1979

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL REPORT

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Made to the Board of Administration

As of July 1, 1979

COATES, HERFURTH & ENGLAND, ACTUARIES AND CONSULTANTS

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January 31, 1980

Board of Administration
Federated City Employees' Retirement System
801 North First Street
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Ladies and Gentlemen:

Pursuant to our agreement with you, we have completed an actuarial experience analysis and several valuations of the contingent assets and liabilities of the Retirement System as of July 1, 1979, as well as a Cost of Living update. We have also studied the cost of certain proposed amendments to the System. We are pleased to hand you herewith our report on the results of the survey.

The studies were based upon the financial statements and employee data furnished by the Retirement Office.

This report describes in detail both the results and the recommendations arising from our regular study. It also compares the results of several additional valuations made based on different inflationary and investment assumptions.

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
Actuaries and Consultants

By Robert D. Drisko
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RDD/wpc

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

July 1, 1979

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CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Introduction

We were requested by the Board to make an actuarial investigation and valuation of the Federated Retirement System as of July 1, 1979, along with an update of your Cost of Living Program, using the latest statistical information available as to the active, inactive and retired membership. We were also requested to make cost calculations if certain proposed amendments to the Retirement System were adopted. In connection with this study, we have made additional valuations of the Retirement System to measure the possible inflationary effects on the City and member costs if the assumptions as to salary scales and investment earnings were changed. As part of our study we have also included the calculation of the ratio of the assets of the System to its obligation for benefits earned to the date of the valuation.

All of the above studies were based upon the unaudited data as supplied to Coates, Herfurth & England by the Retirement Office.

Our actuarial analysis of the retired and active experience under the Retirement System during the two-year period prior to July 1, 1979 was covered in detail in our "Preliminary Working Report" to the Board dated December 17, 1979. That report has already been discussed with the Retirement Board. As a result of these discussions, decisions were made as to the specific non-economic assumptions to be used in the cost studies and also as to the several different appropriate sets of economic assumptions (interest and salary scale assumptions) that should be used.

This report describes in detail both the results and the recommendations arising from our Retirement System studies. Because our actuarial analysis of the retired and

active membership under the System has already been covered in detail elsewhere, this report merely summarizes those results. However, the above mentioned Preliminary Working Report is to be considered as an Addendum to this full actuarial report on the various studies.

As stated above, the valuation results under the varying sets of salary scale and interest assumptions have been calculated in order to point out the effects of inflation upon the contribution requirements of the System. All of us recognize this has become more important recently as the question as to appropriate recognition of inflation in assumptions has become of interest to laymen, accountants, pension directors and other interested parties. We believe these results under varying assumptions will allow one to judge the relative impact of changed assumptions in an inflationary environment.

The valuation of the City's Cost of Living Program has again been calculated on the basis of full funding the 3% maximum benefit increases, as it was done in the previous study.

The ratio of the assets of the System to its obligation for benefits earned to the date of the valuation is being provided because we believe the use of this ratio on an ongoing basis is one of the best measures of the funding progress of the Plan. For comparison purpose this ratio will continue to be calculated at the time of each actuarial study of the System.

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

SUMMARY OF RESULTS AND RECOMMENDATIONS

SECTION II

CITY OF SAN JOSE
FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Summary of Results and Recommendations

Based upon the results of our analysis and valuation of the System, we recommend that the following either be adopted by the System or be noted for future reference, as the case may be:

(1) Note our belief, based upon Item (5) below, that the System is currently being soundly funded;

(2) Adoption of City contribution rates equal to 15.76% of salaries for basic benefits and 7.13% of salaries for the 3% Cost of Living Program, using step rate increases for the combined basic and cost of living rates over the next three years (Sections III(i), III(ii) and III(v);

(3) Adoption of employee contribution rates equal to 6.16% of salaries for basic benefits and 2.76% of salaries for the 3% Cost of Living Program, using step rate increases for the combined basic and cost of living rates over the next three years (Sections III(i), III(ii) and III(v);

(4) Adoption of the results of the Experience Analysis (Section IV);

(5) Note the calculation of the funding progress ratio concept as a measure of funding progress of the System (ratio is 82.2%) (Section III(iii));

(6) Adoption of a 6-1/2% interest rate for valuation purposes, along with a salary scale reflecting merit and longevity plus 4-1/2% inflation per year;

(7) Eliminate all refundability of contributions on the part of the City (Section III(v);

(8) Adoption of the concept of additional valuations at the time of each actuarial study under different combinations of inflation and interest assumptions (Page 26);

With respect to the above items, each is discussed in more detail in the main body of the report and the discussions regarding these points may be found by referring to the Section or page number of the report, as noted in parenthesis.

The Federated City Employees' Retirement System is in a sound funding position. This statement is made based upon the funding progress ratio as calculated in this valuation and upon the anticipated adoption of the recommendations in this report, both as to the long term interest assumption as well as to the required contribution rates coming out of the study.

VALUATION RESULTS - PRESENT SYSTEM

SECTION III

CITY OF SAN JOSE

Basic Contribution Rates

This section will discuss City and Member basic contribution recommendations. The next section will discuss City and member cost of living contribution recommendations.

Contribution requirements are divided into two major categories: City contribution rates and Employee contribution rates. Certain legal requirements within the City Ordinance and the City Code state that part of the liabilities under the System is shared by the members and the City in a 3:8 ratio, part is shared on a 42:58 ratio and the balance of the liabilities is the responsibility of the City alone.

The required City and Employee contribution rates developed in the last actuarial study and recommended by the actuary are shown below:

City			Employees		
Basic	C.O.L.	Total	Basic	C.O.L.	Total
18.84%	7.65%	26.49%	7.64%	2.37%	10.01%

Because the above set of required rates represented a substantial increase in both City and member contribution rates, the actuary recommended and the Retirement Board and the City Council adopted the following pattern of step-increases in contribution rates, designed to reach the necessary levels shown above at the end of a five year period:

Graded Contribution Rates (% of Salaries)

Fiscal	City			Employees		
Year	Basic	C.O.L.	Total	Basic	C.O.L.	Total
1977-78	16.46%	1.25%	17.71%	6.33%	.47%	6.80%
1978-79	17.13	2.88	20.01	6.68	.96	7.64
1979-80	17.80	4.52	22.32	7.04	1.44	8.48
1980-81	18.48	6.14	24.63	7.40	1.92	9.32
1981 & Later	19.15	7.78	26.93	7.75	2.41	10.16

In September of 1978, the contribution rates of the City and of the members were changed to the total rates (basic + C.O.L.) of 20.01% and 7.64% of salaries as shown above. The further step to the 1979-80 levels was not made because of the decision to wait for the results of this actuarial study and then move to the required contribution rates developed in the current actuarial study.

The required City and the Employee contribution rates have been developed in this study, keeping in mind the same 3:8 ratio requirements and 42:58 ratio requirements as mentioned above. Certain modifications were made by us in the funding approach as to the City refundability feature and as to the 60 year amortization period are discussed in detail in Section III(v).

Recommended Required Basic Contribution Rates (If One Step)

The required City and member basic contribution rates resulting from this study, if the rates are adopted in a single step, are 15.76% of salaries by the City and 6.16% of salaries by the members. Later in Section III(v), however, we actually recommend that the levels of the total rates (basic + C.O.L) for both the City and the members be reached using a three year step basis.

Comparison of the Above Basic Rates

The annual compensation of the members on June 30, 1979 was approximately $39,320,000. The following table shows a comparison of the actual dollar amounts needed to be contributed by the City and by the members, as a group, for the fiscal year 1979-1980. These amounts are based on the current contribution rates, the recommended 1979-80 fiscal year rates that were scheduled to be adopted and were delayed, the "single step" rates recommended in the last study and the "single step" rates recommended in this study.

"Basic" Contributions (7/1/79 to 6/30/80)*

		City		Members	
		Rate	Dollars	Rate	Dollars
1.	Current rate	17.13%	$6,736,000	6.68%	$2,627,000
2.	1979-80 step rate (last study)	17.80	6,999,000	7.04	2,768,000
3.	"Single step" rate (last study)	18.84	7,408,000	7.64	3,004,000
4.	"Single step" rate (this study)	15.76	6,197,000	6.16	2,422,000

*These rates exclude the Cost of Living rates and are based on annual salaries on June 30, 1979 of $39,320,000.

Reasons for the Changes in Required Basic Contribution Rates

The most important factors tending to increase required contribution rates were the following: (1) reduction in the long-term interest assumption from 7% to 6-1/2% per annum (the higher level is not being earned for sure on a long-term basis); (2) the increase in retirements (up 45% in the last two years); and (3) the longer life expectancies after both service retirement and disability retirement. Other less important factors also tending to increase costs were: (1) the actual interest earned in the last two years was less than that anticipated in the last study; (2) reserves were only credited with 5-1/2% interest per year rather than 7%; (3) excess earnings above the 5-1/2% level were transferred out of the Basic Retirement Fund into the Cost of Living Fund, draining off "inflationary" earnings that should have stayed in the Basic Fund to offset inflationary cost increases; (4) because of Proposition 13, the number of active members in the Plan reduced, resulting in a higher age of the group and, therefore, requiring a higher percentage contribution rate; (5) total salaries did not increase during the two-year period and the increase in the salary base needed for the 60 year amortization period did not materialize; and (6) less than the necessary contribution dollars were put into the Fund by both the City and the members because the "step increase basis" was used.

There were also certain factors which tended to reduce the costs of the System. These factors were more than enough to cause a net reduction in present basic rates of contribution. They were not enough to reduce the present cost of living rates or even to keep them at their same levels.

The most important factors helping to reduce costs were the following: (1) the future salary scale assumption was reduced from a scale of merit and longevity increases plus 5% inflation per year to merit and longevity increases plus 4-1/2% inflation per year (this change was made to keep the interest assumption and the salary scale assumption consistent as to the amount of inflation in each); (2) the rate of withdrawal (refund) was increased by 33% resulting in considerably more expected releases in future liability than were anticipated in the last study; (3) both the rates of ordinary disability and line of duty disability were reduced about 20%.

A factor also affecting costs, and this one introduced by us and strongly recommended as absolutely necessary for adoption by the Retirement Board and the City Council, is the assumed elimination of the refundability feature in City contributions. This factor only affects the City's contribution rate. The elimination of the City refundability feature will permit far better use of the Entry Age Normal Cost Funding Method (the method adopted in the last study for the purpose of holding down the City's budgetary cost requirement) even if the 60 year amortization period is reduced to, say, 40 or even 30 years. This item is thoroughly discussed in Section III(v).

We suggest that if the Present System is not changed by amendment, the above recommended revision in basic contribution rates by the City and by the members be put into effect as soon as possible but reflecting the three year step increases in the combined basic and cost of living rates as recommended and described in Section III(v).

