CITY OF SAN JOSE
POLICE AND FIRE DEPARTMENT RETIREMENT PLAN

Actuarial Valuation
as of July 1, 1989

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Board of Administration
Police and Fire Department
Retirement Plan
San Jose, California

Board Members:

This report presents the results of our Actuarial Valuation of the San Jose Police and Fire Department Retirement Plan as of July 1, 1989. The report gives our determinations of: (a) contribution requirements for members and the City, and (b) the pension benefit obligation in accordance with Governmental Accounting Standards Board Statement No. 5.

The actuarial content of the report was prepared by me in accordance with generally accepted actuarial principles.

We thank the Secretary to the Board and his staff for provision of excellent data and their assistance with our questions.

Our report is presented in the following sections:

I. CONTRIBUTION REQUIREMENTS

II. FUNDING RATIO

III. ASSETS AND INVESTMENT YIELD

IV. PARTICIPANT DATA

V. ACTUARIAL METHODS AND ASSUMPTIONS

VI. SUMMARY OF PLAN PROVISIONS

We look forward to a discussion of our findings at your next meeting.

Sincerely,

Steven T. Itelson

Steven T. Itelson
Fellow, Society of Actuaries

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I. CONTRIBUTION REQUIREMENTS

A. Retirement Income Benefits

The City Code requires periodic actuarial valuation of the Police and Fire Department Retirement Plan, including determination of contribution requirements on a specified basis. The normal cost is determined on a basis specified in the San Jose Municipal Code. The normal cost is the cost of the benefits for new participants, a variation of the entry-age normal cost method. This Code method is used for both basic and cost-of-living benefits. The normal cost is divided in a three to eight ratio between the employees and the City, respectively.

Contribution rates have also been determined on the entry age normal actuarial cost method. This method spreads the cost of each participant's benefits over his/her career as a level percentage of his/her own salary. The normal cost is the total of these amounts for all employees. It tends to remain stable for the whole group because average age of employment is relatively constant for the full active membership.

The actuarial assumptions project how long retirees will receive benefits, when actives will leave the workforce, and how much the benefits will be. These expected payments are discounted back to the valuation date (July 1, 1989) at the assumed interest rate. The result is the present value of all future benefits. It does not depend on cost method; the method allocates the present value of benefits to time periods.

The supplemental present value* represents the discounted value of all future benefits in excess of the present value of future normal costs. This year the actuarial value of assets ($455,247,000 for pensions) exceeds the supplemental present value on both cost methods. This Unfunded Supplemental Present Value (USPV) must be accounted for if the Plan is to be in actuarial balance.

The Board adopted a funding period of 40 years in 1977; accordingly, the USPV is amortized over the 28 years remaining on that schedule. The amortization payments are set to rise 5.00% per annum. This is the same as amortization using dollars of constant value, assuming five percent inflation. Because the USPV is negative, the amortization payment is actually a credit.

*Also referred to as actuarial accrued liability, or past service liability.

The resulting contribution requirements are as follows on the current Code method.

	Percentage of Compensation		
	Basic Benefits	Cost of Living	Total
Employee contributions	5.92%	2.19%	8.11%
City contributions			
Normal Cost	15.79	5.84%	21.63%
Payment on USPV	(3.89)	2.08	(1.81)
Total City Contribution	11.90%	7.92%	19.82%
Total contributions	17.82%	10.11%	27.93%

The contribution requirements using the entry age normal cost method are as follows:

	Percentage of Compensation		
	Basic Benefits	Cost of Living	Total
Employee contributions	5.47%	2.01%	7.48%
City contributions			
Normal Cost	14.57	5.37	19.94
Payment on USPV	(2.68)	2.54	(.14)
Total City Contribution	11.89%	7.91%	19.80%
Total contributions	17.36%	9.92%	27.28%

Derivations of these contribution rates are shown in Tables 1-A and 1-B. In addition to these rates, the City pays for permanent cost-of-living benefits on a pay-as-you-go basis. Contribution requirements to support retiree health and dental insurance benefits are discussed in Subsections B and C.

The 1987 actuarial valuation report summarized results as recommended by the Board. The report included changes in benefits and the method (to entry age normal), as well as assumption changes. The City Council did not approve that report. As a measure of experience since 1987, the comparison is with the 1987 results for the current plan. These results were shown in the report on the review of experience over 1981 to 1987.

The first comparison is on the entry age normal basis. The results as of July 1, 1987 were as follows for pensions only:

	Contribution Rate
Employees	7.48%
City - Normal Cost	19.96%
- Amortization of USPV	2.00
Total for City	21.96%
Total	29.44%

As shown on the prior page, the normal cost rates now are almost identical: 7.48% for the employees, 19.94% for the City. This has occurred because the average entry age for employees has remained the same. The amortization of USPV has decreased from 2.00% of payroll to a credit of 0.14%, a reduction of 2.14% of wages.

During the past two years, investment income (on the actuarial asset basis) exceeded the 8.00% assumption by $18,992,000. This gain reduced the amortization payment by $1,005,000 for the year 1989-90, or 1.29% of payroll.

If the entry age normal basis had been adopted as of July 1, 1987, the pension contribution rate would have been 29.44% of payroll as shown above. However, contributions (excluding medical and dental benefits) continued to be made at the rate of 35.02% of payroll. These extra City and employee contributions reduced the payment to amortize USPV by .60% of payroll.

Others sources of net actuarial gain accounted for a reduction of .25% of payroll. Experience was more favorable than assumed with respect to the number of retirements for service and disability. Salary increases were slightly below assumptions, which was also a source of gain. There were more active member deaths than expected, and fewer retiree deaths than assumed; these were sources of actuarial loss.

