LABORERS' AND RETIREMENT BOARD
EMPLOYEES' ANNUITY AND BENEFIT
FUND OF CHICAGO
ACTUARIAL STATEMENT
DECEMBER 31, 1987

The following represents a summary of 1987	Laborers' Actuaria (1987 includes HB 1986	l Report: 2715 amendments) 1987
INCOME: Investment Employer Employee Total	\$ 67,653,382 \$ 14,765,250 \$ 11,691,095 \$ 94,109,727	\$ 58,220,924 \$ 14,745,709 \$ 11,774,209 \$ 84,740,842
OUTGO: Refunds, Benefits, Expenses	\$ 25,774,701	\$ 27,701,584
EXCESS OF INCOME OVER OUTGO	\$ 68,335,026	\$ 57,039,258
ACTIVE PARTICIPANTS	4,844	4,873
BENEFICIARIES Employee Spouse Disabilities Children	2,487 1,228 274 93	2,498 1,242 234 84
ACTUARIAL: Assets (Total at book value)	\$489,403,006	\$546,947,052
Funded Ratio	96.34%	93.77%
Accrued Liability	\$507,984,848	\$583,284,026
Termination Liability	\$302,314,080	\$342,037,898
Excess Upon Termination	\$187,088,926	\$204,909,154
Unfunded Liability	\$ 18,581,842	\$ 36,336,974
Annual Actuarial Requirement (ER & EE)	\$ 20,171,065	\$ 22,636,952
Expected Net Annual Actuarial Excess (Deficiency)	\$ 5,429,849	\$ 3,660,561
Required Employer Multiple	.99	1.13
PV Credited Projected Benefits	\$455,604,084	\$521,981,791
INVESTMENT: Yield (on Invested Assets, including gains/losses)	16.69%	12.29%
Invested Assets (Book Value)	\$473,166,911	\$533,128,841
Invested Assets (Market Value)	\$508,418,070	\$522,381,719
MISCELLANEOUS: Salary Roll Average Salary	\$128,601,816 \$ 26,549	\$135,453,096 \$ 27,797

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May 6, 1988

The Retirement Board of the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago, Chicago, Illinois

Gentlemen:

This is to certify that the annual statement as of December 31, 1987, of the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago is, to the best of our knowledge and belief, a true and correct statement of the affairs and conditions of said Fund for the calendar year 1987. This statement has been prepared from the books of the Fund as substantiated by our letters of recommendation to the Retirement Board.

The accounting procedure is outlined in Article 11 of the Illinois Pension Code.

The method of valuation, or method of financing the system, and the actuarial assumptions and methods used in the valuation are shown in a separate Exhibit. The attempt is made to give effect to realistic valuation factors affecting costs.

This statement has been prepared in accordance with generally accepted actuarial principles and practice.

The costs for each of the alternative methods of funding the unfunded accrued liability as required by the Illinois Pension Code Article 22-501.10 are shown in this report. These include:

- 1. interest only on the unfunded liability;
- 2. the level annual amount required to amortized the unfunded accrued liability over a period not exceeding 40 years; and
- 3. the amount required for the current year to amortize the unfunded accrued liability over a period not exceeding 40 years as a level percentage of payroll.

The actuarial present value of credited projected benefits is shown in a separate exhibit.

1987 Assets, Unfunded Liability, Accrued Liability \$ 600-\$ SNO! 500-ACC LIAB 400-UNF LIAB 300-200-ASSETS 100-

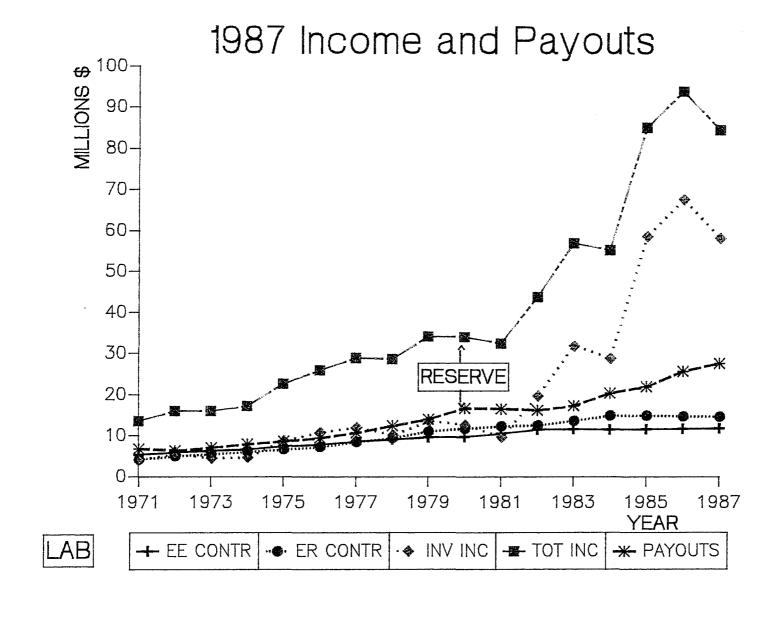
1987 YEAR

1985

1983

1971 1973 1975 1977 1979 1981

LAB ACC LIAB ASSETS



The graph of assets, unfunded liability, and accrued liability illustrates the fund's position with respect to asset growth and accrued liability growth. Please note that the difference between the assets and the accrued liability is what is called unfunded liability.

The next graph illustrates the income of the fund--investment income plus employer contributions plus employee contributions--and the current payouts of the Fund benefits, refunds, and expenses. The excess of income over payouts goes to build reserves for future benefit payments.

ACTUARIAL ASSUMPTIONS

Actuarial assumptions required by ERISA must take into consideration anticipated future experience as well as past experience. As a guide to our thinking, we consulted two recent studies in an attempt to learn what interest and salary scale assumptions are being used to anticipate the future in other public and private pension fund valuations.

A comprehensive study made in 1985 of 948 private pension plans indicated that the average interest assumption used was 7.6% and the average salary scale assumption was 6%. Only 22% of the plans used an interest rate higher than 7% while 39% used an interest rate lower than 7%. For salary scale, 11% used an assumption higher than 6% while 67% used an assumption lower than 6%. most common assumptions were 7% interest and 5% salary. We also have made a study of large public employee pension plans and found that the actuarial assumptions used for the rate of interest and rate of salary increase were somewhat higher. These ranged from 7% to 8% for interest and from 5.5% to 7% The Greenwich Research Associates report to participants Public for salary. Pension Funds 1988, On Target, 90% survey of 290 state and municipal funds indicates that the mean actuarial interest rate assumptions for public funds was 7.6% in 1986 and 7.8% in 1987 (which compares with 8.0% for large corporate pension funds). The mean actuarial salary increase assumption was 5.8% in 1986 and 5.9% in 1987. Based on the 1988 Yearbook of Stocks, Bonds, Bills and Inflation published by Ibbotson Associates, Chicago, Illinois, we find the following results based on historical data for the past 62 years for the period 1926 through 1987.

	Total Annual <u>Return</u>	<u>Inflation</u>	<u>Net</u>
Common Stocks Small Stocks Long Term Corporate Bonds Long Term Government Bonds U.S. Treasury Bills	9.9% 12.1 4.9 4.3 3.5	3.0% 3.0 3.0 3.0	6.9% 9.1 1.9 1.3
20 years 30 years 40 years	1983-1987 1978-1987 1968-1987 1958-1987 1948-1987 1926-1987	3.4% 6.4 6.3 4.8 4.1 3.0	

Based on these studies, it is our opinion that for this Fund, the past experience of investment earnings giving effect to locked-in interest rates and generally expected future interest earnings that a 7.5% future interest assumption would be a reasonable rate for valuation purposes and that 6% per year salary scale is reasonable. These assumptions take into consideration the generally accepted views on future salary increases for our national economy. They could be characterized as being middle of the road.

This valuation includes the costs of the HB2715 Amendments:

- (1) 1.80%, 2.00%, 2.20%, 2.40% benefit accrual rate for those born on or after January 1, 1936 and retiring or dying in service on or after January 1, 1988.
- (2) Reduction in age discount factor (employee and widow) from .5% to .25% for employees born on or after January 1, 1936 and retiring or dying in service on or after January 1, 1988. No discount for employee age less than 60 if employee has at least 35 years of service.
- (3) Minimum employee annuity of \$250 per month and minimum spouse annuity of \$200 per month under certain conditions.
- (4) Elimination of cap on maximum widow's annuity for spouses of certain retired employees with repayment of any "excess spouse" refund.
- (5) Change amount of children's benefit to \$120 or \$150 effective January 1, 1988.
- (6) Provide for certain "Good Government" initiatives.
- (7) Remove chronic alcoholism restriction for ordinary disability.

The RYAN monies or the potential KORSHAK liabilities have not been included in this report.

The liabilities and costs in this report are based in part on a 7.5% per year interest assumption and a 6% per year salary scale assumption. The retirement rates have been adjusted to reflect the changing pattern of retirement. These rates were based on 1985, 1986 and 1987 experience of this fund and the Municipal Fund and expected future changes. All other assumptions are the same as those used for the last report.

In our opinion, these actuarial assumptions in the aggregate are reasonable, taking into account fund experience and future expectations and, represent the best estimate of anticipated experience.

ALTERNATIVE VALUATIONS:

We are currently making alternative valuations giving effect to different rates of salary increases and investment earnings to serve as a guide to the Retirement Board and ourselves in estimating the effects on costs of possible future variations from the assumptions used. These will be submitted at a later time.

ACTUARIAL OBLIGATIONS OF THE FUND

The value of all future pension payments calculated using the actuarial assumptions contained in this report is the sum of payments to two major groups of beneficiaries.

1. Retired Lives

For those currently receiving known benefits--i.e., current retirees, widows, and children--the value is determined based on estimated future longevity with the future benefit payments discounted to the present time at the assumed investment earnings rate.

Group	Number	Present Value of Future Benefits
Employee Annuity	2,498	\$143,486,159
Annuity Increase	2,333	26,414,511
Future Widow Benefit	1,566	13,010,505
Lump Sum Death Benefit	0	0
Health Insurance Supplement	1,207	2,576,639
Widow Annuity	1,240	29,993,523
Widow Compensation	2	2,262
Total Retired Reserve		\$215,483,599

2. Active Lives

The value of future payments for active employees who will receive benefits in the future is estimated, since the amount of pension is only known at the actual time of retirement. This estimate is made using various actuarial assumptions as to future salary increases, probable retirement age, and chance of death, withdrawal, or disablement before retirement. For active employees, the goal is to have enough assets on hand at retirement to pay for all future benefits promised. To provide for an orderly accumulation of these required assets, an actuarial funding method is used. Using the entry age normal funding method, assets are allocated as a level amount (expressed as a percentage of salary) over the

employee's working lifetime. These allocated costs are called "normal costs" and are sufficient, if set aside each year, for a newly hired employee to accumulate the amount required to fully fund his or her benefits when and if he or she retires. For an employee who has completed half his or her working lifetime, roughly half of the required retirement assets should have been accumulated. The actuarial reserve (amount of assets needed now) is then the present value of future benefits less the value of future normal costs to be paid.

Benefit	Present Value of Benefits	Reserve
Employee Annuity	\$ 363,410,495	
Annuity Increase	77,382,348	
Future Widow/Widower Benefit	36,636,904	
Lump Sum Death Benefit	0	
Health Insurance Supplement	2,707,224	
Widow/Widower of Employees - Dying in service	20,350,197	
Widow/Widower Compensation - Duty Death	0	
Miscellaneous	84,894,888	
Total Active	\$ 585,382,056	
Total Active and Retired Present Value of Benefits	\$ 800,865,655	
Less Present Value of Future Normal Costs		<u>\$ 217,581,629</u>
Net Active Reserve		367,800,427
Net Active Reserve & Retired		583,284,026
Less Present Assets		546,947,052
Unfunded Liability		\$ 36,336,974

The difference between the sum of the actuarial reserve for active and retired lives (sometimes called the "Accrued Actuarial Liability") and the present assets is called the "Unfunded Liability." The unfunded liability depends upon the benefits, the characteristics of the covered group of employees and retirees, the actuarial assumptions, and the actuarial funding method. The unfunded liability can be thought of as the amount of assets that will be needed in future years to provide for all future benefits payable when added to the future normal costs determined by the actuarial funding method.

ACTUARIAL BALANCE

For the pension fund to be in actuarial balance, the present value of all benefits payable in the future must equal the sum of present assets plus present value of all future contributions.

Future contributions from the employee and employer must provide for the payment of normal costs for amortization of the unfunded liability on some reasonable basis.