Because of the significant changes being recommended by us in the manner of calculating City contribution rates, this topic will be seriously discussed when we meet with the Retirement Board to discuss this report.

CITY OF SAN JOSE
Cost-of-Living Contribution Rates

Introduction

As part of our overall assignment, we have reviewed your program for automatic adjustment of retirement allowances which results from changes in the Consumer Price Index. In your System the maximum change in cost-of-living allowance is 3% per year. In both this valuation of the System and the one made two years ago, future inflation was assumed to increase at a rate greater than 3% per year. Because of this assumption, the funding of the Cost-of-Living Program was changed at the time of the last study and put on a full funding basis. We agree that such a step was necessary and the full funding basis of your Cost-of-Living Program has again been used.

The legal requirements as to the degree of sharing of the contribution rates between the City and the members were discussed in Section III(i) under Basic Contributions. These same requirements also hold for the cost of living part of the benefit.

Cost-of-Living Contribution Rates (Last Study)

As was mentioned above, at the time of the last study (two years ago) the method of full funding the Cost-of-Living Program was adopted. The changeover to this method of funding brought with it the need for substantially higher contributions for the Cost-of-Living Program. As a practical matter, the actuary recommended and the City adopted a step-rate increase basis that would permit the ultimate cost-of-living contribution rates to be reached by the end of a five-year period instead of having to make the increase all in one step.

The required cost of living contributions resulting from the last study, if made in one step, were 7.65% of salary by the City and 2.37% of salary by the members. The corresponding required rates are shown below in the form of five year step increases:

Fiscal Year	City Rate	Member Rate
1977-78	1.25%	.47%
1978-79	2.88	.96
1979-80	4.52	1.44
1980-81	6.14	1.92
1981 & later	7.78	2.41

As was discussed under the basic contribution section, the 1978-79 step rates were adopted but the 1979-80 rates were postponed until after the results of this study become available.

Recommended Required Cost of Living Contribution Rates (If One Step)

The required City and member cost of living contribution rates resulting from this study, if the rates are adopted as a single step, are 7.13% of salaries by the City and 2.76% of salaries by the members. Later in Section III (v), however, we actually recommend that the levels of the total rates (basic + cost of living) for both the City and the members be reached using a three year step basis.

Comparison of the Above Cost of Living Rates

The annual compensation of the members on June 30, 1979 was approximately $39,320,000. The following table shows a comparison of the actual dollar amounts needed to be contributed by the City and by the members, as a group, for the fiscal year 1979-80. These amounts are based on: (1) the current contribution rates; (2) the recommended 1979-80 fiscal year step rates that were scheduled to be adopted but were postponed; (3) the "single step" rates recommended in the last study; and, (4) the "single step" rates recommended in this study.

Cost of Living Contributions (7/1/79 to 6/30/80)

		City		Members	
		Rate	Dollars*	Rate	Dollars*
1.	Current rate	2.88%	$1,132,000	.96%	$ 377,000
2.	1979-80 step rate (last study)	4.52	1,777,000	1.44	566,000
3.	"Single step" rate (last study)	7.65	3,008,000	2.37	932,000
4.	"Single step" rate (this study)	7.13	2,804,000	2.76	1,085,000

*These dollar amounts are based on annual salaries on June 30, 1979 of $39,320,000.

Reasons for the Changes in Required Cost of Living Contribution Rates

The factors leading to increases in rates or reductions in rates were outlined in considerable detail on Page 10 in connection with the discussion of the change in basic rate requirements. Some of these factors have a much greater effect on the cost of living rates than on the basic rates of contribution. For example, the 45% increase in retired members during the last two years has caused a large increase in the cost of the Cost of Living Program.

In addition to the factors previously discussed, there is one factor that, while "hurting" the basic rates, has tended to "help" the cost of living rates. Much of the "excess interest earnings above the 5-1/2% rates after crediting all basic accounts ended up being transferred from the "Excess Interest Account - Basic" into the Cost of Living Fund. These added assets were then available to help offset the costs of the Cost of Living Program.

The same important item (possible elimination of the City refundability feature) also plays an important role in the City cost of living funding area. As mentioned before, this topic will be discussed thoroughly when we meet with the Retirement Board.

If the Present Cost of Living Program is not changed by amendment, we suggest that the above recommended cost of living contribution rates by the City and by the members be put into effect as soon as possible but reflecting the three year step increases in the combined basic and cost of living rates as described and recommended in Section III(v).

CITY OF SAN JOSE
FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Funding Progress of the System

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

Beginning now, and at the time of each valuation, we intend to compute the ratio of the assets of the System to the obligation for benefits earned to date. We believe that this measure, in combination with a relatively stable contribution rate, will help the Plan's administrators to more adequately monitor the progress of the funding status of the System. To this end, we include on the following page this calculation based on a 6-1/2% interest rate, the recommended interest assumption for this study.

The funding ratio of 82.2% as developed in this study is quite high compared to the funding ratios of many public retirement plans, especially when you take into account the fact that full funding of the Cost-of-Living Program is being provided for.

We believe the best estimate of the "unfunded liability" of the Retirement System on the valuation date is the difference between the benefits earned to date (item (b))and the assets (item (a)) on the following page. This "shortage" at the time of this study was ($90,325,038 - $74,247,141) or about $16,078,000. This "shortage" is being funded and is included within the recommended contribution rates for the members and for the City.

CITY OF SAN JOSE

Funding Progress of the System

(a)	Assets as of Valuation Date (6/30/79)*	$ 74,247,141
(b)	Present value of benefits earned to date assuming immediate 100% vesting**	$ 90,325,038
(c)	Ratio of assets to benefits earned to date (a) ÷ (b)	82.2%

*Assets are based upon Book Value as supplied to us by the System. In calculating the funding progress of the System, we have used all of the assets, including all contingency reserves.

**The interest rate assumed in the calculation of the System's liabilities is 6-1/2% per annum. This item includes all liabilities of the System for basic and cost-of-living benefits granted to those members and beneficiaries already on the Pension Roll. All basic and cost-of-living liabilities of active members are included for every year of service already put in at the valuation date, based on the salaries of the members as of June 30, 1979. Also included are all accounts payable and the "extra" City contributions made to date which are estimated as being ultimately refundable to the City as members withdraw from the System and take their own contributions with them.

It should be noted that the difference between items (a) and (b)above, or approximately $16,100,000, is the best estimate of "unfunded liability" under the System on the valuation date. This "shortage" is being paid for and is included in the contribution rates recommended by the actuary.

CITY OF SAN JOSE

ACTUARIAL BALANCE SHEET

One of the purposes 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 both the basic benefits and the cost of living benefits under the System.

Item #

1. The total assets in both Funds as of June 30, 1979, on a book value basis, taken from the Accounting Balance Sheet.

2. The present value of future contributions it is anticipated will be made by current members after July 1, 1979, and until their separation from the System as active members.

3. The present value of future contributions that will be required by the City, on an Entry Age Normal Cost funding method, in order to fully provide the basic and cost of living benefits anticipated on account of present active and retired members. These contributions are split into two categories, (a) normal cost, and (b) unfunded supplemental cost, and assume the complete elimination of the City refundability feature (See Section III (v)). The unfunded supplemental cost uses an amortization period of 40 years (See Section III(v) for a discussion on this point).

4. This reflects the fact that a transfer of $402,712 was made shortly after the valuation date, out of "Excess Interest Earnings - Basic Fund" into the corresponding account in the Cost of Living Fund.

6. The actuarial present value of the basic and cost of living allowances which are currently being paid to retired members and beneficiaries on account of service, disability retirement and survivor benefits.

7. The present value of retirement allowances (basic and cost of living) for anticipated future service retirements and ordinary and duty disability retirements, including continuance to spouses.

8. The present value of death benefits payable on account of the death of currently active or inactive members.

9. The present value of termination benefits payable on account of the withdrawal (refund) of currently active or inactive members.

10. The amount of excess interest earnings (undistributed earnings) on hand on the valuation date, taking into account the fact that $402,712 was later transferred from the Basic Fund to the Cost of Living Fund. It should be noted that the undistributed earnings are not used in the computation of the basic contribution rates but they are used in the computation of the cost of living rates.

12. This item results from our strong recommendation to eliminate all future refundability in City contribution rates. Because the City has already "over contributed" in the past (because of the refundability feature), it is entitled to a credit for this amount to be used as an offset to its future required contributions when payable. In exchange for this, there will be no refund feature left in the City contribution rates. This topic is thoroughly discussed in Section III(v).

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET*
As of June 30, 1979

ASSETS

		BASIC	C.O.L.
1.	Assets now held (Accounting Balance Sheet)	$ 67,941,889	$ 6,305,252
2.	Present value of members' future contributions: (Basic 6.16% ; C.O.L. 2.76%)	31,826,012	14,259,706
3.	Present value of City's future contributions: ***		
	a. Normal Cost (Basic 12.44%; C.O.L. 4.51%)	64,272,010	23,301,187
	b. Unfunded supplemental cost: (Basic 3.32%; C.O.L. 2.62%)	36,265,565	28,553,704
4.	Transfer of excess interest earnings from Basic Fund to C.O.L. Fund **	(402,712)	402,712
5.	Total Actuarial Assets	$ 199,902,764	$72,822,561
	LIABILITIES		
6.	Present value of retirement allowances being paid	$ 26,509,555	$12,074,648
7.	Present value of retirement benefits to be granted:		
	a. Service Retirement	124,405,066	45,851,259
	b. Ordinary disability	15,636,402	5,153,639
	c. Duty disability	12,943,940	4,328,897
8.	Present value of death benefits to be granted	9,980,335	3,915,688
9.	Present value of members' contributions to be returned upon withdrawal before retirement	4,416,950	1,229,442
10.	Undistributed earnings:		
	a. On hand June 30, 1979	2,368,733	(Used to offset
	b. Later transferred to C.O.L. Fund***	(402,712)	C.O.L. costs)
11.	Accounts payable	39,068	3,609
12.	Future credit available now for past City contributions***	4,005,427	265,379
13.	Total Actuarial Liabilities	$ 199,902,764	$72,822,561

* Interest rate is 6-1/2% per annum and salary scale of merit and longevity plus 4-1/2% inflation per year. Assets are on "book value" basis.

** Reflects the actual transfer of $402,712 that was made at a later date out of the Basic Fund into the Cost of Living Fund.

*** This assumes the complete elimination of the refundability feature in the City contribution rates.

CITY OF SAN JOSE
FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Analysis of Effect of Various Interest Rate and Salary Scale Assumptions Upon Contribution Requirements

Purpose of Multiple Studies

In connection with this survey, we have made additional valuations of the System by varying the interest rates and the corresponding salary scales used in the studies. The purpose of this was to analyze the effect of these changes on the City and member basic and cost of living contribution rates.

