

CITY OF SAN JOSE  
POLICE AND FIRE DEPARTMENT  
RETIREMENT PLAN

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FINAL ACTUARIAL REPORT

Prepared for the  
Board of Administration  
as of  
July 1, 1993

Revised

# W F CORROON



March 25, 1994

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Gentlemen:

Pursuant to our agreement, we have completed an actuarial valuation and experience analysis of the Police and Fire Department Retirement Plan as of July 1, 1993. We are pleased to submit our report on the results of our study.

The study was based upon unaudited employee data and financial information supplied by the Retirement Office. This report describes in detail both the results and recommendations arising from the study.

This report has been prepared in accordance with standards established by the Actuarial Standards Board. The costs, liabilities, rate of interest, and other factors used in the valuation have been determined on the basis of actuarial assumptions and methods that are reasonable, both individually and in the aggregate, taking into consideration the experience of the plan and its reasonable expectations. In combination, the actuarial assumptions represent our best estimate of the anticipated experience.

We look forward to discussing this report with the Board and wish to express our appreciation for the cooperation extended to us by the Administrator of the System and the members of his staff during the course of this study.

Respectfully submitted,

WF CORROON

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ALZ/RGM:abd

Enclosure

# CITY OF SAN JOSE POLICE AND FIRE DEPARTMENT

JULY 1, 1993

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SECTION

I

## REPORT PREFACE

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## (I) INTRODUCTION

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As requested, we have performed an experience analysis and actuarial valuation of the City of San Jose Police and Fire Department Retirement Plan as of July 1, 1993 using the latest statistical information available as to the active, inactive, and retired membership. Modifications to the noneconomic and economic actuarial assumptions were recommended in our preliminary report and were subsequently adopted by the Board of Administration at its January 6, 1994 meeting.

The results presented herein are based upon the unaudited data as supplied to W F Corroon by the Retirement Office, the benefits under the 1961 Police and Fire Department Retirement Plan, and the new actuarial assumptions.

The ratio of the assets of the Plan to its obligation for benefits earned to the date of the valuation is being provided on the Financial Accounting Standards Board Statement No. 35 (SFAS 35) basis and the Governmental Accounting Standards Board (GASB) Statement No. 5 basis. We believe that either of these ratios, if used consistently from year to year, is a good measure of the funding progress of the Plan.

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



## (ii) EXECUTIVE SUMMARY

### Demographic Data

#### Actives:

Number

1,785

Payroll (includes holiday and EMT pay)

\$ 98,831,000 *(8,064,000)*

#### Inactives:

Number

28

#### Retirees:

Number

700

Annual Pension Roll (includes permanent cost of living)

\$ 19,390,000

### Net Assets\*

Five-Year Smoothed Market Value (Actuarial Value of Assets)

\$ 721,229,000

Book Value

730,149,000

Market Value

792,354,000

### Funded Status

GASB #5 Pension Benefit Obligation (PBO)

\$ 879,110,000 *+31,980,000*

Ratio of Actuarial Value of Assets to PBO

82.0%

### Contribution Rates\*\*

	CITY	EMPLOYEES
July 1, 1991 Valuation Contributions		
Rates	20.91%	9.39%
Annual Amount (based on July 1, 1993 Payroll)	\$ 20,666,000	\$ 9,280,000
Current Contributions***		
Rates	22.99%	9.42%
Annual Amount (based on July 1, 1993 Payroll)	\$ 22,721,000	\$ 9,310,000
Recommended Contributions		
Rates	22.24%	9.36%
Annual Amount (based on July 1, 1993 Payroll)	\$ 21,981,000	\$ 9,251,000

*Seabank went up.*

\*Exclude accounts payable.

\*\*Includes costs for retiree medical and dental benefits.

\*\*\*Includes costs resulting from special studies performed by the prior actuary subsequent to the July 1, 1991 valuation.



### (iii) SUMMARY OF STATISTICAL INFORMATION

Results for the July 1, 1993 actuarial valuation of the Plan are based on the following data. For comparative purposes, we also show the figures as of July 1, 1991. Please note that the 1991 census information shown below was extracted from a data tape that the prior actuary provided to us. The 1991 data we received varies somewhat from the information shown in the July 1, 1991 actuarial report.

	July 1, 1991	July 1, 1993	Percentage Increase (Decrease) During the Two-Year Period
<b>Active Members</b>			
Number	1,785	1,785	0%
Total annual payroll	\$ 87,731,000	\$ 98,831,000	13%
Average monthly salary	\$ 4,096	\$ 4,614	13%
<b>Retired Members</b>			
Number	589	700	19%
Total annual pension roll (basic)	N/A	\$ 15,044,000	N/A
Average monthly allowance (basic)	N/A	\$ 1,791	N/A
Total annual pension roll * (basic and COL)	\$ 13,374,000	\$ 19,390,000	45%
Average monthly allowance (basic and COL)	\$ 1,892	\$ 2,308	22%
<b>Inactive Vested Members</b>			
Number	21	28	33%
<b>Net Assets **</b>			
Five-Year Smoothed Market Value	\$ 576,256,000	\$ 721,229,000	25%
Book Value	\$ 565,216,000	\$ 730,149,000	29%
Market Value	\$ 596,286,000	\$ 792,354,000	33%

\* Includes permanent cost of living benefits paid outside of the plan.

\*\* Includes reserves for medical and dental benefits.



SECTION

II

## EXPERIENCE ANALYSIS

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## (i) NONECONOMIC ASSUMPTIONS

### ***Probabilities of Separation from Service Prior to Retirement***

A comparison was made between the number of members actually leaving the Plan because of withdrawal, service retirement, disability retirement, and death over the last two years with the number expected to do so by application of the current actuarial assumptions.

Below we discuss the findings of our study and the recommended changes that were adopted by the Board of Administration at its January 6, 1994 meeting.

### ***Withdrawal***

Our study showed that the actual number of withdrawals, both vested and nonvested, exceeded the number expected, as shown below.

	Actual	Expected	A/E Ratio**
Withdrawal	56*	35.6	157%

\* Includes 12 vested terminations.

\*\*Ratio of actual to expected terminations (Under 100% indicates fewer terminations than expected. Over 100% indicates more terminations than expected.)

We increased the probabilities of withdrawal from ages 25 to 34 to reflect the actual experience for those ages. These increases in rates have the effect of lowering the A/E ratio to 138%. Barring any other changes, an increase in the expected number of terminations generally reduces System costs.

### ***Service Retirement***

We found that the actual number of service retirements greatly exceeded the number of service retirements expected by applying the probabilities used in the last valuation. However, in 1992, the System's prior actuary adjusted the probabilities of service retirement by age to reflect a member's eligibility to retire with unreduced benefits at age 50 with 25 years of service. Service retirement probabilities were increased between ages 50 and 54 to anticipate the additional expected retirees in that age bracket. We found that over the two year experience period the actual number of retirements still exceeded the number expected.

	Actual	Expected	A/E Ratio	Modified Expected	Modified A/E Ratio
Service Retirement	42	20.7	203%	36.4	115%

Due to the expected diminishment of the "catch up" effect associated with any change in service retirement eligibility requirements, we felt that no changes should be made to the rates of service retirement at this time.



### ***Disability Retirement***

Our experience analysis showed that the actual numbers of disability retirements, both service-connected and nonservice-connected, were less than expected. It should be noted that the prior actuary also decreased the probabilities of service-connected disability for ages 51 to 54 (no change for age 50) to account for the expected increase in earlier service retirements.

Below we show the results of our study of disability retirements, based on the 1991 valuation probabilities and on the modified assumptions. For comparative purposes, we have combined the results of the service-connected and nonservice-connected disabilities, although the rates of termination differ between the two types of disability. It should be noted that the figures shown below are heavily weighted toward service-connected disabilities.

	<u>Actual</u>	<u>Expected</u>	<u>A/E Ratio</u>	<u>Modified Expected</u>	<u>Modified A/E Ratio</u>
Disability Retirement	75*	101.7	74%	98.1	76%

\* All service-connected.

We recommended that the current rates of disability, both service-connected and nonservice-connected, continue to be used until it can be demonstrated that the lower number of disability retirements is permanent.

### ***Death Before Retirement***

The actual numbers of deaths, both service-connected and nonservice-connected, were less than expected. Below we show the combined results of our study for deaths before retirement.

	<u>Actual</u>	<u>Expected</u>	<u>A/E Ratio</u>
Death Before Retirement	2	6.4	31%

Because of the low number of observations available to test this assumption and its relatively small impact on costs, we recommended that the current rates of death be continued.

