION IV(iii)

TOTAL ANNUAL SALARY AND MEMBERSHIP DISTRIBUTION
OF ACTIVE GENERAL MEMBERS
AS OF JULY 1, 1986

FEMALE

YEARS OF SERVICE

PRESENT AGE	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	TOTAL
BELOW 20	2 22,052							2 22,052
20 - 24	113 1,746,532	14 207,198						127 1,953,730
25 - 29	300 5,487,480	179 3,294,094	12 209,417					491 8,990,991
30 - 34	263 4,926,670	286 6,233,898	92 1,974,831	2 44,258				643 13,179,657
35 - 39	224 4,399,847	208 4,573,663	150 3,675,070	58 1,381,983	3 66,389			643 14,096,952
40 - 44	159 2,965,349	126 2,793,578	84 1,957,920	59 1,462,063	28 689,858			456 9,868,768
45 - 49	88 1,537,535	78 1,566,993	60 1,260,778	45 1,050,118	21 530,813	14 298,502	2 40,020	308 6,284,759
50 - 54	43 697,010	71 1,560,137	48 947,944	45 1,005,072	24 628,283	8 216,873	10 219,449	249 5,274,768
55 - 59	25 452,394	59 1,126,274	48 984,621	43 919,178	29 630,893	5 93,281	6 114,991	215 4,321,632
60 - 64	7 130,252	30 576,164	16 321,966	30 591,774	7 148,484	7 159,535	7 220,670	104 2,148,845
65 - 69		7 122,088	8 186,734	3 61,057	3 78,844		1 16,591	22 465,314
70 & OVER		1 9,268						1 9,268
TOTAL	1,224 22,365,121	1,059 22,063,355	518 11,519,281	285 6,515,503	115 2,773,564	34 768,191	26 611,721	3,261 66,616,736

AVERAGE AGE 39.00
AVERAGE SERVICE 7.50
AVERAGE ENTRY AGE 31.50

TOTAL ANNUAL SALARY AND MEMBERSHIP DISTRIBUTION
OF ACTIVE SAFETY MEMBERS
AS OF JULY 1, 1986

PRESENT AGE	TOTAL YEARS OF SERVICE							TOTAL
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	
BELOW 20								
20 - 24	7 136,834							7 136,834
25 - 29	40 964,055	26 734,376						66 1,698,431
30 - 34	23 607,405	53 1,599,393	22 716,616	1 39,928				99 2,963,342
35 - 39	8 210,400	40 1,198,464	58 1,886,034	26 924,790				132 4,219,688
40 - 44		13 429,249	27 858,447	43 1,536,003	11 448,900			94 3,272,599
45 - 49		1 32,635	8 277,087	12 395,622	14 528,195			35 1,233,539
50 - 54			1 39,291	5 168,754	14 508,354	3 112,357		23 828,756
55 & OVER					4 166,466	1 55,509	1 63,864	6 285,839
TOTAL	78 1,918,694	133 3,994,117	116 3,777,475	87 3,065,097	43 1,651,915	4 167,866	1 63,864	462 14,639,028

AVERAGE AGE 37.00
AVERAGE SERVICE 10.75
AVERAGE ENTRY AGE 26.25

COUNTY OF FRESNOSummary of Monthly Allowances Being PaidGeneral Members

<u>Service Retirements</u>	<u>Number</u>	<u>Monthly Allowance</u>		
		<u>Basic</u>	<u>Cost-of-Living</u>	<u>Total</u>
Unmodified	1,152	\$644,016	\$139,650	\$ 783,666
Option 1	223	64,072	19,092	83,164
Options 2 & 3	52	18,123	3,368	21,491
Total	<u>1,427</u>	<u>\$726,211</u>	<u>\$162,110</u>	<u>\$ 888,321</u>
 <u>Disability Retirements</u>				
Unmodified	129	\$ 47,773	\$ 12,622	\$ 60,395
Option 1	17	3,476	1,363	4,839
Options 2 & 3	3	357	78	435
Total	<u>149</u>	<u>\$ 51,606</u>	<u>\$ 14,063</u>	<u>\$ 65,669</u>
 <u>Beneficiaries</u>				
Total	<u>188</u>	<u>\$ 51,031</u>	<u>\$ 16,990</u>	<u>\$ 68,021</u>
 Grand Total	 <u>1,764</u>	 <u>\$828,848</u>	 <u>\$193,163</u>	 <u>\$1,022,011</u>

