

**Crookston
Police Relief Association**



**Annual Actuarial Valuation
December 31, 1996**

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Gabriel, Roeder, Smith & Company



Consultants & Actuaries

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Board of Trustees
Crookston Police Relief Association
Crookston, Minnesota

Submitted in this report are the results of the December 31, 1996 actuarial valuation of the assets, actuarial values and contribution requirements associated with the benefits provided by the Crookston Police Relief Association.

The valuation results contained in Section A provide the actuarial information needed to determine the employer's "minimum obligation" effective January 1, 1998. Section A also contains comments regarding the valuation results.

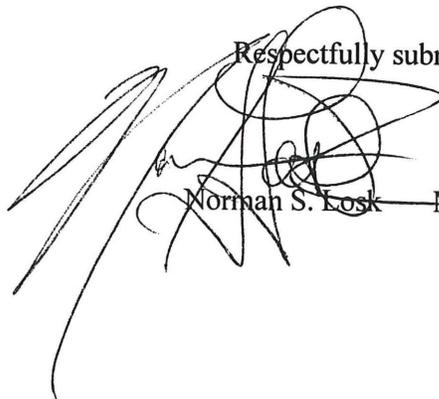
The valuation was based upon information furnished by the Association concerning benefits, financial transactions, active members, terminated members, retirants and beneficiaries. Data was checked for year to year consistency but was not otherwise audited by us. This information is summarized in Section B.

A description of the actuarial funding method and the risk experience assumptions used is contained in Section C. The economic risk experience assumptions, as well as the actuarial funding method to be used, are established by state law.

Information needed to comply with Statement No. 25 of the Governmental Accounting Standards Board is contained in Section D.

The actuarial valuation was prepared using generally accepted actuarial principles and practices based upon the methods, assumptions, summary of plan provisions and the member and financial data described in this report.

Respectfully submitted,


Norman S. Losk


Mary Ann Vitale

SECTION A



Valuation Results

COMMENTS

Economic Assumptions and Financing Method

The economic assumptions of 5% annual investment return and 3-1/2% annual salary increases are established by state law. State law also specifies that the annual minimum obligation of the municipality shall be determined by adding (i) the employer normal cost percent times covered payroll to (ii) the level dollar amount required to amortize the unfunded actuarial accrued liability by December 31, 2010.

It is worth noting that when the same assumptions and methods are applied to plans which differ in nature, the valuation results may not be comparable. Caution should be exercised when attempting to assess the financial condition of one Association relative to another on the basis of valuation results produced using the assumptions and methods mandated by state law.

CONTRIBUTION RATE TO PROVIDE BENEFITS
Member portion & Employer portion
Effective January 1, 1998

| Contributions for | If Paid Equally Throughout Year | |
|--|--|----------------|
| | Normal Cost % of Active Payroll for 1998 | + UAAL Dollars |
| Normal cost of annuities: | | |
| Age & service: to members | 17.03% | |
| Age & service: to survivors | 2.33 | |
| Disability | 1.42 | |
| Death before retirement | 1.57 | |
| Refunds of member contributions | <u>0.15</u> | |
| Total Normal Cost | 22.50% | |
| Amortization of unfunded actuarial accrued liabilities (UAAL) (13 year level dollar payment) | | |
| Retired lives | | \$ 0 |
| Active members | | <u>37,658</u> |
| Total | | 37,658 |
| Total Cost of Benefits | 22.50% | + \$37,658 |
| Member contributions | 8.00% | |
| COMPUTED EMPLOYER RATE: | | |
| (a) If Paid Equally Throughout Year | 14.50% | + \$37,658 |
| (b) IF PAID AT CALENDAR YEAR END | 14.86% | + \$38,588 |

PRESENT ACTUARIAL CONDITION

The Association's accrued actuarial assets were in excess of \$1.8 million on December 31, 1996 -- a considerable sum of money if unencumbered and allocated among a small group of persons. This is not the case with the Association's assets.

