

OFFICIAL COPY

CITY OF SAN JOSE  
POLICE AND FIRE DEPARTMENT RETIREMENT PLAN

Actuarial Valuation  
as of July 1, 1983

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Martin E. Segal Company  
January, 1984

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January 20, 1984

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, 1983. The report gives our determinations of: (a) contribution requirements for members and the City, and (b) the actuarial present values of vested and non-vested accumulated plan benefits.

The actuarial content of the report was prepared by Steven T. Itelson, F.S.A., Enrolled Actuary, in accordance with generally accepted actuarial principles.

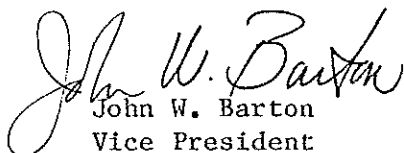
We thank the Secretary to the Board and his staff for provision of excellent data and their assistance with our questions.

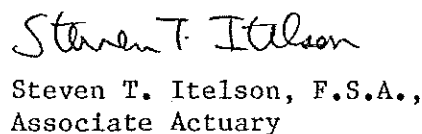
Our report is presented in the following sections:

- 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,

  
John W. Barton  
Vice President

  
Steven T. Itelson, F.S.A.,  
Associate Actuary

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I. CONTRIBUTION REQUIREMENTS

The true cost of a retirement plan can only be known when no future payments will be made to members. At that time, the cost is the benefits and expenses paid, reduced by the investment income.

The actuarial valuation process budgets annual contributions which spread the cost as a level percentage of covered payroll if experience matches that assumed. The normal cost is the amount required to provide benefits (including cost-of-living) for new entrants, spread over their anticipated working lifetimes. Under the San Jose City Code, such contributions are split in a three to eight ratio between the employees and the City, respectively.

These normal cost contributions do not meet the actuarial requirements of the plan. The supplemental present value\* represents the discounted value of all future benefits in excess of the value of future normal costs. The supplemental present value of \$209.5 million exceeds the actuarial asset value by \$36.5 million. This unfunded supplemental present value (USPV) must be funded for the Plan to be in actuarial balance.

The Board adopted a funding period of 40 years in 1977; accordingly, the USPV is amortized over the 34 years remaining on that schedule. The amortization is as a level percentage of increasing payroll, using only the inflation component of 5.00% per annum. This is the same as amortization using dollars of constant value, assuming five percent inflation.

Our resulting contribution requirements are as follows:

	<u>Percentage of Compensation</u>		
	<u>Employee</u>	<u>City</u>	<u>Total</u>
Basic Benefits			
Normal Cost	6.13%	16.34%	22.47%
Payment on USPV	0.00	.31	.31
Cost of Living			
Normal Cost	2.27	6.07	8.34
Payment on USPV	0.00	2.77	2.77
Permanent Cost of Living	<u>0.00</u>	<u>.10</u>	<u>.10</u>
Total	8.40%	25.59%	33.99%

Derivation of these contribution rates is shown in Table 1.

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

Table 1

Actuarial Cost Results

	<u>Basic</u> <u>Benefits</u>	<u>Cost-of-</u> <u>Living</u> <u>Benefits</u>	<u>Permanent</u> <u>Cost-of-</u> <u>Living</u>	<u>Total</u>
1. Present Value of all Future Benefits				
a. Active Members	\$252,141,000	\$ 89,815,000	\$ -0-	\$341,956,000
b. Vested Terminated	799,000	343,000	-0-	1,142,000
c. Pensioners and Beneficiaries	38,685,000	21,314,000	1,192,000	61,191,000
d. Totals	<u>\$291,625,000</u>	<u>\$111,472,000</u>	<u>\$ 1,192,000</u>	<u>\$404,289,000</u>
2. Normal Cost Contribution Rates as % of Compensation*				
a. Employee	6.13%	2.27%	0.00%	8.40%
b. City of San Jose	<u>16.34</u>	<u>6.07</u>	<u>0.00</u>	<u>22.41</u>
c. Totals	<u>22.47%</u>	<u>8.34%</u>	<u>0.00%</u>	<u>30.81%</u>
3. Present Value of Future Normal Costs	\$142,095,000	\$ 52,711,000	\$ -0-	\$194,806,000
4. Supplemental Present Value (1) - (3)	\$149,530,000	\$ 58,761,000	\$ 1,192,000	\$209,483,000
5. Actuarial Asset Value	\$145,954,000	\$ 26,999,000	\$ -0-	\$172,953,000
6. Unfunded Supplemental Present Value (4) - (5)	\$ 3,576,000	\$ 31,762,000	\$ 1,192,000	\$ 36,530,000
7. Amortization of (6) over 34 Years, Payments Increasing 5% Per Annum*	\$ 167,000	\$ 1,488,000	\$ 56,000	\$ 1,711,000
8. Covered Payroll	\$ 53,701,000	\$ 53,701,000	\$53,701,000	\$ 53,701,000
9. Amortization as % of Payroll* (7) ÷ (8)	.31%	2.77%	.10%	3.18%
10. Total Contribution Rates as % of Payroll*				
a. Employee	6.13%	2.27%	0.00%	8.40%
b. City of San Jose	<u>16.65</u>	<u>8.84</u>	<u>0.10</u>	<u>25.59</u>
c. Totals	<u>22.78%</u>	<u>11.11%</u>	<u>0.10%</u>	<u>33.99%</u>