There was also a 1987 valuation of the current plan of benefits using the assumptions adopted this year and the Municipal Code method. The results were as follows in 1987:

	Contribution Rate
Employees	8.20%
City - Normal Cost	21.86%
- Amortization of USPV	.14%
Total for City	22.00%
Total	30.20%

The normal cost has decreased on this basis since 1987. This occurred because the average age of new members decreased slightly. As a result, the employee contribution rate decreased by .09% of salaries, and the City normal cost rate dropped by .23% of payroll. The amortization of USPV decreased from a charge of .14% to a credit of 1.81%, or by 1.95% of payroll. The total City rate decreased by 2.18% of payroll on this basis. Other than the changes in new member ages, the sources of gain and loss are the same on both methods.

The actuarial assumptions used in the retirement income calculations are described in Section V. These assumptions represent a reasonable basis for determining contribution requirements and liabilities of the Plan.

B. Health Insurance Benefits

The Retirement Plan commenced payment of retiree health insurance premiums in September, 1984. The Plan pays the same amount for pensioners and beneficiaries as is paid for active employees. Eligibility for this benefit is either 15 years of service or a 37.5% of salary benefit. The average annual premium paid by the Plan is $2,504 for the 1989-90 fiscal year.

As of July 1, 1985 the contribution rates were .75% of salary each for employees and the City, for a total of 1.50% of compensation. These rates were not changed in 1987. For this valuation, revised decrement rates were used, as for pension benefits. In addition, much more rapid escalation in premiums is assumed in this valuation. The premium inflation anticipated includes 25% for 1990 and grades to 8% for years 1998 and later. Section V gives the detailed assumptions.

The level contribution to pay for benefits over the next 10 years is 3.32% of payroll. This has been divided to have the City and employees each pay 1.66% of wages. The derivation of these results is shown in Table 2. The primary reason for the increase is the much higher medical inflation assumption.

Note that contributions of 3.32% of payroll provide for benefits to be paid over the next 10 years. Assets of $1,248,000 are currently allocated to retiree medical benefits. The assets will rise for about 5 years, then be exhausted by the end of the 10 years. It has been past practice to extend the funding period to 10 years from each valuation date. If experience matches assumptions, the rate for the 10 years after the next valuation will be higher than 3.32% of payroll.

C. Retiree Dental Benefits

Retiree dental benefits have been paid from the Plan assets since 1986. The current premium level is $40.00 per month, a reduction from $41.00 in 1987. The premiums are assumed to rise 7% per annum. The benefits are funded on the same basis as medical: ten-year level term funding.

The contribution rate for retiree dental is .48% of payroll. This rate is derived in Table 3. Note that the actuarial value of assets allocated to dental funding amounted to only $12,000 as of July 1, 1989. The same comments about accumulation and decline of assets apply to dental as made above for retiree medical benefits.

The rate of .48% of payroll has been split as .36% paid by the City, and .12% paid by the employees. This split is in the same proportion as the current basis.

D. Summary

The total recommended contribution rates depend on whether the pensions are funded using the recommended method (entry age normal cost) or the new entrant method currently specified in the City Code. The total for the City is either 21.82% of payroll (entry age normal) or 21.84% (current Code). The total for the employees is 9.26% of base pay on the entry age normal method, and 9.89% under the current City Code. Both methods result in considerably lower total City costs than the current level of 27.46% of wages. The current employee rate is 9.39% of salary. The components are shown below both bases.

ENTRY AGE NORMAL COST METHOD

	Contribution Rates as Percentage of Payroll		
	City	Employees	Total
Pension - Normal Cost	19.94%	7.48%	27.42%
Pension - Amortization of USPV	(.14)	0.00	(.14)
Medical	1.66	1.66	3.32
Dental	.36	.12	.48
Total	21.82%	9.26%	31.08%

CURRENT MUNICIPAL CODE METHOD

	Contribution Rates as Percentage of Payroll		
	City	Employees	Total
Pension - Normal Cost	21.63%	8.11%	29.74%
Pension - Amortization of USPV	(1.81)	0.00	(1.81)
Medical	1.66	1.66	3.32
Dental	.36	.12	.48
Total	21.84%	9.89%	31.73%

Table 1-A

Determination of Contribution Requirements as of July 1, 1989
Proposed Method: Entry Age Normal Cost
Retirement Income Benefits
Dollar Amounts in Thousands

	Basic Benefits	Cost-of-Living Benefits	Total
1. Present Value of Future Benefits			
a. Active Members	$403,422	$146,332	$549,754
b. Terminated Vested Members	2,475	1,060	3,535
c. Pensioners	75,823	48,787	124,610
d. Beneficiaries	8,780	7,204	15,984
e. Total	$490,500	$203,383	$693,883
2. Present Value of Future Normal Cost	$175,802	$ 64,810	$240,612
3. Supplemental Present Value = (1) - (2)	314,698	138,573	453,271
4. Actuarial Value of Assets	354,071	101,176	455,247
5. Unfunded Supplemental Present Value = (3) - (4)	(39,373)	37,397	(1,976)
6. Amortization of (5)	(2,083)	1,978	(105)
7. Amortization as % of Payroll	(2.68%)	2.54%	(.14%)
8. Total Normal Cost as Percentage of Payroll			
a. City	14.57%	5.37%	19.94%
b. Employees	5.47	2.01	7.48
c. Total	20.04%	7.38%	27.42%
9. Total City Contribution Rate (7) + (8a)	11.89%	7.91%	19.80%
10. Total Employee Contribution Rate = (8b)	5.47%	2.01%	7.48%
11. Total Contribution Rates	17.36%	9.92%	27.28%
12. Covered Payroll	$ 77,724	$ 77,724	$ 77,724

Note: Amortization payments based on 28-year funding from July 1, 1989 with payments increasing 5% per annum.