### ***Summary of Probabilities of Separation***

The rates of separation from active service have been discussed in the foregoing paragraphs. However, it is difficult to obtain the meaning of the probabilities of separation by examining each one of them separately. This is because each of the probabilities depends on the others. For example, if there is more turnover, there will be fewer retirements. Because of this interdependency, it is helpful to develop another table which takes this into account. Exhibit 1 at the end of this section shows the expected number of present active members who will eventually separate from the Plan for each of the various causes of termination, based on the 1991 valuation assumptions, the 1992 modified special study assumptions, and the 1993 recommended changes.



In Exhibit 2, we have used these results to graphically display the percentage of members to separate, which makes it easier to visualize the meaning of the probabilities of separation. For purposes of this graph, we have combined the following:

- service-connected death and nonservice-connected death into Death, and
- service-connected disability and nonservice-connected disability into Disability

#### ***Mortality After Service Retirement***

At the time of the last actuarial study of the Retirement Plan, the 1983 Group Annuity Mortality Table was used to predict mortality after service retirement for both members and survivors. The male version of the table was used for members, while the female version of the table was used for survivors.

The expected numbers of retired deaths during the current investigation period are shown below.

	Actual	Expected	A/E Ratio
Members	6	3.7	162%
Survivors	5	4.4	114%

Due to the small size of the group, we recommended that the 1983 Group Annuity Mortality Table continue to be used to predict mortality after service retirement for members (male version of the table, no setback) and survivors (female version of the table, no setback).

The life expectancies under this table for members retired for service and survivors are as follows:

Years of Life Expectancy Based on Current Mortality Table		
Age	Members	Survivors
50	29.2	34.9
60	20.6	25.7
70	13.2	17.1
80	7.6	10.2

For a more complete listing of life expectancies after service retirement for members and survivors, see Section IV (viii).

#### ***Mortality After Disability Retirement***

At the time of the last actuarial study, the 1982-86 California PERS Experience Study for Disability Mortality was used to measure mortality after disability retirement.

For the two years under investigation, the expected number of deaths of retired disabled members was 18.8 while the actual number of deaths was 15 (an A/E ratio of 80%).



The life expectancies under this table for members retired for disability are as follows:

Years of Life Expectancy Based on Current Mortality Table	
Age	Members
50	25.9
60	18.4
70	12.2

We recommended that the 1982-86 California PERS Experience Study for Disability Mortality continue to be used to predict mortality after disability retirement.

For a more complete listing of life expectancies after disability retirement, see Section IV (ix).

**The Board of Administration adopted all of the recommended noneconomic actuarial assumptions described above at its January 6, 1994 meeting.**



## Exhibit 1

### EXPECTED NUMBER TO EVENTUALLY SEPARATE FOR INDICATED CAUSE

(Based on 1991 Actuarial Assumptions)

Present Age	Number of Actives	Withdrawal	Ordinary Death	Ordinary Disability	Service	Duty Death	Duty Disability
20-24	16	5	0	0	2	0	9
25-29	192	36	4	2	28	3	119
30-34	306	36	6	3	48	5	208
35-39	326	18	6	3	56	6	237
40-44	336	6	6	3	62	5	254
45-49	355	1	5	2	74	4	269
50-54	199	0	2	0	53	2	142
55-59	50	0	1	0	17	0	32
60-64	5	0	0	0	2	0	3
65 & OVER	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>1,785</b>	<b>102</b>	<b>30</b>	<b>13</b>	<b>342</b>	<b>25</b>	<b>1,273</b>
		(5.7%)	(1.7%)	(0.7%)	(19.2%)	(1.4%)	(71.3%)

(Based on 1992 Modified Actuarial Assumptions)

Present Age	Number of Actives	Withdrawal	Ordinary Death	Ordinary Disability	Service	Duty Death	Duty Disability
20-24	16	5	0	0	3	0	8
25-29	192	36	4	2	41	3	106
30-34	306	36	6	3	72	5	184
35-39	326	18	6	3	84	5	210
40-44	336	6	5	3	93	5	224
45-49	355	1	4	2	111	4	233
50-54	199	0	2	0	75	2	120
55-59	50	0	1	0	17	0	32
60-64	5	0	0	0	2	0	3
65 & OVER	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>1,785</b>	<b>102</b>	<b>28</b>	<b>13</b>	<b>498</b>	<b>24</b>	<b>1,120</b>
		(5.7%)	(1.6%)	(0.7%)	(27.9%)	(1.3%)	(62.8%)

(Based on 1993 New Actuarial Assumptions)

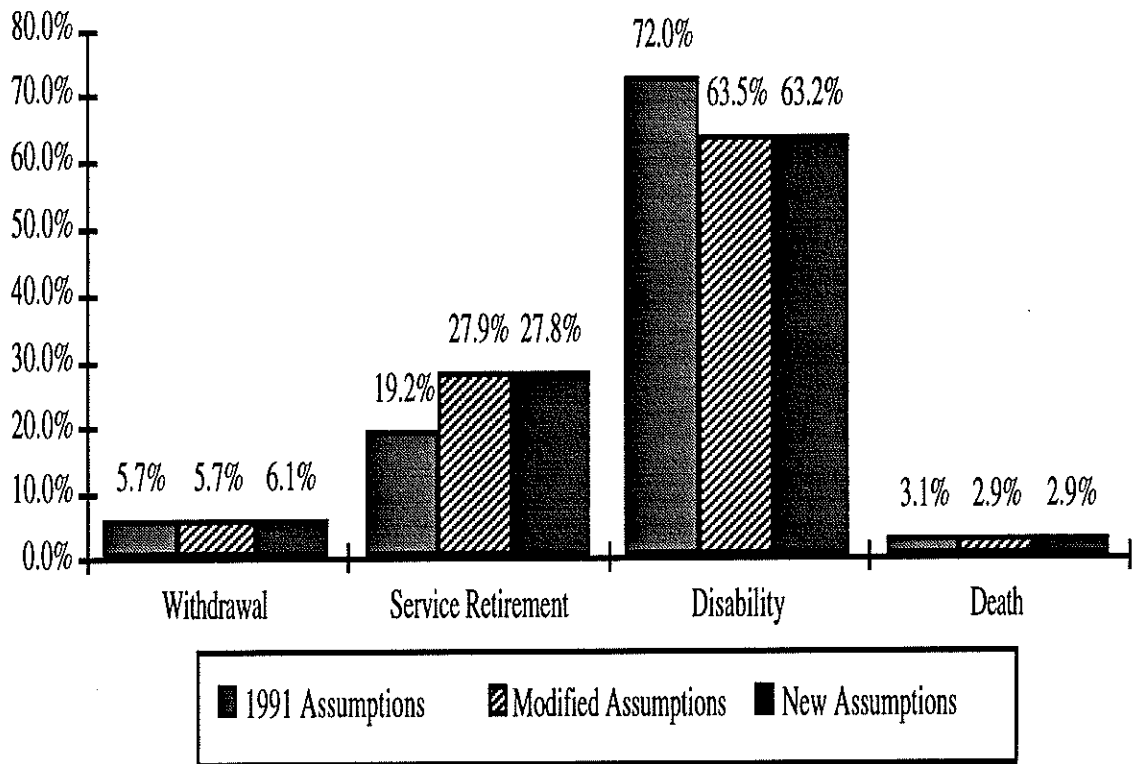
Present Age	Number of Actives	Withdrawal	Ordinary Death	Ordinary Disability	Service	Duty Death	Duty Disability
20-24	16	6	0	0	3	0	7
25-29	192	41	4	2	40	3	102
30-34	306	37	6	3	72	5	183
35-39	326	18	6	3	84	5	210
40-44	336	6	5	3	93	5	224
45-49	355	1	4	2	111	4	233
50-54	199	0	2	0	75	2	120
55-59	50	0	1	0	17	0	32
60-64	5	0	0	0	2	0	3
65 & OVER	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>1,785</b>	<b>109</b>	<b>28</b>	<b>13</b>	<b>497</b>	<b>24</b>	<b>1,114</b>
		(6.1%)	(1.6%)	(0.7%)	(27.8%)	(1.3%)	(62.5%)



## Exhibit 2

### EXPECTED PERCENTAGE TO EVENTUALLY SEPARATE FOR INDICATED CAUSE

(Based on 1991, 1992 Modified and 1993 New Actuarial Assumptions)



## (ii) ECONOMIC ASSUMPTIONS

### INTEREST RATE ASSUMPTIONS

To assist in the selection of appropriate interest assumptions for use in the actuarial valuation, we studied the recent history of the Retirement Fund's investment returns, the assumptions utilized by other employers, and the assumptions utilized by other police and fire retirement systems.