\*Payable periodically during the year.

Although this measure is used by the Controller of the State of California and by many other systems as a basis for comparing funding progress of various plans, we believe that the more important measures of a system's funding status are the appropriateness of the actuarial assumptions, the method by which the unfunded liabilities are being funded, and the pattern of annual contribution requirements.

Table 2

Assets of the Fund as of June 30, 1983

	<u>Market Value</u>	<u>Book Value</u>
Investments:		
Cash Equivalents	\$ 27,193,000	\$ 27,193,000
Debt Securities	122,405,000	127,969,000
Equity Securities	<u>32,583,000</u>	<u>26,550,000</u>
Total Investments	\$182,181,000	\$181,712,000
Cash	67,000	67,000
Accounts Receivable:		
Employee Contributions	\$ 192,000	\$ 192,000
City Contributions	627,000	627,000
Accrued Interest	<u>2,706,000</u>	<u>2,706,000</u>
Total Receivables	<u>3,525,000</u>	<u>3,525,000</u>
Total Assets	\$185,773,000	\$185,304,000
Accounts Payable	<u>12,820,000</u>	<u>12,820,000</u>
Net Assets Available for Plan Benefits	\$172,953,000	\$172,484,000

San Jose Police and Fire

Table 4

Summary of Recent Investment Performance  
Market Value and Book Value Bases  
 (All Amounts in Thousands of Dollars)

Fiscal Year Ending June 30,	Market Value Basis			Book Value Basis		
	Net Investment Income	Average Assets	Net Yield	Net Investment Income	Average Assets	Net Yield
1983	\$39,118	\$124,556	31.41%	\$17,242	\$145,963	11.81%
1982	7,972	99,599	8.00%	12,239	116,739	10.48%
1981	3,219	84,326	3.82%	9,339	93,846	9.95%
1980	4,795	72,429	6.62%	7,114	78,130	9.11%
1979	5,171	61,036	8.47%	5,063	66,846	7.57%
Total	\$60,275	\$441,946	13.64%	\$50,997	\$501,524	10.17%

Note: Data for years prior to July 1, 1981 from 1981 preliminary actuarial valuation done by prior actuarial consultants.

San Jose Police and Fire

B. Vested Terminated Employees

There were 12 former employees retaining vested rights to deferred pensions as of July 1, 1981. Three elected refunds of their accumulated contributions, and one returned to work. After addition of 7 new vested terminations, there were 15 such participants as of July 1, 1983.

C. Retired Participants

There were 286 retired members as of July 1, 1981. During the succeeding two years, eleven died, one had benefits suspended, and two pensions were reinstated. There were 38 new pensions awarded (36 service-connected and two non-service disabilities). Hence there were 314 retired members as of July 1, 1983.

A distribution of these awards by type and benefit amount is shown in Table 7. The same awards are distributed by type and age in Table 8. The average benefit was \$1,207 monthly, including \$983 in Basic benefits. Average pensioner age was 59.

D. Survivors

Fifty-four beneficiaries of deceased retirees and actives were included in the July 1, 1981 census. Two of those members died, and two lost eligibility by attaining age 22. There were 13 new beneficiaries, resulting in 63 survivors in pay status as of July 1, 1983. These members are distributed by department and monthly pension in Table 9, and by age in Table 10. Four of the beneficiaries were dependent children. The average survivor benefit was \$635 per month.