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Table 1-B

Determination of Contribution Requirements as of July 1, 1989
Method Specified in City Code on July 1, 1989
Retirement Income Benefits
Dollar Amounts in Thousands

		Basic Benefits	Cost-of-Living Benefits	Total
1.	Present Value of Future Benefits			
	a. Active Members	$403,422	$146,332	$549,754
	b. Terminated Vested Members	2,475	1,060	3,535
	c. Pensioners	75,823	48,787	124,610
	d. Beneficiaries	8,780	7,204	15,984
	e. Total	$490,500	$203,383	$693,883
2.	Present Value of Future Normal Cost	$193,525	$ 71,635	$265,160
3.	Supplemental Present Value = (1) - (2)	296,975	131,748	428,723
4.	Actuarial Value of Assets	354,071	101,176	455,247
5.	Unfunded Supplemental Present Value = (3) - (4)	(57,096)	30,572	(26,524)
6.	Amortization of (5)	(3,021)	1,618	(1,403)
7.	Amortization as % of Payroll	(3.89%)	2.08%	(1.81%)
8.	Total Normal Cost as Percentage of Payroll			
	a. City	15.79%	5.84%	21.63%
	b. Employees	5.92	2.19	8.11
	c. Total	21.71%	8.03%	29.74%
9.	Total City Contribution Rate (7) + (8a)	11.90%	7.92%	19.82%
10.	Total Employee Contribution Rate = (8b)	5.92%	2.19%	8.11%
11.	Total Contribution Rates	17.82%	10.11%	27.93%
12.	Covered Payroll	$ 77,724	$ 77,724	$ 77,724

Note: Amortization payments based on 28-year funding from July 1, 1989 with payments increasing 5% per annum.

Table 2

Retiree Health Insurance Funding Calculations
Medical Benefits

Premium Increases of 25% First Year Decreasing Gradually to 8%
No Future Retirees Decline Coverage
Future Employees Are Included

Year	(1) Estimated Number of Insured Retirees	(2) Estimated Annual Cost	(3) Projected Covered Payroll (000 Omitted)	(4) Cost as Percentage of Payroll = (2) / (3)
1989-90	551	$1,380,000	$ 77,724	1.78%
1990-91	592	1,854,000	83,165	2.23
1991-92	636	2,288,000	88,986	2.57
1992-93	681	2,796,000	95,215	2.94
1993-94	730	3,386,000	101,880	3.32
1994-95	781	4,058,000	109,012	3.72
1995-96	834	4,810,000	116,643	4.12
1996-97	888	5,633,000	124,808	4.51
1997-98	945	6,532,000	133,544	4.89
1998-99	1,004	7,491,000	142,892	5.24

Level Cost Calculation Over 10 Years

(a)	Present Value of Future Benefits =	$ 25,135,000
(b)	Actuarial Value of Assets =	1,248,000
(c)	Present Value of Payroll over Next 10 Years =	717,493,000
(d)	Level Contribution Rate as Percentage of Payroll = [(a) - (b)]/(c) =	3.32%

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Table 3

Retiree Health Insurance Funding Calculations
Dental Benefits

7% Annual Increases in Average Premiums Paid by the Plan
No Future Retirees Decline Coverage
Future Employees Are Included

Year	(1) Estimated Number of Insured Retirees	(2) Estimated Annual Cost	(3) Projected Covered Payroll (000 Omitted)	(4) Cost as Percentage of Payroll = (2) / (3)
1989-90	578	$ 277,000	$ 77,724	0.36%
1990-91	619	318,000	83,165	0.38
1991-92	662	363,000	88,986	0.41
1992-93	707	416,000	95,215	0.44
1993-94	756	475,000	101,880	0.47
1994-95	806	543,000	109,012	0.50
1995-96	859	618,000	116,643	0.53
1996-97	913	704,000	124,808	0.56
1997-98	969	799,000	133,544	0.60
1998-99	1,027	906,000	142,892	0.63

Level Cost Calculation Over 10 Years

(a)	Present Value of Future Benefits =	$ 3,480,000
(b)	Actuarial Value of Assets =	12,000
(c)	Present Value of Payroll over Next 10 Years =	717,493,000
(d)	Level Contribution Rate as Percentage of Payroll = [(a) - (b)]/(c) =	0.48%

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II. FUNDING STATUS

There are various ways to measure the progress of funding a retirement system. One measure is the level of the assets in relation to the supplemental present value. This unfunded liability is amortized as part of the contribution rate in Section I.

Another measure is the present value of projected benefits. This value must be disclosed in accordance with Governmental Accounting Standards Board (GASB) Statement No. 5 effective with the fiscal year beginning July 1, 1987. Its requirements include computation of the pension benefit obligation, or PBO. This amount includes projection of salary increases, but prorates all potential future occurrences for service as of the determination date. The retiree medical and dental benefits are excluded. The PBO differs from the supplemental present value because the latter incorporates a leveling of contributions under the entry age normal method. The PBO is shown below as of July 1, 1989:

Retirees, beneficiaries and deferred vested terminated members	$144,129,000
Current employees: Employee contributions with credited interest	59,466,000
Employer-financed vested	214,741,000
Employer-financed non-vested	32,547,000
Total all participants	$450,883,000

The ratio of assets to the PBO is one measure of funding status. As of July 1, 1989, the actuarial value of assets exceeded the PBO; the funding ratio was 100.97%. Assets also exceeded the present values of accrued and vested benefits.

The change in actuarial assumptions lowered the Pension Benefit Obligation by $7,217,000, from $458,100,000 to $450,883,000. On the same basis as 1987, the funding ratio would have been 99.38%. The funding ratio as of July 1, 1987 was 90.94%.

Any measure of funding status is usefull only when it is followed over time to see periodic changes. Funding ratios decline when benefits are increased, and depend on the actuarial assumptions used, especially the interest rate. The pattern of changes in actuarial contribution requirements and the appropriateness of the assumptions are also important in analyzing funding status of a pension plan.