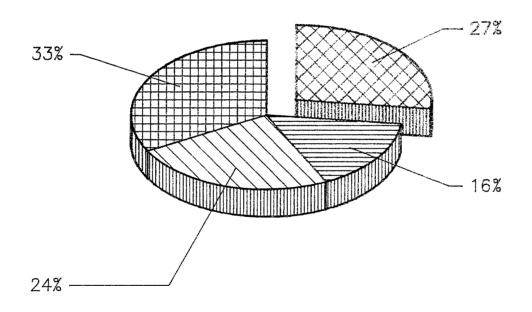
Present Value of		% of Total
Present Assets Future Employee contributions Future Employer contributions Deficiency	\$ 546,947,052 125,946,320 165,644,601 (<u>37,672,318</u>)	68% 16 21 (5_)
TOTAL	\$ 800,865,655	100%

Present Value of	Actuarial Assets	% of Total	Actuarial Liabilities	% of Total
Benefits Retired lives Active lives			\$ 215,483,599 585,382,056	27% 73%
Present Assets	\$ 546,947,052	68%		
Normal Costs	217,581,629	27%		
Unfunded Liability	 36,336,974	<u>5%</u>	 	
Total	\$ 800 865 655	100%	\$ 800 865 655	100%

Following are pie charts that illustrate

- 1. Actuarial Present Value of Future Benefits
- 2. Actuarial Assets
- 3. Actuarial Cost Method

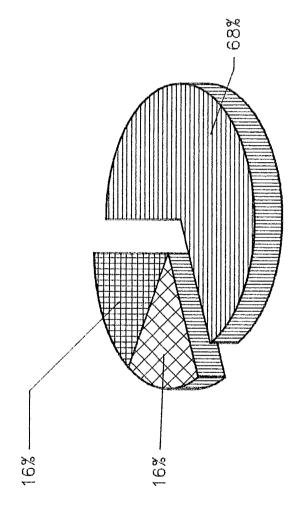
1987 Actuarial Present Value of Benefits







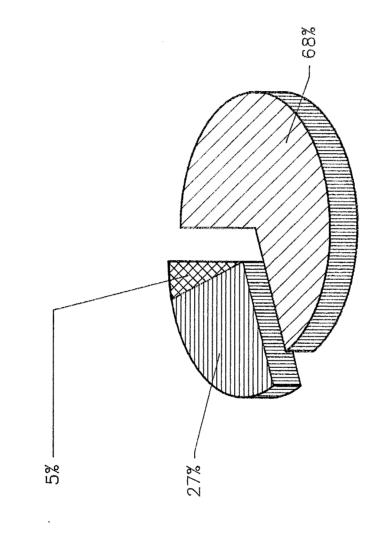
1987 Actuarial Assets







1987 Actuarial Cost Method

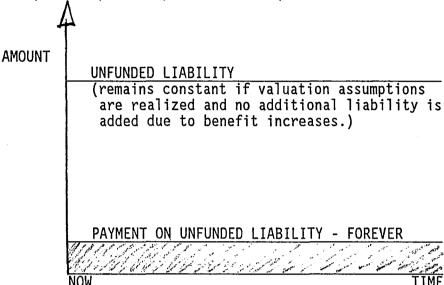






1. Normal Cost-Plus-Interest Method. This method of valuation used for this report, is the same as for the last report. It is the method that was used and is intended to continue the current provisions of the Article governing the fund in full force and effect on a permanent basis--explained in detail under "Actuarial Assumptions and Methods." The method is also referred to as a middle-of-the-road method of funding since the unfunded liability is recognized but not amortized.

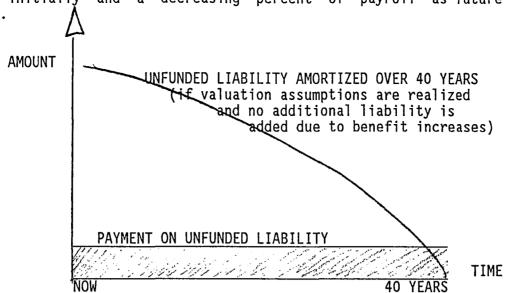
The normal cost-plus-interest-only method of funding is that recommended by the Illinois Public Employees Pension Laws Commission. It was also the minimum required for private pension plans for IRS qualification before ERISA.



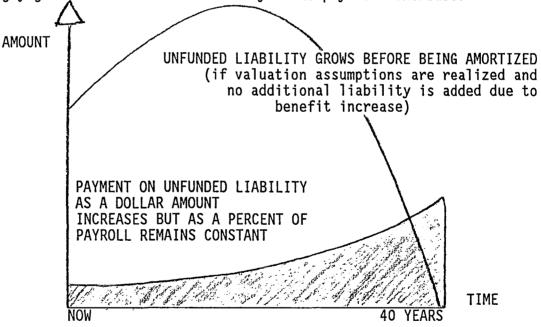
2. Normal Cost-Plus-40-Year-Amortization Method. ERISA minimum funding standards require that initial unfunded liability existing on January 1, 1976, be amortized over a 40 year period. We have calculated the cost of amortizing the existing unfunded liability.

Both of these cost methods, the normal cost-plus-interest method and the normal cost-plus-40-year-amortization method, express the past service costs as a level annual dollar amount. Consequently, as the total payroll increases in the future, the level annual amount becomes a decreasing percent of the total payroll.

Under both methods, level dollar amounts represent a greater percent of payroll initially and a decreasing percent of payroll as future payrolls increase. Λ



3. <u>Level-Annual-Percent-of-Payroll Method</u>. An alternative method for funding that is receiving increased attention for public employee pension plans is a method that sets the funding standard cost objective as a level annual percent of payroll rather than as a level annual amount. This method will result in increasingly greater dollar amounts each year as payrolls increase.



This constant percent of payroll method is not an acceptable method under ERISA. It may be more acceptable in the future in view of the presumably permanent nature of public retirement systems with a constant flow of new entrants and the desire to place a relatively constant tax burden (as percentage of salary) on future generations of taxpayers. Please note that if this amount is recomputed each year with the same amortization period, the unfunded liability will never be amortized.

For the Retirement Board's guidance, we have estimated the financial effects of different amortization methods. The costs under these funding methods are contingent upon all actuarial assumptions being met and continued active membership at the same level. These three methods meet the requirements set forth in Illinois Revised Statutes, Chapter 108-1/2, Article 22-501.10. The results are given in the following table:

		Required 1988 Tax Levy	Ultimate Required Multiple	Unfunded Liability Will:	Portion Required for Amortization of Unfunded Liability
1.	Normal Cost + Interest Only	\$11,586,915	1.13	Remain constant at \$36,336,974*	\$2,628,487
2.	ERISA: Normal Cost + 40-Year Amortization	\$11,747,556	1.15	Decrease to \$0*	\$2,782,702
3.	Normal Cost + 40 Year Level % Payroll Increasi 4% a Year (Inflation Only)	ng	1.03	Increase to \$52,669,061 in 22 years and decrease thereafter*	\$1,671,312 in 1988 increases to \$7,999,484 in 40 Years
4.	Present Law (Includes Park)	\$15,400,000	1.37		

^{*} Assuming all valuation assumptions are realized and no future benefit liberalization.

The preceding comparative table indicates the need to take into consideration in the funding policy future annual costs expressed both as a level annual dollar amount and as a level annual percent of payroll.

The level-annual-percent-of-payroll method results in substantially increasing costs and contributions in future years, especially at the end of a funding period.

In determining funding policy it is essential to provide a margin of safety for unfavorable operating experience such as salaries over anticipated salaries, decreasing age of retirement, increasing longevity, and declining fund membership.

REQUIRED ACTUARIAL CONTRIBUTION

Based on the normal cost-plus-interest-method of funding, we find that the tax levy for 1988 should be \$11,586,915, which amount includes a 4% reserve for loss on collection. This amount is based on an annual payroll (as of December 31, 1987) of \$135,453,096 and an active membership of 4,873 persons. The detail is shown in the table that follows.

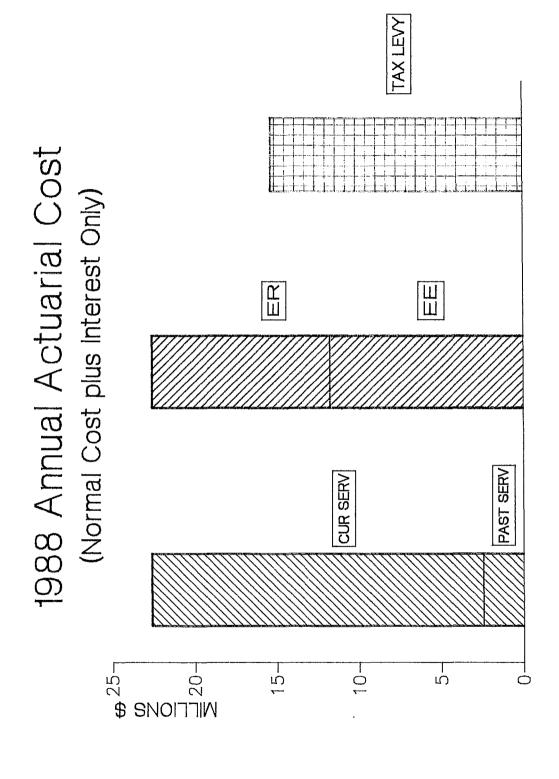
DETAIL OF ANNUAL CITY CONTRIBUTION:

		Amount Pe	ercent of Salary	Dollars Per Active Member
1.	Normal Cost - for Current Service	\$20,008,465	14.77%	\$4,106
2.	7.5% Interest on Unfunded Liability	\$ 2,628,487	1.94%	<u>\$ 539</u>
<u>3.</u>	Total Actuarial Requirement (1)+(2)	\$22,636,952	16.71%	<u>\$4,645</u>
4.	Employee Contributions	\$11,513,513	8.50%	\$2,363
5.	Employer Requirement (3-4)	\$11,123,439	8.21%	\$2,282
6.	Expected Net Employer Contribution from 1988 Tax Levy of \$15,400,000 after a 4% Loss	\$14,784,000	10.91%	\$3,034
7.	Expected Net Annual Deficiency (excess)	\$(3,660,561)	(2.70%)	(\$ 752)
8.	Tax Levy Required (Assume 4% Loss)	\$11,586,915		
9.	Required Multiple	1.13		
10.	Present Authorized Multiple	1.37		
11.	Amortization Period (Present Multiple)	8 years		

The "Illinois Public Employees Pension Laws Commission Impact Statement," appended to this report, illustrates both the present financial position and the direction of the financial condition.

The above table indicates that the Fund is more than meeting the annual actuarial cost on the normal cost-plus-interest basis.

The following bar chart illustrates the annual actuarial cost for the next year (composed of current service cost and past service cost) to be paid for by the employee and the employer. The annual cost is more than being met. The employer portion is provided by tax levy (the third column).





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AIL OF NORMAL COST	% Salary	<pre>\$ Per Active Member</pre>
Retirement Annuity Post-Retirement Annuity Increase Post-Retirement Spouse Annuity Spouse Annuity for Death in Service Health Insurance Child's Annuity Ordinary Disability Duty Disability Refunds Widows'/Widowers' Compensation Expense of Administration	6.88% 1.46 .71 .61 .03 .07 .89 .89 1.49 0.00	\$1,911 407 197 171 8 19 248 249 413 0 456
Reciprocal Benefits	0.10	27
	14.77%	\$4,106

CHANGE IN THE UNFUNDED LIABILITY

The total unfunded liability as of December 31, 1987, is \$36,336,974. As of December 31, 1986, it was \$18,581,842.

Detail of Change in Unfunded Liability

1.	Increase in Salaries under 6.0% Assumed	(\$ 4,287,957)	Decrease
2.	Investment Yield over 7.5% Assumed	(21,518,841)	Decrease
3.	Excess in Annual Contribution: 1987 Total Actuarial Requirement\$20,171,065 Less Employer Net to Fund 1987 Tax Levy	(6,348,853)	Decrease
4.	Change in Assumptions (Retirement Rates)	12,677,781	Increase
5.	Amendments (HB 2715)	29,787,872	Increase
6.	Miscellaneous Actuarial Changes	7,445,130	Increase
Net	Change in Unfunded Liability	\$17,755,132	Increase

FUNDED RATIO:

The ratio of assets to liabilities is 93.77% as of December 31, 1987, and was 96.34% as of December 31, 1986. This ratio represents the extent to which present and future benefit promises are secured by present assets. The funded ratio decreased because assets increased 11.8% while liabilities increased 14.8%.

RATIO OF ACTIVE EMPLOYEES TO ANNUITANTS and BENEFICIARIES:

The ratio of active employees to annuitants and beneficiaries is 1.20 as of December 31, 1987, and was 1.19 as of December 31, 1986. This ratio illustrates the relationship between the contributors and the beneficiaries.