Table 5-A

Census of Active Police Participants as of July 1, 1983  
 (figures in parentheses are average compensation)

Age	Total	Years of Service					
		1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 & over
Total.....	924 (\$33,825)	323 (\$29,540)	167 (\$33,611)	212 (\$34,971)	132 (\$37,660)	66 (\$40,134)	24 (\$44,436)
Under 25....	39 (\$27,159)	39 (\$27,159)	-	-	-	-	-
25 - 29....	181 (\$29,829)	160 (\$29,398)	21 (\$33,114)	-	-	-	-
30 - 34....	236 (\$32,471)	101 (\$30,326)	94 (\$33,634)	41 (\$35,088)	-	-	-
35 - 39....	223 (\$34,723)	23 (\$31,108)	46 (\$33,779)	121 (\$35,083)	33 (\$37,240)	-	-
40 - 44....	117 (\$37,034)	-	6 (\$33,708)	37 (\$34,540)	60 (\$38,054)	14 (\$40,682)	-
45 - 49....	90 (\$38,686)	-	-	13 (\$34,790)	34 (\$37,598)	39 (\$40,172)	4 (\$46,102)
50 - 54....	35 (\$41,653)	-	-	-	5 (\$36,132)	13 (\$39,432)	17 (\$44,975)
55 - 59....	2 (\$39,157)	-	-	-	-	-	2 (\$39,157)
60 - 64....	1 (\$39,157)	-	-	-	-	-	1 (\$39,157)
65 & Over..	-	-	-	-	-	-	-

Table 5-C

Census of All Active Participants as of July 1, 1983  
 (figures in parentheses are average compensation)

Age	Total	Years of Service					
		1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 & Over
Total.....	1,582 (\$33,945)	441 (\$29,232)	323 (\$33,441)	355 (\$34,723)	254 (\$37,010)	156 (\$39,278)	53 (\$40,651)
Under 25....	55 (\$27,027)	55 (\$27,027)	-	-	-	-	-
25 - 29.....	230 (\$29,552)	201 (\$29,056)	29 (\$32,987)	-	-	-	-
30 - 34.....	339 (\$32,113)	142 (\$29,881)	137 (\$33,432)	60 (\$34,382)	-	-	-
35 - 39.....	393 (\$34,242)	41 (\$30,746)	103 (\$33,358)	198 (\$34,928)	51 (\$36,174)	-	-
40 - 44.....	288 (\$36,144)	2 (\$30,402)	40 (\$33,287)	81 (\$34,466)	137 (\$37,138)	28 \$40,626	-
45 - 49.....	168 (\$38,143)	-	10 (\$35,787)	16 (\$34,753)	60 (\$37,401)	78 \$39,302	4 \$46,102
50 - 54.....	91 (\$39,262)	-	3 (\$36,385)	-	6 (\$37,274)	48 \$38,237	34 \$41,312
55 - 59.....	13 (\$39,339)	-	1 (\$30,401)	-	-	2 \$44,445	10 \$39,211
60 - 64.....	5 (\$34,668)	-	-	-	-	-	5 \$34,668
65 & Over...	-	-	-	-	-	-	-

San Jose Police and Fire

Table 7

Distribution of Pensioners as of July 1, 1983  
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	31	100	11	24	135	13	55	235	24
Under \$200	-	-	-	-	-	1	-	-	1
\$200 - \$399	-	1	-	-	-	-	-	1	-
\$400 - \$599	9	2	1	2	7	2	11	9	3
\$600 - \$799	4	9	2	7	19	3	11	28	5
\$800 - \$999	3	23	2	7	17	1	10	40	3
\$1,000 - \$1,199	2	12	1	1	28	4	3	40	5
\$1,200 - \$1,399	1	14	4	5	23	1	6	37	5
\$1,400 - \$1,599	4	13	1	1	17	1	5	30	2
\$1,600 - \$1,799	2	10	-	-	11	-	2	21	-
\$1,800 - \$1,999	2	7	-	-	6	-	2	13	-
\$2,000 - \$2,199	2	2	-	-	3	-	2	5	-
\$2,200 - \$2,399	1	6	-	-	3	-	1	9	-
\$2,400 & Over	1	1	-	1	1	-	2	2	-

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Table 9

Distribution of Beneficiaries by Monthly Pension  
and Department

Amount	Fire	Police	Total
Total	26	37	63
Under \$200	-	-	-
\$200 - \$299	1	1	2
\$300 - \$399	6	11	17
\$400 - \$499	3	3	6
\$500 - \$599	3	2	5
\$600 - \$699	7	4	11
\$700 - \$799	1	7	8
\$800 - \$899	2	2	4
\$900 - \$999	1	3	4
\$1,000 - \$1,099	-	1	1
\$1,100 - \$1,199	-	-	-
\$1,200 & Over	2	3	5

San Jose Police and Fire

## V. ACTUARIAL METHODS AND ASSUMPTIONS

We have utilized an actuarial cost method known as the entry age normal cost method for funding both the basic and cost-of-living benefits. This method is required under the City Code and is used in situations where a cost is desired which will remain relatively level as a percentage of the participating payroll.

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

The annual normal cost is calculated as the level percentage of pay required over the average new employee's period of covered employment to fund the total expected benefits. The unfunded supplemental present value is amortized over 40 years beginning July 1, 1977 (34 years as of July 1, 1983), 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 is projected from current status to latest possible retirement by application of these assumptions. Those used in the valuation as of July 1, 1983 are described below. Only the interest and salary increase assumptions have been changed since the preliminary 1981 valuation.