#### *Historical Return on Investments*

The rates of return (net of expenses) on the Fund's investments over the last three years at book, market, and five-year smoothed market value are shown in the following table:

Fiscal Year	Rate of Return at Book Value	Rate of Return at Market Value	Rate of Return at Five-Year Smoothed Market Value
1990/91	7.67%	7.65%	8.51%
1991/92	9.15%	12.57%	8.83%
1992/93	13.56%	13.60%	10.40%
3-year average	10.13%	11.27%	9.25%

#### *Assumptions Utilized by Other Employers*

Results of a survey of interest rate assumptions utilized by California public retirement systems are shown in Table 1.

**Table 1**

Percentage of Retirement Plans  
Utilizing Interest Rate Assumptions Within Range

Interest Rate Range	State Controllers Report on California Public Retirement Systems (Fiscal Year 1991/92)
Under 7%	8%
7% - 7.99%	17%
8% - 8.99%	72%
9% and over	3%
Average rate	7.97%

The average interest rate assumptions used by the 1937 Act Counties is 8.21%. PERS presently utilizes a rate of 8.75%.



In Table 2 below, we show the current interest rate assumptions utilized by other municipal police and fire retirement systems.

**Table 2**

Interest Rate Assumptions Utilized by  
Police and Fire Retirement Systems

Retirement System	Interest Rate Assumption *
San Jose Police and Fire	8.00%
Alameda City Police and Fire	8.50%
Fresno City Police and Fire	8.00%
Los Angeles City Police and Fire	8.50%
Oakland City Police and Fire	8.50%
San Diego City Employees (includes Safety members)	8.00%
San Francisco Employees (includes Safety members)	8.00%

\* Source: California State Controller's Report for Fiscal Year 1991/92.

#### ***Development of Investment Return Assumption***

Economic theory holds that the total nominal rate of return on an investment is comprised of two components:

- Inflation
- Real rate of return

#### ***Inflation***

In order for an investment to be marketable, it must be expected to provide a hedge against inflation. In addition, there must be some premium reflective of the risk that the investor takes in holding the security.

Inflation also affects benefit amounts in the form of salary increases and cost of living adjustments.

Inflationary salary and wage increases are granted to maintain the purchasing power of salaries and wages earned by employees over time. Since retirement benefits are linked to compensation, inflationary increases affect the projected amount of benefit an employee will receive upon retirement.

Pension benefits for members are automatically adjusted for at least a portion of the increases that occur in the Consumer Price Index (CPI) after retirement. These cost-of-living adjustments directly impact the amount of benefits paid from the System, thus they must be anticipated in the actuarial valuation process.



As an illustration of the historical inflation rates exhibited by the U. S. economy, the table shown below provides the average compound rates of increase in the Consumer Price Index through 1992 over selected periods.

**Table 3**

Historic CPI Increases			
Period	Average	Period	Average
Last 90 Years	3.3%	Last 30 Years	5.3%
Last 70 Years	3.2%	Last 20 Years	6.3%
Last 50 Years	4.4%	Last 10 Years	3.8%

The inflation assumptions used by the 1937 Act Counties are shown in Table 4. As can be seen in Table 4, the average assumption is 4.96%.

**Table 4**

Current Long-Term Inflation Assumptions Used by 1937 Act Counties  
(As of December, 1993)

Retirement System	Assumed Inflation	Retirement System	Assumed Inflation
Alameda	5.00%	Sacramento	5.00%
Contra Costa	5.25%	San Bernardino	5.00%
Fresno	5.00%	San Diego	5.00%
Imperial	5.00%	San Joaquin	5.00%
Kern	4.00%	San Mateo	5.00%
Los Angeles	5.00%	Santa Barbara	5.00%
Marin	4.50%	Sonoma	5.00%
Mendocino	5.00%	Stanislaus	5.00%
Merced	5.25%	Tulare	5.00%
Orange	5.00%	Ventura	5.25%
		<b>Average</b>	<b>4.96%</b>

PERS presently utilizes a rate of 4.50%. We recommended that the current 5% inflation assumption be maintained.

#### *Rate of Return*

In order to develop an appropriate real (inflation free) rate of return, it is first necessary to determine how assets will be allocated among the various investment classes: stocks, bonds, real estate, and cash equivalents.

The Board's target and current asset allocations are shown in Table 5.



**Table 5**

Asset Allocation as of 6/30/93

	Target	Current*
Stocks	45%	36%
Bonds	45%	53%
Real Estate	10%	5%
Cash	0%	6%

\*At Market Value. Assumes loaned securities are held in the same proportion as unloaned securities.

Many empirical studies have been carried out to measure historical real rates of return on various types of investments. One of the most notable is that by Roger Ibbotson and Rex A. Sinquefeld, titled Stocks, Bonds and Inflation: Simulations of the Future. Table 6 provides the Ibbotson - Sinquefeld measure of the real rates of return for the years between 1926 and 1992. Investment consulting firms utilize this and other studies to derive expected long-term real rates of return for use in asset allocation models. These models serve as an aid to retirement plan fiduciaries in determining what proportion of the plans' investment portfolio to place in various classes of securities.

**Table 6**Ibbotson - Sinquefeld  
Real Rates of Return of Investments

	(1926 - 1992)
Stocks	7.0%
Long-term government bonds	1.7%
Long-term corporate bonds	2.3%
Treasury bills	0.5%

Applying the target asset allocation (Table 5) to the information in Table 6 results in a real rate of return of approximately 4.4% (assuming 4% real rate of return for real estate and equal percentages of corporate and government bonds). There are a number of additional factors which must be considered before arriving at an appropriate level for actuarial valuation purposes. These are discussed below:

**Expenses for Professional Services:** Professional fees and administrative expenses (up to 0.07% of assets for administrative expenses) of the Fund are being paid from Fund earnings. Annual expenses amount to approximately 0.3% of the Fund values.

**Variations in Return Rates:** Annual real rates of return have varied substantially over the years. For example, even if we expect the averages displayed in Table 6 to be a reasonable estimate of real returns in the future, we know there is some likelihood that future real rates will fall below historical averages.



In order to quantify this, one would need to know what is referred to statistically as the standard error of the estimate. As an approximation of this quantity, we have utilized historical information available as to the expected variation in real rates of return. If we make certain assumptions about the statistical nature of the average real returns and consider the relatively high concentration of stock in the target allocation, the results are that in order to be about 75% certain that the actual return is no less than our estimate, it would be necessary to use a value about 1% below that derived above. It should be noted that this derived margin is only approximate since the global economy is a complex, dynamic system.

**Adherence to Target Asset Allocation:** Variations in the actual versus the target asset allocation will occur from time to time. For example, market conditions may cause cash holdings to increase for some period. In general, we expect that as long as such variations generally arise as part of the investment managers' short term strategy to maximize returns, no additional margin needs to be built into the determination of the System's expected real rate of return. Looking back to Table 5, it is clear that there is a fairly wide disparity between the current asset allocation and the target. If we utilize the current asset allocation with the information in Table 6, we arrive at a real rate of return of 3.8%. The margin necessary to obtain a 75% confidence level would be closer to 0.9% rather than the 1% mentioned earlier.

Based on the above analysis and survey information, we concluded that a real rate of return of 3% is appropriate for use with the 5% inflation rate, for a total return of 8%, assuming that the Board adheres to the target asset allocation.

### ***Salary Scale Assumption***

The salary scale assumption is comprised of the following two components:

- Inflation
- Merit and Longevity

### ***Inflation***

In addition to being an important component of interest earnings, inflation also causes members' salaries and the cost-of-living to rise.

The average salary increases and the Consumer Price Index (CPI) increases, based on the All Urban Consumer indices for June, during the last three years were as follows:

Fiscal Year	Weighted Average Salary Increase	CPI Increase (San Francisco - Oakland - San Jose Area)
1990/91	6.8%*	4.6%
1991/92	8.1%**	3.1%
1992/93	8.1%**	3.0%

\* Based on information provided by the Plan's prior actuary. Assumes equal increases over a two-year period.

\*\* Assumes equal increases over the two-year period between actuarial studies. Includes increases due to inclusion of holiday pay and EMT pay.



### *Merit and Longevity Increases*

The second component of the salary scale assumption is merit and longevity. Employees generally receive increases in excess of inflation over their careers as a result of promotions and advances in their pay grades.

Following are the nominal annual salary increases received by employees over the two years ending June 30, 1993. These increases do not include holiday pay and EMT pay since these components constitute a one-time increase only.