COUNTY OF FRESNOSummary of Monthly Allowances Being PaidSafety Members

<u>Service Retirements</u>	<u>Number</u>	<u>Monthly Allowance</u>		
		<u>Basic</u>	<u>Cost-of-Living</u>	<u>Total</u>
Unmodified	104	\$102,347	\$23,404	\$125,751
Option 1	3	2,826	573	3,399
Options 2 & 3	2	441	229	670
Total	<u>109</u>	<u>\$105,614</u>	<u>\$24,206</u>	<u>\$129,820</u>
<u>Disability Retirements</u>				
Unmodified	23	\$ 18,089	\$ 4,472	\$ 22,561
Options 1	2	1,335	369	1,704
Options 2 & 3	0	0	0	0
Total	<u>25</u>	<u>\$ 19,424</u>	<u>\$ 4,841</u>	<u>\$ 24,265</u>
<u>Beneficiaries</u>				
Total	<u>20</u>	<u>\$ 9,188</u>	<u>\$ 3,355</u>	<u>\$ 12,543</u>
Grand Total	<u>154</u>	<u>\$134,226</u>	<u>\$32,402</u>	<u>\$166,628</u>

COUNTY OF FRESNO

General Male Members

Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Death	Duty Disability	Terminated Vested
20	.1545	.0002	.0000	.0000	.0000	.0001	.0001	.0005
21	.1455	.0002	.0000	.0000	.0000	.0001	.0001	.0005
22	.1370	.0002	.0000	.0000	.0000	.0001	.0001	.0005
23	.1280	.0002	.0000	.0000	.0000	.0001	.0001	.0005
24	.1200	.0002	.0000	.0000	.0000	.0001	.0001	.0005
25	.1150	.0003	.0001	.0000	.0001	.0001	.0001	.0010
26	.1110	.0003	.0001	.0000	.0001	.0001	.0001	.0010
27	.1080	.0003	.0001	.0000	.0001	.0001	.0001	.0010
28	.1050	.0003	.0001	.0000	.0001	.0001	.0001	.0015
29	.1000	.0003	.0001	.0000	.0001	.0001	.0001	.0020
30	.0930	.0004	.0001	.0000	.0001	.0001	.0001	.0025
31	.0840	.0004	.0001	.0000	.0001	.0001	.0001	.0030
32	.0750	.0004	.0001	.0000	.0001	.0001	.0001	.0035
33	.0660	.0004	.0002	.0000	.0002	.0001	.0001	.0040
34	.0590	.0004	.0002	.0000	.0002	.0001	.0001	.0045
35	.0550	.0005	.0003	.0000	.0002	.0001	.0002	.0050
36	.0520	.0005	.0003	.0000	.0002	.0001	.0002	.0060
37	.0510	.0005	.0003	.0000	.0002	.0001	.0002	.0070
38	.0495	.0005	.0004	.0000	.0002	.0001	.0002	.0090
39	.0475	.0006	.0004	.0000	.0002	.0001	.0002	.0115
40	.0450	.0006	.0005	.0000	.0003	.0001	.0003	.0120
41	.0425	.0006	.0006	.0000	.0003	.0001	.0003	.0125
42	.0400	.0007	.0008	.0000	.0003	.0001	.0003	.0130
43	.0370	.0007	.0010	.0000	.0004	.0001	.0003	.0130
44	.0330	.0008	.0012	.0000	.0004	.0001	.0003	.0125
45	.0300	.0008	.0014	.0000	.0005	.0001	.0004	.0115
46	.0270	.0009	.0016	.0000	.0005	.0001	.0005	.0105
47	.0240	.0010	.0018	.0000	.0006	.0001	.0006	.0095
48	.0220	.0011	.0020	.0000	.0006	.0001	.0007	.0085
49	.0200	.0012	.0022	.0000	.0007	.0001	.0008	.0075
50	.0180	.0013	.0025	.0600	.0008	.0001	.0009	.0070
51	.0170	.0014	.0028	.0400	.0009	.0001	.0010	.0065
52	.0160	.0015	.0031	.0400	.0010	.0002	.0011	.0060
53	.0150	.0016	.0035	.0400	.0011	.0002	.0012	.0055
54	.0140	.0017	.0039	.0500	.0012	.0002	.0013	.0050
55	.0135	.0018	.0043	.0500	.0013	.0002	.0014	.0045
56	.0130	.0019	.0045	.0600	.0014	.0002	.0016	.0040
57	.0125	.0020	.0047	.0700	.0015	.0002	.0017	.0035
58	.0120	.0021	.0049	.0800	.0016	.0002	.0019	.0030
59	.0115	.0022	.0051	.0900	.0017	.0003	.0020	.0025
60	.0110	.0024	.0053	.1600	.0018	.0003	.0021	.0025
61	.0105	.0026	.0054	.1800	.0019	.0003	.0021	.0025
62	.0100	.0028	.0055	.4000	.0020	.0003	.0022	.0025
63	.0095	.0030	.0056	.2400	.0022	.0003	.0023	.0025
64	.0090	.0032	.0057	.2500	.0024	.0004	.0024	.0025
65	.0000	.0034	.0000	.3500	.0027	.0004	.0000	.0000
66	.0000	.0036	.0000	.3000	.0030	.0004	.0000	.0000
67	.0000	.0038	.0000	.3000	.0034	.0004	.0000	.0000
68	.0000	.0040	.0000	.5000	.0039	.0004	.0000	.0000
69	.0000	.0042	.0000	.7500	.0045	.0004	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000	.0000