III. ASSETS AND INVESTMENT YIELD

The audit report as of June 30, 1989 shows net assets of $457,876,000 for the combined Retirement and Cost-of-Living Funds. That amount includes fixed income investments at amortized cost, equities at original cost, and adjustments for amounts payable and receivable. The market value for the combined Funds was $479,884,000.

A different basis has been adopted for actuarial valuations. Realized and unrealized appreciation and depreciation are spread over five years, beginning with the fiscal year in which they occur. This basis is used for such gain and loss after June 30, 1983. Table 4 shows the determination of the actuarial value of investments.

During the 1988-89 fiscal year, there was net appreciation of $27,187,000, of which 20% is recognized and 80% deferred as of July 1, 1989. There was $14,737,000 of net depreciation for the year 1987-88, a result of unrealized depreciation and realized gains. Of the net total, 60% is deferred and 40% included as of July 1, 1989. Similarly, part of the appreciation (depreciation) from other years is recognized, and part is deferred as of July 1, 1989. There is $23,377,000 of appreciation that will be recognized in future years. There was $23,377,000 of deferred appreciation as of July 1, 1989 This reserve will help offset any market value decreases subsequent to the valuation date. The actuarial value of investments of $450,383,000 for all benefits combined is the market value less deferred appreciation.

Table 5 presents the total assets on the actuarial basis. The Funds have increased from $345,857,000, as of July 1, 1987 to $456,507,000 in 1989. This is an increase of 32%. Of the actuarial value of assets, $1,248,000 is allocated to retiree medical, $12,000 to retiree dental, $101,176,000 to cost-of-living, and $354,071,000 to basic benefits.

Table 6 presents a summary of income and disbursements on the actuarial basis over the past two years. Contributions were $28.0 million in the year 1988-89, an increase of 8.1% from the prior year.

Benefit payments in the year 1988-89 were over $12.2 million, including $1,318,000 paid for retiree health and dental insurance premiums.

Net investment income on the actuarial value basis includes interest and dividends. It also includes 20% of each year's total appreciation (or depreciation) which has not been fully recognized. Investment income net of all expenses was $45,837,000 for the year 1988-89, and $33,662,000 the prior year. These represent net yields of 11.38% and 9.52%, respectively.

Table 4

Determination of Actuarial Value of Investments
As of June 30, 1989
(All Amounts in Thousands of Dollars)

Year Ending	Market Value	Book Value	Unrealized Appreciation to Date	Unrealized Appreciation in Year	Realized Appreciation in Year	Total Appreciation	Deferred Appreciation Percentage	Deferred Appreciation Amount
6/30/85	$253,345	$247,278	$ 6,067	$ 22,367	$ 1,537	$23,904	N/A	$ -0-
6/30/86	326,533	292,185	34,348	28,281	3,887	32,168	20%	6,434
6/30/87	375,834	347,176	28,658	(5,690)	15,777	10,087	40	4,035
6/30/88	405,106	399,716	5,390	(23,268)	8,531	(14,737)	60	(8,842)
6/30/89	473,760	451,752	22,008	16,618	10,569	27,187	80	21,750
						$78,609		$23,377

Market Value of Investments	$473,760
Less: Deferred Appreciation	23,377
Actuarial Value of Investments	$450,383

Table 5

Assets of the Fund as of June 30, 1989 and 1988
Actuarial Value Basis
(All Amounts in Thousands of Dollars

	6/30/89		6/30/88	
Investments		$450,383		$450,393
Cash		965		965
Accounts Receivable:				
Employee Contributions	$ 134		$ 331	
City Contributions	391		999	
Accrued Interest	4,500		4,034	
Other	3,046		1,149	
Total Receivablse		8,071		6,513
Total Assets		$459,419		$399,774
Accounts Payable		2,912		4,863
Net Assets Available for Plan Benefits		$456,507		$394,911

Table 6

Summary Statement of Income and Disbursements for
Plan Years Ending June 30, 1989 and 1988 Actuarial Value Basis
(All Amounts in Thousands of Dollars)

	1989		1988	
Contribution Income:				
Employees	$ 6,907		$ 6,610	
City	21,116		19,298	
Total		$ 28,023		$ 25,908
Investment Income:				
Interest	$26,467		$23,192	
Dividends	4,473		3,870	
Net Rental Income	583		342	
Write-up(down)*	15,720		7,228	
Less: Professional Fees & Expenses	1,406		970	
Net Total		$ 45,837		$ 33,662
Benefit Payments				
Account Refunds	$ 463		$ 132	
Health Insurance Premiums	1,318		1,154	
Retirement Benefits	10,483		9,230	
Total		12,264		10,516
Net Increase in Assets		$ 61,596		$ 49,054
Assets, Beginning of Year		394,911		345,857
Assets, End of Year		$456,507		$394,911

*Represents that portion of realized and unrealized appreciation (depreciation) recognized for the year under the assets valuation method.

IV. PARTICIPANT DATA

Detailed information on active, retired, survivor and vested terminated members was provided on computer tape by the Secretary to the Board.

A. Active Employees

The valuation as of July 1, 1987 included 1,654 active employees (997 police, 657 fire). During the 1987-89 period, 27 of those members terminated (6 retained vested rights), 45 retired on service-connected disability, and there were four service retirements. There were nine active member deaths.

There were 91 new members (including transfers and re-hires), increasing the active membership to 1,660 as of July 1, 1989. Average salary increased from $42,440 to $46,823, or at the rate of 5.04% per annum. Distributions of these participants by age, service and average salary are shown in Tables 7-A, 7-B and 7-C. Table 8 gives a distribution by salary and department. Of the 1,660 active participants, 1,007 (61%) had met the ten-year service requirement for a vested benefit.

B. Vested Terminated Employees

There were 23 former employees retaining vested rights to deferred pensions as of July 1, 1987. During the 1987-89 period, there were 6 new vested terminations, and two former employees retired. Two of the terminated vested members as of 1987 received lump sum distributions. Hence, 25 vested terminated participants remained as of July 1, 1989.