Employees with less than 5 years of service: 8.72%

Employees with 5 or more years of service:

Age Bracket	Annual Increase
25-29	6.99%
30-34	4.53%
35-39	4.06%
40-44	3.99%
45-49	3.62%
50-54	3.52%
55-59	3.75%
60-64	3.26%

The average annual increase in the San Francisco - Oakland - San Jose CPI over this two year period was 3.0%. Netting this from the above nominal increases yields the following real wage increases:

Employees with less than 5 years of service: 5.72%

Employees with 5 or more years of service:

Age Bracket	Annual Increase
25-29	3.99%
30-34	1.53%
35-39	1.06%
40-44	0.99%
45-49	0.62%
50-54	0.52%
55-59	0.75%
60-64	0.26%

In light of this experience, the merit and longevity assumption was modified as detailed at the end of this section.

### Actuarial Value of Assets

A modified book value of the Fund's assets has been used for purposes of calculating the required contribution rates. Under this approach, more recognition is given each year to total earnings of the Fund.

The approach used by your Plan is to spread each year's total gains and losses over five years. In other words, in the first year, only 20% of total gains and losses are to be recognized. The remaining 80% are deferred and will be recognized over the next 4 years in equal installments. After 5 years the total gain or loss will be recognized.

Phasing in realized and unrealized gains and losses over a five-year period decreases fluctuation in the valuation assets from year to year. This helps to ensure stability in the contribution rates.

The modified assets, which we called the Actuarial Value, were arrived at as follows:

1. Total Gains (Losses)

Plan Year Ending June 30	Change in Total Gains/(Losses)*			Number of Years Remaining in Deferral Period as of 6/30/93	Total Gains/ (Losses) Deferred as of 6/30/93
	Unrealized	Realized	20% of Unrealized and Realized		
Up to 1989	\$ (12,340,000)	\$ 34,877,000	\$ 4,507,000	0	\$ 0
1990	6,961,000	6,050,000	2,602,000	1	2,602,000
1991	2,101,000	3,268,000	1,074,000	2	2,148,000
1992	23,464,000	14,695,000	7,632,000	3	22,895,000
1993	7,671,000	46,679,000	10,870,000	4	43,480,000

2. Total Gains (Losses) Deferred as of June 30, 1993	\$ 71,125,000
3. Market Value of Investments as of June 30, 1993	\$ 792,811,000
4. Actuarial Value of Investments (3. - 2.)	\$ 721,686,000
5. Net Book Value of Assets	\$ 730,149,000
6. Investments:	
a. Cost Value	\$ 730,606,000
b. Actuarial Value (4.)	\$ 721,686,000
7. Net Actuarial Value of Assets (5. - 6a. + 6b.)	\$ 721,229,000
8. Retiree Health Insurance Reserves at Actuarial Value:	
a. Medical	\$ 6,010,000
b. Dental	\$ 627,000
9. Actuarial Value of Assets Used for Pension Contribution Rates (7. - 8a. - 8b.)	\$ 714,592,000

The actuarial value of assets is lower than the book value as of June 30, 1993 due to only 20% of the large realized gain during 1992-93 of \$46,679,000 being recognized under this method.



### **Summary of Interest Rate and Salary Scale Recommendations**

In summary, we recommended the use of the following economic assumptions for the System's July 1, 1993 valuation:

- Interest Rate    –    8.0%
- Inflation Rate   –    5.0%
- Salary Scale     –    The total salary scale assumption, based on age and years of service, is illustrated below: (Note: the current salary increase assumption includes 0.5% for "productivity and standard of living." The recommended assumption did not include this component.)

	Current Salary Increase Assumption	Recommended Salary Increase Assumption
First 5 years of service	10.0%	10.0%
After 5 years of service:		
Ages 25 – 29	7.0%	8.5%
Ages 30 – 34	6.8%	7.0%
Ages 35 – 39	6.6%	6.5%
Ages 40 – 44	6.4%	6.0%
Ages 45 – 49	6.2%	6.0%
Ages 50 – 54	6.0%	5.5%
Ages 55 – 59	5.8%	5.5%
Ages 60 and over	5.5%	5.0%

**The Board of Administration adopted all of the recommended economic actuarial assumptions described above at its January 6, 1994 meeting.**



SECTION  
III

VALUATION RESULTS



## (i) CONTRIBUTION RATES

Retirement contribution requirements are divided into two major categories: City and Employee contribution rates. The basic and cost of living future pension liabilities (Normal Cost) under the System are shared by the City and the employees on an 8:3 ratio. The City pays 100% of the unfunded liability. Retiree medical insurance contribution rates are shared equally between the City and employees, while the dental rates are shared on a 3:1 ratio.

A comparison of City and employee total basic, cost of living and medical and dental insurance contribution rates follows. This comparison shows rates and annual dollar amounts currently contributed, as well as those resulting from our study based on the new economic and noneconomic actuarial assumptions.

	Retirement Basic & Cost of Living and Medical & Dental Insurance Contribution Rates			
	CITY		EMPLOYEE	
	% of Payroll	Annual Amount*	% of Payroll	Annual Amount *
<b>July 1, 1991 Valuation Rates @ 8% interest and 5% inflation</b>	20.91%	\$ 20,666,000	9.39%	\$ 9,280,000
<b>Current Rates @ 8% interest and 5% inflation**</b>	22.99%	\$ 22,721,000	9.42%	\$ 9,310,000
<b>Recalculated Rates @ 8% interest and 5% inflation</b>	22.24%	\$ 21,981,000	9.36%	\$ 9,251,000

\*Based on June 30, 1993 total payroll of \$ 98,831,000.

\*\*Includes costs resulting from special studies performed by the prior actuary subsequent to the July 1, 1991 valuation.

In comparing the current rates with the recalculated rates resulting from the new study, we note a decrease in both the City and the employee rate. The main reasons for the decrease in the rates are as follows:

- higher than expected return on assets, which lowered the City rate,
- higher withdrawal probabilities, which accounted for decreases in the City and employee rates, and
- lower total salary scale assumption, which lowered both the City and the employee rates.

These decreases were offset somewhat by the inclusion of holiday pay and EMT pay in the final average salary definition and increases to the medical and dental rates for retiree health insurance.



The determination of the City's basic and cost of living contribution rates is made according to the Entry Age Normal Cost actuarial funding method. Under this method, part of the cost of benefits (normal cost) is being paid over the future working lifetimes of the members, and part (the unfunded actuarial accrued liability (UAAL)) is being amortized over a fixed number of years. The UAAL is amortized over a 40-year period, with 24 years remaining from the valuation date. Member basic and cost of living contributions are payable over the employees' future working lifetimes.

The medical insurance premium benefits are being partially funded over the next ten years and the cost is shared equally between the City and the employees. The dental insurance premium benefit is also being funded over the next ten years with the City and employees paying the total cost on a 3:1 ratio.

The Board adopted the recommended economic and noneconomic actuarial assumptions. As a result, the costs and liabilities shown in this report were developed only under the new assumptions.

#### **Recommended Contribution Rates**

We recommend the following contribution rates be adopted.

	Total Contribution Rates			
	CITY		EMPLOYEE	
	% of Payroll	Annual Amount*	% of Payroll	Annual Amount
<b>Recommended Rates @ 8% interest and 5% inflation</b>				
a. Basic				
Normal Cost	14.49%	\$ 14,321,000	5.43%	\$ 5,367,000
UAL	(2.80)	(2,767,000)	0.00	0
b. COL				
Normal Cost	5.49	5,426,000	2.06	2,036,000
UAL	2.89	2,856,000	0.00	0
c. Medical Insurance	1.72	1,700,000	1.72	1,700,000
d. Dental Insurance	0.45	445,000	0.15	148,000
e. Total	22.24%	\$ 21,981,000	9.36%	\$ 9,251,000

\*Based on June 30, 1993 total payroll of \$ 98,831,000.

Tables A and B on the following pages show the procedure used to arrive at the medical and dental insurance premium costs.