COUNTY OF FRESNO

General Female Members

Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Death	Duty Disability	Terminated Vested
20	.1850	.0001	.0000	.0000	.0000	.0000	.0001	.0005
21	.1800	.0001	.0000	.0000	.0000	.0000	.0001	.0005
22	.1750	.0001	.0000	.0000	.0000	.0000	.0001	.0005
23	.1690	.0001	.0000	.0000	.0000	.0000	.0001	.0010
24	.1630	.0001	.0000	.0000	.0000	.0000	.0001	.0010
25	.1570	.0002	.0001	.0000	.0001	.0000	.0001	.0010
26	.1510	.0002	.0001	.0000	.0001	.0000	.0001	.0015
27	.1440	.0002	.0001	.0000	.0001	.0000	.0001	.0020
28	.1360	.0002	.0001	.0000	.0001	.0000	.0001	.0025
29	.1270	.0003	.0001	.0000	.0001	.0000	.0001	.0035
30	.1180	.0003	.0001	.0000	.0001	.0000	.0001	.0050
31	.1080	.0003	.0001	.0000	.0001	.0000	.0001	.0055
32	.0980	.0003	.0002	.0000	.0001	.0000	.0001	.0060
33	.0890	.0004	.0002	.0000	.0001	.0000	.0001	.0060
34	.0830	.0004	.0002	.0000	.0001	.0000	.0001	.0055
35	.0790	.0004	.0003	.0000	.0001	.0000	.0001	.0055
36	.0750	.0005	.0003	.0000	.0001	.0000	.0001	.0055
37	.0710	.0005	.0004	.0000	.0001	.0000	.0001	.0050
38	.0670	.0005	.0004	.0000	.0001	.0000	.0001	.0050
39	.0640	.0005	.0005	.0000	.0001	.0000	.0001	.0050
40	.0610	.0006	.0005	.0000	.0001	.0000	.0001	.0050
41	.0590	.0006	.0006	.0000	.0001	.0000	.0001	.0050
42	.0560	.0006	.0007	.0000	.0001	.0000	.0001	.0055
43	.0520	.0007	.0008	.0000	.0001	.0000	.0001	.0065
44	.0470	.0007	.0009	.0000	.0001	.0000	.0001	.0090
45	.0420	.0007	.0010	.0000	.0002	.0000	.0001	.0120
46	.0370	.0008	.0011	.0000	.0002	.0000	.0002	.0110
47	.0330	.0008	.0012	.0000	.0002	.0000	.0002	.0100
48	.0300	.0009	.0013	.0000	.0002	.0000	.0002	.0090
49	.0265	.0009	.0014	.0000	.0003	.0000	.0002	.0085
50	.0245	.0010	.0015	.0350	.0003	.0000	.0003	.0075
51	.0230	.0010	.0016	.0250	.0003	.0000	.0003	.0065
52	.0215	.0011	.0017	.0250	.0004	.0000	.0003	.0060
53	.0205	.0011	.0018	.0250	.0004	.0000	.0003	.0055
54	.0195	.0012	.0020	.0250	.0004	.0000	.0003	.0055
55	.0185	.0012	.0022	.0350	.0004	.0000	.0004	.0055
56	.0180	.0013	.0024	.0350	.0005	.0000	.0004	.0055
57	.0175	.0014	.0026	.0400	.0005	.0000	.0004	.0055
58	.0170	.0015	.0028	.0500	.0005	.0000	.0004	.0055
59	.0160	.0016	.0030	.0800	.0006	.0000	.0005	.0055
60	.0150	.0018	.0032	.1400	.0006	.0000	.0005	.0055
61	.0140	.0019	.0034	.1400	.0006	.0000	.0005	.0045
62	.0130	.0020	.0036	.3000	.0007	.0000	.0005	.0035
63	.0115	.0021	.0038	.1250	.0007	.0000	.0005	.0025
64	.0100	.0022	.0040	.2500	.0007	.0000	.0005	.0015
65	.0000	.0024	.0000	.3500	.0008	.0000	.0000	.0000
66	.0000	.0025	.0000	.2500	.0008	.0000	.0000	.0000
67	.0000	.0026	.0000	.3500	.0008	.0000	.0000	.0000
68	.0000	.0027	.0000	.5000	.0009	.0000	.0000	.0000
69	.0000	.0028	.0000	.6000	.0009	.0000	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000	.0000