Procedure Used to Select Assumptions for Study

To assist in the selection of appropriate interest and salary scale combinations to use in these studies, we had available the current salary information on the active members as well as information as to the earnings of the Fund over the past several years.

The long term (30, 40, 50 years) interest assumption used in connection with the last valuation was 7%. At that time the earnings of the Fund were short of the 7% and at present they are at about the level of 7%. Because in the previous actuarial study, the actuaries wanted to put considerably more anticipated salary increases into the cost calculations, they were also led into using a "comparable" level of expected interest earnings on the Fund. We agree with the concept that the same amounts of inflation must be used in the salary scale and in the long term interest assumption. This results in reasonable levels of required rates of contribution for the members and for the City, especially if the earnings of the Fund are high enough.

The same factor that has caused interest earnings on your Fund to rise in the past (inflation) has also caused both the members' salaries and the Consumer Price Index to rise. Because the retirement benefits under the Plan are based on final average salaries and because the City has a 3% Cost-of-Living Program, this means sub-

stantially higher costs will ultimately fall on the System due to this inflation. Unless as much of the higher earnings as possible are put back into the Fund to help offset these inflationary costs, the contribution rates necessary to soundly fund the System will continue to rise.

In connection with this study (as we are doing for our other Public Clients), we are recommending that as high an interest assumption as possible be used in the valuation. Along with the high interest assumption, we are also using corresponding high levels of salary scales to anticipate the effects of future inflation.

In our actuarial work for public retirement plans, we have been using as a basis for recommending appropriate combinations of interest rate and salary scales a recent statistical study coming out of the University of Chicago. This study (Stocks, Bonds, Bills and Inflation: Simulations of the Futue (1976-2000): Roger E. Ibbotson and Rex A. Sinquefield, Journal of Business, Volume 49, No. 3, July 1976), analyzes the long-term rates of investment return in relation to various levels of inflation, using results actually achieved during the period 1926-1974. In an earlier study by the same men, they developed a statistical basis for estimating the real rate of return (inflation-adjusted) for common stocks, long term government and corporate bonds, and Treasury bills. Applying these real rates of return to the actual composition of your Fund's investments resulted in a composite real rate of return of approximately 2.25%. If account is taken of possible additional amounts beyond the 2.25% which would result from active professional management and because the expectations of future earnings were considerably higher on June 30, 1979 than they were on December 31, 1975, we feel the real rate of return could easily attain an additional .50% per year. This real rate of return on the Fund of 2.75% per year is the same as that assumed in the last actuarial study as the non-inflationary rate of investment return.

The last actuarial study assumed an ultimate rate of general pay increase of 5% per year as being appropriate to use with the long term interest assumption of 7% per annum. We also agree that this assumption is reasonable. The study actually assumed general pay increases starting at 7% per year and going to 5% per year gradually over a five-year period. This is consistent with the type of salary scale-interest combinations we are using in connection with our public plan valuations.

The detailed analysis of the basis used by us for selecting the appropriate combinations of long term (30, 40 or 50 years) interest assumption and long term (20, 30 or 40 years) salary scales is shown in Section III of our Preliminary Working Report, dated December 17, 1979, and was discussed at length at the December 20, 1979 meeting of the Retirement Board. A copy of the Preliminary Working Report is attached as an Addendum to the full actuarial report as of June 30, 1979, to support the bases for the decisions of both the economic and non-economic assumptions used in the studies.

Specific Multiple Studies Selected

As a result of the December 20, 1979 meeting and working session including the Retirement Board and the actuary, it was agreed that the following three studies would be made, having the salary scale and investment assumptions set forth below:

*Study #1 — 6% interest with a salary scale of merit and longevity plus 4% inflation. In the valuation, the inflation starts at 6% and reduces at .40% per year for each of five years until it reaches the level of 4% per year, and it remains at that level.

*Study #2 — 6-1/2% interest with a salary scale of merit and longevity, plus 4-1/2% inflation. In the valuation, the inflation starts at 6% and reduces at .30% per year for each of five years until it reaches the level of 4-1/2% per year, where it remains.

*Study #3 — 7% interest with a salary scale of merit and longevity plus 5% inflation. In the valuation, the inflation starts at 6% and reduces at .20% per year for each of five years until it reaches the level of 5% inflation, where it remains.

*In each of these studies described above, we have started with an inflation rate of 6%, because in the last 15 years public retirement systems in California have averaged about 6% inflation per year in salaries. That 6% salary inflation rate was then graded over a five-year period to the ultimate inflation rate being used in each study.

A detailed example of the actual salary increases used in Study #2 (our recommended study) is shown below:

a. Merit and longevity increases are the same in each of the studies and depend on the attained age of the member.

b. The inflation part of the salary increase that was assumed for all ages in the valuation under Study #2 is:

Year	Inflation
1st	6.00%
2nd	5.60
3rd	5.20
4th	4.80
5th	4.40
6th & Over	4.00

We feel the above schedule showing the inflationary part of the salary increases used in Study #2 illustrates that this 5 year grading approach results in salary increases which are reasonable, both on a long-term basis and over the next five years.

Based on the several combinations of assumptions included within the three studies, we show summarized in Tables A and B on pages 35 and 36 the results of these assumptions on the members' contribution rates (Table A) and on the required City's contribution rates (Table B). These various studies provide a good basis for judging the effects of inflation on the range of the resulting required contribution rates.

We show in Section VI(ix) a detailed listing of each of the salary scales used in the three studies.

Results Obtained from the Studies

We show in Table A on Page 35 a comparison of the ultimate (if taken in one step) employee basic and cost of living contribution rates used in the various June 30, 1979 valuations with the present employee set of recommended rates before the study was made.

In Table B on Page 36 we compare the required City basic and cost of living contribution rates based on the various sets of assumptions used in the studies.

The rates in both Table A and Table B are shown both as percentages of salary and as annual contributions based on the annual salaries at the time of the valuation.

Our actual recommendations as to specific contribution rates for the members and for the City are discussed in the next Section. We are recommending step increases over a three-year period for both the City and the members to arrive at the required levels of their contributions on a gradual basis. In this grading of the contribution rates, the total rates (basic + cost of living) are taken into account.

Recommendations - General

In Tables A and B on Pages 35 and 36 there are summarized the resulting required City and member contribution rates for each of the three different valuations made. The problem now is that, having made studies based on three different sets of economic assumptions, how do you choose the one result which is more appropriate than the others. To determine this it is important to look more closely at the sets of assumptions used.

Because the interest assumption involves the best estimate of what will happen from an investment standpoint over the next 40 or 50 years, it is important that too high a level of long-term interest earnings is not assumed, and counted on, in the calculations. If the 7% interest assumption were to materialize over the long term, then the required contributions of Study #3 would be appropriate. However, at this point in time we feel there is a risk in using lower levels of contributions now (the 7% interest results) and then having to increase them later on if the higher interest earnings do not materialize on a long term basis.

Because of the present earnings position of the Fund and the earning levels attained over the past several years, we recommend that the interest assumption used be 6-1/2%. The use of this rate will provide some help in offsetting the costs of the System which have tended to go up because of the consistently rather high inflation in the recent 10 years.

Because of the value to the Board of having multiple valuation results, as shown in Tables A and B, we recomend at the time of each actuarial study that multiple valuations be made. This will introduce different combinations of inflation and interest earnings so comparisons can be made with the current valuation results to be sure they are well within the range of contribution rates that would be required, based upon alternative assumptions. We feel in this way the funding of the Retirement Program of the City of San Jose can continue to be maintained on a sound basis into the future.

Recommendations - Member Contribution Rates

We recommend that the Retirement Board adopt the employee basic as well as cost of living contribution rates resulting from Study #2. This study assumes a long-term interest rate of 6-1/2%, along with a salary scale reflecting merit and longevity increases plus 4-1/2% inflation per year.

It can be seen in Table A (Page 35) that to make the necessary employee total contribution rate changes in one step would mean large increases in member contributions. For this reason, we recommend that the members' required total contribution levels be reached using a method of step rate increases over a three-year period.

We show below the resulting member basic and cost of living contribution rates, as well as the required annual contributions, if the three step rate increases are adopted. Because the higher contribution levels are being reached gradually instead of right away, the final steps of the required total contribution rates would have to be higher than those shown for Study #2.

Members' Required Contributions*

	Basic		C.O.L.		Total	
Year	%	Dollars	%	Dollars	%	Dollars
Now	6.68%	$2,627,000	.96%	$ 377,000	7.64%	$3,004,000
1	6.16	2,422,000	1.97	775,000	8.13	3,197,000
2	6.16	2,422,000	2.45	963,000	8.61	3,385,000
3 and over	6.16	2,422,000	2.94	1,156,000	9.10	3,578,000
Study #2	6.16%	$2,422,000	2.76%	$1,085,000	8.92%	$3,507,000

*Based on annual salaries of $39,320,000.

Recommendations - City Contribution Rates

We recommend that the Retirement Board adopt the City basic as well as cost of living contribution rates resulting from Study #2. This study assumes a long-term interest rate of 6-1/2%, along with a salary scale reflecting merit and longevity increases plus 4-1/2% inflation per year.

It can be seen in Table B (Page 36) that to make the necessary City total contribution rate changes in one step would mean large increases in City contributions. For this reason, we recommend that the City's required total contribution levels also be reached using a method of step rate increases over a three-year period.

We show below the resulting City basic and cost of living contribution rates as well as the required annual contributions, if the three step rate increases are adopted. Because the higher contribution levels are being reached gradually instead of right away, the final steps of the required total contribution rates would have to be higher than those shown for Study #2.

City's Required Contributions*

	Basic		C.O.L.		Total	
Year	%	Dollars	%	Dollars	%	Dollars
Now	17.13%	$6,736,000	2.88%	$1,132,000	20.01%	$7,868,000
1	15.76	6,197,000	5.34	2,100,000	21.10	8,297,000
2	15.76	6,197,000	6.44	2,532,000	22.20	8,729,000
3 and later	15.76	6,197,000	7.53	2,961,000	23.29	9,158,000
Study #2	15.76%	$6,197,000	7.13%	$2,803,000	22.89%	$9,000,000

*Based on annual salaries of $39,320,000.

ALSO, be sure and read the NOTE on the next page in connection with our calculation of the above City contribution rates.

CAREFULLY NOTE

It is most important that the Retirement Board be aware of the fact that the above recommended City contribution rates reflect the adoption of our recommended changes in the manner in which the City contribution rates are calculated. They involve both the elimination of the refundability feature of the City and also the reduction in the years over which the cost of part of the City's liabilities are amortized. These changes and the reasons that they are absolutely essential are discussed in the next setion of this report.