**TABLE A**

**RETIREE HEALTH INSURANCE 10-YEAR COST PROJECTION**

**MEDICAL BENEFITS**

	(1)	(2)	(3)	(4)	(5)	(6)
					<u>Cost as a Percentage of Payroll</u>	
<u>Year</u>	<u>Annual Cost Per Retiree</u>	<u>Number of Insured Retirees</u>	<u>Annual Cost</u>	<u>Total Covered Payroll</u>	<u>Actual Percentage</u>	<u>Level Percentage</u>
			(1) x (2)		(3) / (4)	[(7) - (8)] / (9)
7/1/93	\$3,637	667 *	\$2,426,000	\$98,831,000	2.45%	3.44%
7/1/94	4,073	714	2,907,000	103,773,000	2.80%	3.44%
7/1/95	4,521	764	3,452,000	108,962,000	3.17%	3.44%
7/1/96	4,973	817	4,063,000	114,410,000	3.55%	3.44%
7/1/97	5,421	874	4,740,000	120,131,000	3.95%	3.44%
7/1/98	5,855	936	5,477,000	126,138,000	4.34%	3.44%
7/1/99	6,323	1,001	6,329,000	132,445,000	4.78%	3.44%
7/1/00	6,829	1,071	7,314,000	139,067,000	5.26%	3.44%
7/1/01	7,375	1,146	8,452,000	146,020,000	5.79%	3.44%
7/1/02	7,965	1,226	9,767,000	153,321,000	6.37%	3.44%

(7) Present Value of Future Benefits: \$34,856,000

(8) Estimated Reserve of Assets  
Available for Medical Premiums: \$6,010,000

(9) Present Value of Future Salaries: \$840,526,000

**Actuarial Assumptions**

Investment Yield: 8.00%  
Growth in Covered Payroll: 5.00%  
Growth in Retiree Rolls: 7.00%  
Funding: 10 year

\* Average cost as of July 1, 1993



**TABLE B**  
**RETIREE HEALTH INSURANCE 10-YEAR COST PROJECTION**  
**DENTAL BENEFITS**

(1)	(2)	(3)	(4)	(5)	(6)
Year	Annual Cost Per Retiree	Number of Insured Retirees	Annual Cost (1) x (2)	Total Covered Payroll	Cost as a Percentage of Payroll
					Actual Percentage (3) / (4)
					Level Percentage [(7) - (8)] / (9)
7/1/93	\$636	681 *	\$433,000	\$98,831,000	0.44%
7/1/94	681	729	496,000	103,773,000	0.48%
7/1/95	729	780	568,000	108,962,000	0.52%
7/1/96	780	834	651,000	114,410,000	0.57%
7/1/97	835	893	745,000	120,131,000	0.62%
7/1/98	893	955	853,000	126,138,000	0.68%
7/1/99	956	1,022	977,000	132,445,000	0.74%
7/1/00	1,023	1,094	1,119,000	139,067,000	0.80%
7/1/01	1,095	1,170	1,281,000	146,020,000	0.88%
7/1/02	1,172	1,252	1,467,000	153,321,000	0.96%

(7) Present Value of Future Benefits: \$5,503,000

(8) Estimated Reserve of Assets  
 Available for Dental Premiums: \$627,000

(9) Present Value of Future Salaries: \$840,526,000

**Actuarial Assumptions**

Investment Yield: 8.00%  
 Growth in Covered Payroll: 5.00%  
 Growth in Retiree Rolls: 7.00%  
 Funding: 10 year

\* Average cost as of July 1, 1993



## (ii) FUNDING PROGRESS OF THE SYSTEM

A comparison of the measurement of the funding progress of the Plan in successive valuations is an important criterion for determining the soundness of a pension system. There are various methods of measuring the progress of the System's funding, but we believe the most useful measure is the ratio of the system's assets to its obligations for benefits earned to date. Unless amendments are made to the Plan, actuarial assumptions are strengthened, or actuarial losses are incurred, the assets typically increase at a greater rate than the liabilities for benefits earned to date. This will have the effect of increasing funding progress ratios in future years.

### ***FASB Statement No. 35 - "Plan Continuation" Assumption Without Future Salary Increases***

We have determined a funding ratio based on the actuarial liabilities as defined by the Financial Accounting Standards Board No. 35 (SFAS 35). The SFAS 35 liabilities assume an ongoing plan, that is, they include future withdrawals, deaths and disability retirements. Future projected salary increases are *not* included in these figures. The accumulated benefit obligation includes all liabilities of the System for basic and cost-of-living benefits granted to members and survivors already on the pension roll. All liabilities of active and vested inactive members are included for every year of service already earned as of the valuation date and assume immediate 100% vesting.

The SFAS 35 liabilities and funding ratios as of June 30, 1993, based on the 8% interest rate assumption, are shown below. Please note that liabilities shown reflect the recommended changes in noneconomic actuarial assumptions.

#### (1) Accumulated Benefit Obligation:

a. Current Retirees and Survivors	\$ 256,266,000
b. Terminated Vested Participants	4,060,000
c. Active Participants' Accumulated Contributions	85,915,000
d. Active Participants Employer Financed Portion:	
Vested	181,873,000
Nonvested	37,736,000
e. Other	<u>6,637,000</u>
Total Accumulated Benefit Obligation	\$ 572,487,000

#### (2) Net Assets at:\*

a. Book Value	\$ 730,149,000
b. Actuarial Value	\$ 721,229,000
c. Market Value	\$ 792,354,000

#### (3) Funding Ratio at:

a. Book Value	127.5%
b. Actuarial Value	126.0%
c. Market Value	138.4%

\*Includes estimated health and dental reserves.



### GASB #5 - "Plan Continuation" Assumption With Future Salary Increases

We have determined a funding ratio based on the actuarial liabilities as defined by the Governmental Accounting Standards Board Statement No. 5 (GASB #5). The GASB #5 liabilities assume an ongoing plan, that is, they include future withdrawals, deaths and disability retirements. In addition, *future projected salary increases* are included in these figures. The pension benefit obligation includes all liabilities of the System for basic and cost-of-living benefits granted to members and survivors already on the pension roll. All liabilities of active and vested inactive members are included for every year of service already earned at the valuation date and assume immediate 100% vesting.

The GASB #5 liabilities and funding ratios as of June 30, 1991 and 1993, based on the 8% interest and 5% inflation assumptions, are shown below. Please note that the liabilities shown as of June 30, 1993 reflect the recommended changes in noneconomic actuarial assumptions and salary scale assumption.

		8% Interest and 5% Inflation	
		June 30, 1991	June 30, 1993
(1) Pension Benefit Obligation:			
a. Current Retirees and Survivors	\$	166,074,000	\$ 256,266,000
b. Terminated Vested Participants		3,096,000	4,060,000
c. Active Participants' Accumulated Contributions		73,692,000	85,915,000
d. Active Participants' Employer Financed Portion:			
Vested		278,840,000	322,832,000
Nonvested.		29,048,000	43,809,000
e. Other		0	6,637,000
Total Pension Benefit Obligation	\$	550,750,000	\$ 719,519,000
(2) Net Assets at:			
a. Book Value	\$	562,318,000	\$ 730,149,000
b. Actuarial Value	\$	573,358,000	\$ 721,229,000
c. Market Value	\$	593,388,000	\$ 792,354,000
(3) Funding Ratio at:			
a. Book Value		102.1%	101.5%
b. Actuarial Value		104.1%	100.2%
c. Market Value		107.7%	110.1%

\*The 1991 figures exclude estimated health and dental reserves, whereas the 1993 figures include these amounts. The 1991 liabilities also exclude benefit improvements granted after that date.

It should be noted that the June 30, 1991 GASB #5 figures were calculated by the prior actuary. Both calculations prorate the duty disability benefit using service to date divided by service projected to expected disability date.

Note that a funding ratio of 100% or more does not mean that future contributions are unnecessary. It simply reflects the difference in the funding methodology used in financing the Plan and the GASB #5 reporting requirements.



56h INSERT

**GASB #5 - "Plan Continuation" Assumption With Future Salary Increases**

We have determined a funding ratio based on the actuarial liabilities as defined by the Governmental Accounting Standards Board Statement No. 5 (GASB #5). The GASB #5 liabilities assume an ongoing plan, that is, they include future withdrawals, deaths and disability retirements. In addition, *future projected salary increases* are included in these figures. The pension benefit obligation includes all liabilities of the System for basic and cost-of-living benefits granted to members and survivors already on the pension roll. All liabilities of active and vested inactive members are included for every year of service already earned at the valuation date and assume immediate 100% vesting.

The GASB #5 liabilities and funding ratios as of June 30, 1991 and 1993, based on the 8% interest and 5% inflation assumptions, are shown below. Please note that the liabilities shown as of June 30, 1993 reflect the recommended changes in noneconomic actuarial assumptions and salary scale assumption.