COUNTY OF FRESNO

Safety Members

Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Death	Duty Disability	Terminated Vested
20	.0810	.0003	.0000	.0000	.0000	.0002	.0005	.0010
21	.0780	.0003	.0000	.0000	.0000	.0002	.0005	.0011
22	.0750	.0003	.0000	.0000	.0000	.0002	.0005	.0012
23	.0720	.0003	.0000	.0000	.0000	.0002	.0006	.0013
24	.0680	.0003	.0000	.0000	.0000	.0002	.0007	.0014
25	.0630	.0004	.0002	.0000	.0001	.0003	.0007	.0015
26	.0580	.0004	.0002	.0000	.0001	.0003	.0008	.0017
27	.0530	.0004	.0003	.0000	.0002	.0003	.0008	.0019
28	.0480	.0004	.0003	.0000	.0002	.0003	.0009	.0021
29	.0420	.0004	.0003	.0000	.0002	.0003	.0010	.0023
30	.0370	.0005	.0003	.0000	.0002	.0004	.0010	.0025
31	.0320	.0005	.0004	.0000	.0002	.0004	.0011	.0027
32	.0280	.0005	.0004	.0000	.0002	.0004	.0013	.0030
33	.0250	.0005	.0004	.0000	.0002	.0004	.0015	.0035
34	.0230	.0005	.0005	.0000	.0002	.0004	.0017	.0040
35	.0220	.0006	.0006	.0000	.0002	.0005	.0019	.0045
36	.0210	.0006	.0006	.0000	.0002	.0005	.0021	.0052
37	.0200	.0006	.0007	.0000	.0002	.0005	.0023	.0060
38	.0190	.0007	.0008	.0000	.0002	.0005	.0025	.0065
39	.0180	.0007	.0009	.0000	.0002	.0005	.0029	.0060
40	.0170	.0008	.0010	.0000	.0003	.0006	.0032	.0055
41	.0150	.0008	.0010	.0000	.0003	.0006	.0036	.0050
42	.0130	.0009	.0011	.0000	.0003	.0006	.0039	.0045
43	.0110	.0009	.0012	.0000	.0003	.0007	.0043	.0041
44	.0090	.0010	.0012	.0000	.0003	.0007	.0047	.0037
45	.0070	.0010	.0013	.0500	.0004	.0008	.0053	.0033
46	.0060	.0011	.0014	.0400	.0004	.0008	.0058	.0030
47	.0050	.0012	.0014	.0450	.0005	.0009	.0065	.0027
48	.0040	.0013	.0015	.0500	.0006	.0009	.0072	.0024
49	.0030	.0014	.0016	.0550	.0007	.0010	.0080	.0023
50	.0000	.0015	.0016	.1300	.0008	.0010	.0088	.0020
51	.0000	.0016	.0017	.0800	.0009	.0011	.0096	.0000
52	.0000	.0017	.0018	.0800	.0010	.0012	.0104	.0000
53	.0000	.0018	.0019	.0700	.0011	.0013	.0112	.0000
54	.0000	.0019	.0020	.1000	.0012	.0013	.0120	.0000
55	.0000	.0020	.0020	.2700	.0013	.0014	.0127	.0000
56	.0000	.0021	.0021	.2700	.0014	.0015	.0135	.0000
57	.0000	.0022	.0022	.2500	.0015	.0016	.0143	.0000
58	.0000	.0023	.0022	.3000	.0016	.0017	.0151	.0000
59	.0000	.0024	.0023	.7000	.0017	.0018	.0159	.0000
60	.0000	.0000	.0000	1.0000	.0000	.0000	.0000	.0000