C. Retired Participants

There were 401 retired members as of July 1, 1987. During the succeeding two years, 16 retirees died. There were 55 new pensions awarded (including 3 service retirements and 51 service-connected disabilities). Hence there were 440 retired members as of July 1, 1989.

A distribution of these awards by type and benefit amount is shown in Table 9. The same awards are distributed by type and age in Table 10. The average benefit was $1,836 monthly, including $1,431 in Basic benefits. Average pensioner age was 60.

D. Survivors

Eighty-three beneficiaries of deceased retirees and actives were included in the July 1, 1987 census. Six of those members died and there were 24 new beneficiaries. Hence there were 101 survivors in pay status as of July 1, 1989. These members are distributed by department and monthly pension in Table 11, and by age and department in Table 12. The average survivor benefit was $995 per month.

The following summarizes membership data as of July 1, 1989 and 1987.

	7/1/89	7/1/87
Actives		
Number	1,660	1,652
Average Age	39.7	38.6
Average Service	13.3	12.3
Total Annual Salaries*	$77,724,000	$70,196,000
Average Annual Salary*	$ 46,822	$ 42,440
Retirees		
Number	440	401
Average Age	59.8	59.4
Average Monthly Pension**	$1,836	$1,672
Survivors		
Number	101	83
Average Monthly Pension**	$995	$879
Vested Terminated		
Number	25	23
Average Monthly pension Payable at Age 55	$1,194	$1,138

*The annualized effects of anticipated salary increases in the coming year are included. For 1989, the increases included 5.0% for Police and 4.2% for Fire. For 1987, 4% was used for all members. These adjustments were applied to the July wages of each member.

**Including permanent cost-of-living benefits paid outside the Plan.

Table 7-A

Census of Active Police Participants as of July 1, 1989
(figures in parentheses are average compensation)

Age	Years of Service							
	Total	Under 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & Over
Total...	996 ($47,468)	182 ($41,383)	270 ($45,603)	172 ($48,447)	156 ($49,281)	135 ($51,637)	74 ($54,296)	7 ($60,550)
Under 25.	12 ($35,077)	12 ($35,077)						
25 - 29.	117 ($41,886)	83 ($40,563)	34 ($45,114)					
30 - 34.	212 ($45,094)	51 ($42,650)	133 ($45,487)	28 ($47,676)				
35 - 39.	236 ($47,499)	24 ($43,754)	83 ($45,903)	101 ($49,007)	28 ($49,998)			
40 - 44.	210 ($48,984)	11 ($43,060)	20 ($45,962)	37 ($47,660)	87 ($49,532)	55 ($51,291)		
45 - 49.	124 ($51,204)	1 ($45,143)		6 ($47,445)	35 ($48,217)	56 ($52,260)	26 ($54,051)	
50 - 54.	72 ($53,297)				6 ($48,492)	22 ($51,076)	40 ($54,759)	4 ($58,111)
55 - 59.	13 ($54,879)					2 ($49,893)	8 ($52,779)	3 ($63,802)
60 - 64.								
65 & Over								

Table 7-B

Census of Active Fire Participants as of July 1, 1989
(figures in parentheses are average compensation)

Age	Years of Service							
	Total	Under 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & Over
Total...	664 ($45,861)	83 ($35,270)	118 ($43,917)	122 ($46,024)	136 ($47,112)	129 ($48,615)	63 ($53,334)	13 ($52,938)
Under 25.	8 ($33,618)	8 ($33,618)						
25 - 29..	45 ($36,115)	32 ($33,679)	13 ($42,110)					
30 - 34..	78 ($41,315)	30 ($36,775)	45 ($44,001)	3 ($46,439)				
35 - 39..	108 ($43,601)	13 ($36,730)	43 ($43,370)	34 ($44,866)	18 ($46,723)			
40 - 44..	144 ($46,814)		16 ($43,376)	38 ($46,801)	78 ($47,643)	12 ($46,049)		
45 - 49..	173 ($47,645)			33 ($45,494)	40 ($46,253)	84 ($48,290)	16 ($52,171)	
50 - 54..	82 ($52,269)		1 ($95,797)	12 ($48,061)		33 ($50,377)	34 ($54,274)	2 ($52,884)
55 - 59..	22 ($51,957)			2 ($46,847)			12 ($52,860)	8 ($51,881)
60 - 64..	3 ($55,022)						1 ($45,666)	2 ($59,700)
65 & Over	1 ($47,985)							1 ($47,985)

Table 7-C

Census of Active Participants as of July 1, 1989
(figures in parentheses are average compensation)

Age	Total	Years of Service						
		Under 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & Over
Total....	1,660 ($46,825)	265 ($39,468)	388 ($45,090)	294 ($47,441)	292 ($48,271)	264 ($50,160)	137 ($53,854)	20 ($55,603)
Under 25.	20 ($34,493)	20 ($34,493)						
25 - 29..	162 ($40,283)	115 ($38,648)	47 ($44,283)					
30 - 34..	290 ($44,077)	81 ($40,474)	178 ($45,111)	31 ($47,556)				
35 - 39..	344 ($46,275)	37 ($41,286)	126 ($45,039)	135 ($47,964)	46 ($48,717)			
40 - 44..	354 ($48,101)	11 ($43,060)	36 ($44,813)	75 ($47,225)	165 ($48,639)	67 ($50,352)		
45 - 49..	297 ($49,131)	1 ($45,143)		39 ($45,796)	75 ($47,169)	140 ($49,878)	42 ($53,335)	
50 - 54..	154 ($52,750)		1 ($95,797)	12 ($48,061)	6 ($48,492)	55 ($50,657)	74 ($54,536)	6 ($56,368)
55 - 59..	35 ($53,043)			2 ($46,847)		2 ($49,893)	20 ($52,828)	11 ($55,132)
60 - 64..	3 ($55,022)						1 ($45,666)	2 ($59,700)
65 & Over	1 ($47,985)							1 ($47,985)