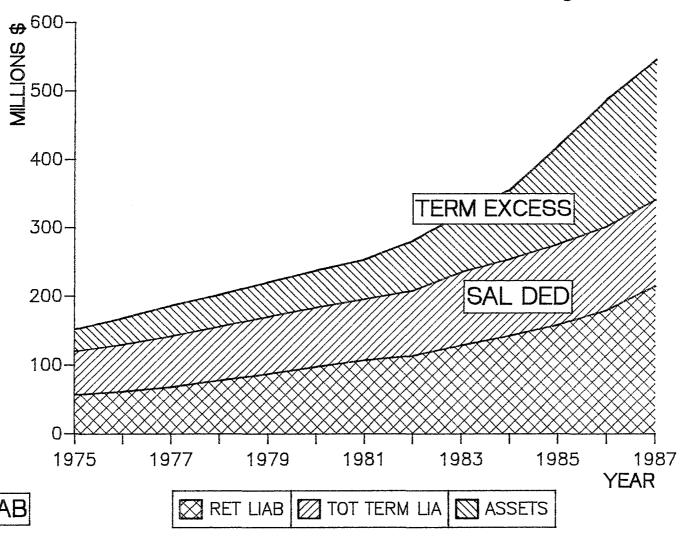
TERMINATION LIABILITY

A measure of plan funding is to compare the assets to liabilities for present annuitants and the amount of refundable contributions for active and inactive employees. This amount would be a minimum measure of what it would cost to terminate the plan as of the valuation date.

	1986	1987	
Liability for Retired Annuitants and Widows/Widowers Spouses of Annuitants	\$179,881,834	\$215,483,5	;99
Salary Deductions Contributed by Active Fund Members	\$122,432,246	\$126,554,2	<u> 199</u>
Total Assets at Book Value	\$302,314,080 \$489,403,006	\$342,037,8 \$546,947,0	
Excess Upon Termination	\$187,088,926	\$204,909,	154
Available Assets for Actives (Retirees Fully Funded)	\$309,521,172	\$331,463,4	153
Available Per Active Employee	\$ 63,898	\$ 68,0)20
Refundable per Active Employee	\$ 25,275	\$ 25,9	9 70
Ratio of Available to Refundable	253%	26	62%

The following chart illustrates the remaining assets after terminating the plan.

1987 Termination Liability



VESTED LIABILITY

We have computed the value of vested benefits for active employees. That is, an employee who is eligible to retire, either with an immediate or deferred retirement annuity, is assumed to retire and is valued at the estimated amount of annuity for the employee's life. The value of estimated post retirement annuity increase and estimated spouse annuity is added. No death or disability benefits for those dying or becoming disabled in the future are included. Active employees not currently eligible for a retirement benefit are valued at the amount of their refundable accumulated salary deductions with statutory interest. Retired lives are entirely vested. The total vested liability computed using the actuarial assumptions of interest and mortality in this report is greater than the termination liability used in previous reports because the value of a retirement annuity for an eligible employee is greater than the amount of his or her accumulated salary deductions.

	1986	<u>1987</u>
Liability for Retired Annuitants and Widows/Widowers and Spouses of Annuitants	\$179,881,834	\$215,483,599
Value of Active Employees Eligible To Retire Accumulated Salary Deductions of Active Employees Eligible for Refund	\$234,844,382	\$244,134,459
and not Annuity	\$ 70,442,970	\$ 76,574,038
Active Vested Liability	\$305,287,352	\$320,708,497
Total Vested Liability	\$485,169,186	\$536,192,096
Assets at Book Value	\$489,403,006	\$546,947,052
Unfunded Vested Liability	(\$ 4,233,820)	(\$ 10,754,956)
Vested Funded Ratio	100.87%	102.01%

The average amount of assets required per active employee to provide for vested benefits as of the valuation date is \$65,813. This should be compared to the average amount of assets required per active employee to fully fund the present amount required to provide for future projected retirement annuity assuming future service and salary increments--using the entry age normal funding method described in the actuarial assumptions and methods. This amount per active employee is \$75.477.

The Governmental Accounting Standards Board (GASB) Statement No. 5 - Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Governmental Employers requires disclosure of the actuarial present value of credited projected benefits for reports issued for fiscal years beginning after December 15, 1987.

The Actuarial Present Value (APV) of credited projected benefits must take into account the long-term nature of the pension obligations on a going-concern basis (rather than a termination basis). Benefits are projected to anticipated retirement, assuming future salary increases and future years of service credit. The liability or value of credited benefits is determined based on the ratio of years of service to date to the total years of service at projected retirement. This measure differs from the actuarial cost method used for funding the pension plan. The credited projected benefit method is not recommended for funding if level costs are desired.

The stated purpose of the GASB disclosure is to provide persons familiar with financial matters with information useful to (a) assess the funding status on a going-concern basis, (b) ascertain the progress made in accumulating assets to pay benefits when due, and (c) assess the extent to which employers are making contributions to the system at actuarially determined rates. The use of a single actuarial method--the credited projected benefit method, which may differ from that used for funding--is to facilitate comparison and understanding. However, the financial health of the pension plan should be measured against the actuarial method used for funding the plan. No split between vested and nonvested current employees is possible, due to the different vesting schedules of the defined benefit and defined contribution portions of the benefits.

See complete GASB disclosure exhibit in the rear of this report.

	<u>1986</u>	<u>1987</u>
Pension Benefit Obligation (PBO)		
APV of Credited Projected Benefits Accumulated contributions (with interest) Payable to retirees and beneficiaries Payable to vested and nonvested	\$122,432,246 \$179,881,834	\$126,554,299 \$215,483,599
current employees	\$153,290,004	\$179,943,893
Total APV	\$455,604,084	\$521,981,791
Net assets available for benefits (book value)	\$489,403,006	\$546,947,052
Excess assets over APV of credited projected benefits	(\$ 33,798,922)	(\$ 24,965,261)
Percentage funded	107.42%	104.78%
Unfunded APV as % of Payroll	(26.28%)	(18.43%)

A continuous review of the Fund's operating experience is needed, just as it has been needed in the past. The rates of salary increases, rates of retirement and investment earnings are of critical importance in cost estimates. Costs will need to be adjusted as these factors vary.

For example, for every \$1 increase in salary over the 6% increases assumed in the salary scale the unfunded liability will be increased by about \$2.72. This will be in addition to the additional current annual service cost for every dollar in salary over the 6% salary scale assumed.

These additional costs will be reduced to some extent by the annual amount of investment income earned over the assumed 7.5% used for valuation purposes. The extent of the reduction will depend on the relative amounts of these two items.

The disadvantage of funding methods that use the level percent of payroll funding of past service is that the unfunded liability will continually increase if salaries continue at the predicted rates. Subject to projections of contributions and disbursements for potential cost flow problems the level percent of payroll method would appear to provide a long-range level funding method on a minimum funding basis whether for interest only or over a 40 year period.

OTHER MATTERS

RYAN LAWSUIT

An annuitant has sued the city for failing to make contributions to the four City pension funds on a timely basis. A judgment was entered in the amount of approximately \$15-\$20 million for the four City pension funds representing interest on the city contribution. This fund share has not been included in this report.

KORSHAK LAWSUIT

The City is seeking to recover from the four City pension funds approximately \$83 million in past annuitant health care costs paid by the City for the period 1980-1987 in excess of the "premiums" paid by annuitants and the "supplement" paid by the pension fund. The City contends that these past health care costs are a responsibility of the pension funds and all future health care costs are a responsibility of the pension funds, the annuitants, or both. These liabilities, which could be substantial, have not been included in this report. Present financing is not adequate to fund these liabilities on a long-term basis.

The RYAN monies or the potential KORSHAK liabilities have not been included in this report.

Respectfully submitted,

Donald F. Campbell, F.C.A., M.A.A.A. Enrolled Actuary # 1248

Donald P. Campbell, F.S.A., M.C.A., M.A.A.A. Enrolled Actuary #1498

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ACTUARIAL BALANCE SHEET

AS OF

DECEMBER 31, 1987

ASSETS

AND

LIABILITIES

LIABILITIES AND FUND BALANCES

ACTUARIAL BALANCE SHEET AS OF DECEMBER 31, 1987

ANNUITY PAYMENT FUND ACCOUNT (Based on 4% Amer. Exp. & 3% Comb.) Employee Annuitants Employee Annuities Fixed Spouse Annuitants Spouses' Annuities Fixed Total Annuity Payment Fund	\$ 60,164,950.32 11,423,012.04 21,819,059.04 18,366,384.60	\$111,773,406.00
SALARY DEDUCTION FUND ACCOUNT Employees Spouses of Employees Total Salary Deduction Fund	\$ 90,287,148.56 20,508,543.53	\$110,795,692.09
CITY CONTRIBUTION FUND ACCOUNT Employees Spouses of Employees Supplemental Annuities Total City Contribution Fund	\$ 84,244,296.17 27,838,766.25 4,027.35	\$112,087,089.77
OTHER RESERVES Supplementary Payment Reserve Annuity Payment Fund Account Total Other Reserves	\$ 68,955.31 4,399,029.59	\$ 4,467,984.90
PRIOR SERVICE FUND ACCOUNT (Based on 4% Amer. Exp. & 3% Comb.) Employee Annuitants Spouse Annuitants Spouses' Annuities Fixed Salary Deductions 3% Annuity Increase Estimated Excess Liability (Note 1) Total Prior Service Account	\$128,614,004.88 10,775,529.48 4,982,598.88 9,288,573.38 90,499,147.27	\$244,159,853.89
TOTAL LIABILITIES		\$583,284,026.65
Obligations of Fund for Prior Service Li	abilities (Note 1)	(\$ 36,336,974.57)
TOTAL NET LIABILITIES AND FUND BALANCES		\$546,947,052.08

Note 1 - The letter of transmittal attached hereto sets forth the manner in which this liability was determined.

INCOME

YEAR 1987

INCOME

AND

EXPENDITURES

EXPENDITURES FOR YEAR 1987

TOTAL INCOME FORWARDED	\$83,268,881.38
ANNUITIES AND BENEFITS PAID Employees' Annuities Spouses' Annuities Children's Annuities Ordinary Disability Duty Disability Supplementary Payments Annuitant Health Insurance	\$17,927,108.38 2,702,842.00 92,200.00 1,208,314.24 1,211,598.84 29,881.20 298,674.00
Total Benefits Paid	\$23,470,618.66
Reciprocal Act Reimbursements Net Benefits Paid	(<u>5,021.03</u>) \$23,465,597.63
EXPENSE OF ADMINISTRATION	
Salaries Regular Employees Blue Cross & Blue Shield Services	\$ 259,870.32 31,095.50
Legal Expense Medical Expense Actuarial Consulting Auditing Annuities/Dis./Ret./Est. Employee Accts. & Cont./Stmt. Check Processing Office Supplies and Equipment Printing and Stationery Postage Rent & Electricity Election Expense Telephone & Telegraph Conference & Association Exp. Insurance Premiums Miscellaneous Total Expenses	16,000.80 19,300.08 4,441.11 19,000.00 105,700.00 80,627.79 44,837.39 15,448.06 18,663.90 19,468.05 93,302.51 786.00 2,053.84 17,839.00 214.00 2,902.66 751,551.01
REFUNDS TOTAL EXPENDITURES	2,012,474.93 \$26,229,623.57
EXCESS INCOME OVER EXPENDITURES	\$57,039,257.81
Net Change in Reserve for Loss on Coll and Taxes Receivable for Prior Year	
INCREASE IN NET ASSETS FOR YEAR	\$57,544,046.06

COMPARATIVE ANALYSIS

YEAR 1987

ASSETS

AND

LIABILITIES

COMPARATIVE ANALYSIS

LIABILITIES AND FUND BALANCES

LIABILITY RESERVES ANNUITY PAYMENT FUND	01/01/87	12/31/87	Increase (Decrease)
Employee Annuitants Emp. Annuities Fixed Spouse Annuitants Spouses' Annuities Fixed	\$ 54,294,206 11,428,993 19,696,871 16,136,185	\$ 60,164,950 11,423,012 21,819,059 18,366,385	\$ 5,870,745 (5,981) 2,122,188 2,230,199
Total	\$101,556,255	\$111,773,406	\$10,217,151
SALARY DEDUCTION FUND ACCOUNT Employees Spouses of Employees	\$ 86,365,679 19,533,271	\$ 90,287,149 20,508,544	\$ 3,921,469 975,273
Total	\$105,898,950	\$110,795,692	\$ 4,896,742
CITY CONT. FUND ACCOUNT Employees Spouses of Employees Supplemental Annuities	\$ 80,760,585 26,633,930 3,898	\$ 84,244,296 27,838,766 4,027	\$ 3,483,711 1,204,836 129
Total	\$107,398,413	\$112,087,090	\$ 4,688,676
OTHER RESERVES Supplemental Pymt. Res. Annuity Fund Account	\$ 68,837 3,467,167	\$ 68,955 4,399,030	\$ 118 931,862
Total	\$ 3,536,004	\$ 4,467,985	\$ 931,981
PRIOR SERVICE FUND ACCOUNT Employee Annuitants Spouse Annuitants Spouses' Annuities Fixed Sal. Ded. 2% Annuity Estimated Excess Liability	\$105,817,526 3,396,030 4,016,861 8,758,997 67,605,813	\$128,614,005 10,775,529 4,982,599 9,288,573 90,499,147	\$22,796,479 7,379,499 965,738 529,576 22,893,334
Total	\$189,595,226	\$244,159,854	\$54,564,628
TOTAL LIABILITIES	\$507,984,849	\$583,284,027	\$75,299,178
UNFUNDED OBLIGATIONS	(\$ 18,581,843)	(\$ 36,336,975)	(\$17,755,132)
TOTAL NET LIABILITIES	\$489,403,006	\$546,947,052	\$57,544,046