Further Recommendations - Suggested Changes

In calculating the required rates of contribution of the City, we have modified two of the assumptions used in the last study. We feel these two assumptions are completely inappropriate. The first suggested change has to do with the refundability feature as it applies to City contributions. This employer refundability feature (tied into the refundability of members' contributions) has been used in connection with the Federated System for almost 10 years. The second suggested change has to do with reducing the 60 year amortization period down to a 30 or 40 year period. Both of the suggested changes affect only the City's contribution rates and have no effect on the members' rates of contribution.

Elimination of the City Refundability Feature

At the present time, when a member leaves the System and obtains a refund of his own contributions plus interest the City also receives a refund (or a credit toward its required contributions). We feel that it is essential that this procedure be completely eliminated and, therefore, in the various City rates shown in this report, we have eliminated the City refund feature. We list below some of the main reasons why we believe it is absolutely necessary to eliminate the refund feature for the City:

1. No more than about 1% of all Public Pension Plans (if that many) would likely have this employer refundability feature.

2. Unless the method is changed, the resulting City rate would substantially overstate the City's part of the actual cost of the System as it has done for the past several years, and because of this will seriously mislead the City Council, the employees, the Public, the accountants and the auditors.

3. If the City rate with a refundable feature in it is used as a basis for setting up City budgets, it will overstate the annual City contributions actually required for the Retirement Plan.

4. Back before Proposition 13, the "loaded" or "overstated" contribution requirements might have been helpful to provide some flexibility in City budget requirements but now this luxury should not be permitted. Newspaper and magazine articles already "shout" about the extremely high cost of public pensions plans, without deliberately overstating the City's pension cost picture.

5. It is possible that the inclusion of the refundability feature to the City, leading to overstated City Pension contribution requirements, could come back to cause serious problems to the City if the time comes when the City wants to raise money by selling a bond and the auditors or accountants insist that the annual pension requirements of the City, be disclosed on the overstated basis.

6. The City refundability feature almost certainly must require additional work (and therefore additional cost) to the Retirement Office and to the Finance Department to keep the records necessary to make it operate.

7. From the inside or outside auditors point of view, this feature would either add to their work or mislead them as to the true City financial picture.

8. It makes no sense to us to continue this feature which leads to deliberately putting extra money into the Retirement Plan just to be able to get it back later on. As an indication of the overstatement of the actual City costs under this refundability feature, there is already approximately $4,270,000of City contributions now in the fund that we estimate will end up being returned to the City later on as some of the present members leave and take out their contributions. In the Actuarial Balance Sheet in Item 3 on Page 19, if the City refundability feature were to be continued, the expected future City contributions would be about $11,000,000 more than would actually be needed under the System. As you can see from the size of these amounts, this is not a minor item, and we feel it results in completely misleading the Public, the City Council and the employees.

9. If the City refundability feature is continued, it might lead the City officials to think there is a major cost problem because substantial City costs are needed in the Retirement Plan area. One way the City Officials might view a solution to

the problem (that does not exist except for the refundability feature) is to put all new employees into the State Retirement System. This kind of a solution would trade an "imagined" problem for a real problem because all the new younger employees (now the main basis of stability of retirement contribution rates) would not be available to your own System. Since the members of your System contribute toward almost all costs on either a 3:8 or 42:58 ratio with the City, this would mean higher percentage contribution rates would fall on the remaining members of the System.

10. From our point of view, changing from refundable to non-refundable City contributions can only help the Plan, the members, the City, the City Council, the taxpayers and anyone else trying either to review the City Pension Plan or trying to understand how it works.

If the City refundability feature is eliminated from the cost structure of the Retirement System, this would mean that the City is entitled to receive as a credit any past contributions that are estimated to be excessive due to the City refundability feature. At the valuation date (June 30, 1979) this amounted to $4,271,000. Because of its size, we would suggest that the City use this credit toward reducing its contributions to the Plan over each of the next three years, rather than all at once. Unless this approach to a gradual use of the credit is taken, this could seriously reduce the amount of new assets going into the Fund and being available for investment at the current high investment rate for new money.

In calculating the rates of contribution in this study, we have assumed that the members and the City will continue to share liabilities on the same basis as before, 3:8 or 42:58, depending upon which liabilities we are talking about. Because the members' contribution must be on a refundable basis so employees who leave can take their contributions with them, we have put the cost of this refundability feature on the members as a group, since only they benefit from this provision. The City's rates, on the other hand, are completely on a non-refundable basis and do not have in them any of the cost of the refundability of contributions to terminating employees.

Reducing the Amortization Period

At the time of the last actuarial study, the Entry Age Normal Cost funding method was adopted. This permitted the cost of part of the City's liabilities to be amortized (or paid for) over a 60 year period.

However, because of the City's refundability feature and the method of taking City refunds whenever the members take their own refunds, the amount of the Supplemental Liability that would normally be able to be amortized over a long period has been severely limited. This means that, even using a funding period of 60 years, only a small amount of City annual cost savings resulted.

Here, then, is another example of problems the City refundability feature can cause. This feature indirectly takes away most of the City's budgetary savings that would normally result from using the new funding method. With the elimination of the City refundability feature, this means that much more of the City liabilities can be amortized over a long period of time rather than over about a 15 year period (the members' average future working lifetime), thus bringing down the City's contribution rate.

Very few Public Employers are amortizing part of their pension costs over a period as long as 60 years. As a matter of fact, the use of such a long period "suggests" that the City's fiscal position is poor and the funding of the Plan is not sound. This, therefore, may also be a misleading connotation that is being applied to the City's fiscal condition.

Because under E.R.I.S.A., the Federal Pension Act for private pension plans, the longest funding period permitted is 40 years, we suggest that the City use an amortization period no longer than 40 years. The recommended City contribution rates shown in Table B all assume a 40 year period for funding the Supplemental Liabilities under the Plan. We believe it would even make sense, if possible, to cut the funding period for this part of the City liability down to 30 years.

We look forward to our meeting with the Retirement Board and to the discussion of the results of this study and the several changes which we feel are highly important to the Board (as part of its fiduciary responsibility) and certainly also highly important to the City Council. We would encourage an in-depth discussion of this matter when we meet with the Retirement Board.

TABLE A

CITY OF SAN JOSE

Comparison of Employees' Ultimate Contribution Rates Based on 6/30/79 Valuation

Present Rates (before Study)

Present - 7% interest; merit, longevity + 5% inflation

Present Rates

	%	Dollars*
Basic	6.68%	$ 2,627,000
C.O.L.	.96	377,000
Total	7.64%	$ 3,004,000

1977 Recommended "One Step" Rates

	%	Dollars*
Basic	7.64%	$ 3,004,000
C.O.L.	2.37	932,000
Total	10.01%	$ 3,936,000

Rates Updated by 6/30/79 Valuation

Study #1 - 6% interest; merit, longevity + 4% inflation

	%	Dollars*
Basic	6.66%	$ 2,619,000
C.O.L.	3.07	1,207,000
Total	9.73%	$ 3,826,000

Study #2 - 6-1/2% interest; merit, longevity + 4-1/2% inflation

	%	Dollars*
Basic	6.16%	$ 2,422,000
C.O.L.	2.76	1,085,000
Total	8.92%	$ 3,507,000

Study #3 - 7% interest; merit, longevity + 5% inflation

	%	Dollars*
Basic	5.69%	$ 2,238,000
C.O.L.	2.46	967,000
Total	8.15%	$ 3,205,000

*City contributions based on total annual salaries on the valuation date of $39,320,000.

TABLE B

CITY OF SAN JOSE

Comparison of City's Ultimate Contribution Rates Based on 6/30/79 Valuation

Present Rates (before Study)

Present - 7% interest; merit, longevity + 5% inflation

Present Rates

	%	Dollars*
Basic	17.13%	$ 6,736,000
C.O.L.	2.88	1,132,000
Total	20.01%	$ 7,868,000

1977 Recommended "One Step" Rates

	%	Dollars*
Basic	18.84%	$ 7,408,000
C.O.L.	7.65	3,008,000
Total	26.49%	$10,416,000

Rates Updated by 6/30/79 Valuation

Study #1 - 6% interest; merit, longevity + 4% inflation

	%	Dollars*
Basic	17.04%	$ 6,700,000
C.O.L.	7.93	3,118,000
Total	24.97%	$ 9,818,000

Study #2 - 6-1/2% interest; merit, longevity + 4-1/2% inflation

	%	Dollars*
Basic	15.76%	$ 6,197,000
C.O.L.	7.13	2,803,000
Total	22.89%	$ 9,000,000

Study #3 - 7% interest; merit, longevity + 5% inflation

	%	Dollars*
Basic	14.56%	$ 5,725,000
C.O.	6.40	2,516,000
Total	20.96%	$ 8,241,000

*City contributions based on total annual salaries on the valuation date of $39,320,000.

EXPERIENCE ANALYSIS

SECTION IV

CITY OF SAN JOSE
FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Experience Analysis
Summary of Results

A. POST RETIREMENT MORTALITY:

In this actuarial study, we reviewed the mortality experience of the System's retired members and beneficiaries during the two-year period from July 1, 1977 through June 30, 1979. The purpose of the study was to test and, if necessary, to revise the mortality tables in use under the Plan to reflect the mortality experience among persons who have retired for service or disability.

The Retirement Office provided us with the usual information concerning all persons on the pension roll on June 30, 1979 and with information on all pensioners who had died during the two-year period.

The comparisons of the actual number of deaths to the number of deaths expected under both the service and the disability mortality experience are shown in considerable detail in our Preliminary Working Report, dated December 17, 1979, and discussed with the Retirement Board at the December 20, 1979 meeting, held specifically for that purpose. The above report has been designated as an Addendum to this report and, together, both these reports provide the complete detail as to the experience studies and the various valuations of the System.

(i) Mortality after Service Retirement

The mortality experience of your retired life group is reviewed at least every three years and at that time any necessary changes to the mortality table are made to bring the actual experience and the expected experience of the System into closer alignment. The two-year period, July 1, 1977 to June 30, 1979, and the experience from the actuarial study prior to that date have been taken into account in this study as well as a comparison with the recent mortality experience under other like public retirement systems.

In analyzing the mortality experience, not just the total number of deaths but the distribution of the deaths by age groups is taken into consideration. Because the experience for the women is very different from that for the men, this is also kept separate.

In this study, we find that modifications are again needed in the mortality tables to bring the age distribution of the expected deaths into closer alignment with the actual deaths taking place.

To accomplish the above, we have recommended, and the Retirement Board has concurred, that the tables used to anticipate deaths after service retirement be the following: The Male 1971 Group Annuity Mortality Table without an age adjustment for the men and the Female 1971 Group Annuity Mortality Table with ages set back one year for the women. These are the same tables used in the previous study except that the ages have been set back one year for both the men and women to provide for slightly longer life expectancies than were anticipated in the last study.