San Jose Police and Fire

Table 8

Distribution of Active Participants on July 1, 1989
by Annual Compensation

Annual Compensation	Number of Employees		
	Police	Fire	Total
Under $30,000	-	-	-
$30,000 - $31,999	-	38	38
32,000 - 33,999	30	-	30
34,000 - 35,999	2	-	2
36,000 - 37,999	3	-	3
38,000 - 39,999	16	35	51
40,000 - 44,999	82	170	252
45,000 - 49,999	619	241	860
50,000 - 54,999	193	153	346
55,000 - 59,999	8	1	9
60,000 - 64,999	29	4	33
65,000 & Over	14	22	36
Total	996	664	1,660

Note: "Compensation" is July 1, 1989 rate including increases scheduled for 1989-90.

Table 9

Distribution of Pensioners as of July 1, 1989
By Type and Total Monthly Pension

Monthly Benefit Amount	Police			Fire			Total		
	Service	Service Connected Disability	Non-Service Disability	Service	Service Connected Disability	Non-Service Disability	Service	Service Connected Disability	Non-Service Disability
Total..........	29	163	16	19	196	17	48	359	33
Under $600....	-	-	2	-	-	4	-	-	6
$ 600 - 799..	3	4	3	1	-	3	4	4	6
800 - 999..	1	5	2	3	12	2	4	17	4
1,000 - 1,199..	3	19	2	1	18	1	4	37	3
1,200 - 1,399..	3	16	1	5	15	2	8	31	3
1,400 - 1,599..	1	14	-	1	30	4	2	44	4
1,600 - 1,799..	1	25	4	3	24	-	4	49	4
1,800 - 1,999..	2	19	1	1	23	1	3	42	2
2,000 - 2,199..	2	15	1	-	13	-	2	28	1
2,200 - 2,399..	3	8	-	2	21	-	5	29	-
2,400 - 2,559..	2	9	-	-	14	-	2	23	-
2,600 - 2,799..	2	6	-	1	12	-	3	18	-
2,800 - 2,999..	2	9	-	-	5	-	2	14	-
3,000 & Over...	4	14	-	1	9	-	5	23	-

Table 10

Distribution of Pensioners as of July 1, 1989
By Type and Age

Monthly Benefit Amount	Police			Fire			Total		
	Service	Service Connected Disability	Non-Service Disability	Service	Service Connected Disability	Non-Service Disability	Service	Service Connected Disability	Non-Service Disability
Total..........	29	163	16	19	196	17	48	359	33
Under 40....	-	5	-	-	-	-	-	5	-
40 - 44....	-	14	1	-	6	-	-	20	1
45 - 49....	-	19	-	-	13	4	-	32	4
50 - 54....	-	29	2	-	31	6	-	60	8
55 - 59....	7	34	1	4	51	3	11	85	4
60 - 64....	3	34	6	2	34	2	5	68	8
65 - 69....	6	16	3	2	31	-	8	47	3
70 - 74....	4	7	2	4	17	2	8	24	4
75 - 79....	4	5	1	1	13	-	5	18	1
80 - 84....	1	-	-	3	-	-	4	-	-
85 & Over..	4	-	-	3	-	-	7	-	-

San Jose Police and Fire

Table 11

Distribution of Beneficiaries by Monthly Pension and Department

Amount	Police	Fire	Total
Total.............	49	43	92
Under $400.......	1	4	5
$ 400 - 499.....	4	1	5
500 - 599.....	7	8	15
600 - 699.....	2	3	5
700 - 799.....	3	4	7
800 - 899.....	4	7	11
900 - 999.....	6	2	8
1,000 - 1,099.....	2	2	4
1,100 - 1,199.....	2	2	4
1,200 - 1,399.....	6	5	11
1,400 - 1,599.....	2	1	3
1,600 - 1,799.....	2	-	2
1,800 - 1,999.....	2	2	4
2,000 & Over......	6	2	8

Note: This table excludes 9 children receiving benefits.

V. ACTUARIAL METHODS AND ASSUMPTIONS

We have utilized two different actuarial cost methods for funding both the basic and cost-of-living pension benefits. The method required under the City Code is to base the "current service contributions" on the cost of benefits for new entrants. The proposed method is the entry age normal actuarial cost method. The current method is a variation of entry age normal.

Under both methods, the total contribution requirement has two components: an annual normal cost and a payment with respect to the unfunded supplemental present value (USPV).

On the entry age normal method, the annual normal cost for each employee is calculated as the level percentage of pay required over that employee's period of covered employment to fund the total expected benefits. The total normal cost is the sum of the normal costs for all employees. The current Code method uses new entrants only for determining normal cost as a percentage of payroll. The unfunded supplemental present value is amortized over 40 years beginning July 1, 1977 (28 years remaining as of July 1, 1989) in amounts level in constant dollars assuming 5% inflation.

The actuarial assumptions are generally classed as economic (investment yield, salary scale, post-retirement cost-of-living), post-retirement mortality (beneficiary, healthy and disabled retirees), and pre-retirement decrements (service-connected and non-service death and disability, termination, and retirement). Each employee is projected from current status to latest possible retirement by application of these assumptions. Those used in the valuation as of July 1, 1989 are described below. Many assumptions were changed effective this year.

Investment Yield and Asset Valuation

The actuarial calculations are based on the assumption that the net effective yield on the assets will be 8.00% per year. Assets are carried at adjusted market value; realized and unrealized appreciation (depreciation) occurring after June 30, 1983 is spread over five years. As of July 1, 1989, changes in market value through June 30, 1985 are fully recognized.