		8% Interest and 5% Inflation	
		June 30, 1991	June 30, 1993
(1) Pension Benefit Obligation:			
a. Current Retirees and Survivors	\$	166,074,000	\$ 256,266,000
b. Terminated Vested Participants		3,096,000	4,060,000
c. Active Participants' Accumulated Contributions		73,692,000	85,915,000
d. Active Participants' Employer Financed Portion:			
Vested		278,840,000	402,410,000
Nonvested		29,048,000	123,822,000
e. Other		0	6,637,000
Total Pension Benefit Obligation	\$	550,750,000	\$ 879,110,000
(2) Net Assets at:*			
a. Book Value	\$	562,318,000	\$ 730,149,000
b. Actuarial Value	\$	573,358,000	\$ 721,229,000
c. Market Value	\$	593,388,000	\$ 792,354,000
(3) Funding Ratio at:			
a. Book Value		102.1%	83.1%
b. Actuarial Value		104.1%	82.0%
c. Market Value		107.7%	90.1%

\*The 1991 figures exclude estimated health and dental reserves whereas the 1993 figures include these amounts. The 1991 liabilities also exclude benefit improvements granted after that date.

It should be noted that the June 30, 1991 GASB #5 figures were calculated by the prior actuary. It is our belief that the major difference between the June 30, 1991 and 1993 calculations lies in the treatment of the valuation of the duty disability benefit. Our interpretation of GASB #5 assumes immediate vesting for duty disability purposes.

Note that a funding ratio of 100% or more does not mean that future contributions are unnecessary. It simply reflects the difference in the funding methodology used in financing the Plan and the GASB #5 reporting requirements.



### (iii) ACTUARIAL BALANCE SHEET

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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 basic and cost of living (COL) benefits under the Plan.

**Item #**

1. The total assets in the Retirement Fund as of June 30, 1993 at Actuarial Value as described in Section II(ii).
2. The present value of the retirement, medical, and dental contributions which it is anticipated will be made by present members after July 1, 1993, until their separation from the System as active members.
3. The present value of future contributions that will be required of the City in order to fully provide the pension benefits anticipated on account of present active, inactive and retired members. The present value of future contributions required of the City to pay for medical and dental premiums for current and future retirees over the next 10 years is also included.
5. The actuarial present value of the allowances which are currently being paid to retired members and survivors on account of service retirements, disability, and survivor benefits.
6. The present value of retirement allowances for anticipated future service and disability retirements, including continuance to spouses, to active and inactive members.
7. The present value of death benefits payable on account of the death of currently active members.
8. The present value of termination benefits payable on account of the withdrawal (refund) of currently active members.



# Actuarial Balance Sheet\*

As of June 30, 1993

	ASSETS		
	BASIC	COL	TOTAL
1. Total Actuarial Value of Assets	\$ 553,933,000	\$ 174,654,000	\$ 728,587,000
2. Present Value of Future Contributions by Members:			
a. Retirement	58,855,000	22,326,000	81,181,000
b. Medical and Dental	18,804,000	0	18,804,000
3. Present Value of Future Contributions by the City:			
a. Normal Cost	156,947,000	59,536,000	216,483,000
b. Unfunded Actuarial Accrued Liability	(48,271,000)	49,802,000	1,531,000
c. Medical and Dental	21,555,000	0	21,555,000
4. Total Actuarial Assets	<u>\$ 761,823,000</u>	<u>\$ 306,318,000</u>	<u>\$ 1,068,141,000</u>

	LIABILITIES		
	BASIC	COL	TOTAL
5. Present Value of Retirement Allowances Payable to Present Retired Members	\$ 154,025,000	\$ 102,241,000	\$ 256,266,000
6. Present Value of Retirement Allowances to be Granted:			
a. Service Retirement	172,756,000	62,821,000	235,577,000
b. Disability Retirement	369,304,000	136,516,000	505,820,000
7. Present Value of Death Benefits to be Granted	10,632,000	4,626,000	15,258,000
8. Present Value of Members' Contributions to be Returned upon Withdrawal Before Retirement	752,000	114,000	866,000
9. Present Value of Medical and Dental Benefits**	40,359,000	0	40,359,000
10. Accounts Payable	13,995,000	0	13,995,000
11. Total Actuarial Liabilities	<u>\$ 761,823,000</u>	<u>\$ 306,318,000</u>	<u>\$ 1,068,141,000</u>

\* Based on 8% interest and 5% inflation plus graded merit and longevity.

\*\* Includes \$6,637,000 of estimated medical and dental reserves.



SECTION  
IV

APPENDIX



## (i) MAJOR PLAN PROVISIONS

Briefly summarized below are the major provisions of the 1961 San Jose Police and Fire Department Retirement Plan, as amended through July 1, 1993.

### ***Final Average Salary (FAS)***

Final average salary is defined as the highest 12 consecutive months of compensation earnable, not to exceed 108% of compensation paid to the member during the 12 months immediately preceding the last 12 months of service. FAS excludes overtime pay and expense allowances.

### ***Return of Contributions***

If a member should resign or die before becoming eligible for retirement, his or her contributions plus 2% interest per annum will be refunded.

### ***Service Retirement Benefit***

Members with 20 years of service who have attained age 55 are eligible to retire. Members age 70 (no service requirement) and members with 30 years of service, regardless of age, are also eligible to retire.

The normal service retirement benefit is 2.5% of FAS per year of service, not to exceed 75% of FAS.

A special study was performed by the plan's prior actuary in 1992 (and subsequently adopted by the Board) which allows members with 25 years of service to retire at age 50 with unreduced benefits. Otherwise, members age 50 with 20 years of service receive their accrued service retirement benefit, reduced for interest below age 55.

Ten years of service are required for vesting purposes.

### ***Disability Benefit***

#### ***Nonservice-connected***

Members with 2 years of service, regardless of age, are eligible for nonservice-connected disability. The benefit is 32% of FAS for the first 2 years of service plus 1% of FAS for each successive year. The maximum benefit is 50% of FAS.

Members with more than 20 years of service receive 2.5% of FAS per year of service, not to exceed 75% of FAS.

#### ***Service-connected***

Members may retire regardless of length of service, and the benefit is the greater of 2.5% of FAS per year of service (maximum 75% of FAS) or 50% of FAS.



### ***Death Benefit (before and after retirement)***

#### ***Nonservice-connected***

Eligibility is based on 2 years of service, regardless of age. The spouse receives 24% of FAS for the first 2 years of service plus 0.75% of FAS for each successive year. The maximum benefit is 37.5% of FAS.

If a member has eligible dependent children (under age 18, or age 22 if a full time student), the benefits are as follows:

1 child	25% of FAS
2 children	37.5% of FAS
3 or more children	50% of FAS

The total benefits payable to a family shall not exceed 75% of FAS.

If a member does not have a spouse nor dependent children at death, a lump sum equal to the greater of the member's contributions or \$1,000 is paid to the estate.

These benefits are payable for active member deaths and deaths after nonservice-connected disability retirement.

#### ***Service-connected***

The spouse receives 37.5% of FAS. Eligible dependent children receive 25% of FAS per child. The total benefits payable to a family shall not exceed 75% of FAS.

These benefits are payable for active member deaths and deaths after service-connected disability retirement and service retirement.

### ***Death Benefit - Inactive Members (after retirement)***

The spouse receives 1.875% of FAS per year of service, not to exceed 37.5% of FAS. Eligible dependent children receive the following:

1 child	1.25% of FAS per year of service
2 children	1.875% of FAS per year of service
3 or more children	2.5% of FAS per year of service

The total benefits payable to a family shall not exceed 75% of FAS.

### ***Cost of Living***

The maximum increase in retirement allowance is 3% a year. The increases are based on the annual change in the Consumer Price Index.



### ***Post-Retirement Health and Dental***

Retirees and survivors with 15 years of service, or receiving a benefit of at least 37.5% of FAS, receive the same medical coverage that the City pays for an active member. Members must have retired from active service to be eligible.

### ***Members' Retirement Contributions***

The members' contribution rates are recalculated on an actuarial basis at each actuarial study. The members presently contribute at the rate of 9.42% of pay. This rate includes costs resulting from special studies performed by the plan's prior actuary in 1992.

### ***City's Retirement Contributions***

The City presently contributes at a rate of 22.99% of pay for all members. This rate includes costs resulting from special studies performed by the plan's prior actuary in 1992. 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 and the assets on hand. These rates are changed in accordance with the results of each actuarial study.



## (ii) SUMMARY OF ASSUMPTIONS AND FUNDING METHOD

Below is a summary of the actuarial assumptions adopted by the Board of Administration at its January 6, 1994 meeting.