TAXES RECEIVABLE

DECEMBER 31, 1987

Year	Uncollected Taxes 12-31-87	Estimate for Loss 12-31-86	Additional Est. Setup 12-31-87	Total Est. for loss 12-31-87	Taxes Collectible 12-31-87
CITY					
1983 1984 1985 1986 1987	\$ 309,764.06 360,564.17 523,764.46 694,890.35 12,408,000.00	(353,353.00) (371,439.00)	(\$ 8,789.84) 10,129.00 167,716.00 284,175.00 (<u>620,400.00</u>)	(\$ 310,759.84) (343,224.00) (203,723.00) (347,325.00) (620,400.00)	(\$ 995.78) 17,340.17 320,041.46 347,565.35 11,787,600.00
	\$14,296,983.04	<u>(\$1,658,262.00)</u>	(\$167,169.84)	(\$1,825,431.84)	<u>\$12,471,551.20</u>
1987	\$ 2,852,000.00 \$17,148,983.04	Replacement tax	k due from Stat	te	\$ 2,852,000.00 \$15,323,551.20

PARK DISTRICT

1983 1984 1985 1986 1987	\$ 579.47 (\$ 916.41 (766.04 (0 (21,000.00	702.28) 994.21) 1,450.00) 1,250.00)	\$ (122.81 77.80 683.96 1,250.00 1,050.00)	(\$ (((579.47) \$ 916.41) 766.04) 0) 1,050.00)	0 0 0 0 19,950.00
	\$ 23,261.92 (\$	4,396.49)	<u>\$</u>	1,084.57	(<u>\$</u>	3,311.92) \$	19,950.00

TOTAL

 $\underline{\$17,172,244.96}$ ($\underline{\$1,662,658.49}$) ($\underline{\$166,085.27}$) ($\underline{\$1,828,743.76}$) $\underline{\$15,343,501.20}$

Note: The loss on the 1987 tax levy was 5%. Due to the 100% collection of the personal property replacement tax, the overall loss is 4%. The statutory requirement of \$15,281,000 is the sum of \$12,408,000 plus \$21,000 plus \$2,852,000.

MEMBERSHIP STATISTICS

YEAR 1987

		Number at Beginning of Year	Increases	Decreases	Number At End of Year
Α.	Changes in Active Participants				
	Male	4,486	274	239	4,521
	Female	358	40	46	352
	Total	<u>4,844</u>	314	<u>285</u>	4,873
В.	Changes in Annuitants & Beneficiari	es			
	Employee Annuitants	2,406	180	170	2,416
	Spouse Annuitants	1,205	79	75	1,209
	Children's Annuities	93	18	27	84
	Ordinary Disability Benefits	119	89	126	82
	Duty Disability Benefits	155	566	569	152
	Reciprocal: Employee Spouse	81 21	10 11	9 1	82 31
	Widow/Widower Compensation Annuities	2	0	0	2
	Total	4,082	<u>953</u>	977	4,058
C.	Ratio of Active Participants to Annuitants & Beneficiaries	<u>1.19</u>	•		1.20

SALARY AND AGE STATISTICS

YEAR 1987

Ages and Salaries as of December 31, 1987

Male

Ages	Number	Annual Salaries	Average Annual Salaries
Under 20 20 - 24 25 - 29 30 - 34 35 - 39 40 - 44 45 - 49 50 - 54 55 - 59 60 - 64 65 - 69 70 & over Without Record	1 86 460 726 605 451 509 479 511 416 167 61 49	\$ 18,936 2,337,480 12,785,448 21,012,432 17,455,344 13,040,472 14,954,400 13,574,688 14,671,392 11,798,688 4,757,280 1,816,608 1,322,640	\$18,936 27,180 27,794 28,943 28,852 28,915 29,380 28,340 28,711 28,362 28,487 29,780 26,993
Total	<u>4521</u>	\$129,545,808	<u>\$28,654</u>
	Female		
20 - 24 25 - 29 30 - 34 35 - 39 40 - 44 45 - 49 50 - 54 55 - 59 60 - 64 65 - 69 70 & over Without Record	8 21 19 14 12 20 28 58 91 63 9	\$ 193,200 478,152 469,344 362,952 260,088 413,664 519,696 861,144 1,282,296 833,928 86,664 146,160 \$ 5,907,288	\$24,150 22,769 24,702 25,925 21,674 20,683 18,561 14,847 14,091 13,236 9,629 16,240 \$16,782
TOTAL MALE AND FEMALE	<u>4873</u>	\$135,453,096	<u>\$27,797</u>

SALARY AND AGE STATISTICS

YEAR 1987

AGES AT ENTRANCE

	!	MALE	FEMA	ALE
	Number	Annual Salaries	Number	Annual Salaries
Under 25 25 - 29 30 - 34 35 - 39 40 - 44 45 - 49 50 - 54 55 - 59 60 & over W/O record	1,586 936 647 419 396 250 134 85 19	\$ 47,111,520 26,985,216 17,826,264 11,815,440 10,974,744 6,934,488 3,592,776 2,411,376 571,344 1,322,640	28 44 58 90 79 33 8 1 2	\$ 630,312 859,392 1,089,720 1,356,792 1,148,184 502,008 132,984 18,360 23,376 146,160
Totals	4,521	\$129,545,808	<u>352</u>	\$5,907,288
Average Annual Sa Average Attained Average Service Average Age at En	Age	\$28,654 44.3 13.9 30.4		\$16,782 54.2 17.3 36.9

AGE AND SERVICE DISTRIBUTION

YEAR 1987

Average Salaries by Age and Service Grouping (Showing the Number of Members and the Average Salaries of Males and Females Combined)

Ages	Under 1	1-4	5-9	Year 10-14	rs of Se 15-19	rvice 20-24	25-29	30-34	35+	Total
00-20		1 18936								1 18936
20-24	5 23990	64 26501	25 28501							94 26992
25-29	8 29985	148 25709	274 28109	51 29743						481 27575
	14 31994									745 28835
35-39	5 26750	94 25476	196 27229	216 30551	88 30862	20 31898				619 28786
40-44	2 28308	62 25779	112 27877	118 28010	87 30259	76 31764	6 28592			463 28727
45-49	2 26904	40 26343	92 27124	107 28232	72 29144	135 30316	81 31522			529 29051
50-54	4 28620	39 27157	83 26858	83 28618	71 27598	99 25858	90 29235	38 30676		507 27800
55-59	4 30534	17 26739	53 26631	92 26904	56 26943	111 25356	80 26511	107 28838	49 31417	569 27298
60-64	1 44640	15 26790	43 26737	63 27632	69 26519	133 22861	61 23306	63 26333	59 30391	507 25801
65-69	ı		15 28806	25 28084	29 25855	73 20574	34 22414	30 26803	24 26633	230 24310
70+		1 17808	3 31824	16 28502	9 29963	15 22526	9 25645	11 31822	6 24260	70 27190
W/O	8 8847	13 29533	18 <u>26297</u>	10 28596	6 <u>28660</u>	1 31824	1 30888	1 20112	<u></u>	58 <u>25324</u>
No. Sal. Age Servi	53 26490 ce	634 26330	1175 27695	1095 29053	503 28719	663 26291	362 27410	250 28338	138 29835	4873 27797 45.0 14.1
RL87					39					LAB

LABORERS' AND RETIREMENT BOARD EMPLOYEES' ANNUITY AND BENEFIT FUND OF CHICAGO ANNUITANTS CLASSIFIED BY AGE AS OF DECEMBER 31, 1987 Retirement Annuities*

Average Average Male Annua1 Annual Female Annual Annua 1 Number Ages Number **Payments Payments Payments Payments** \$ \$ \$ \$ 20 - 2425 - 2930 - 341 3,000.00 3,000.00 35 - 39 3 9,000.00 3,000.00 40 - 44 1 3,000.00 3,000.00 45 - 4950 - 54 4 21,649.08 5,412.27 55 - 59 14,844.92 42 623,486.64 5 49,349.88 9,869.98 3,491,364.12 60 - 64259 13,480.17 31 144,347.52 4,656.37 65 - 69 441 5,113,959.48 11,596.28 746,372,40 144 5,183.14 70 - 74 1,024,191.36 4,511.86 436 3,791,152.44 8,695.30 227 75 - 79 2,040,069.60 7,364.87 179 658,922.16 277 3,681.13 80 - 84 132 885,380.04 6,707.42 132 469,750.56 3,558.72 4,901.60 85 - 89 56 274,489.44 67 228,295.20 3,407.39 90 - 94 23 109,490.40 4,760.45 26 85,301.28 3,280.82 95 - 99 29,577.12 4,929.52 5 6 15,415.20 3,083.04 100-105 1 3,000.00 3,000.00 Totals 1681 \$16,395,618.36 \$ 9,753.49 817 \$3,424,945.56 \$ 4,192.10 75

Average Age 71 Spouses Annuities (Not Including Compensation)

Average Average Annua₁ Male Annual Female Annua 1 Annua 1 **Payments** Number Ages Number **Payments Payments Payments** \$ \$ \$ 20 - 24 25 - 29 1 2,400.00 2,400.00 4 30 - 34 9,600.00 2,400.00 3 35 - 39 3,054.84 9,164.52 17 40 - 44 44,145.60 2,596.80 27 45 - 49 76,662.24 2,839.34 50 - 54 40 144,560.16 3,614.00 55 - 59 2,400.00 2,400.00 82 243,040.92 2,963.91 1 60 - 643,228.29 1 2,400.00 2,400.00 165 532,668.48 65 - 69 1 2,400.00 2,400.00 228 721,823.28 3,165.89 6 70 - 74 14,400.00 2,400.00 265 772,178.52 2,913.88 75 - 79 5 203 575,463.36 2,834.79 12,000.00 2,400.00 80 - 84 1 103 267,867.00 2,600.65 2,400.00 2,400.00 85 - 89 62 155,987.40 2,515.93 20 90 - 94 50,158.68 2,507.93 95 - 99 5 13,078.56 2,615.71 100-105 15 \$36,000.00 2,400.00 1225 \$3,618,798.72 \$2,954.12 Totals

Average Age $\frac{72}{\text{*Annuities have been adjusted for minimums included in HB 2715.}}$

<u>70</u>

NEW ANNUITIES GRANTED

DURING 1987

	Aı	Male nnuitants		Female nuitants	Wi D	Widows/ dowers of eceased mployees	Wi D	Widows/ dowers of eceased nuitants
Number Retired		155		35		26		64
Average Attained Age		64.8		65.7		54.9		71.5
Average Length of Service		28.8		24.2		22.3		N/A
Average Annual Salary (4 out of 10)	\$	26,544	\$	10,884		N/A		N/A
Average Annual Final Salary	\$	29,136	\$	11,496	\$	26,508		N/A
Total Annual Annuity	\$	2,436,540	\$	189,741	\$	115,009	\$	215,208
Average Annual Annuity	\$	15,720	\$	5,421	\$	4,423	\$	3,363
Total Liability (7.5% UP-1984)	\$	27,155,746	\$2	2,205,540	\$1	,205,228	\$1	,723,926
Average Liability	\$	175,198	\$	63,015	\$	46,354	\$	26,936
Total Cost for Income Tax Purposes	\$	3,066,330	\$	254,916	\$	385,984		N/A
Average Cost	\$	19,783	\$	7,283	\$	14,846		N/A
Expected Future lifetime (yrs.)		15.35		18.14		26.89		14.05
Payback Period (yrs.)		1.26		1.34		3.36		N/A
Replacement ratio		54.0%		47.2%		N/A		N/A
Liability divided by Salary	. =	6.01		5.4 8		N/A		N/A

HISTORY 1965 to 1987

HISTORY OF AVERAGE ANNUAL SALARIES ENTIRE FUND

Year End	Members in Serv.(1)	Percent <u>Increase</u>		Percent Increase	Salary	Percent	Actuarial Salary Assumption	CPI Chicago
for	7,936 7,995 8,102 7,891 7,777 7,220 6,864 6,971 6,752 6,638 7,032 6,613 6,752 6,613 6,175 5,847 5,765 5,847 5,765 5,970 5,424 5,341 5,138 4,844 4,873 age Last	5	\$ 45,872,832 47,598,552 52,268,304 56,165,136 60,523,296 62,916,768 66,142,320 69,950,692 73,108,848 78,526,728 89,276,280 90,487,008 98,029,296 103,399,152 105,825,264 108,854,496 118,054,512 134,293,920 131,355,840 131,327,856 125,594,688(3 128,601,816 135,453,096 ase)	2.4 5.3	\$ 5,780 5,954 6,451 7,118 7,782 8,714 9,636 10,035 10,828 11,830 12,696 13,285 14,519 15,636 17,138 18,617 20,478 22,495 24,218 24,589 24,444 26,549 27,797	2.3% 3.0 8.3 10.3 9.3 12.0 10.6 4.1 7.9 9.3 7.3 4.6 9.3 7.7 9.6 8.6 10.0 9.8 7.7 1.5 (.6) 8.6 4.7 (2	1.00% 1.75 1.75 1.75 1.75 3.50 3.50 5.00 5.00 5.00 5.00 6.00 6.00 6.00 6	1.4% 2.9 2.7 4.3 5.4 5.6 3.9 2.9 6.2 10.7 7.9 4.8 8.6 12.5 4.0 8.0 4.1
Year		(3.9)%		.2%		4.4%		3.5%
Avg. 10 Y	Last ears	(3.1)%		3.4%		6.8%		7.0%

- (1) Includes those members who were on disability.
- (2) Average annual increase in salary 1965-1987, about 7.4% compounded. The average increase in the Chicago CPI for the same period is about 6.0%.
- (3) Total salaries include the 7% Board of Education "pick up" for the first time due to a change in the law.