The following schedule puts the \$1.8 million into perspective by showing the relationship between accrued actuarial assets, actuarial accrued liabilities, and the number of persons with actual and potential claims on the Association's assets.

| | Accrued Actuarial Assets | Actuarial Accrued Liabilities | Unfunded Actuarial Accrued Liabilities | Percent Funded |
|-----------------------------|---|--|---|---------------------------|
| Retirants and Beneficiaries | | | | |
| Retired Members (9) | | \$1,371,600 | | |
| Surviving Spouses (3) | | 94,860 | | |
| Surviving Children (0) | | 0 | | |
| Total (12) | \$1,466,460 | \$1,466,460 | \$ 0 | 100.0% |
| Deferred Members (1) | 136,692 | 136,692 | 0 | 100.0 |
| Active Members (3) | 243,182 | 605,698 | 362,516 | 40.1 |
| Total | \$1,846,334 | \$2,208,850 | \$362,516 | 83.6% |

Actuarial accrued liabilities represent the value, computed as of December 31, 1996 of:

- (i) retirement allowances likely to be paid the 12 retirants and beneficiaries; and
- (ii) the contributions assumed to have been made for the 3 active members from entry into the plan until December 31, 1996.

The value of retirement allowances likely to be paid the 12 retirants and beneficiaries, discounted for investment earnings and mortality, was computed to be \$1,466,460 as of December 31, 1996. To put this amount in perspective, the \$1,466,460, together with investment earnings, will just be sufficient to pay the 12 retirants and beneficiaries their allowances for their remaining lifetimes. This assumes the 12 retirants and beneficiaries live and die according to the assumed mortality and the \$1,466,460 is invested to yield an average annual return of 5.0% over the remaining lifetimes of the retirants and beneficiaries.

With respect to the active members, the actuarial accrued liability of \$605,698 represents the amount that would have been accumulated by December 31, 1996. This assumes the normal cost (which is expressed as a level percentage of pay) had been contributed from the date of hire until December 31, 1996 for the 3 actives, and that these amounts had earned 5.0% interest. It also assumes that the members in the past have lived, died, withdrawn, retired and received salary increases according to the actuarial assumptions shown in this report.

HISTORICAL FUNDING RATIO SCHEDULE (\$ IN THOUSANDS)

| Valuation Date December 31 | Actuarial Accrued Liabilities | Accrued Actuarial Assets | Percent Funded |
|----------------------------------|-------------------------------------|--------------------------------|-------------------|
| 1987 | \$1,464 | \$1,163 | 79.4% |
| 1988 | 1,708 | 1,270 | 74.4 |
| 1989 | 1,865 | 1,375 | 73.7 |
| 1990 | 1,880 | 1,468 | 78.1 |
| 1991 | 2,005 | 1,570 | 78.3 |
| 1992 | 2,022 | 1,638 | 81.0 |
| 1993 | 2,025 | 1,690 | 83.5 |
| 1994 | 2,068 | 1,724 | 83.4 |
| 1995 | 2,099 | 1,785 | 85.0 |
| 1996 | 2,209 | 1,846 | 83.6 |

COMPUTED CONTRIBUTIONS - COMPARATIVE SCHEDULE

| Year Ended December 31 | | Total Normal Cost as a Percent of Valuation Payroll* | Contribution For Unfunded Actuarial Accrued Liabilities |
|---------------------------|--------|--|---|
| Valuation | Fiscal | | |
| 1987 | 1989 | 22.39% | \$22,335 |
| 1988 | 1990 | 23.47 | 33,342 |
| 1989 | 1991 | 23.42 | 38,348 |
| 1990 | 1992 | 23.45 | 33,261 |
| 1991 | 1993 | 23.50 | 36,299 |
| 1992 | 1994 | 23.07 | 33,263 |
| 1993 | 1995 | 23.08 | 30,134 |
| 1994 | 1996 | 23.05 | 32,320 |
| 1995 | 1997 | 23.01 | 30,943 |
| 1996 | 1998 | 22.50 | 37,658 |

* *Includes employee contributions.*

CONTRIBUTION FOR CALENDAR YEAR EFFECTIVE JANUARY 1, 1998

For any period of time the percent-of-payroll contribution rate is converted to dollars. The amount of dollars for any calendar year depends upon the results of the last actuarial valuation, and the timing of contributions within the year. The later the contribution date, the greater the dollar amount will be.