COUNTY OF FRESNO

SECTION IV (vi)

Member Contribution Rates*
GENERAL-Section 31676.12

ENTRY AGE	Basic		C.O.L.**		Basic and C.O.L.	
	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350
16	2.06%	3.10%	1.48%	2.22%	3.54%	5.32%
17	2.06	3.10	1.48	2.22	3.54	5.32
18	2.06	3.10	1.48	2.22	3.54	5.32
19	2.06	3.10	1.48	2.22	3.54	5.32
20	2.06	3.10	1.48	2.22	3.54	5.32
21	2.07	3.10	1.48	2.22	3.55	5.32
22	2.08	3.12	1.49	2.24	3.57	5.36
23	2.09	3.13	1.50	2.24	3.59	5.37
24	2.10	3.15	1.51	2.26	3.61	5.41
25	2.12	3.17	1.52	2.27	3.64	5.44
26	2.13	3.19	1.53	2.29	3.66	5.48
27	2.15	3.22	1.54	2.31	3.69	5.53
28	2.16	3.25	1.55	2.33	3.71	5.58
29	2.18	3.28	1.56	2.35	3.74	5.63
30	2.21	3.31	1.58	2.37	3.79	5.68
31	2.23	3.35	1.60	2.40	3.83	5.75
32	2.26	3.38	1.62	2.42	3.88	5.80
33	2.28	3.42	1.63	2.45	3.91	5.87
34	2.30	3.46	1.65	2.48	3.95	5.94
35	2.33	3.50	1.67	2.51	4.00	6.01
36	2.36	3.54	1.69	2.54	4.05	6.08
37	2.38	3.58	1.71	2.57	4.09	6.15
38	2.41	3.62	1.73	2.60	4.14	6.22
39	2.44	3.66	1.75	2.62	4.19	6.28
40	2.46	3.70	1.76	2.65	4.22	6.35
41	2.49	3.74	1.79	2.68	4.28	6.42
42	2.52	3.78	1.81	2.71	4.33	6.49
43	2.55	3.82	1.83	2.74	4.38	6.56
44	2.58	3.86	1.85	2.77	4.43	6.63
45	2.60	3.91	1.86	2.80	4.46	6.71
46	2.63	3.95	1.89	2.83	4.52	6.78
47	2.66	3.99	1.91	2.86	4.57	6.85
48	2.69	4.03	1.93	2.89	4.62	6.92
49	2.72	4.08	1.95	2.92	4.67	7.00
50	2.75	4.12	1.97	2.95	4.72	7.07
51	2.78	4.17	1.99	2.99	4.77	7.16
52	2.81	4.21	2.01	3.02	4.82	7.23
53	2.84	4.25	2.04	3.05	4.88	7.30
54	2.86	4.30	2.05	3.08	4.91	7.38
55	2.90	4.34	2.08	3.11	4.98	7.45
56	2.92	4.39	2.09	3.15	5.01	7.54
57	2.96	4.44	2.12	3.18	5.08	7.62
58	2.99	4.48	2.14	3.21	5.13	7.69
59 & Over	3.02	4.53	2.17	3.25	5.19	7.78