HISTORY OF TOTAL ANNUITIES

Employee Annuitants (Male and Female)

Year	Number of	Total	Average
End	Annuitants	Annuities	Annuities
1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986	1,593 1,651 1,675 1,724 1,777 1,831 1,907 2,009 2,087 2,188 2,227 2,379 2,420 2,419 2,419 2,469 2,419 2,469 2,419 2,487 2,498	\$2,495,396 2,779,061 2,927,594 3,373,308 3,781,854 4,331,609 4,887,747 5,633,971 6,287,310 7,162,866 7,976,776 8,958,700 9,950,080 10,725,716 11,550,456 13,123,860 14,194,488 16,737,498 19,820,563	\$1,566 1,683 1,748 1,957 2,128 2,366 2,563 2,804 3,013 3,274 3,582 3,766 4,112 4,434 4,775 5,315 5,868 6,730 7,934
		e Annuitants ding Compensation)	
1969	909	\$ 640,079	\$ 704
1970	928	673,352	726
1971	921	711,618	773
1972	932	775,469	832
1973	967	860,410	890
1974	997	959,632	963
1975	1,022	1,053,816	1,031
1976	1,041	1,142,064	1,097
1977	1,059	1,267,194	1,197
1978	1,075	1,381,263	1,285
1979	1,111	1,523,370	1,371
1980	1,154	1,689,076	1,464
1981	1,153	1,768,868	1,534
1982	1,174	1,927,743	1,642
1983	1,211	2,128,737	1,758
1984	1,228	2,304,994	1,877
1985	1,210	2,462,519	2,035
1986	1,226	2,610,422	2,129
1987	1,240	3,654,798	2,947

LABORERS' AND RETIREMENT BOARD EMPLOYEES' ANNUITY AND BENEFIT FUND OF CHICAGO HISTORY OF INVESTMENT YIELDS

Nonrecurring Gains and Losses Are Excluded from Income

	norm court in g use in a good of	Investment Yield	Investment Yield
		on	on
<u>Year</u>		<u>Total Assets</u>	Invested Assets
1971		4.75%	4.99%
1972		5.47	5.70
1973		5.76	6.03
1974		6.58	6.98
1975		7.25	7.73
1976		7.23	7.65
1977		7.01	7.35
1978		6.61	6.97
1979		7.38	7.82
1980		7.69	8.20
1981		8.46	9.11
1982		9.88	10.47
1983		9.37 (9.30)*	9.79 (9.72)*
1984		9.67 (9.58)*	
1985		8.89 (8.72)*	
1986		7.44 (7.14)*	
1987		<u>6.50 (6.20)</u> *	
Avg. of Last	5 Years	8.37%(8.19)*	8.72%(8.53)*

		Nonre	curring G	lains and L	osses are Included	in Income
		Avg.	30	3 Mo.	Investment Yield	Investment Yield
	Actuarial	Ins.	Year	Treasury	on	on
Year	<u>Assumption</u>	Co.	Treasury	<u>Bills</u>	Total Assets	Invested Assets
1971	4.50%	5.44%	N/A	4.348%	3.95%	4.14%
1972	4.50	5.56	N/A	4.071	4.79	5.00
1973	5.00	5.88	N/A	7.041	3.60	3.77
1974	5.00	6.25	N/A	7.886	3.55	3.76
1975	5.00	6.36	N/A	5.838	6.17	6.58
1976	6.00	6.55	N/A	4.989	6.98	7.39
1977	6.00	6.89	N/A	5.265	7.00	7.35
1978	6.00	7.31	8.49%	7.221	5.34	5.62
1979	6.00	7.73	9.29	10.041	6.61	7.00
1980	6.00	8.02	11.30	11.506	5.66	6.03
1981	6.00	8.57	13.44	14.029	3.99	4.29
1982	6.75	8.91	12.76	10.686	7.64	8.09
1983	6.75	8.96	11.18	8.520	11.14 (11.07)*	11.64 (11.57)*
1984	6.75	9.45	12.39	9.570	8.88 (8.79)*	
1985	7.00	9.63	10.79	7.470	16.34 (16.17)	· 17.07 (16.89)*
1986	7.50	9.35	7.80	5.970	16.06 (15.74)	
1987	7.50	NA	8.59	5.820	11.90 (11.59)	
Ava o			10.15%	7.460%	$\overline{12.86\%(12.67)}$	

^{*}Investment income is net of investment expense.

Notes: Yield = Investment Income

1/2(Assets at beginning + Assets at end - Investment Income)

Bonds valued at amortized value, stocks at cost. Market values are not considered.

RL87

1984 SESSION

Direct deposit

1985 SESSION

HB 398 1.80, 2.00, 2.20, 2.40% Benefit accrual rate for those born before January 1, 1936, and retiring after August 16, 1985

Reduction in age discount factor (employee and widow) from 0.5% to 0.25% for employees born before January 1, 1936, and retiring or dying in service after August 16, 1985

Health insurance supplement up to \$25 per month if the employee is age 65 or older with at least 15 years of service (for each employee annuitant in receipt of annuity and for each employee who retires on annuity in the future)

Disability provisions extended to age 70 in certain cases
Unisex money purchase factors for widows/widowers
Membership provisions extended to age 70
Board of Education employee contribution "pick up" included in the definition of salary for contribution and benefit purposes

1986 SESSION

HB 2630 Cap removed on spouse maximum annuity.

Automatic post-retirement increase to begin on first anniversary of retirement following attainment at age 60.

1987 SESSION

HB 2715 1.80, 2.00, 2.20, 2.40% Benefit accrual rate for those born on or after January 1, 1936, and retiring on or after January 1, 1988

Reduction in age discount factor (employee and widow) from .5% to .25% for employees born on or after January 1, 1936, and retiring or dying in service on or after January 1, 1988. No discount for employee age less than 60 if employee has at least 35 years of service

Minimum employee annuity of \$250 and minimum spouse annuity of \$200 under certain conditions

Elimination of cap on maximum widow's annuity for spouses of certain retired employees with repayment of any "excess spouse" refund

Change amount of children's benefits to \$120 or \$150 effective 1-1-88

Provide for certain "Good Government" initiatives

Remove chronic alcoholism restriction for ordinary disability

LABORERS' AND RETIREMENT BOARD EMPLOYEES' ANNUITY AND BENEFIT FUND OF CHICAGO HISTORY OF RECOMMENDED EMPLOYER MULTIPLES

Year of Report	Statutory Multiple	Normal Cost Plus Interest	Normal Cost Plus 40 Year Amortization	Normal Cost Plus 40 Year % of Salary Amortization
1974	1.235	1.48		
1975	1.280	1.33		
1976A	1.325	1.54	1.62	1.24
1977	1.370	1.53	1.62	1.24
1978A	1.370	1.69	1.78	1.38
1979	1.370	1.62	1.71	1.34
1980	1.370	1.96	2.04	1.67
1981	1.370	1.59	1.67	1.30
1982A	1.370	1.34	1.40	1.03
1983B	1.370	1.54	1.60	1.21
1984	1.370	1.58	1.63	1.30
1985AB	1.370	1.60	1.64	1.33
1986AB	1.370	.99	1.00	.94
1987AB	1.370	1.13	1.15	1.03

A = Change in actuarial assumptions B = Change in benefits

HISTORY OF FINANCIAL INFORMATION HISTORY OF CHANGE IN UNFUNDED LIABILITY

	Salary Scale	Investment	Contribution	Amendments
1976	\$ 2,054,198	(\$ 3,060,916)	\$1,344,697	\$ 0
1977	6,438,469	(1,713,276)	25,079	0
1978	999,265	1,250,567	(86,848)	0
1979	9,603,360	(1,250,488)	(104,786)	0
1980	8,111,444	758,925	178,166	0
1981	12,205,164	4,852,598	2,104,112	0
1982	13,090,805	(4,232,954)	(249,949)	0
1983	4,185,219	(12,540,094)	(805,111)	28,057,130
1984	(13,893,652)	(6,915,903)	(708,947)	0
1985	(20,313,749)	(33,560,632)	(404,023)	17,491,073
1986	5,125,287	(38,156,363)	(1,490,690)	15,144,096
1987	(4,287,957)	(21,518,841)	(6,348,853)	29,787,872
TOTALS	\$23,317,853	(\$116,087,377)	(\$6,547,153)	\$90,480,171

	Assumptions	Miscellaneous	Total
1976	(\$ 5,885,819)	(\$ 729,227)	(\$ 6,227,067)
1977	0	1,742,226	6,492,498
1978	4,719,124	926,635	7,808,743
1979	0	(4,182,778)	4,065,308
1980	0	(4,483,742)	4,564,793
1981	0	(12,538,029)	6,623,845
1982	(10,209,470)	(2,498,897)	(4,100,465)
1983	0	(5,235,581)	13,661,563
1984	0	3,858,364	(17,660,138)
1985	806,348	5,624,931	(30,356,052)
1986	(50,944,726)	13,613,438	(56,708,958)
1987	12,677,781	7,448,590	17,758,592
TOTALS	(\$48,836,762)	\$ 3,545,930	(\$54, 127, 338)

Over the last 12 years, the unfunded liability has decreased by \$54.1 million. The biggest component of increase has been benefit changes which account for \$90.5 million; followed by salary increase over the assumed amount of \$23.3 million; followed by miscellaneous changes due to actuarial experience (retirement, disability, death and withdrawal) of \$3.5 million. The components which reduced the unfunded liability over the same period were investment earnings in excess of the assumed amount of \$116.1 million changes in actuarial assumptions of \$48.8 million and more than adequate contributions (on the interest only basis) of \$6.5 million.

Investment earnings in excess of the assumed amount have been the general trend. Salary increases generally have exceeded the assumed increases, but not always, and have been approximately offset by the investment gains. Experience for retirements and withdrawals tends to fluctuate, but tracks fairly well the assumed rates. Mortality experience has been somewhat heavier than expected, so the assumed mortality tables can be considered as having a margin for future mortality improvement.

HISTORY OF FINANCIAL INFORMATION

ACCRUED AND UNFUNDED LIABILITIES

71A \$158,815,569 \$110,423,040 69.5% \$48,392,529 \$66,142,320 73% 72 172,160,657 120,072,655 69.7 52,088,002 69,950,692 74 73 197,782,050 128,624,035 65.0 69,158,015 73,108,848 95 74 215,636,093 137,709,821 63.9 77,926,272 78,526,728 99 75 242,216,859 151,749,085 62.7 90,467,774 89,276,280 101 76A 252,410,689 168,219,982 66.6 84,190,707 90,487,008 93 77 277,111,671 186,428,465 67.3 90,683,205 98,029,296 93 78A 301,135,468 202,643,520 67.3 98,491,948 103,399,152 95 79 323,368,034 220,810,778 68.3 102,557,256 105,825,264 97 80 345,364,820 238,242,772 69.0 107,122,048 108,854,496 98 81 367,980,498 254,234,605 69.1 113,745,893 118,054,512 96 82A 391,353,993 281,708,565 72.0 109,645,428 134,293,920 82	Year- End	Accrued Liability	Assets at Book Value	Funded Ratio	Unfunded Accrued Liability	Payroll	Unfunded Accrued % Payroll
83B 444,711,069 321,404,078 72.3 123,306,991 131,355,840 94 84 462,455,964 356,809,111 77.2 105,646,853 131,327,856 80 85AB 495,844,974 420,554,173 84.8 75,290,801 125,594,688 60 86AB 507,984,848 489,403,006 96.3 18,581,842 128,601,816 14 87AB 583,284,026 546,947,052 93.8 36,336,974 135,453,096 27	72 73 74 75 76A 77 78A 79 80 81 82A 83B 84 85AB 86AB	172,160,657 197,782,050 215,636,093 242,216,859 252,410,689 277,111,671 301,135,468 323,368,034 345,364,820 367,980,498 391,353,993 444,711,069 462,455,964 495,844,974 507,984,848	120,072,655 128,624,035 137,709,821 151,749,085 168,219,982 186,428,465 202,643,520 220,810,778 238,242,772 254,234,605 281,708,565 321,404,078 356,809,111 420,554,173 489,403,006	69.7 65.0 63.9 62.7 66.6 67.3 67.3 69.0 69.1 72.0 72.3 77.2 84.8 96.3	52,088,002 69,158,015 77,926,272 90,467,774 84,190,707 90,683,205 98,491,948 102,557,256 107,122,048 113,745,893 109,645,428 123,306,991 105,646,853 75,290,801 18,581,842	69,950,692 73,108,848 78,526,728 89,276,280 90,487,008 98,029,296 103,399,152 105,825,264 108,854,496 118,054,512 134,293,920 131,355,840 131,327,856 125,594,688 128,601,816	74 95 99 101 93 93 95 97 98 96 82 94 80 60 14