### 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; gain and loss occurring after June 30, 1983 (realized or unrealized) is spread over five-years.

### Salary Projection

A salary projection is used in any actuarial valuation to estimate the salary progression of employees in the future. The salary projection used in the valuation is 6.50% per year before age 45, and 5.50% thereafter. Regardless of age, increases of 9.50% per year are assumed during the first 4 years after employment.

### 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.

Table 11

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

<u>Age</u>	<u>Service- Connected Death</u>	<u>Non- Service Death</u>	<u>Service- Connected Disability</u>	<u>Non- Service Disability</u>	<u>Withdrawal</u>	<u>Service Retirement</u>
20	.000085	.000445	.000506	.000000	.074340	.000000
21	.000090	.000445	.000506	.000000	.071460	.000000
22	.000100	.000445	.000506	.000000	.068580	.000000
23	.000110	.000450	.000506	.000000	.065700	.000000
24	.000125	.000455	.000506	.000000	.062820	.000000
25	.000140	.000460	.000562	.000000	.022511	.000000
26	.000160	.000465	.000817	.000000	.021465	.000000
27	.000180	.000475	.001264	.000031	.020419	.000000
28	.000205	.000485	.001942	.000062	.019373	.000000
29	.000230	.000495	.002840	.000094	.018326	.000000
30	.000260	.000505	.004077	.000125	.017280	.000000
31	.000290	.000520	.005315	.000156	.016234	.000000
32	.000325	.000535	.006552	.000188	.015188	.000000
33	.000360	.000550	.007790	.000219	.014141	.000000
34	.000400	.000570	.009027	.000281	.013095	.000000
35	.000440	.000590	.010264	.000343	.012049	.000000
36	.000485	.000610	.011502	.000407	.011002	.000000
37	.000530	.000635	.012740	.000469	.009956	.000000
38	.000580	.000665	.013977	.000656	.008910	.000000
39	.000630	.000700	.015215	.000781	.007864	.000000
40	.000685	.000740	.016452	.000969	.006818	.000000
41	.000740	.000785	.017692	.001157	.005771	.000000
42	.000800	.000835	.018929	.001344	.004725	.000000
43	.000860	.000890	.020167	.001593	.003881	.000000
44	.000925	.000950	.021404	.001844	.003206	.000000
45	.000980	.001015	.022642	.002156	.002700	.000000
46	.001060	.001085	.023879	.002532	.002025	.000000
47	.001130	.001160	.025117	.002968	.001350	.000000
48	.001205	.001240	.026354	.003532	.000675	.000000
49	.001280	.001325	.027592	.004219	.000338	.000000
50	.001360	.001420	.138375	.005032	.000169	.000000
51	.001440	.001525	.144315	.006031	.000086	.000000
52	.001525	.001640	.150255	.007219	.000045	.000000
53	.001610	.001775	.156195	.008656	.000023	.000000
54	.001700	.001930	.142830	.010343	.000011	.000000
55	.001790	.002105	.086310	.000000	.000000	.500000
56	.001880	.002310	.077400	.000000	.000000	.100000
57	.001975	.002545	.068490	.000000	.000000	.100000
58	.002075	.002810	.059580	.000000	.000000	.100000
59	.002180	.003115	.050670	.000000	.000000	.100000
60	.002290	.003470	.041760	.000000	.000000	.100000
61	.002410	.003885	.032850	.000000	.000000	.100000
62	.002540	.004370	.023940	.000000	.000000	.100000
63	.002680	.004935	.015030	.000000	.000000	.100000
64	.002830	.005590	.006120	.000000	.000000	.100000
65	.000000	.000000	.000000	.000000	.000000	1.000000

## 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. Early Service 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.

### 3. 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.

### 4. Non-Service Disability Retirement:

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).

8. Post-Retirement Death Benefits: 37.5% of Final Compensation to a spouse, plus 25% of such wages per child (to a maximum of 3). Family maximum is 75% of Final Compensation. For vested termination or non-service disability retirement with less than 20 years of service, spouse's benefit is 75% of retiree's allowance. Post-retirement cost-of-living adjustments are included in beneficiary annuities.
9. 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.
10. 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.
11. 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.
12. Employee Contribution: Three-elevenths of the actuarial cost of the plan benefits for new entrants. The rate effective October 1, 1981 was 11.07% of compensation. This report recommends new employee contribution rates.
13. Eligible Beneficiaries: Spouse to whom employee or retiree married at date of death, children under age 18 (age 22 for full-time students).
14. Cost-of-Living Adjustment: 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%.