*As a percentage of salary based upon 8.50% interest and 6.75% salary assumptions.

**71.69% of basic rates

Member Contribution Rates*
SAFETY-Section 31664

ENTRY AGE	Basic		C.O.L.**		Basic and C.O.L.	
	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350
18	2.47%	3.71%	1.77%	2.66%	4.24%	6.37%
19	2.48	3.72	1.78	2.67	4.26	6.39
20	2.48	3.73	1.78	2.67	4.26	6.40
21	2.50	3.75	1.79	2.69	4.29	6.44
22	2.52	3.77	1.81	2.70	4.33	6.47
23	2.53	3.80	1.81	2.72	4.34	6.52
24	2.55	3.83	1.83	2.75	4.38	6.58
25	2.57	3.86	1.84	2.77	4.41	6.63
26	2.59	3.89	1.86	2.79	4.45	6.68
27	2.62	3.92	1.88	2.81	4.50	6.73
28	2.64	3.96	1.89	2.84	4.53	6.80
29	2.66	3.99	1.91	2.86	4.57	6.85
30	2.68	4.03	1.92	2.89	4.60	6.92
31	2.71	4.06	1.94	2.91	4.65	6.97
32	2.74	4.10	1.96	2.94	4.70	7.04
33	2.76	4.14	1.98	2.97	4.74	7.11
34	2.79	4.18	2.00	3.00	4.79	7.18
35	2.82	4.23	2.02	3.03	4.84	7.26
36	2.85	4.27	2.04	3.06	4.89	7.33
37	2.88	4.32	2.06	3.10	4.94	7.42
38	2.91	4.37	2.09	3.13	5.00	7.50
39	2.94	4.41	2.11	3.16	5.05	7.57
40	2.97	4.46	2.13	3.20	5.10	7.66
41	3.00	4.51	2.15	3.23	5.15	7.74
42	3.04	4.56	2.18	3.27	5.22	7.83
43	3.07	4.60	2.20	3.30	5.27	7.90
44	3.10	4.65	2.22	3.33	5.32	7.98
45	3.14	4.70	2.25	3.37	5.39	8.07
46	3.16	4.75	2.27	3.41	5.43	8.16
47	3.20	4.80	2.29	3.44	5.49	8.24
48	3.24	4.85	2.32	3.48	5.56	8.33
49 & Over	3.27	4.90	2.34	3.51	5.61	8.41

*As a percentage of salary based upon 8.50% interest and 6.75% salary assumptions.

**71.69% of basic rates

(Revised)

COUNTY OF FRESNOAccounting Balance Sheet
As of June 30, 1986ASSETS

1.	Cash	\$ 18,073,000
2.	Contributions and other receivables	1,074,000
3.	Securities owned (cost basis)	297,004,000
4.	Interest and dividends receivable	<u>4,455,000</u>
5.	Total Assets	<u>\$320,606,000</u>

LIABILITIES AND FUND BALANCE

6.	Members' deposit reserve		
	a. Normal contributions	\$47,744,000	
	b. Cost of living contributions	<u>22,020,000</u>	\$ 69,764,000
7.	Current service advance reserve		49,536,000
8.	Current service pension reserve		100,309,000
9.	Annuity reserve		19,260,000
10.	Survivors' death benefit reserve		1,782,000
11.	Cost of living reserve		45,308,000
12.	Investment contingency reserve		9,568,000
13.	Undistributed earnings		17,053,000
14.	Retiree health insurance reserve*		6,365,000
15.	Warrants and accounts payable		<u>1,661,000</u>
16.	Total Liabilities		<u>\$320,606,000</u>

*New reserve established by the Retirement Board on August 6, 1986.