SOLVENCY (TERMINATION) TEST

Year End	- Retired Liability	Active Member Salary Deductions	Total Term. Liab.	Assets at Book Value	Termination Cost (excess)	Quick Ratio Assets to Term. Liab.
75 76A 77	\$56,403,573 61,271,047 67,977,467	\$63,162,106 68,189,205 73,608,310	\$119,565,679 129,460,252 141,585,777	\$151,749,085 168,219,982 186,428,466	\$(32,183,406 (38,759,730 (44,842,689) 130
78A 79 80	77,603,101 86,918,802 97,598,923	78,072,062 83,057,007	155,675,163 169,975,809	202,643,520 220,810,778	(46,968,357 (50,834,969) 130) 130
81 82A	107,291,048 113,743,284	88,378,748 94,516,563	183,588,283 195,669,796 208,259,847	238,242,772 254,234,605 281,708,565	(54,654,489 (58,564,809 (73,448,718) 130) 135
83B 84 85AB	, ,	111,888,474 117,882,073	235,632,452 254,602,113 276,396,525	321,404,078 356,809,111 420,554,173	(85,771,626 (102,206,998 (144,157,648) 140
	179,881,434 215,483,599	122,432,246 126,554,299	302,314,080 342,037,898	489,403,006 546,947,052	(187,088,926 (204,909,154	

A Change in valuation assumptions B Change in benefits

Quick ratio is defined as assets divided by the termination liability

PLAN DESCRIPTION

Any employee of the City of Chicago or the Board of Education of the City employed under the provisions of the municipal personnel ordinance as labor service or any person employed by a retirement board of any annuity and benefit fund in the city is covered by the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (Laborers' Plan) which is a defined benefit single employer pension plan with a defined contribution minimum. Although this is a single employer plan, the defined benefits as well as the employer and employee contribution levels are mandated in Illinois State Statutes (Chapter 108 1/2-Pensions-Article 11) and may be amended only by the Illinois legislature. The City of Chicago accounts for the plan as a pension trust fund. The City of Chicago payroll for employees covered by the Laborers' Plan for the year ended December 31, 1987 was \$135,453,096. At December 31, 1987 the Laborers' Plan membership consisted of:

	<u>December 31, 1987</u>
Retirees and beneficiaries currently receiving benefits	3,740
Terminated employees entitled to benefits or a refund of contributions but not	
yet receiving them	1,507
Current employees	4,873

The Laborers' Fund provides retirement benefits as well as death and disability benefits. Employees age 55 or more with at least 10 years of service are entitled to receive a money purchase annuity with partial city contributions if under age 60 with less than 20 years of service. Employees age 55 or more with at least 20 years of service are entitled to receive a minimum formula annuity of 1.8% per year for the first 10 years of service, 2.0% per year for the next 10 years, 2.2% per year for the next 10 years, and 2.4% per year for each year of service over 30 times the final average salary (highest average annual salary for any 4 consecutive years within the last 10 years of service immediately preceding the date of retirement). If the employee retires prior to age 60, the annuity shall be reduced by 1/4 of 1% for each month the employee is under age 60. The original annuity shall not exceed 75% of the highest average annual salary. The monthly annuity is increased by 3% of the original annuity at the first payment date following the later of age 60 or the first anniversary of retirement, and by 3% annually thereafter.

Covered employees are required to contribute 8.5% (7% if age 65 or over) of their salary to the Laborers' Plan. If an employee leaves covered employment without qualifying for an annuity, accumulated contributions are refunded with interest (3% or 4% depending on when employee became a participant). The City of Chicago is required by state statutes to contribute the remaining amounts necessary to finance the requirements of the fund. It is required to levy a tax at a rate not more than an amount equal to the total amount of contributions by the employees to the fund made in the calendar year two years prior to the year for which the annual applicable tax is levied, multiplied by 1.37 annually.

1987

LABORERS' AND RETIREMENT BOARD EMPLOYEES' ANNUITY AND BENEFIT FUND OF CHICAGO GASB DISCLOSURE PLAN ASSETS

Bonds are stated at amortized value; stocks are at cost; real estate separate accounts are at adjusted cost.

FUNDING STATUS AND PROGRESS

The amount shown below as the "pension benefit obligation" is a standardized disclosure measure of the present value of pension benefits, adjusted for the effects of projected salary increases and step-rate benefits, estimated to be payable in the future as a result of employee service to date. The measure is intended to help users assess the funding status of the system on a going-concern basis, assess progress made in accumulating sufficient assets to pay benefits when due, and make comparisons among employers. The measure is the Actuarial Present Value (APV) of credited projected benefits and is independent of the funding method used to determine contributions to the system. No split between vested and nonvested current employees is possible, due to the different vesting schedules of the defined benefit and defined contribution portions of the benefits.

The pension benefit obligation was computed as part of an actuarial valuation performed as of December 31, 1987. Significant actuarial assumptions used in the valuation for 1987 include (a) a rate of return on the investment of present and future assets of 7.5 percent per year compounded annually, (b) projected salary increases of 4 percent per year compounded annually, attributable to inflation, (c) additional projected salary increase of 2 percent per year, attributable to seniority/merit, and (d) post retirement benefit increases of 3 percent per year for employee annuitants age 60 and over.

At December 31, 1987, the excess of assets over the pension benefit obligation was \$24,965,261. At December 31, 1986, this excess was \$33,798,922.

Pension Benefit Obligation (PBO)

APV of Credited Projected Benefits

Al V 01 creatica frojectica belieffts		
Payable to Retirees and Beneficiaries	\$179,881,834	\$215,483,599
Current Employees - Accumulated Employee Contributions	\$122,432,246	\$126,554,299
Payable to Vested and Non-Vested Current Employees	\$153,290,004	\$179,943,893
Total APV	\$455,604,084	\$521,981,791
Net Assets Available for Benefits, at Cost (market value is \$536,199,930)	\$489,403,006	\$546,947,052
Assets Over APV	(\$ 33,798,922)	(\$ 24,965,261)
Percentage Funded	107.42%	104.78%
Assets Over APV as % of Payroll	(26.28%)	(18.43%)

Current year changes in the actuarial assumptions and benefit provisions are reflected in the December 31, 1987 pension benefit obligation shown above. The change in actuarial assumptions increased the pension benefit obligation by \$12,376,774. The changes in benefits increased the pension benefit obligation by \$25,591,929.

CONTRIBUTIONS REQUIRED AND CONTRIBUTIONS MADE

The Plan's funding policy provides for an employer contribution which, when added to the amounts contributed by the employees, will be sufficient for the requirements of the Fund. This amount cannot be more than an amount equal to the total amount of contributions by the employees to the Fund made in the calendar year two years prior to the year of the employer contribution, multiplied by 1.37.

The total required Annual Actuarial Contribution to the Fund (financed by the employee and the city) is equal to the Current Service Cost plus Interest Only on the Unfunded Liability determined using the Entry Age Normal method. The unfunded liability is recognized but not amortized. The employer contribution required for Interest Only on the Unfunded Liability results in a decreasing annual employer cost expressed as a percentage of payroll as future payrolls increase. Since the tax levy is expressed as a multiple of the total salary deductions made two years prior, the City is effectively contributing a level annual percentage of payroll.

For the year 1987 (based on a 1987 multiple of 1.37), the City contributed (after tax levy losses of 4%) \$14,745,709 or 11.47% of payroll. For 1987, the employee contributions were \$11,774,209 or 9.16% of payroll. As the Current Cost requirement for the Entry Age Normal Method plus the requirement for Interest Only on the Unfunded Liability was 15.68% of payroll, an excess of 4.94% of payroll or \$6,348,853 was contributed. Such contribution is applied to amortize the Unfunded Liability.

The Annual Actuarial Contribution to the Fund for 1988 (based on Normal Cost Plus Interest Only Basis) increased by \$2,887,683 because of the amendments and by \$1,348,230 because of the change in actuarial assumptions (retirement rates).

On an alternative amortization basis for 1987, the Current Service Cost plus an amount to amortize the present Unfunded Liability over a sliding 40 year period with increasing payments at 4% representing a constant percentage of payroll, assuming a total of future payroll increase at 4% a year, an excess of 5.32% of payroll or \$6,838,329 was contributed.

It is estimated for 1988 that contributions will again more than meet the standard. If the excess of contributions continues as in 1988, the Unfunded Liability will be amortized over about 8 years.

ANNUAL ACTUARIAL REQUIREMENTS

Actuarial Recommended Contribution (Employer and Employee) Normal Cost Plus Various Amortization Methods.

Year 80 81 82 83A 84B 85 86AB 87AB 88AB	NC Plus Interest \$21,699,408 25,019,195 23,885,754 24,484,651 25,818,914 26,200,791 24,965,655 20,171,065 22,636,952	B NC Plus ERISA 40-Year Amortization \$22,362,086 25,711,368 24,620,727 25,070,322 26,456,281 26,746,874 25,330,252 20,249,927 22,791,167	C NC Plus Increasing % of Salary \$19,478,525 22,699,461 21,422,580 21,442,931 22,731,331 23,555,414 22,617,955 19,681,589 21,679,777	Percen	B C ressed as tage of Salary nning of Year 21.13% 18.41% 23.62 20.85 20.86 18.15 18.67 15.97 20.14 17.31 20.37 17.94 20.17 18.01 15.75 15.30 16.83 16.01
ACTUAL	EMPLOYER AND	EMPLOYEE CONTRIB	UTION		
	D	E		D	E
			Expre	essed as a	
					ge of Salary
Year	Employer	Employee		Beginn	ing of Year
80	\$11,791,330	\$ 9,729,912		11.14%	9.19%
81	12,392,694	10,522,389		11.38	9.67
82	12,589,417			10.66	9.78
83A	13,681,225			10.19	8.64
84B	14,996,619			11.42	8.78
85	15,035,039			11.45	8.81
86AB	14,765,250			11.76	9.31
87AB	14,745,709			11.47	9.16
	EST14,784,000			10.91	8.50
OOAD	13114,704,000	11,313,313		10.91	0.30
DEFICIE	ENCY (EXCESS)	IN ANNUAL CONTRI	BUTION		
	F	G	Н	F	G H
		NC Plus ERISA	NC Plus	Expr	essed as a
	NC Plus	40-Year	Increasing %	Percent	age of Salary
Year	Interest	Amortization	of Salary	Begin	ning of Year
80	\$ 178,166	\$ 840,844	(\$ 2,042,717)	.17%	.79% (1.93)%
81	2,104,112		(215,622)	1.93	2.57 (.20)
82	(249,949		(2,713,123)	(.21)	
83A	(805,111		(3,846,831)	(.60)	(.16) (2.86)
84B	(708,948		(3,796,531)	(.54)	
85	(404,023		(3,049,400)	`.31´	11 (2.32)
86AB) (1,126,093)	(3,838,390)	(1.19)	(.90)(3.06)
87AB		3) (6,269,991)	(6,838,329)	(4.94)	(4.88) (5.32)
		(3,506,346)	(4,617,736)	(2.70)	(2.59) (3.41)
		al assumptions	(1,121,110)	(/	(====) (****)
	nge in benefit				
	.,,				

TREND INFORMATION

Trend information gives an indication of the progress made in accumulating sufficient assets to pay benefits when due. For 1984 and 1985, the assets were insufficient to cover the Pension Benefit Obligation. For 1986 and 1987, the assets exceeded the amount needed for the Pension Benefit Obligation.