The life expectancies for all ages under the new tables are shown in Section VI(vi) of this report. A comparison of the life expectancies after service retirement under the present tables and the under the recommended table is shown below for representative ages.

Years of Life Expectancy

	Present Table		Recommended New Table	
Age	Male	Female	Male	Female
55	21.9	28.0	22.7	28.9
60	18.0	23.5	18.8	24.4
65	14.4	19.2	15.1	20.1
70	11.3	15.3	11.9	16.0

(ii) Mortality after Retirement for Disability

The size of your disabled life group is too limited to use as the basis of developing an independent mortality table. The mortality table currently in use by your System is 90% of the Pension Benefit Guaranty Corporation Male Disability Table and is being used for both men and women.

Because of the very small number of disability cases under the System, we have based our recommendation of an appropriate disability mortality table on our disability mortality experience under the many public systems we serve. We recommend the 1973 Disability Mortality Table as a measure of life expectancies after disability under the System. This mortality table for disabled lives is presently being used for almost all of our public employee clients.

The life expectancies under this table for all ages are shown in Section VI(vii) of this report. We have shown below for representative ages the life expectancies under the recommended disability mortality table compared to those now being used:

Years of Life Expectancy (Male and Female)

Age	Present Table	Recommended New Table
40	16.6	23.3
45	15.2	20.8
50	13.8	18.5

From the above comparison, it can be seen that the new table provides for considerably longer life expectancies after disability retirement than those now being used. The present basis of the mortality table is disability experience under Social Security. The requirements for Social Security disability are generally much more severe than those under public pension plans. This in turn leads to considerably shorter life expectancies for disability members under the Social Security Program.

In connection with our experience study into the mortality after disability, more detail is included in the Preliminary Working Report (now an Addendum to this report).

B. PROBABILITIES OF SEPARATION FROM SERVICE PRIOR TO RETIREMENT:

In order to complete an actuarial valuation of the active lives of a public pension plan, it is necessary to make certain assumptions regarding the following contingencies or probabilities (considered to be non-economic assumptions as compared to the economic assumptions of interest and salary scales):

1. Withdrawal (refund)
2. Death before eligible to retire
3. Ordinary disability retirement
4. Service retirement
5. Death while eligible to retire
6. Duty disability retirement
7. Terminated while vested

The Retirement Office furnished us with detailed information for each person who had been an active member of the Plan at any time during the two-year period ending June 30, 1979. The data for those members who remained in the Plan as of June 30, 1979 is summarized in Section VI(iii) to show the total annual salaries and the active membership distribution. In Section VI(iv) is shown a summary of the number of members and the total annual salaries by the sex and attained age of the members.

In the analysis of the active experience, an attempt was made to eliminate as much as possible any undue influence of Proposition 13 on the withdrawal, service retirement and vested termination rates.

Our first step in comparing the actual experience under the System to that expected was, where necessary, to convert any previous active turnover rates which were on an "if eligible" basis to equivalent rates which could be applied directly to the whole group of active members.

The results of our analysis of the active experience of the System during the two-year period ending June 30, 1979 and how the actual experience compared to that expected, based on last time's assumptions, provided the basis of the following contingencies or probabilities: withdrawal (refund), death before eligible to retire, disability retirement (ordinary and line of duty), service retirement, death while eligible to retire and vested terminations. Each of these contingencies was discussed in considerable detail in our Preliminary Working Report of December 17, 1979 (now an Addendum to this report). All of these various assumptions were also considered in detail at our meeting with the Retirement Board on December 20, 1979, held specifically for that purpose. As a result of that meeting, the Board concurred with the actuary's recommendations as to all of the non-economic assumptions to be used in the valuations of the System.

We summarize briefly below the results of our analysis of the active membership experience.

Withdrawal from Service (Refund)

The number of expected withdrawals under the recommended new rates as compared to the old rates went up close to 50% for the males and about 18% for the females. In total, there was an overall increase in expected cases of withdrawal of about 33%. As we have done in the past, the rates of withdrawal that have been recommended were based upon the experience among members who had accrued at least three years of service. The turnover among members with less than three years of service is, of course, higher but the financial effect of such withdrawals upon the System is small.

Death Before Retirement

In connection with the last study, death rates before retirement were not shown separately as death before eligible to retire and death after eligible to retire. In this study, the separation has been made based on the experience within your

System. The total 1979 expected deaths were reduced almost 20% for both the men and the women.

Ordinary Disability Retirement

The number of expected ordinary disability cases under the recommended new rates as compared to the old rates went down about 20% for the males and 15% for the females. A reduction is the rate of ordinary disability means a savings to the System.

Service Retirement

Rates of service retirement for both the males and the females were increased to expect about 15% more retirements for the males and 25% more retirements for the females. Both the men and women showed a tendency to retire at slightly younger ages than previously. This tends to increase the cost of the System.

Duty Disability Retirement

The number of expected duty disability cases under the recommended new rates as compared to the old rates went down about 25% for the males and 35% for the females. These changes tend to reduce costs of the System.

Vested Terminations

The results of the investigation into vested terminations led to increasing these rates about 50% for the males and 100% for the females. The expected cases of this type are still quite small relative to the number of expected withdrawals. An increase in vested terminations means a reduction in cost of the System because the vested benefit is generally less expensive than a disability or service retirement benefit.

Probabilities of Separation

The rates of separation from active service that have been discussed in the foregoing paragraphs and recommended as the basis for the current actuarial valuation are shown in Section VI(viii) of this report.

It is difficult to obtain the meaning of the various probabilities of separation by examining each of them directly because each of the probabilities depends on all the others. For example, if there is more turnover, there will be less retirement. Because of this interdependency, it is helpful to develop another table which takes this interdependency into account. Exhibit I on the following page shows for both men and women the expected number of present active members who will eventually separate for each of the various causes of termination, based on the newly recommended actuarial assumptions. At the time of the next study of the active experience under your System, we will be in a position to present two exhibits, one for the old assumptions and one for the new assumptions. Using the two exhibits, it will make it much easier to see what the changes from the old to the new probabilities of separation from the System really mean.

CITY OF SAN JOSE

Exhibit I

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Expected Number to Eventually Separate for Indicated Cause*

MALE

Attained Age	Number of Actives	With-drawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Disability	Terminated Vested
20-24	61	52	0	1	5	1	1	1
25-29	239	160	3	8	46	5	7	10
30-34	340	138	7	21	121	13	18	22
35-39	211	37	6	18	108	11	15	16
40-44	219	19	6	21	130	12	17	14
45-49	193	4	5	20	132	11	15	6
50-54	178	1	3	17	134	8	14	1
55-59	109	0	1	12	83	4	9	0
60-64	58	0	1	6	45	2	4	0
65 & Over	7	0	0	0	7	0	0	0
Total	1,615	411 (25.4%)	32 (2.0%)	124 (7.7%)	811 (50.2%)	67 (4.2%)	100 (6.2%)	70 (4.3%)

FEMALE

20-24	34	31	0	0	2	0	0	1
25-29	177	138	1	3	23	1	4	7
30-34	180	106	1	7	48	2	6	10
35-39	117	38	2	7	54	2	7	7
40-44	91	14	1	7	55	2	7	5
45-49	91	3	1	8	68	2	8	1
50-54	84	0	1	7	67	2	7	0
55-59	75	0	1	7	61	1	5	0
60-64	21	0	0	2	18	0	1	0
65 & Over	5	0	0	0	5	0	0	0
Total	875	330 (37.7%)	8 (.9%)	48 (5.5%)	401 (45.8%)	12 (1.4%)	45 (5.1%)	31 (3.6%)

*Based on new actuarial assumptions (7/1/79)

C. SALARY SCALES:

The term Salary Scales refers to a schedule of percentage increases by attained age which are used in projecting salaries, at future points in time. These projected salaries are in turn used for estimating the amount of pension payable at retirement and for estimating the projected liability on account of other decrements (for example, disability, death, withdrawal).

In making actuarial cost calculations, it is essential that the salary scale assumption be as consistent as possible with the interest assumption used in a particular study. This topic is covered in considerable detail in our Preliminary Working Report (now an Addendum to this report). The subject of interest rates and salary scales was discussed as thoroughly as possible at the December 17, 1979 meeting which included the Retirement Board and the actuary. It was especially for the purpose of discussing the relationship of the economic assumptions to be used in the studies that this meeting was called.

The combinations of salary scales and interest assumptions used in these studies are described and are rather thoroughly discussed n Section III(v). The salary scales themselves are shown in Section VI(ix) at the back of this report.

D. EXPERIENCE ANALYSIS SCHEDULE:

The probabilities for the various occurrences as used in these studies and discussed above in B are listed for your convenience in the Appendix to this report in Section VI(viii).

PROPOSED AMENDMENTS TO THE SYSTEM

SECTION V

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Proposed Amendments to the System

As requested by the Board of Administration, in connection with the June 30, 1979 actuarial study, we have also calculated the effects on costs if various proposed amendments are adopted by the Federated Employees' Retirement System. These proposed amendments are listed below:

#1 Cost to increase the cost of living allowance maximum from 3% to 4%, 5%, 6% or 7% per year.

#2 Cost to begin the cost of living increase on the month following the first twelve months of retirement instead of the present method of beginning the increase on April 1st after one completed twelve month cycle following the first April 1st in retirement:

a. If the member receives the full 3% increase after the twelve months

b. If the member receives a "pro rata" increase after the twelve months (example - if member retired in June, the pro-rata amount would be 10/12 x 3% = 2.5%).

#3 Cost to fund the health and dental insurance for the retirees.

Proposed Amendment #1

Proposed Amendment

Cost to increase the cost of living allowance maximum from 3% to 4%, 5%, 6% or 7% per year.

Cost

Because the City is contemplating a possible increase in the cost of living level, we feel we should bring to the attention of the Retirement Board certain general information in regard to the Cost of Living Program.

If the Consumer Price Index changes in the future were large enough every year so that the retired member received a 3% increase, this would be the equivalent of cost-wise adding about 36% to the cost of the basic benefit. If the maximum were changed to 4%, 5%, 6% or 7% per year and this size were granted every year in the future, this is equivalent to adding about 52%, 70%, 90% or 112%, respectively, to the cost of the basic benefit.

The cost of living contribution rates required by the City and by the members are discussed in Sections III(ii) and III(v). The costs as shown below are the increases in the contribution rates above the present levels if the added liabilities are shared in a 3:8 ratio and if one-half of the City's liabilities are able to be funded over a 40 year period. Only the members' contributions are refundable.

Increases in Annual Contributions Required

C.O.L.	City		Employees	
Maximum	%	Dollars*	%	Dollars*
4%	3.29%	$1,293,600	1.45%	$ 570,100
5%	7.08	2,783,900	3.14	1,234,600
6%	11.46	4,506,100	5.11	2,009,300
7%	16.53	6,499,600	7.39	2,905,800

*Based on annual salaries on the valuation date of $39,320,000.