Revised 3/13/87

COUNTY OF FRESNO

SECTION IV (viii)

Ratio of Current Compensation to Compensation Anticipated at Retirement Age

AGE	GENERAL MEMBERS			SAFETY MEMBERS		
	Study #1	Study #2	Study #3	Study #1	Study #2	Study #3
20	.031	.034	.044	.067	.074	.089
21	.034	.039	.049	.073	.080	.097
22	.038	.043	.054	.080	.087	.104
23	.042	.047	.059	.086	.094	.112
24	.047	.052	.065	.093	.102	.121
25	.051	.057	.071	.101	.110	.129
26	.056	.062	.076	.109	.118	.138
27	.061	.067	.083	.117	.126	.147
28	.066	.073	.089	.125	.135	.157
29	.072	.079	.096	.135	.145	.168
30	.077	.085	.103	.145	.155	.179
31	.083	.092	.110	.155	.166	.191
32	.090	.098	.118	.166	.178	.203
33	.096	.105	.125	.178	.190	.216
34	.102	.111	.132	.191	.203	.230
35	.109	.118	.140	.204	.217	.244
36	.116	.126	.147	.218	.231	.259
37	.124	.134	.156	.233	.246	.274
38	.132	.142	.165	.248	.262	.290
39	.140	.151	.175	.264	.278	.307
40	.149	.160	.185	.282	.295	.325
41	.159	.171	.196	.300	.314	.343
42	.170	.181	.207	.320	.334	.363
43	.181	.193	.219	.341	.354	.384
44	.193	.205	.232	.363	.377	.407
45	.205	.218	.245	.386	.400	.429
46	.219	.232	.259	.412	.426	.455
47	.233	.246	.274	.439	.453	.482
48	.248	.261	.290	.468	.481	.509
49	.264	.277	.306	.498	.511	.539
50	.282	.295	.325	.530	.543	.570
51	.300	.314	.344	.565	.577	.603
52	.319	.333	.363	.602	.614	.638
53	.340	.354	.384	.642	.652	.674
54	.363	.377	.406	.684	.694	.714
55	.387	.401	.430	.729	.737	.755
56	.412	.426	.455	.776	.784	.799
57	.439	.453	.481	.828	.834	.846
58	.467	.481	.509	.881	.885	.894
59	.498	.511	.539	.939	.941	.945
60	.530	.543	.570	1.000	1.000	1.000
61	.565	.577	.602			
62	.602	.614	.638			
63	.642	.652	.674			
64	.684	.694	.714			
65	.729	.737	.755			
66	.776	.784	.799			
67	.827	.833	.845			
68	.881	.885	.894			
69	.939	.941	.945			
70	1.000	1.000	1.000			

Study #1 = 8.50% interest with salary scale of merit and longevity plus 6.00% for inflation.
Study #2 = 8.50% interest with salary scale of merit and longevity plus 5.75% for inflation.
Study #3 = 8.00% interest with salary scale of merit and longevity plus 5.25% for inflation.

COUNTY OF FRESNOYears of Life Expectancy after Service RetirementGeneral and Safety Members

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>Male</u>	<u>Female</u>
50	26.91	33.54	80	7.00	9.40
51	26.05	32.61	81	6.63	8.88
52	25.20	31.67	82	6.27	8.37
53	24.36	30.75	83	5.94	7.89
54	23.53	29.82	84	5.63	7.43
55	22.71	28.90	85	5.34	6.99
56	21.90	27.99	86	5.06	6.57
57	21.10	27.08	87	4.80	6.16
58	20.31	26.17	88	4.55	5.77
59	19.53	25.28	89	4.31	5.40
60	18.76	24.39	90	4.08	5.04
61	18.00	23.50	91	3.87	4.70
62	17.26	22.63	92	3.66	4.38
63	16.53	21.77	93	3.46	4.07
64	15.81	20.91	94	3.26	3.77
65	15.11	20.07	95	3.07	3.50
66	14.43	19.24	96	2.89	3.23
67	13.77	18.42	97	2.71	2.98
68	13.13	17.62	98	2.54	2.76
69	12.50	16.82	99	2.37	2.54
70	11.91	16.03	100	2.20	2.34
71	11.33	15.26	101	2.04	2.14
72	10.79	14.50	102	1.88	1.95
73	10.26	13.78	103	1.72	1.78
74	9.74	13.07	104	1.55	1.61
75	9.24	12.40	105	1.38	1.44
76	8.76	11.75	106	1.21	1.28
77	8.28	11.12	107	1.04	1.13
78	7.83	10.53	108	.88	.98
79	7.41	9.95	109	.71	.84
			110	.50	.69
			111	--	.50