<u>Year</u>	Assets Available for Benefits as a % of Pension Benefit Obligation	Unfunded Pension Benefit Obligation as a % of Covered Payroll	Employer Contributions as a % of Covered Payroll
1984	85.89%	44.65%	11.42%
1985	93.91	21.71	11.45
1986	107.42	(26.28)	11.76
1987	104.78	(18.43)	11.47

	Employer Contributions						
<u>Year</u>	Required Normal Cost Plus Interest Only Basis	Required Statutory Basis*	Actual**				
1984	\$14,653,668	\$14,972,550	\$14,996,619				
1985	15,037,923	14,979,650	15,035,039				
1986	14,290,107	14,765,250	14,765,250				
1987	9,239,911	14,659,550	14,745,709				

^{*}Tax Levy After 4% Overall Loss

^{**}Net Tax Levy and Miscellaneous Income

INCOME AND PAYOUTS

Year End	Employee Contribution		mployer ributions(2)	Investment Income (3)	Total Income
72	5,928,386	4,	793,135	5,391,547	16,113,068
73	6,269,104	5,	463,149	4,394,426	16,126,679
74	6,597,012		103,125	4,646,080	17,346,217
75	7,375,222		699,000	8,665,212	22,739,434
76	7,887,179	•	287,000	10,785,585	25,959,764
77	8,568,248		470,000	11,993,200	29,031,448
78	9,077,825		477,125	10,112,216	28,667,166
79	9,571,764		108,298	13,547,589	34,227,651
80	9,729,912		791,330	12,626,861	34,148,103
81	10,522,389		392,694	9,631,793	32,546,876
82	11,546,286		589,417	19,729,269	43,864,972
83	11,608,537		681,225	31,809,924	57,099,686
84	11,531,243		996,619	28,832,621	55,360,483
85	11,569,775		035,039	58,720,209	85,325,023
86	11,691,095		765,250	67,653,382	94,109,727
87	11,774,209		745,709	58,220,924	84,740,842
•	11,771,200	,		33,223,321	31,710,312
'ear	A	\ \dministrativ	ė		Income Less
End	Benefits	Expenses	Refunds	Total	Pay Outs(4)
72	\$ 5,014,917	\$ 208,278	\$1,201,934	\$ 6,425,129	\$ 9,687,939
73	5,587,346	215,796	1,322,312	7,125,454	9,001,225
74	6,329,476	231,455	1,438,356	7,999,287	9,346,930
75	7,028,933	261,733	1,400,097	8,690,763	14,048,671

Year End	Benefits	Expenses	Refunds	Total	Pay Outs(4)
72	\$ 5,014,917	\$ 208,278	\$1,201,934	\$ 6,425,129	\$ 9,687,939
73	5,587,346	215,796	1,322,312	7,125,454	9,001,225
74	6,329,476	231,455	1,438,356	7,999,287	9,346,930
75	7,028,933	261,733	1,400,097	8,690,763	14,048,671
76	7,710,946	288,228	1,483,562	9,482,736	16,477,028
77	8,704,971	316,160	1,798,049	10,819,180	18,212,268
78	9,764,039	350,648	2,339,764	12,454,451	16,212,715
79	10,795,166	438,914	2,821,593	14,055,673	20,171,977
80	12,161,292	440,591	4,195,056	16,796,939	17,351,164
81	12,880,890	640,795	3,074,561	16,596,246	15,950,630
82	13,851,434	626,772	1,860,636	16,338,842	27,526,130
83	14,828,962	641,349	1,936,538	17,406,849	39,692,837
84	16,582,310	766,485	3,124,454	20,473,249	34,887,234
85	18,516,249	1,266,552	2,273,021	22,055,822	63,269,201
86	20,881,472	2,006,912	2,886,317	25,774,701	68,335,026
87	23,465,597	2,223,312	2,012,475	27,701,584	57,039,258

Statistical material required by Government Accounting Standards Board.

- Includes deductions in lieu for disability
- (2) Net tax levy and miscellaneous income(3) Includes realized net loss on sale and exchange of bonds
- (4) Does not include prior year adjustments

Exhibit "P"

LABORERS' AND RETIREMENT BOARD EMPLOYEES' ANNUITY AND BENEFIT FUND OF CHICAGO GASB DISCLOSURE

ANALYSIS OF FUNDING PROGRESS*

<u>Year</u>	Net Assets Available For Benefit (Book)	Pension Benefit Obligation	Percentage Funded	Unfunded Pension Benefit Obligation	Annual Covered Payroll	Unfunded As % of Covered Payroll
1984 1985AB 1986AB 1987AB	489,403,006	\$415,442,598 447,815,793 455,604,084 521,981,791	93.91 107.42	\$58,633,487 27,261,620 (33,798,922) (24,965,261)	\$131,327,856 125,594,688 128,601,816 135,453,096	44% 21 (26) (18)

Analysis of the dollar amounts of net assets available for benefits, pension benefit obligation, and unfunded pension benefit obligation in isolation can be misleading. Expressing the net assets available for benefits as a percentage of the pension benefit obligation provides one indication of funding status on a going-concern basis. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the system. Trends in unfunded pension benefit obligation and annual covered payroll are both affected by inflation. Expressing the unfunded pension benefit obligation as a percentage of annual covered payroll approximately adjusts for the effects of inflation and aids analysis of progress made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the retirement system.

^{*}The disclosure made in this exhibit does not include other appropriate measures of funding progress which must also be examined to obtain the complete picture.

A Change in Actuarial Assumptions

B Change in Benefits

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Method: The actuarial funding method used is the entry age normal method.

This cost method assigns to each year of employment a constant percentage of an employee's salary, called the <u>current service cost</u> (sometimes referred to as <u>normal cost</u>), sufficient to accumulate the necessary funds to provide for the full prospective costs of the employee's projected retirement pension. The amount of pension must be estimated using various assumptions as to future compensation levels, employee turnover, mortality and pension fund earnings, since the actual pension can be known only at the time of retirement. These are called actuarial assumptions.

It should be emphasized that the actuarial assumptions do not directly affect the cost of the pension plan. Benefits are fixed by statute and will become payable as various members and their dependents satisfy the contingencies covered. The actual cost of the plan can only be determined after all benefits have been paid and is equal to the total benefits paid, plus total administrative expenses, minus total investment income.

The <u>accrued liability</u> of the fund at any point in time is the accumulated value of all <u>current service costs</u> that should have been paid up at that time for active <u>employees</u> plus the full prospective cost of pensions for all retired <u>employees</u>. The extent that the actual plan <u>assets</u> are less than the <u>accrued liability</u> is called the <u>unfunded liability</u>.

An amount of money is required each year to keep the <u>unfunded liability</u> from increasing if all assumptions are realized. This amount is called <u>interest</u> only on the unfunded liability.

The required total actuarial contribution required to the fund is equal to the current service costs plus interest only on the unfunded liability. This is the funding policy. This minimum method of funding, often referred to as the middle-of-the-road method, is the method the fund has tried to follow in the past. It has evolved over the years and seeks to satisfy the ideologies of all interested groups, including opinions often expressed by the Civic Federation. No funds are provided for amortization of the unfunded liability.

Reserves for employees' retirement annuities, spouses' retirement annuities and death benefit annuities are valued on the entry age normal method. Grouped ages of entry, 22, 27, 32, 37, 42, 47, 52, 57, and 62 and over, are used.

The costs for the following items are valued on an annual cost basis. No reserves are set up, as these items tend to stabilize on a cash basis.

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

- 1. Duty disability benefits
- 2. Ordinary disability benefits
- 3. Children's annuities
- 4. Refunds--including refunds for no wife
- 5. Expense of administration

Reserves are set up for duty, and ordinary disability recipients as if they were in active service.

ACTUARIAL ASSUMPTIONS

Mortality: Active Members, Present and Future Retired Members and Spouses: UP-1984 MORTALITY TABLE, male and female.

<u>Interest</u>: 7.5% a year, compounded annually. An exhibit details the investment yields the Fund actually realized over the past few years. This assumption contains a 4% inflation assumption and a 3.5% real rate of return assumption.

Interest earnings over the assumed rate can be used to reduce losses that may result from variations in other cost factors--such as increased costs resulting from salary increases greater than the assumed rate.

It must be realized that the interest assumption is a long-range assumption-it must cover a period as long as perhaps 50 years--which would be the period of time, say, that the youngest employee in the fund will work before retiring on pension for the rest of his or her life. There is no guarantee that the current high interest rates will continue over this period.

<u>Salary Increase</u>: 6% a year, compounded annually. An exhibit details the annual increase in the average salary over the past years, which averages greater than 6%. This assumption contains a 4% inflation assumption and a 2% merit and longevity assumption.

It should be remembered that pensions are based directly upon salary. It is believed that if the recent pattern continues in the long-range future, the salary scale assumption will need to be increased.

Increased costs will necessarily result, with the extent of the increase in cost depending on the extent of the increase in salary over the assumed time period.

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Rate of Retirement: The rates of retirement used in this valuation are shown in an exhibit grouped by age of entrance into the service and are based on 1985, 1986, and 1987 experience of this Fund for males and on experience of the Municipal Fund for females. These rates reflect the changing pattern of retirement.

Rate of Termination: These rates are shown in an exhibit and are based on the experience of the Fund.

Proportion Married: This is shown in an exhibit.

Active Membership: It is assumed that the future active membership of the Fund will remain at the present level and that the average age at entrance into the service will be about the same in the future as it has been in the past. The actuarial costs are based on the present group. If future entrants to the Fund are older than the present group, then costs will tend to increase. Conversely, if new entrants are younger, then costs will tend to decrease.

Age of Spouse: The spouse of a male employee is assumed four years younger; the spouse of a female employee is assumed four years older.

Asset Value: Bonds are amortized value; stocks are at cost, real estate separate accounts at adjusted cost.

Reciprocal Benefits: Active life normal costs and reserves are loaded 1%.

Loss on Tax Levy: 4% overall is assumed for all future years.

Required Tax Multiple: Is computed using the actuarial requirement less expected employee contributions (increased to adjust for the loss on the tax levy) divided by the expected employee contributions computed two years prior using the actuarial salary scale. If the actual contributions had been used, the result would be somewhat different. The method used approximates a steady condition of uniformly increasing salaries.

LABORERS' AND RETIREMENT BOARD EMPLOYEES' ANNUITY AND BENEFIT FUND OF CHICAGO SERVICE TABLE FUNCTIONS

Rates of Retirement

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11415									
Attained Age	Age 22	at Entra 27	ance 32	37	42	47	52	57	62
55 56 57 58 59 60 61 62 63 64 65 66 67 68 70	.10 .06 .30 .35 .50 .50 .75 .75	.03 .04 .05 .05 .20 .22 .25 .30 .35 .50	.01 .02 .02 .03 .09 .09 .15 .24 .28 .40 .45 .50 .75	.07 .02 .04 .10 .12 .33 .40 .45 .65 .70 .75	.01 .01 .04 .04 .07 .09 .11 .42 .46 .50 .75	.02 .02 .03 .05 .06 .08 .13 .22 .50 .75	.02 .02 .03 .03 .05 .30 .15 .20 .50	.02 .05 .10 .10 .15 .20 .50 .50	.02 .05 .10 .15 .20 .50 .75
Female									
55 56 57 58 59 60 61 62 63 64 65 67 68 70	.10 .10 .35 .10 .25 .40 .50 .75 .75	.05 .07 .09 .11 .28 .30 .33 .50 .75 .75	.04 .05 .06 .08 .12 .15 .30 .33 .22 .24 .27 .30 .50	.01 .02 .03 .10 .13 .14 .15 .15 .42 .20 .30 .75	.01 .01 .02 .04 .08 .09 .10 .25 .27 .33 .50 .75	.01 .01 .02 .02 .03 .03 .03 .13 .15 .25 .50 .75	.02 .03 .03 .04 .05 .05 .06 .07 .50 .75	.02 .03 .03 .04 .06 .08 .12 .50 .75	.02 .04 .15 .18 .22 .50 .75

Expected average age of retirement

present membership 62.18 new hires 62.95

SERVICE TABLE FUNCTIONS

Rates of Termination

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111	а		_

Attained Age	Age at 22	Entrance 27	32	37	42	47	52	57	62
22 27 32 37 42 47 52 57 62 67	.223 .116 .050 .021 .012 .005	.262 .100 .046 .025 .012 .005	.219 .098 .022 .010 .005	.221 .088 .034 .017	.176 .080 .028	.142 .076	.120 .046	.112	.148
Female									
22 27 32 37 42 47 52 57 62 67	.140 .108 .052 .022 .008	.174 .085 .038 .022 .013 .005	.108 .062 .033 .017 .009	.074 .051 .028 .015	.054 .033 .020	.063 .033	.054 .036	.056	.027

Attained Age	Male Death Rate UP-1984 Per 1,000	Female Death Rate UP-1984 Per 1,000	Proportion Married %
22	1.167	1.385	81
27	1.058	1.167	81
32	1.208	1.058	81
37	1.792	1.208	80
42	2.818	1.792	83
47	4.635	2.818	83
52	7.543	4.635	84
57	11.863	7.543	82
62	18.685	11.863	80
67	29.634	18.685	78
70	37.667	24.847	74

ACTUARIAL EXPERIENCE

The actuarial assumptions for retirement, withdrawal and pre-retirement mortality determine when and if a benefit is expected to be paid. The post-retirement mortality determines how long the benefit is expected to be paid. Once the actives enter service, there is a probability that they will not be in the work force at the end of each year because of withdrawal, retirement or death, at which time they may be eligible for a benefit to be paid. The withdrawal and retirement rates for the Laborers' Fund have been based on past experience of this fund and the Municipal Fund with adjustments for expected changes in the future. The pre-retirement and post-retirement mortality are based on a published table, the UP84 and not on the experience of this Fund. The actual experience of the Fund is compared to the expected experience of the Fund each year and changes in the rates or tables are made when the future expectations differ from the expectations using the current rates.