Proposed Amendment #2

Proposed Amendment

Cost to begin the cost of living increase on the month following the first twelve months of retirement instead of the present method of beginning the increase on April 1st after one completed twelve month cycle following the first April 1st in retirement:

a. If the member receives the full 3% increase after the twelve months.

Example:

(1) member retires on 9/1/82

(2) member receives a 3% increase starting on 9/1/83 and running through 3/1/84

(3) member would receive an additional 3% increase on 4/1/84 and on each 4/1 thereafter

b. If the member receives a "pro-rata" increase after the twelve months.

Example:

(1) member retires on 9/1/82

(2) member receives an increase of 7/12 x 3% starting on 9/1/83 and running through 3/1/84

(3) member would receive an additional 3% increase on 4/1/84 and on each 4/1 thereafter

Cost

The costs as shown below are the increases required in the contribution rates if the added liabilities are shared in a 3:8 ratio and if one-half of the City's liabilities are able to be funded over a 40 year period. Only the members' contributions are refundable

Increases in Annual Contributions Required

	City		Members	
Proposed	%	Dollars*	%	Dollars*
#2a	0.10%	$ 39,300	0.06%	$ 23,600
#2b	0.05	19,600	0.03	11,800

*Based on annual salaries on the valuation date of $39,320,000.

Proposed Amendment #3

Proposed Amendment

Cost to fund the health and dental insurance for the retirees

Cost

The Retirement Office provided us with certain current information as to the various degrees of health and dental coverages provided by certain jurisdictions in California. Because of the impossibility of predicting the amounts of escalation in the costs for these services, our cost calculations assume a flat $45 per month insurance premium being required on behalf of each retired member as long as the member shall live.

The figures shown below assume that all of the cost will fall on the City. The liabilities because of present retired members are assumed to be funded over a 40 year period. The liabilities because of future retired members are assumed split: one-half is paid for (or funded) over a 40 year period and one-half is funded over the members' average future working lifetime (about 15 years).

Increases in City's Annual Contributions Required

		%	Dollars*
(1)	For Present Retired	0.17%	$ 66,800
(2)	For Future Retired	0.55	216,300
(3)	For Both Groups	0.72%	$ 283,100

*Based on annual salaries on the valuation date of $39,320,000.

Summary of Proposed Amendments

This report has within it the cost effects of different possible amendments to the Retirement System. We look forward to our meeting with the Board of Administration and to the discussion of the various possibilities as set forth in this report.

APPENDIX

SECTION VI

CITY OF SAN JOSE
MAJOR PLAN PROVISIONS OF THE PRESENT 1975 SYSTEM

Briefly summarized below are the major provisions of the Federated City Employees' Retirement System, as amended through June 30, 1979.

1. Membership

Mandatory coverage for all full-time employees.

2. Return of Contributions

a. If a member should resign or die without being eligible for an allowance, his or her contributions plus interest will be refunded. A member terminating with at least 5 years of service may elect to leave his or her contributions and receive a deferred retirement benefit at age 55.

b. Generally, if a member receives a refund of contributions, the City also receives a refund (or credit for) the contributions it made on behalf of the member.

3. Death Benefit Before Retirement

a. If a member dies because of service connected death or non-service connected death, if the member has at least 5 years of service, the spouse receives an allowance of 2-1/2% times final average salary (minimum of 40% of final average salary and maximum of 75% of final average salary). If there is no spouse, unmarried children are entitled to the allowance to age 18.

b. If there are no family members eligible for an allowance, the beneficiary receives the return of the member's contributions plus one months' salary for each year of service up to 6 years.

4. Death Benefit After Retirement

a. If a member dies after retirement, a lump sum amount of $500 is paid to the beneficiary or estate.

b. On the death of the retired member, 50% of the member's allowance as it was at death is continued to the surviving spouse for life. If there is no spouse, then 25% continuance of the benefit is given to each child under age 18, but the maximum benefit to the children as a group cannot exceed 75% continuance.

5. Disability Retirement

a. Requirement

(1) Members with at least 5 years of service and under age 55 are eligible for non-service connected disability.

(2) If the disability is service connected, the member may retire regardless of length of service.

b. Benefit

(1) The minimum amount of non-service connected disability benefit is 40% of final average salary, but not less than the service retirement benefit. The benefit is subject to a reduction factor for each year of age under age 55.

(2) The benefit for service-connected disability is 40% of final average salary.

6. Service Retirement

a. Requirement

Members with at least 5 years of service, who have attained the age of 55, are eligible to retire. Retirement is compulsory on the member's 70th birthday.

b. Benefit

The retirement allowance payable is the final average salary (highest 3 consecutive years) multiplied by 2-1/2% per year, not to exceed 30 years. The maximum benefit is 75% of final average salary.

7. Members Contributions (Basic & Cost of Living)

The members' contribution rates are recalculated on an actuarial basis at each actuarial study. The members presently contribute at the rate of 7.64% of base salaries.

8. City Contributions

The City presently contributes at a rate of 20.01% of the base salaries of all members. The City rate is the percentage of salary necessary, on an actuarial basis, to provide for the payment of the benefits promised, also taking into account the contributions being made by the members. These rates are changed in accordance with each actuarial study.

9. Cost of Living

The current maximum increase in retirement allowance is 3% a year, based on the Cost of Living Index for the month of December.

CITY OF SAN JOSE

Summary of Assumptions and Funding Method

A. Basic Benefit Assumptions

1.	Valuation Interest Rate	6-1/2%
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	1973 Disability Mortality Table
3.	Pre-Retirement Mortality	Based upon the Experience Analysis
4.	Withdrawal Rates	Based upon the Experience Analysis
5.	Disability Rates	Based upon the Experience Analysis
6.	Salary Scales	Reflecting merit and longevity plus 4-1/2% inflation per year. Inflation graded from 6% to 4-1/2% over 5 years.
7.	Service Retirement Rates	Based upon the Experience Analysis
8.	Assets	Valued at Cost

CITY OF SAN JOSE

Summary of Assumptions and Funding Method
(Continued)

B. Funding Methods:

1. Basic Benefits

a. Part of the liability is being funded on the Entry Age Normal Method with a Supplemental Present Value. The remaining amortization period for this Supplemental Present Value is 58 years. We will be strongly recommending that the amortization period be reduced at this point to 40 years.

b. A rather small part of the liability is being funded on the attained age method.

2. Cost of Living Benefits

Full funding of the 3% Cost-of-Living benefit also using the Entry Age Normal method of funding with a Supplemental Present Value with the same periods as described in Item 1 above.

3. City Refundability

On the withdrawal of the member from the System, both the member and the City receive a refund of contributions made on behalf of the member. We will also be strongly recommending that all refund of City contributions be eliminated.

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Total Annual Salary and Membership Distribution

Of Active Members

as of June 30, 1979

YEARS OF SERVICE

MALE PRESENT AGE	0-4	5-9	10-14	15-19	20-24	25-29	OVER 30	TOTAL
20-24	61 761,150							61 761,150
25-29	191 2,527,344	45 667,667	3 46,566					239 3,241,577
30-34	188 2,722,642	133 2,259,676	19 333,619					340 5,315,937
35-39	51 868,946	96 1,768,056	38 737,802	26 491,426				211 3,866,230
40-44	52 892,190	53 1,015,534	49 932,334	54 1,097,450	11 211,588			219 4,149,096
45-49	35 601,939	32 608,894	42 799,422	56 1,084,184	26 582,309	2 37,024		193 3,713,772
50-54	25 383,865	36 653,302	24 442,728	40 835,302	31 664,937	20 474,396	2 35,048	178 3,489,578
55-59	10 158,730	22 449,150	27 481,260	22 392,964	20 408,460	8 248,014		109 2,138,578
60-64	2 28,399	16 280,046	7 135,148	9 167,908	15 273,572	9 155,922		58 1,040,995
65-69	2 35,906	2 33,358	1 13,468	2 43,862				7 126,594
TOTAL	617 8,981,111	435 7,735,683	210 3,922,347	209 4,113,096	103 2,140,866	39 915,356	2 35,048	1,615 27,843,507

Average Attained Age	40.00
Average Service	9.00
Average Entry Age	31.00

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Total Annual Salary and Membership Distribution

Of Active Members

As of June 30, 1979

YEARS OF SERVICE

FEMALE PRESENT AGE	0-4	5-9	10-14	15-19	20-24	25-29	OVER 30	TOTAL
20-24	33	1						34
	358,716	12,870						371,586
25-29	149	27	1					177
	1,751,495	378,196	8,658					2,138,349
30-34	106	63	10	1				180
	1,326,720	919,055	128,648	13,650				2,388,073
35-39	52	44	15	6				117
	629,682	691,106	235,846	79,118				1,635,752
40-44	30	27	15	15	4			91
	356,519	392,912	224,146	229,637	52,754			1,255,968
45-49	45	21	12	10	1	2		91
	521,399	287,638	175,916	134,727	18,512	44,616		1,182,808
50-54	35	29	9	5	5	1		84
	406,270	420,004	129,558	76,284	68,406	23,972		1,124,494
55-59	25	24	14	7	2	3		75
	284,850	324,454	199,160	104,254	33,384	55,042		1,001,144
60-64	7	8	4	2				21
	83,122	115,284	67,704	52,546				318,656
65-69	3	2						5
	35,074	24,882						59,956
TOTAL	485	246	80	46	12	6		875
	5,753,847	3,566,401	1,169,636	690,216	173,056	123,630		11,476,786

Average Attained Age	39.00
Average Service	6.00
Average Entry Age	33.00

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Number of Active Members and Total Annual Salaries

By Sex and Attained Age

Age	Male		Female		Total	
	No.	Salary	No.	Salary	No.	Salary
20	6	$ 70,408	5	$ 51,948	11	$ 122,356
21	7	83,018	4	35,276	11	118,294
22	12	154,544	5	50,479	17	205,023
23	12	140,582	14	161,473	26	302,055
24	24	312,598	6	72,410	30	385,008
25	52	680,307	26	283,038	78	963,345
26	38	480,061	32	377,892	70	857,953
27	48	666,052	40	490,017	88	1,156,069
28	46	635,678	45	534,814	91	1,170,492
29	55	779,479	34	452,588	89	1,232,067
30	79	1,194,788	42	548,494	121	1,743,282
31	75	1,199,221	37	502,064	112	1,701,285
32	76	1,157,965	35	473,783	111	1,631,748
33	58	903,464	36	484,373	94	1,387,837
34	52	860,499	30	379,359	82	1,239,858
35	45	836,619	31	442,387	76	1,279,006
36	48	846,941	26	374,423	74	1,221,364
37	45	825,335	20	281,863	65	1,107,198
38	39	706,671	19	274,409	58	981,080
39	34	650,664	21	262,670	55	913,334
40	50	952,118	25	402,698	75	1,354,816
41	47	902,250	18	224,130	65	1,126,380
42	39	723,708	13	191,371	52	915,079
43	44	847,988	20	259,487	64	1,107,475
44	39	723,032	15	178,282	54	901,314
45	33	608,295	19	229,923	52	838,218
46	50	960,959	18	222,902	68	1,183,861
47	44	937,326	19	253,500	63	1,190,826
48	32	566,409	16	213,824	48	780,233
49	34	640,783	19	262,659	53	903,442
50	33	642,572	17	232,206	50	874,778
51	30	595,486	20	290,446	50	885,932
52	40	798,273	18	229,275	58	1,027,548
53	33	610,696	17	233,402	50	844,098
54	42	842,551	12	139,165	54	981,716