### **Recommended Assumptions**

Valuation Interest Rate	8.0%
Medical Inflation Rate	Graded from 12% to 8% over 5 years, remaining at 8% thereafter.
Dental Inflation Rate	7%
Interest Rate Credited to Active Member Accounts	2%
Post-Retirement Mortality	
(a) Service	
Members	1983 Group Annuity Mortality Table – Male
Survivors	1983 Group Annuity Mortality Table – Female
(b) Disability	1982-86 California PERS Experience Study – Disability
Pre-Retirement Mortality	Based upon the Experience Analysis as of 6/30/93
Disability Rates	Based upon the Experience Analysis as of 6/30/93
Service Retirement Rates	Based upon the Experience Analysis as of 6/30/93
Withdrawal Rates	Based upon the Experience Analysis as of 6/30/93
Salary Scales	10.0% for the first five years of service. Graded increases thereafter ranging from 8.5% at age 25 to 5.0% at ages 60 and over. Of the total salary increases, 5.0% is for inflation.
Assets	Five-Year Smoothed Market Value (Actuarial Value)
Marriage Assumption for Active and Inactive Members	75%
Survivor Age Difference	Survivor is 3 years younger than member.

### **Funding Method**

The System's liability is presently being funded on the Entry Age Normal Cost method with an Unfunded Actuarial Accrued Liability (UAAL). The amortization period for the UAAL is 40 years beginning in 1977, with 24 years remaining on the July 1, 1993 valuation date.



(iii) ANNUAL SALARY AND MEMBERSHIP DISTRIBUTION  
OF ACTIVE MEMBERS  
As of June 30, 1993

PRESENT AGE	YEARS OF SERVICE							TOTAL
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	
BELOW 20								
	16							16
20 - 24	634,190							634,190
	167	25						192
25 - 29	7,083,547	1,280,805						8,364,352
	128	126	52					306
30 - 34	5,710,885	6,782,924	2,922,386					15,416,195
	39	86	162	39				326
35 - 39	1,842,694	4,657,867	9,186,302	2,358,409				18,045,272
	9	31	109	126	61			336
40 - 44	428,444	1,658,844	6,178,420	7,663,417	3,662,273			19,591,398
	2	10	30	77	176	60		355
45 - 49	93,458	549,392	1,677,015	4,513,234	10,618,853	3,770,243		21,222,195
		1	1	25	51	106	15	199
50 - 54		55,473	56,536	1,404,018	2,973,148	6,546,182	1,082,449	12,117,806
				9	5	23	13	50
55 - 59				533,619	304,594	1,455,143	795,589	3,088,945
				1		1	3	5
60 & OVER				65,214		64,217	221,228	350,659
	361	279	354	277	293	190	31	1,785
TOTAL	15,793,218	14,985,305	20,020,659	16,537,911	17,558,868	11,835,785	2,099,266	98,831,012

Average Age                   40.25  
Average Service           13.50  
Average Entry Age       26.75



(iv) SUMMARY OF MONTHLY ALLOWANCES BEING PAID  
As of June 30, 1993

Option	Number	Monthly Allowance		
		Basic	Cost of Living	Total
SERVICE RETIREMENT				
A	111	\$ 252,274	\$ 40,092	\$ 292,366
B	1	3,164	0	3,164
C	0	0	0	0
G	1	3,702	0	3,702
I	1	4,030	0	4,030
K	0	0	0	0
P	1	3,719	0	3,719
S	0	0	0	0
Total	115	\$ 266,889	\$ 40,092	\$ 306,981
DISABILITY				
A	464	\$ 873,597	\$ 260,571	\$ 1,134,168
B	1	2,108	0	2,108
C	1	2,583	0	2,583
G	0	0	0	0
I	0	0	0	0
K	1	2,901	0	2,901
P	0	0	0	0
S	1	3,984	0	3,984
Total	468	\$ 885,173	\$ 260,571	\$ 1,145,744
SURVIVOR				
Total	117	\$ 101,586	\$ 61,517	\$ 163,103
GRAND TOTAL	700	\$ 1,253,648	\$ 362,180	\$ 1,615,828



(v) ANNUAL BENEFIT AND MEMBERSHIP DISTRIBUTION  
OF RETIRED MEMBERS AND SURVIVORS  
As of June 30, 1993

PRESENT AGE	YEARS OF RETIREMENT							TOTAL
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & OVER	
BELOW 45	15	17	3	1				36
	383,826	339,219	28,944	14,634				766,623
45 - 49	15	13	8	10	3			49
	454,782	280,354	143,718	159,235	40,481			1,078,570
50 - 54	58	20	6	7	2			93
	2,248,101	455,836	116,817	119,055	33,486			2,973,295
55 - 59	87	36	19	13	6	1		162
	3,430,878	1,108,092	376,864	190,343	93,179	13,677		5,213,033
60 - 64	29	66	21	7	8	2		133
	1,022,336	2,302,398	485,388	124,811	143,946	28,462		4,107,341
65 - 69	6	13	41	15	8	2		85
	156,390	329,924	1,070,256	342,198	152,142	27,856		2,078,766
70 - 74	4	5	14	25	9		1	58
	89,372	116,724	349,093	664,474	219,029		10,885	1,449,577
75 - 79	4	5	2	14	21	2		48
	48,694	59,936	56,940	321,428	589,596	27,996		1,104,590
80 - 84	2	3	4	4	8	2	1	24
	25,897	65,215	39,327	97,784	201,567	27,637	12,100	469,527
85 - 89	1		1	1	1	3	2	9
	9,330		9,833	9,211	24,282	33,928	36,602	123,186
90 & OVER	3							3
	25,436							25,436
TOTAL	224	178	119	97	66	12	4	700
	7,895,042	5,057,698	2,677,180	2,043,173	1,497,708	159,556	59,587	19,389,944

Average Age 60.50  
Average Years Retired 9.50  
Average Retirement Age 51.00



(vi) PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT  
(1992 Modified Assumptions)

<u>Age</u>	<u>Withdrawal</u>	<u>Ordinary Death</u>	<u>Ordinary Disability</u>	<u>Service</u>	<u>Duty Death</u>	<u>Duty Disability</u>
20	.0743	.0004	.0000	.0000	.0001	.0000
21	.0715	.0004	.0000	.0000	.0001	.0001
22	.0686	.0004	.0000	.0000	.0001	.0002
23	.0657	.0005	.0000	.0000	.0001	.0003
24	.0628	.0005	.0000	.0000	.0001	.0004
25	.0225	.0005	.0000	.0000	.0001	.0005
26	.0215	.0005	.0001	.0000	.0002	.0006
27	.0204	.0005	.0001	.0000	.0002	.0007
28	.0194	.0005	.0001	.0000	.0002	.0008
29	.0183	.0005	.0001	.0000	.0002	.0009
30	.0173	.0005	.0001	.0000	.0003	.0010
31	.0162	.0005	.0002	.0000	.0003	.0013
32	.0152	.0005	.0002	.0000	.0003	.0016
33	.0141	.0006	.0002	.0000	.0004	.0019
34	.0131	.0006	.0003	.0000	.0004	.0022
35	.0120	.0006	.0003	.0000	.0004	.0026
36	.0110	.0006	.0003	.0000	.0005	.0030
37	.0100	.0006	.0004	.0000	.0005	.0035
38	.0089	.0007	.0004	.0000	.0006	.0040
39	.0079	.0007	.0005	.0000	.0006	.0045
40	.0068	.0007	.0005	.0000	.0007	.0050
41	.0058	.0008	.0006	.0000	.0007	.0070
42	.0047	.0008	.0007	.0000	.0008	.0095
43	.0039	.0009	.0007	.0000	.0009	.0125
44	.0032	.0010	.0008	.0000	.0009	.0160
45	.0027	.0010	.0008	.0000	.0010	.0200
46	.0020	.0011	.0009	.0000	.0011	.0250
47	.0014	.0012	.0009	.0000	.0011	.0310
48	.0007	.0012	.0010	.0000	.0012	.0390
49	.0003	.0013	.0010	.0000	.0013	.0490
50	.0002	.0014	.0012	.0100	.0014	.0600
51	.0001	.0015	.0010	.0200	.0014	.0700
52	.0000	.0016	.0007	.0400	.0015	.0800
53	.0000	.0018	.0004	.0700	.0016	.0900
54	.0000	.0019	.0001	.1000	.0017	.1000
55	.0000	.0021	.0000	.1500	.0018	.1700
56	.0000	.0023	.0000	.1000	.0019	.2100
57	.0000	.0025	.0000	.1000	.0020	.2500
58	.0000	.0028	.0000	.1500	.0021	.2900
59	.0000	.0031	.0000	.1500	.0022	.3200
60	.0000	.0035	.0000	.2000	.0023	.3400
61	.0000	.0039	.0000	.2000	.0024	.3600
62	.0000	.0044	.0000	.3000	.0025	.3750
63	.0000	.0049	.0000	.3000	.0027	.3880
64	.0000	.0056	.0000	.5000	.0028	.4000
65	.0000	.0000	.0000	1.0000	.0000	.0000



# PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT (New Assumptions)

<u>Age</u>	<u>Withdrawal</u>	<u>Ordinary Death</u>	<u>Ordinary Disability</u>	<u>Service</u>	<u>Duty Death</u>	<u>Duty Disability</u>
20	.0743	.0004	.0000	.0000	.0001	.0000
21	.0715	.0004	.0000	.0000	.0001	.0001
22	.0686	.0004	.0000	.0000	.0001	.0002
23	.0657	.0005	.0000	.0000	.0001	.0003
24	.0628	.0005	.0000	.0000	.0001	.0004
25	.0338	.0005	.0000	.0000	.0001	.0005
26	.0312	.0005	.0001	.0000	.0002	.0006
27	.0286	.0005	.0001	.0000	.0002	.0007
28	.0262	.0005	.0001	.0000	.0002	.0008
29	.0238	.0005	.0001	.0000	.0002	.0009
30	.0216	.0005	.0001	.0000	.0003	.0010
31	.0194	.0005	.0002	.0000	.0003	.0013
32	.0175	.0005	.0002	.0000	.0003	.0016
33	.0155	.0006	.0002	.0000	.0004	.0019
34	.0138	.0006	.0003	.0000	.0004	.0022
35	.0120	.0006	.0003	.0000	.0004	.0026
36	.0110	.0006	.0003	.0000	.0005	.0030
37	.0100	.0006	.0004	.0000	.0005	.0035
38	.0089	.0007	.0004	.0000	.0006	.0040
39	.0079	.0007	.0005	.0000	.0006	.0045
40	.0068	.0007	.0005	.0000	.0007	.0050
41	.0058	.0008	.0006	.0000	.0007	.0070
42	.0047	.0008	.0007	.0000	.0008	.0095
43	.0039	.0009	.0007	.0000	.0009	.0125
44	.0032	.0010	.0008	.0000	.0009	.0160
45	.0027	.0010	.0008	.0000	.0010	.0200
46	.0020	.0011	.0009	.0000	.0011	.0250
47	.0014	.0012	.0009	.0000	.0011	.0310
48	.0007	.0012	.0010	.0000	.0012	.0390
49	.0003	.0013	.0010	.0000	.0013	.0490
50	.0002	.0014	.0012	.0100	.0014	.0600
51	.0001	.0015	.0010	.0200	.0014	.0700
52	.0000	.0016	.0007	.0400	.0015	.0800
53	.0000	.0018	.0004	.0700	.0016	.0900
54	.0000	.0019	.0001	.1000	.0017	.1000
55	.0000	.0021	.0000	.1500	.0018	.1700
56	.0000	.0023	.0000	.1000	.0019	.2100
57	.0000	.0025	.0000	.1000	.0020	.2500
58	.0000	.0028	.0000	.1500	.0021	.2900
59	.0000	.0031	.0000	.1500	.0022	.3200
60	.0000	.0035	.0000	.2000	.0023	.3400
61	.0000	.0039	.0000	.2000	.0024	.3600
62	.0000	.0044	.0000	.3000	.0025	.3750
63	.0000	.0049	.0000	.3000	.0027	.3880
64	.0000	.0056	.0000	.5000	.0028	.4000
65	.0000	.0000	.0000	1.0000	.0000	.0000



# (vii) ACCOUNTING BALANCE SHEET

As of June 30, 1993

(At Book Value)

	Retirement Fund	Cost-of-Living Fund	Total
<b>Assets:</b>			
Receivable from City of San Jose:			
Employee contributions	\$ 222,000	\$ 61,000	\$ 283,000
Employer contributions	450,000	248,000	698,000
Due from the City of San Jose	83,000	0	83,000
Due from other City of San Jose retirement fund	2,000	1,000	3,000
Receivable from brokers	2,109,000	3,473,000	5,582,000
Accrued interest receivable	5,022,000	1,867,000	6,889,000
Investments, at amortized cost	<u>550,337,000</u>	<u>180,269,000</u>	<u>730,606,000</u>
	<u>\$ 558,225,000</u>	<u>\$ 185,919,000</u>	<u>\$ 744,144,000</u>
<b>Liabilities:</b>			
Payable to brokers	\$ 5,655,000	\$ 7,375,000	\$ 13,030,000
Payable to terminated employees and other liabilities	877,000	42,000	919,000
Due to the City of San Jose	<u>0</u>	<u>46,000</u>	<u>46,000</u>
	<u>6,532,000</u>	<u>7,463,000</u>	<u>13,995,000</u>
Net assets available for benefits	<u>\$ 551,693,000</u>	<u>\$ 178,456,000</u>	<u>\$ 730,149,000</u>
<b>Fund Balance:</b>			
Employee contributions	\$ 65,507,000	\$ 21,742,000	\$ 87,249,000
Employer contributions and undistributed earnings	<u>486,186,000</u>	<u>156,714,000</u>	<u>642,900,000</u>
	<u>\$ 551,693,000</u>	<u>\$ 178,456,000</u>	<u>\$ 730,149,000</u>



# (viii) YEARS OF LIFE EXPECTANCY AFTER SERVICE RETIREMENT

Age	Members	Survivors	Age	Members	Survivors
50	29.18	34.90	80	7.64	10.20
51	28.30	33.97	81	7.21	9.63
52	27.42	33.03	82	6.81	9.09
53	26.55	32.10	83	6.43	8.57
54	25.68	31.16	84	6.07	8.06
55	24.82	30.23	85	5.73	7.58
56	23.97	29.31	86	5.41	7.11
57	23.13	28.39	87	5.10	6.66
58	22.29	27.48	88	4.82	6.23
59	21.46	26.57	89	4.54	5.81
60	20.64	25.67	90	4.28	5.40
61	19.83	24.78	91	4.04	5.02
62	19.02	23.89	92	3.80	4.66
63	18.23	23.01	93	3.58	4.31
64	17.45	22.15	94	3.37	3.98
65	16.69	21.28	95	3.16	3.67
66	15.95	20.43	96	2.98	3.37
67	15.23	19.59	97	2.80	3.10
68	14.52	18.76	98	2.62	2.84
69	13.84	17.94	99	2.45	2.59
70	13.18	17.13	100	2.28	2.36
71	12.54	16.34	101	2.11	2.14
72	11.92	15.56	102	1.95	1.93
73	11.31	14.81	103	1.78	1.74
74	10.72	14.08	104	1.61	1.55
75	10.15	13.37	105	1.43	1.37
76	9.60	12.69	106	1.26	1.19
77	9.08	12.03	107	1.09	1.03
78	8.57	11.39	108	.92	.87
79	8.10	10.78	109	.74	.71

1983 GA (x, y)



# (ix) YEARS OF LIFE EXPECTANCY AFTER DISABILITY RETIREMENT

Age	Male & Female	Age	Male & Female	Age	Male & Female
20	51.86	50	25.95	80	7.58
21	50.95	51	25.15	81	7.14
22	50.04	52	24.36	82	6.75
23	49.13	53	23.58	83	6.38
24	48.22	54	22.81	84	6.03
25	47.31	55	22.06	85	5.70
26	46.41	56	21.30	86	5.37
27	45.50	57	20.56	87	5.05
28	44.60	58	19.82	88	4.74
29	43.70	59	19.08	89	4.45
30	42.81	60	18.36	90	4.18
31	41.91	61	17.65	91	3.93
32	41.02	62	16.95	92	3.70
33	40.14	63	16.27	93	3.49
34	39.26	64	15.62	94	3.26
35	38.38	65	14.99	95	3.02
36	37.52	66	14.39	96	2.76
37	36.67	67	13.81	97	2.52
38	35.83	68	13.25	98	2.29
39	34.99	69	12.71	99	2.07
40	34.16	70	12.20	100	1.87
41	33.32	71	11.70	101	1.68
42	32.50	72	11.23	102	1.51
43	31.67	73	10.77	103	1.35
44	30.85	74	10.33	104	1.20
45	30.02	75	9.89	105	1.06
46	29.20	76	9.44	106	0.93
47	28.38	77	8.99	107	0.81
48	27.57	78	8.53	108	0.70
49	26.76	79	8.05	109	0.59
				110	0.50

1982-86 California PERS Experience Study for Disability Mortality