Actuarial Experience

Actual to Expected

		MORTALITY		RETIREMENT	WITHDRAWAL
YEAR	ACTIVE	RETIRED	WIDOW		
1979	1.35	1.54	1.54	1.25	1.37
1980	1.57	1.06	1.21	1.46	2.63
1981	1.47	1.25	2.06	1.38	2.11
1982	1.00	1.41	1.72	NEW RATES .95	1.08
	NEW MOR	TALITY RAT	ES		
1983	.98	1.49	1.66	.99	1.02
1984	.69	1.45	1.63	1.27	1.23
1985	1.52	1.65	2.70	.98	1.32
1986	.88	1.52	1.70	1.44	1.43
1987	1.90	1.45	1.87	1.11	.63
				NEW RATES	

1988

LABORERS' AND RETIREMENT BOARD EMPLOYEES' ANNUITY AND BENEFIT FUND OF CHICAGO ACTUARIAL EXPERIENCE ATTAINED AGE AT RETIREMENT 1987

AGE						ALES Y AGES				TOTAL
	<u>22</u>	<u>27</u>	<u>32</u>	<u>37</u>	<u>42</u>	<u>47</u>	<u>52</u>	<u>57</u>	<u>62</u>	
55 56	3									3 0
57 58	6 2	1		1						8
59	1	7	1	,		7				2 8
60 61	11 7	2 6	1	1		1	1			15 14
62 63	2 3	4 3	2	3	1 .			2		11 12
64	1	2	1	5 5	1	1	*			11
65 66	1	2 3 2	4 1	3 5 5 3	6 2	1	2			22 9
67		ī	•	7	2	_	i			11
68 69		1		1	1	1		2		3 5 8
70 TOTAL	37	32	9	2 31	2 17	2 5	2 7	4	0	8 142

21 male employees retired before age 55 or after age 70 in 1987. Of the total 163 males who retired in 1987, 155 were still on employee annuity at the end of the year.

AGE						ALES Y AGES				TOTAL
	<u>22</u>	<u>27</u>	<u>32</u>	<u>37</u>	<u>42</u>	<u>47</u>	<u>52</u>	<u>57</u>	<u>62</u>	
55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 TOTAL	1	1	2 1 1 1 5	1 3 2 2 1	4 3 2 2 1 3 1 16	1 2 3	0	0	0	0 0 0 2 1 2 0 3 2 4 6 2 4 1 5 3 3 5

IMPACT SHEET PREPARED BY FUND ACTUARY

FUND	LABORERS'
ANNUAL PAYROLL	\$135,453,096
ACTIVE MEMBERS	4,873
VALUATION DATE	12-31-87
	PRESENT PLAN
(1) ACCRUED LIABILITY	\$583,284,026
(2) ASSETS	\$546,947,052
(3) UNFUNDED LIABILITY	\$36,336,974
(4) FUNDED RATIO	93.77%

DIRECTION OF FINANCIAL CONDITION

(5) REQD ANNUAL CONTRIB	\$22,636,952	\$4,645 16.71%
(6) EST EMPLOYER CONTRIB	\$14,784,000	\$3,034 10.91%
(7) EST EMPLOYEE CONTRIB	\$11,513,513	\$2,363 8.50%
(8) DEFICIENCY(EXCESS)	(\$3,660,561)	(\$751)-2.70%

LIS87/212

PARTICIPANTS

Person employed by the City in a position classified by the Civil Service Commission of the employer as labor service of the employer; any person employed by the Board; any person employed by the Retirement Board of any other Annuity and Benefit Fund which is in operation for the employer.

SERVICE

For all purposes except formula minimum annuity and ordinary disability credit, service in four months in any calendar year constitutes one year of service credit.

For minimum annuity, one half-year credit is given for one completed month of service and a full year credit is given for one complete month of service plus service in at least 5 other months. For O.D. credit, the exact number of days, months and years are used.

RETIREMENT ANNUITY

Money Purchase Formula: Maximum is 60% of final salary. Applies in cases where an employee is age 55 or more and has over 10 years of service. If employee is age 55 to 60 with service less than 20 years, the annuity is based on all employee deductions plus 1/10 of the city contributions for each year over 10. In case of withdrawal before age 55 and application after age 55, the annuity is based on employee deductions plus 1/10 of the city contributions for each year over 10, with interest to date of application or age 55, whichever is later. The age factor for age 55 is used.

The annuity is based on all employee deductions and city contributions in cases where the employee is: (a) age 55 to 60 with 20 or more years of service; (b) age 60 to 70; (c) resigning at the time of disability expiration. Money purchase can be calculated only to age 70.

Minimum Annuity Formula: Maximum is 75% of final average salary.

- a. An employee age 55 or older withdrawing on or after January 1, 1988, with at least 20 years of service, is qualified for an annuity equal to 1.8% for each of the first 10 years of service plus 2.% for each of the next 10 years plus 2.2% for each of the next 10 years and 2.4% for each year of service over 30 years of the final average salary during the four highest consecutive years within the last 10 years of service prior to retirement. This annuity is discounted 0.25% for each month the employee is younger than 60 to age 55 unless he has at least 35 years of service.
- b. An employee who is at least age 65 with 15 or more years of service is qualified for an annuity equal to 1% for each year of service multiplied by the final average salary added to the sum of \$25 for each year of service.
- c. The employee will receive a minimum annuity of \$250 per month if employee retires at age 60 or more with at least 10 years of service on or after January 1, 1988.

PLAN SUMMARY

Reversionary Annuity: An employee may elect to reduce his or her annuity by an amount less than or equal to \$200 to provide a reversionary annuity for a spouse, parent, child, brother, or sister, to begin upon the employee's The election must be made before retirement and have been in effect 2 years prior to death. The death of the employee before retirement voids the The reversionary annuity cannot exceed 80% of the employee's If the employee resigns after June 30, 1983, the 3% reduced annuity. automatic annual increase in annuity will be computed on the original, not the reduced, annuity; if the beneficiary dies before the employee annuitant, the full annuity is restored for annuities elected after June 30, 1983. amount of the monthly reversionary annuity is determined by multiplying the amount of the monthly reduction in the employee's annuity by a factor based on the age of the employee and the difference in the age of the employee and the age of the reversionary annuitant at the starting date of the employee's annuity.

Reciprocal Annuity: Under reciprocal retirement an employee can receive annuity based on continued service credits in two or more governmental units in Illinois to whose pension fund he or she has contributed for at least one year.

Automatic Increase in Annuity: An employee who is age 60 or more is entitled to receive 2% of the original annuity, such increase to begin in January of the year immediately following the year of the first anniversary of retirement. Beginning with January of the year 1984 such increases are at the rate of 3% of the original annuity. An employee who retires prior to age 60 will receive such increase beginning in January of the year following the year he attained age 60. Effective for retirements on or after January 1, 1987, the first increase shall begin upon the first annuity payment date following the first anniversary of retirement, or age 60 if later.

SPOUSE'S ANNUITY (Payable until remarriage)

Money Purchase Formula: When an employee is 65, or retires prior to age 65, the spouse's annuity is fixed, based on employee deductions and city contributions made for spouses' annuity purposes and a joint life age factor. (If the employee is a female, these are deductions accumulated since October 1974.) In the case of the spouse of an employee over 65, the money purchase annuity is the amount fixed at employee age 65; all deductions after that time are refunded if the employee dies in service.

If the employee dies in service under 65, the spouse's annuity is based on all sums accumulated to their credit. This annuity cannot exceed the amount at which the spouse's annuity would have been fixed if the employee had continued to work to age 65.

For 3% annuities fixed on or after August 1, 1983, the "Combined Annuity Mortality Table" shall continue to be used; however, widows'/widowers' single life annuities and reversionary annuities shall be computed using the best factor (the factor producing the highest annuity), not depending upon sex.

PLAN SUMMARY

SPOUSE'S ANNUITY

Spouses' Minimum Annuity Formula: If the employee is at least age 60 and has 20 or more years of service, the spouse's annuity is equal to 1/2 the amount of annuity the employee was entitled to at the time of death, if death occurred before retirement, or was entitled to receive on the date of retirement, if the employee died after retirement. This annuity is subject to a maximum of \$400 (\$500 if retirement or death before retirement occurs on or after January 1, 1984. Effective January 23, 1987, there is no maximum dollar amount) and must be then discounted .25% for each month that the spouse is under age 60 at the time the annuity is fixed.

In the case of the spouse of a female employee, the female employee must have made contributions for her spouse for at least 20 years to qualify for the minimum annuity formula. Current female employees may elect to pay spouse contributions for their service before October, 1974.

The spouse will receive a minimum annuity of \$200 per month if employee retires with at least 10 years of service or dies in service with at least 5 years on or after January 1, 1988.

CHILDREN'S ANNUITY

Child's annuity is payable upon the death of the employee, either active or retired, if the child is unmarried, under age 18, born before participant is age 65 and before his separation from service or legally adopted at least one year before child's annuity becomes payable and prior to the attainment of age 55 by the adopting employee parent. Annuity is \$120 per month while spouse of deceased employee is alive and \$150 per month if no spouse is alive. Except for duty death deceased employee must have had 4 years of service or at least 2 years from latest re-entrance if he had previously resigned from service.

FAMILY MAXIMUM

Mon-duty death: 60% of final monthly salary: Duty death: 70% of final monthly salary.

DISABILITIES

Duty Disability Benefits: Any employee who becomes disabled as the result of injury incurred in the performance of any act of duty, shall have a right to receive duty disability benefit in the amount of 75% of salary at date of injury plus \$10 a month for each unmarried child (the issue of the employee) less than age 18. Child's duty disability benefit is limited to 15% of the employee's salary as of date of injury. Duty disability benefits begin one day after the later of the last day worked and the last day paid.

PLAN SUMMARY

If the disability has resulted from any mental disorder, physical defect or disease which existed at the time such injury was sustained, the duty disability benefit shall be 50% of salary at date of injury. Disablement because of heart attacks, strokes, or any disablement due to heart disease shall not be considered to be the result of an accident suffered in the performance of duty.

Duty disability benefit is payable to age 65 if disability begins before age 60. For an employee who begins disability on or after age 60, disability will continue for 5 years or to age 70 whichever occurs first. The City contributes salary deductions for annuity purposes. Such amounts contributed by the city after December 31, 1983, while the employee is receiving duty disability benefits are not refundable to the employee and will be used for annuity purposes only.

Ordinary Disability Benefit: Disability other than in performance of an act of duty...50% of salary less the sum ordinarily deducted from salary for annuity purposes, as of last day worked payable until age 65 and limited to a maximum of 1/4 of employee's total service or 5 years, whichever occurs first if disability begins before age 60. For an employee who begins disability on or after age 60, disability will continue for a period not greater than 1/4 of employee's total service, but no more than 5 years or age 70, whichever occurs first

GROUP HEALTH HOSPITAL AND SURGICAL INSURANCE PREMIUMS

The pension fund may provide up to \$25 per month (paid to the underwriting organization) health insurance supplement for employee annuitants if the employee is age 65 or older with least 15 years of service. This supplement is available to any employee annuitant who is receiving annuity or for any employee who retires on annuity in the future.

REFUNDS

To Employee: Upon separation from service employee is entitled to all salary deductions plus interest if employee is under age 55. If over age 55 employee is eligible for refund if he has less than 10 years of service or would be eligible for temporary rather than life annuity. Effective September 17, 1983, employee may choose a refund in lieu of annuity if annuity would be less than \$200 per month.

Spouse's annuity deductions are payable to employee if not married when he retires or attains age 65.

PLAN SUMMARY

<u>To Spouse:</u> In lieu of annuity if annuity would be temporary rather than life and spouse so chooses. Effective September 17, 1983, spouse may choose a refund in lieu of annuity if annuity would be less than \$200 per month.

Remaining Amounts: Amounts contributed by employee excluding 0.5% deductions for annuity increase, which have yet not been paid out as annuity, are refundable to his estate with interest to his retirement or death if he died in service.

DEDUCTIONS AND CONTRIBUTIONS

	Deductions	Contributions [†]
Employee Spouse Annuity Increase	6-1/2% 1-1/2% ** 1/2%	6% 2% ** -
Total:	8-1/2%	8%

^{**} Only to employee age 65.

FINANCING *

The City shall levy a tax annually equal to the total amount of contributions in the 2 years prior multiplied by 1.370 for 1978 and each year thereafter.

TAX SHELTER OF EMPLOYEE SALARY DEDUCTIONS

Beginning January 1, 1982, the City employee salary deductions were designated for income tax purposes to be made by the employer. The W2 salary is therefore reduced by the amount of contribution. For pension purposes the salary remains unchanged. Income tax will be paid when a refund or annuity is granted. For the purposes of benefits, refunds, or financing, these contributions are treated as employee contributions. Beginning September 1, 1981, Board of Education employee contributions were paid by the employer. The 1985 amendments contained a provision whereby the amount of pick-up, if any, is included in the pensionable salary for contributions and benefits. Such provision was retroactive to September 1, 1981.