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Number of Active Members and Total Annual Salaries

By Sex and Attained Age
(Continued)

	Male		Female		Total	
Age	No.	Salary	No.	Salary	No.	Salary
55	24	$ 484,614	20	$ 273,904	44	$ 758,518
56	20	379,080	19	257,426	39	636,506
57	22	483,080	12	162,793	34	645,873
58	24	439,296	10	132,769	34	572,065
59	19	352,508	14	174,252	33	526,760
60	17	321,958	5	62,634	22	384,592
61	12	210,704	8	107,276	20	317,980
62	12	206,551	3	54,236	15	260,787
63	10	196,404	2	28,496	12	224,900
64	7	105,378	3	66,014	10	171,392
65	2	43,862	2	24,882	4	68,744
66	3	48,256	2	21,294	5	69,550
67	0	0	0	0	0	0
68	1	13,468	1	13,780	2	27,248
69	1	21,008	0	0	1	21,008
70	0	0	0	0	0	0
TOTAL	1,615	$27,843,507	875	$11,476,786	2,490	$39,320,293

CITY OF SAN JOSE

Summary of Monthly Allowances Being Paid

Service Retirements Option	Number	Basic Monthly Allowances	Cost of Living Regular	Cost of Living Permanent	Total Monthly Allowances
1	65	$ 24,968	$ 4,862	$ 302	$ 30,132
2	25	4,932	825	60	5,817
3	23	9,987	2,610	204	12,801
4	6	3,890	1,188	210	5,288
5	158	106,825	3,715	-	110,540
8	2	130	-	-	130
9	24	8,440	1,632	226	10,298
Total	303	$159,172	$14,832	$1,002	$175,006
Disability Retirements Option					
1	4	$ 852	$ 247	$ 27	$ 1,126
2	1	202	86	40	328
3	1	70	26	6	102
4	-	-	-	-	-
5	36	20,177	1,084	-	21,261
8	-	-	-	-	-
9	10	2,928	554	-	3,482
Total	52	$ 24,229	$ 1,997	$ 73	$ 26,299
Beneficiaries					
Total	44	$ 15,410	$ 2,013	$ 126	$ 17,549
Grand Total	399	$198,811	$18,842	$1,201	$218,854

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Years of Life Expectancy after Service Retirement

Age	Male	Female
50	26.91	33.54
51	26.05	32.61
52	25.20	31.67
53	24.36	30.75
54	23.53	29.82
55	22.71	28.90
56	21.90	27.99
57	21.10	27.08
58	20.31	26.17
59	19.53	25.28
60	18.76	24.39
61	18.00	23.50
62	17.26	22.63
63	16.53	21.77
64	15.81	20.91
65	15.11	20.07
66	14.43	19.24
67	13.77	18.42
68	13.13	17.62
69	12.50	16.82
70	11.91	16.03
71	11.33	15.26
72	10.79	14.50
73	10.26	13.78
74	9.74	13.07
75	9.24	12.40
76	8.76	11.75
77	8.28	11.12
78	7.83	10.53
79	7.41	9.95
80	7.00	9.40
81	6.63	8.88
82	6.27	8.37
83	5.94	7.89
84	5.63	7.43

1971 GA (x) (y - 1)

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Years of Life Expectancy after Service Retirement (Continued)

Age	Male	Female
85	5.34	6.99
86	5.06	6.57
87	4.80	6.16
88	4.55	5.77
89	4.31	5.40
90	4.08	5.04
91	3.87	4.70
92	3.66	4.38
93	3.46	4.07
94	3.26	3.77
95	3.07	3.50
96	2.89	3.23
97	2.71	2.98
98	2.54	2.76
99	2.37	2.54
100	2.20	2.34
101	2.04	2.14
102	1.88	1.95
103	1.72	1.78
104	1.55	1.61
105	1.38	1.44
106	1.21	1.28
107	1.04	1.13
108	.88	.98
109	.71	.84
110	.50	.69
111	—	.50

1971 GA (x) (y-1)

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Years of Expectation of Life After Disability Retirement

Age	Male & Female	Age	Male & Female	Age	Male & Female
20	33.87	50	18.50	80	6.35
21	33.37	51	18.06	81	6.02
22	32.86	52	17.61	82	5.70
23	32.34	53	17.18	83	5.39
24	31.82	54	16.75	84	5.11
25	31.29	55	16.32	85	4.84
26	30.76	56	15.90	86	4.59
27	30.22	57	15.48	87	4.35
28	29.67	58	15.07	88	4.12
29	29.13	59	14.66	89	3.90
30	28.58	60	14.25	90	3.70
31	28.03	61	13.84	91	3.50
32	27.48	62	13.44	92	3.31
33	26.94	63	13.03	93	3.12
34	26.40	64	12.62	94	2.95
35	25.87	65	12.22	95	2.77
36	25.34	66	11.81	96	2.61
37	24.82	67	11.40	97	2.44
38	24.30	68	10.99	98	2.28
39	23.78	69	10.58	99	2.13
40	23.27	70	10.17	100	1.98
41	22.77	71	9.77	101	1.83
42	22.28	72	9.36	102	1.68
43	21.78	73	8.95	103	1.53
44	21.30	74	8.55	104	1.38
45	20.82	75	8.15	105	1.23
46	20.34	76	7.77	106	1.07
47	19.88	77	7.40	107	.90
48	19.41	78	7.04	108	.73
49	18.96	79	6.69	109	.50

1973 Disability Table

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Male Members
Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Disability	Vested Termination
20	.2220	.0004	.0000	.0000	.0000	.0006	.0000
21	.2110	.0004	.0000	.0000	.0000	.0006	.0000
22	.1990	.0004	.0000	.0000	.0000	.0006	.0000
23	.1880	.0004	.0000	.0000	.0000	.0006	.0000
24	.1780	.0004	.0000	.0000	.0000	.0006	.0000
25	.1690	.0004	.0002	.0000	.0002	.0006	.0011
26	.1620	.0004	.0002	.0000	.0002	.0007	.0012
27	.1500	.0004	.0002	.0000	.0002	.0007	.0013
28	.1360	.0005	.0002	.0000	.0003	.0008	.0014
29	.1230	.0005	.0003	.0000	.0003	.0008	.0015
30	.1100	.0005	.0004	.0000	.0003	.0008	.0016
31	.0970	.0005	.0004	.0000	.0004	.0009	.0018
32	.0850	.0005	.0004	.0000	.0004	.0009	.0021
33	.0730	.0006	.0004	.0000	.0005	.0009	.0024
34	.0610	.0006	.0004	.0000	.0005	.0010	.0027
35	.0500	.0006	.0005	.0000	.0005	.0010	.0031
36	.0390	.0007	.0005	.0000	.0006	.0010	.0035
37	.0300	.0007	.0006	.0000	.0006	.0010	.0042
38	.0250	.0008	.0007	.0000	.0007	.0011	.0050
39	.0210	.0008	.0008	.0000	.0008	.0011	.0056
40	.0180	.0009	.0009	.0000	.0009	.0011	.0062
41	.0160	.0009	.0009	.0000	.0010	.0012	.0070
42	.0145	.0010	.0010	.0000	.0011	.0012	.0077
43	.0130	.0010	.0011	.0000	.0013	.0013	.0075
44	.0105	.0011	.0012	.0000	.0015	.0013	.0072

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Male Members
Probabilities of Separation Prior to Retirement
(Continued)

Age	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Disability	Vested Termination
45	.0090	.0012	.0013	.0000	.0018	.0013	.0071
46	.0075	.0013	.0014	.0000	.0020	.0014	.0070
47	.0060	.0014	.0015	.0000	.0023	.0014	.0068
48	.0045	.0015	.0017	.0000	.0025	.0015	.0064
49	.0035	.0016	.0020	.0000	.0027	.0017	.0058
50	.0025	.0017	.0024	.0000	.0030	.0020	.0048
51	.0020	.0018	.0028	.0000	.0032	.0024	.0034
52	.0015	.0020	.0033	.0000	.0034	.0029	.0020
53	.0010	.0022	.0040	.0000	.0036	.0036	.0010
54	.0005	.0024	.0050	.0000	.0038	.0044	.0006
55	.0000	.0018	.0065	.2000	.0048	.0053	.0000
56	.0000	.0019	.0081	.0700	.0052	.0063	.0000
57	.0000	.0020	.0098	.0700	.0056	.0075	.0000
58	.0000	.0021	.0118	.0800	.0060	.0090	.0000
59	.0000	.0022	.0143	.0800	.0064	.0112	.0000
60	.0000	.0023	.0188	.0800	.0068	.0137	.0000
61	.0000	.0024	.0233	.0800	.0072	.0166	.0000
62	.0000	.0025	.0279	.2600	.0076	.0200	.0000
63	.0000	.0026	.0329	.0500	.0081	.0245	.0000
64	.0000	.0027	.0386	.0500	.0086	.0295	.0000
65	.0000	.0028	.0446	.5000	.0091	.0350	.0000
66	.0000	.0029	.0000	.5000	.0096	.0000	.0000
67	.0000	.0030	.0000	.5000	.0101	.0000	.0000
68	.0000	.0032	.0000	.5000	.0107	.0000	.0000
69	.0000	.0033	.0000	.5000	.0112	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Female Members
Probabilities of Separation Prior to Retirement