1971 GA (x) (y - 1)

COUNTY OF FRESNOYears of Life Expectancy after Disability RetirementGeneral Members

<u>Age</u>	<u>Male & Female</u>	<u>Age</u>	<u>Male & Female</u>	<u>Age</u>	<u>Male & Female</u>
20	38.73	50	21.08	80	7.00
21	37.98	51	20.59	81	6.63
22	37.26	52	20.11	82	6.27
23	36.56	53	19.63	83	5.94
24	35.87	54	19.16	84	5.63
25	35.19	55	18.68	85	5.34
26	34.53	56	18.21	86	5.06
27	33.87	57	17.75	87	4.80
28	33.23	58	17.29	88	4.55
29	32.60	59	16.83	89	4.31
30	31.98	60	16.37	90	4.09
31	31.37	61	15.91	91	3.87
32	30.76	62	15.45	92	3.66
33	30.17	63	14.99	93	3.46
34	29.58	64	14.53	94	3.26
35	29.00	65	14.07	95	3.07
36	28.43	66	13.60	96	2.89
37	27.87	67	13.13	97	2.71
38	27.31	68	12.66	98	2.54
39	26.76	69	12.18	99	2.37
40	26.21	70	11.70	100	2.20
41	25.67	71	11.21	101	2.04
42	25.14	72	10.72	102	1.88
43	24.61	73	10.22	103	1.72
44	24.09	74	9.73	104	1.55
45	23.57	75	9.24	105	1.38
46	23.06	76	8.76	106	1.21
47	22.56	77	8.28	107	1.04
48	22.06	78	7.83	108	.88
49	21.57	79	7.41	109	.71
				110	.50

1981 Disability Table

COUNTY OF FRESNOYears of Life Expectancy after Disability RetirementSafety Members

<u>Age</u>	<u>Male & Female</u>	<u>Age</u>	<u>Male & Female</u>	<u>Age</u>	<u>Male & Female</u>
20	49.29	50	23.59	80	7.00
21	48.39	51	22.80	81	6.63
22	47.48	52	22.03	82	6.27
23	46.58	53	21.26	83	5.94
24	45.68	54	20.50	84	5.63
25	44.79	55	19.77	85	5.34
26	43.89	56	19.06	86	5.06
27	43.01	57	18.40	87	4.80
28	42.12	58	17.78	88	4.55
29	41.24	59	17.20	89	4.31
30	40.36	60	16.64	90	4.09
31	39.48	61	16.11	91	3.87
32	38.61	62	15.59	92	3.66
33	37.74	63	15.08	93	3.46
34	36.88	64	14.58	94	3.26
35	36.02	65	14.09	95	3.07
36	35.16	66	13.61	96	2.89
37	34.31	67	13.13	97	2.71
38	33.45	68	12.66	98	2.54
39	32.61	69	12.18	99	2.37
40	31.77	70	11.70	100	2.20
41	30.93	71	11.21	101	2.04
42	30.09	72	10.72	102	1.88
43	29.26	73	10.22	103	1.72
44	28.43	74	9.73	104	1.55
45	27.61	75	9.24	105	1.38
46	26.80	76	8.76	106	1.21
47	25.98	77	8.28	107	1.04
48	25.18	78	7.83	108	.88
49	24.38	79	7.41	109	.71
				110	.50

1981 Disability Table