Salary Projection

A salary projection is used in any actuarial valuation to estimate the wage progression of employees in the future. The salary projection used is graded, from 7% at age 25, to 6% at age 50, then to 5.5% increase at age 60 and over. Regardless of age, increases of 10.00% per year are assumed during the first five years after employment. The scale includes 5.00% for price inflation, .50% for real growth in wages, and 0% to 1.50% for promotion/longevity. The pay for each rank is assumed to rise 5.50% annually. These rates are revised from the prior valuation. The salary increase from entry at age 25 to retirement at age 50 averages 7.13% per annum.

Post-Retirement Benefit Increases

Benefit increases are triggered by increases in the Consumer Price Index. We assume pensions will increase by 3% per year, the maximum allowed under the City Code.

Mortality Rates After Retirement

In estimating the amount of the reserve required to pay an employee's retirement benefits for the remainder of his and his spouse's lifetime, it is necessary to make an assumption with respect to expected mortality rates. For this purpose, the 1983 male Group Annuity Mortality Table has been used for service retirees. For beneficiaries, the 1983 female Group Annuity Mortality Table is used.

For disabled pensioners, the mortality rate used is the California P.E.R.S. 1982-86 experience study disability retirement mortality rates. The schedule below shows the annual mortality rates and life expectancies these tables provide. These assumptions were revised for 1989.

	Deaths Per 1,000 Lives			Life Expectancy (Years)		
Age	Retiree	Beneficiary	Disabled Retiree	Retiree	Beneficiary	Disabled Retiree
45	N/A	1.12	6.0	N/A	38.7	30.0
50	4.34	1.83	7.7	28.2	34.0	25.9
55	6.81	2.82	11.4	23.9	29.3	22.1
60	10.18	4.71	15.9	19.8	24.8	18.4
65	17.32	7.85	26.5	15.9	20.5	15.0
70	30.59	13.76	41.4	12.4	16.3	12.2

Termination Rates

The termination rates used in an actuarial valuation are intended to reflect all probable terminations of employment, including voluntary withdrawal from service, disability, retirement and death. These rates involve a forecast of the number of employees in various age brackets who will leave the coverage of the Plan prior to becoming eligible for a pension, as well as the number who will qualify for disability benefits. The non-vested employer contributions made on behalf of these employees who leave prior to attainment of pension eligibility become available for the payment of pensions to others. A complete set of these probabilities is shown in Table 13. Rates of retirement for service, service-connected disability and non-service disability were revised as a result of the experience review.

Retiree Health and Dental Insurance Benefits

Funding of these benefits is done on a ten-year level percentage of payroll basis, assuming covered payroll increases 7% per annum. Eligible retirees elect medical coverage under Blue Cross, or Health Maintenance Organizations Kaiser and Lifeguard. The premiums paid by the Plan are based on the lowest-cost coverage. Depending on the coverage chosen, the retiree or survivor may pay part of the cost of these medical benefits. There are two alternative dental programs; no retiree contributions are required.

Annual premium increases of 7.00% are assumed for dental benefits. The current premium is $480 per annum.

The average premiums paid by the Plan for medical benefits are assumed to increase as follows:

Fiscal Year Beginning July 1,	Percentage Increase
1990	25%
1991	15
1992	14
1993	13
1994	12
1995	11
1996	10
1997	9
1998 & Over	8

The average premium paid by the Plan is $2,504 for fiscal year 1989-90. This includes the increase effective August 1, 1989.

Growth in coverage rolls and investment income are assumed as for valuation of retirement income benefits. The mix of coverages is assumed to continue as it now exists. All eligible retirees and survivors are assumed to elect both medical and dental coverage.

Administrative Expenses

There is no allowance for administrative expenses. Professional fees (principally investment expenses) and other expenses paid from the Retirement Funds are treated as part of net yield.

Other Assumptions

It was also assumed that 75% of the participants will have a spouse at the time of retirement who is three years younger than the member.

Table 13

San Jose Police and Fire Department Retirement Plan
Probabilities of Separation Prior to Retirement

Age	Service-Connected Death	Non-Service Death	Service-Connected Disability	Non-Service Disability	Withdrawal	Service Retirement
20	.0001	.0004	.0000	.0000	.0743	.0000
21	.0001	.0004	.0001	.0000	.0715	.0000
22	.0001	.0004	.0002	.0000	.0686	.0000
23	.0001	.0005	.0003	.0000	.0657	.0000
24	.0001	.0005	.0004	.0000	.0628	.0000
25	.0001	.0005	.0005	.0000	.0225	.0000
26	.0002	.0005	.0006	.0001	.0215	.0000
27	.0002	.0005	.0007	.0001	.0204	.0000
28	.0002	.0005	.0008	.0001	.0194	.0000
29	.0002	.0005	.0009	.0001	.0183	.0000
30	.0003	.0005	.0010	.0001	.0173	.0000
31	.0003	.0005	.0013	.0002	.0162	.0000
32	.0003	.0005	.0016	.0002	.0152	.0000
33	.0004	.0006	.0019	.0002	.0141	.0000
34	.0004	.0006	.0022	.0003	.0131	.0000
35	.0004	.0006	.0026	.0003	.0120	.0000
36	.0005	.0006	.0030	.0003	.0110	.0000
37	.0005	.0006	.0035	.0004	.0100	.0000
38	.0006	.0007	.0040	.0004	.0089	.0000
39	.0006	.0007	.0045	.0005	.0079	.0000
40	.0007	.0007	.0050	.0005	.0068	.0000
41	.0007	.0008	.0070	.0006	.0058	.0000
42	.0008	.0008	.0095	.0007	.0047	.0000
43	.0009	.0009	.0125	.0007	.0039	.0000
44	.0009	.0010	.0160	.0008	.0032	.0000
45	.0010	.0010	.0200	.0008	.0027	.0000
46	.0011	.0011	.0250	.0009	.0020	.0000
47	.0011	.0012	.0310	.0009	.0014	.0000
48	.0012	.0012	.0390	.0010	.0007	.0000
49	.0013	.0013	.0490	.0010	.0003	.0000
50	.0014	.0014	.0600	.0012	.0002	.0020
51	.0014	.0015	.0720	.0010	.0001	.0020
52	.0015	.0016	.0850	.0007	.0000	.0040
53	.0016	.0018	.1050	.0004	.0000	.0070
54	.0017	.0019	.1300	.0001	.0000	.0100
55	.0018	.0021	.1700	.0000	.0000	.1500
56	.0019	.0023	.2100	.0000	.0000	.1000
57	.0020	.0025	.2500	.0000	.0000	.1000
58	.0021	.0028	.2900	.0000	.0000	.1500
59	.0022	.0031	.3200	.0000	.0000	.1500
60	.0023	.0035	.3400	.0000	.0000	.2000
61	.0024	.0039	.3600	.0000	.0000	.2000
62	.0025	.0044	.3750	.0000	.0000	.3000
63	.0027	.0049	.3880	.0000	.0000	.3000
64	.0028	.0056	.4000	.0000	.0000	.5000
65	.0000	.0000	.0000	.0000	.0000	1.0000