Age	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Disability	Vested Termination
20	.2240	.0001	.0000	.0000	.0000	.0005	.0000
21	.2120	.0001	.0000	.0000	.0000	.0005	.0000
22	.2000	.0001	.0000	.0000	.0000	.0005	.0000
23	.1890	.0001	.0000	.0000	.0000	.0005	.0000
24	.1790	.0001	.0000	.0000	.0000	.0005	.0000
25	.1700	.0001	.0004	.0000	.0001	.0005	.0030
26	.1620	.0001	.0004	.0000	.0001	.0006	.0031
27	.1550	.0001	.0004	.0000	.0001	.0006	.0033
28	.1480	.0002	.0004	.0000	.0001	.0006	.0035
29	.1410	.0002	.0004	.0000	.0001	.0007	.0037
30	.1340	.0002	.0004	.0000	.0001	.0007	.0041
31	.1270	.0002	.0004	.0000	.0001	.0007	.0044
32	.1200	.0002	.0004	.0000	.0001	.0008	.0047
33	.1120	.0003	.0004	.0000	.0001	.0008	.0050
34	.1020	.0003	.0005	.0000	.0001	.0008	.0052
35	.0930	.0003	.0005	.0000	.0001	.0008	.0053
36	.0810	.0003	.0005	.0000	.0002	.0009	.0054
37	.0700	.0003	.0005	.0000	.0002	.0009	.0055
38	.0600	.0004	.0006	.0000	.0002	.0009	.0059
39	.0510	.0004	.0006	.0000	.0003	.0009	.0064
40	.0430	.0004	.0006	.0000	.0003	.0010	.0069
41	.0350	.0004	.0007	.0000	.0003	.0010	.0074
42	.0280	.0005	.0007	.0000	.0004	.0010	.0078
43	.0220	.0005	.0008	.0000	.0005	.0011	.0076
44	.0170	.0006	.0008	.0000	.0005	.0011	.0070

CITY OF SAN JOSE

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Female Members
Probabilities of Separation Prior to Retirement
(Continued)

Age	Withdrawal	Ordinary Death	Ordinary Disability	Service	Death While Eligible	Duty Disability	Vested Termination
45	.0130	.0006	.0009	.0000	.0006	.0011	.0062
46	.0100	.0007	.0010	.0000	.0007	.0012	.0053
47	.0080	.0007	.0012	.0000	.0007	.0012	.0044
48	.0065	.0008	.0014	.0000	.0008	.0014	.0035
49	.0050	.0009	.0016	.0000	.0009	.0016	.0026
50	.0040	.0009	.0018	.0000	.0010	.0019	.0018
51	.0030	.0009	.0020	.0000	.0011	.0022	.0013
52	.0020	.0010	.0022	.0000	.0012	.0030	.0009
53	.0010	.0011	.0030	.0000	.0014	.0030	.0004
54	.0005	.0012	.0041	.0000	.0015	.0036	.0002
55	.0000	.0011	.0054	.1500	.0017	.0043	.0000
56	.0000	.0011	.0062	.0600	.0018	.0051	.0000
57	.0000	.0011	.0074	.0600	.0020	.0063	.0000
58	.0000	.0012	.0089	.0700	.0022	.0082	.0000
59	.0000	.0012	.0112	.0700	.0024	.0101	.0000
60	.0000	.0013	.0151	.0800	.0027	.0121	.0000
61	.0000	.0013	.0189	.0800	.0030	.0140	.0000
62	.0000	.0014	.0243	.2600	.0032	.0170	.0000
63	.0000	.0015	.0245	.0500	.0035	.0210	.0000
64	.0000	.0015	.0247	.0500	.0038	.0256	.0000
65	.0000	.0016	.0248	.5000	.0040	.0325	.0000
66	.0000	.0017	.0000	.5000	.0043	.0000	.0000
67	.0000	.0018	.0000	.5000	.0046	.0000	.0000
68	.0000	.0020	.0000	.5000	.0049	.0000	.0000
69	.0000	.0022	.0000	.5000	.0053	.0000	.0000
70	.0000	.0000	.0000	1.0000	.0000	.0000	.0000

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Ratio of Current Compensation to Compensation Anticipated at Age 70

Age	Study #1*	Study #2*	Study #3*
20	.051	.040	.031
21	.056	.044	.035
22	.062	.049	.039
23	.068	.054	.043
24	.074	.059	.048
25	.081	.065	.052
26	.088	.071	.058
27	.096	.078	.064
28	.105	.086	.070
29	.114	.094	.077
30	.124	.102	.084
31	.133	.110	.092
32	.143	.119	.099
33	.152	.128	.107
34	.162	.137	.115
35	.173	.146	.124
36	.184	.156	.133
37	.195	.167	.143
38	.208	.178	.153
39	.220	.190	.164
40	.234	.202	.175
41	.248	.215	.188
42	.262	.229	.201
43	.278	.244	.215
44	.294	.259	.229
45	.311	.276	.245
46	.328	.292	.260
47	.345	.309	.277
48	.363	.327	.294
49	.382	.346	.313

*Study #1 = Interest rate 6% and salary scale of merit and longevity + 4% inflation

Study #2 = Interest rate 6½% and salary scale of merit and longevity + 4½%

Study #3 = Interest rate 7% and salary scale of merit and longevity + 5% inflation

FEDERATED EMPLOYEES' RETIREMENT SYSTEM

Ratio of Current Compensation to Compensation Anticipated at Age 70
(Continued)

Age	Study #1*	Study #2*	Study #3*
50	.401	.364	.331
51	.421	.384	.351
52	.441	.405	.371
53	.463	.427	.394
54	.485	.449	.416
55	.508	.472	.440
56	.531	.497	.465
57	.556	.522	.491
58	.581	.549	.518
59	.608	.577	.547
60	.636	.607	.578
61	.666	.638	.611
62	.696	.670	.645
63	.729	.705	.682
64	.763	.741	.720
65	.798	.779	.761
66	.834	.818	.803
67	.873	.861	.848
68	.913	.905	.896
69	.956	.951	.947
70	1.000	1.000	1.000

*Study #1 = Interest rate 6% and salary scale of merit and longevity + 4% inflation.

Study #2 = Interest rate 6½% and salary scale of merit and longevity + 4½%.

Study #3 = Interest rate 7% and salary scale of merit and longevity + 5%.

CITY OF SAN JOSE
FEDERATED EMPLOYEES' RETIREMENT SYSTEM
Accounting Balance Sheet
As of June 30, 1979

		Basic Retirement Fund	Cost of Living Fund	Combined Retirement System
	ASSETS			
1.	Cash in bank	$ 101,883	$ 16,434	$ 118,317
2.	Contributions receivable:			
	a. Employee	48,748	7,069	55,817
	b. Employer	78,345	16,539	94,884
3.	Accrued interest receivable	732,152	69,946	802,098
4.	Investments (Book Value)	66,923,418	6,190,010	73,113,428
5.	Amortization discount/premium on purchased securities	57,343	5,254	62,597
6.	Total Assets	$67,941,889	$6,305,252	$ 74,247,141
	LIABILITIES AND RESERVES			
7.	Accounts payable	$ 39,068	$ 3,609	$ 42,677
8.	Employee contributions	17,094,389	978,494	18,072,883
9.	Employer contributions	20,304,707	2,738,982	23,043,689
10.	Retired reserves	28,134,992	254,040	28,389,032
11.	Undistributed earnings	2,368,733*	2,330,127*	4,698,860
12.	Total Liabilities & Reserves	$67,941,889	$6,305,252	$ 74,247,141

*For actuarial calculation of the basic and cost of living rates of contribution, consider $402,712 of "Excess Interest Earnings" as being transferred out of the Basic Retirement Fund and into the Cost of Living Fund.

CITY OF SAN JOSE

Accounting Principles Board Opinion #8

Pension Expense Provision

The accounting profession has established standards for determining pension expense for purposes of financial statements. These standards have been set up not to establish the proper funding standards for a particular pension plan but to maintain consistency, comparability, and somewhat reasonable stability of cost from year to year. In order to achieve this, the accounting profession has designed a set of standards for measuring the progress of funding the vested benefit obligation. This does not mean, of course, that the System is required to contribute what the accounting profession says but only that any difference between what is contributed by the System and what is suggested by the accounting profession's guidelines will be reflected in the financial statements. These requirements basically consist of specifying costing standards, the method for paying off the unfunded liability, the establishment of a minimum and a maximum contribution for purposes of balance sheet accruals and also maintaining the relative stability of a contribution requirement of the System from year to year.

It should be emphasized that the amount necessary to be contributed on a yearly basis is not affected by provisions of this Opinion. Compliance with Accounting Principles Board Opinion #8 does not, in and of itself, provide for an adequate funding standard as established by the actuary for the System. It is within the actuary's province and expertise to determine the effects of the costing and funding standards required to maintain the pension plan on a sound financial basis. This point is sometimes misunderstood by interested parties who are not thoroughly familiar with the technical aspects of the funding of a pension plan system.

Both private and public retirement systems are subject to the Opinion. However, the Opinion was designed with private plans in mind and might not in all cases appear reasonable for use with public plans.

The following page is designed solely for use by accountants in determining the amount to be treated by them as pension plan expense for the year under Opinion #8.

CITY OF SAN JOSE

Financial Statement Information Required By
Opinion No. 8 of the Accounting Principles Board

For the Year Beginning July 1, 1979 and ending June 30, 1980
Pension Expense Provisions and Status of Vested Liabilities*

1. As of 7/1/79 the present value of vested benefits was $97,705,400 while the assets at cost value amount to $74,247,100. The excess of the present value of vested benefits over the cost value of assets is equal to $23,458,300. The estimated value of vested benefits at the prior valuation was not calculated.

2. In our opinion, the range of provisions for the period 7/1/79 - 6/30/80 under paragraph 17 of the Opinion are as follows:

(a)	Maximum Provision	
(1)	Normal Cost	$6,664,800
(2)	10% of Liability Base	3,301,400
(3)	Total = (1) + (2)	$9,966,200
(b)	Minimum Provision	
(1)	Normal Cost	$6,664,800
(2)	40-year amortization payment based on Liability Base	2,333,900
(3)	Total = (1) + (2)	$8,998,700

The provisions shown here are for financial statement purposes and are based on the assumption that payments are made as a level percent of payroll. The contributions for the System are shown another section.

3. The changes made in the actuarial assumptions in this valuation were:

(a) The interest rate was changed from 7% to 6-1/2%.

(b) Salary scales were changed from merit, longevity plus 5% inflation per year to merit, longevity plus 4-1/2% inflation per year.

(c) The mortality after retirement was changed to provide for longer life expectancies after both service and disability retirement.

(d) From the active experience analysis, the probabilities of withdrawal (refund), service retirement and vested terminations were all increased. The probabilities of death before retirement and disability were both reduced.

(e) The refund feature of City contributions was eliminated.

(f) The amortization period for Supplemental Present Values was reduced from 60 years to 40 years.

The estimated net effect of all of the above changes in assumptions on the total pension expense was a reduction in City cost (as a percentage of salaries).

4. Actuarial gains and losses were spread through the routine application of the actuarial cost method.

5. In our opinion, the actuarial cost method and assumptions used in this valuation are acceptable under the Opinion.

*Based upon 6-1/2% interest and other assumptions used in the basic valuation.