VI. SUMMARY OF PLAN PROVISIONS

The principal features of the 1961 San Jose Police and Fire Department Retirement Plan are as follows:

1. **Normal Service Retirement:**

Age requirement:	55
Service requirement:	20 years (no requirement if age 65).

Pension amount:

2.50% of Final Compensation times years of service; maximum benefit is 75% of Final Compensation (for 30 years of service).

2. **Unreduced Early Retirement:**

Age requirement:	None
Service requirement:	30 years

Pension amount:

Same as Normal Service Retirement without reduction, or 75% of Final Compensation.

3. **Reduced Early Retirement:**

Age requirement:	50
Service requirement:	20 years

Pension amount:

Service Retirement pension accrued reduced for interest from age 55. Reduction factors based on interest rates adopted by the Board as needed.

4. **Vested Benefits:**

Age requirement:	None
Service requirement:	10 years

Pension amount:

2.50% of Final Compensation times years of service; maximum benefit is 75% of Final Compensation (for 30 years of service). Benefits begin at later of age 55 and 20 years after employment date.

5. <u>Non-Service Disability Retirement</u>:

Age requirement:	None
Service requirement:	2 years

Pension amount:

32% of Final Compensation for the first 2 years of service, plus 1% for each year thereafter, up to 50% for 20 years of service. For retirement with more than 20 years of service, pension is 2.50% Final Compensation times years of service (maximum 30 years).

6. <u>Service-Connected Disability Retirement</u>:

Age requirement:	None
Service requirement:	None

Pension amount:

50% of Final Compensation or 2.50% of Final Compensation times years of service (maximum of 30 years), if greater.

7. <u>Non-Service-Connected Death Benefit</u>:

Age requirement:	None
Service requirement:	2 years

Pension amount:

24% of Final Compensation for the first 2 years of service, plus .75% for each year thereafter, to a maximum of 37.5% of Final Compensation. This amount is payable to a spouse. Benefits for dependent children are:

1 child: 25% of Final Compensation
2 children: 37.5% of Final Compensation
3 or more children: 50% of Final Compensation

Maximum family benefit is 75% of Final Compensation.

If no spouse or children, a lump sum equal to the greater of the employee's accumulated contributions or $1,000 is paid.

These benefits paid for active employee death or death after non-service disability.

8. **Service-Connected Death Benefit**:

   Age requirement: None
   Service requirement: None

   Pension amount:

   Annuity of 37.5% of member's Final Compensation payable to surviving spouse. Benefit amount for dependent children is 25% of Final Compensation per child. Maximum family benefit is 75% of Final Compensation.

   These benefits paid for active employee death, and for death after service or service-connected disability retirement.

9. **Post-Retirement Death Benefits, Vested Termination**:

   Payable to a spouse: 1.875% of Final Compensation times years of service. For children, 1.25% (1.875% for two, or 2.50% for three children) times Final Compensation times years of service. Maximum of 20 years of service (37.5% benefit); family maximum benefit is 75% of Final Compensation.

10. **Termination Benefit**:

    In lieu of any other pension benefit, an employee may elect to receive, upon termination of employment, an amount equal to his employee contributions accumulated with 2% interest per annum

11. **Final Compensation**:

    Average monthly compensation during the highest 12 consecutive months, but not more than 108% of compensation paid in 12 months preceding the last 12 months of service.

12. **Service**:

    Members shall receive credit for each year of full-time employment from date of hire until date of termination, including proportional credit for days.

13. <u>Employee Contribution</u>:

Three-elevenths of the Plan's normal cost for pensions. The recommended rates are 1.66% of pay for retiree health insurance benefits and .12% for the retiree dental program. The recommended rate for pensions is 8.11% under the current actuarial method and 7.48% of pay under the entry age normal method. The total is 9.89% of pay on the current method, and 9.26% of pay on entry age normal method. The employee contribution rate totalled 9.39% prior to this valuation.

14. <u>Eligible Beneficiaries</u>:

Spouse to whom member was married at both retirement date and death for post-retirement annuities; spouse at time of active employee death; children under age 18 (age 22 for full-time students).

15. <u>Cost-of-Living Adjustment</u>:

Retiree and survivor benefits are increased or decreased annually by the annual increase or decrease in the Consumer Price Index (maximum adjustment applied: 3%). The excess over 3% is accumulated and applied to future years when CPI change is less than 3%. Such adjustments are included in beneficiary annuities.

16. <u>Retiree/Survivor Health and Dental Insurance Benefits</u>:

Eligibility requirement:

Either 15 years of service, or collecting a pension of 37.5% of Final Compensation.

Benefit amount:

Retirement Fund pays same amount for coverage that the City pays for the corresponding active member. The retiree pays the balance (if any). Benefits for spouses are payable only to the spouse as of retirement.