The municipality's dollar contribution for the year may be determined as follows:

| | | |
|--|------------|---------|
| (1) Estimated covered payroll for 1998 | \$_____ | |
| (2) Total normal cost % from page A-2 | 22.50 | |
| (3) Total normal cost (Line 1 times line 2) | | \$_____ |
| (4) _____ x 1.035 1996 Administrative expenses paid from the Special Fund | | _____ |
| (5) Amortization payment on UAAL from page A-2 | | 37,658 |
| (6) Total contributions required (Line 3 plus line 4 plus line 5) | | _____ |
| (7) Employee contributions (Line 1 times 8%) | \$_____ | |
| (8) (a) State amortization aid based on 12/31/78 UAAL of \$405,703 | \$6,106 | |
| (b) State amortization aid based on 1984 legislation | <u>980</u> | |
| (c) Total State amortization aid | | 7,086 |
| (9) Estimated insurance premium aid | | _____ |
| (10) Estimated total contributions from other sources (Line 7 plus line 8 plus line 9) | | _____ |
| (11) Employer's Minimum Obligation if payment is made in equal installments throughout the year (Line 6 minus line 10) | | \$_____ |
| (12) EMPLOYER'S MINIMUM OBLIGATION IF PAYMENT IS MADE AT YEAR END (LINE 11 TIMES 1.0247) | | \$_____ |

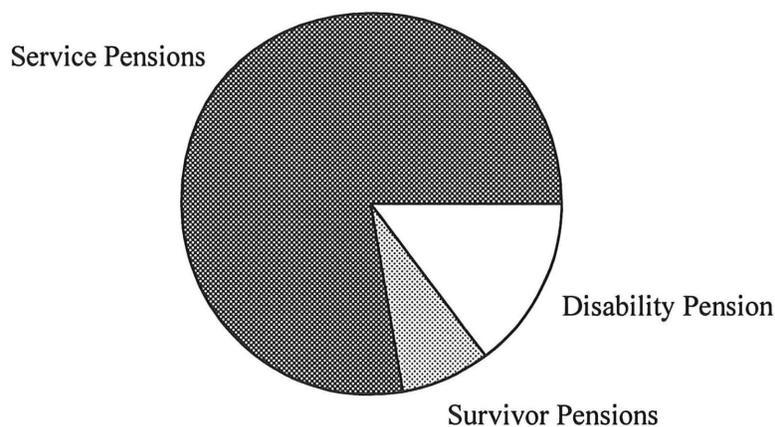
SECTION B



**Valuation Data and
Summary of Benefit Provisions**

RETIRANTS AND BENEFICIARIES DECEMBER 31, 1996
BY TYPE OF ANNUITY BEING PAID

| <u>Type of Annuity Being Paid</u> | <u>No.</u> | <u>Monthly Amounts</u> | <u>Computed Actuarial Accrued Liabilities</u> |
|-----------------------------------|------------|----------------------------|---|
| Retirants receiving: | | | |
| Age & service | 8 | \$ 7,777.75 | \$1,105,236 |
| Disability | <u>1</u> | <u>1,465.21</u> | <u>266,364</u> |
| Totals | 9 | 9,242.96 | 1,371,600 |
| Beneficiaries receiving: | | | |
| Spouse | 3 | 762.89 | 94,860 |
| Child | <u>0</u> | <u>0.00</u> | <u>0</u> |
| Totals | 3 | 762.89 | 94,860 |
| <hr/> | | | |
| Totals | 12 | \$10,005.85 | \$1,466,460 |



Monthly Amount Paid by Benefit

INACTIVE MEMBERS ELIGIBLE FOR DEFERRED BENEFITS
DECEMBER 31, 1996

| No. | Monthly Amount | Computed Accrued Liabilities |
|------------|---------------------------|---|
| 1 | \$919.88 | \$136,692 |

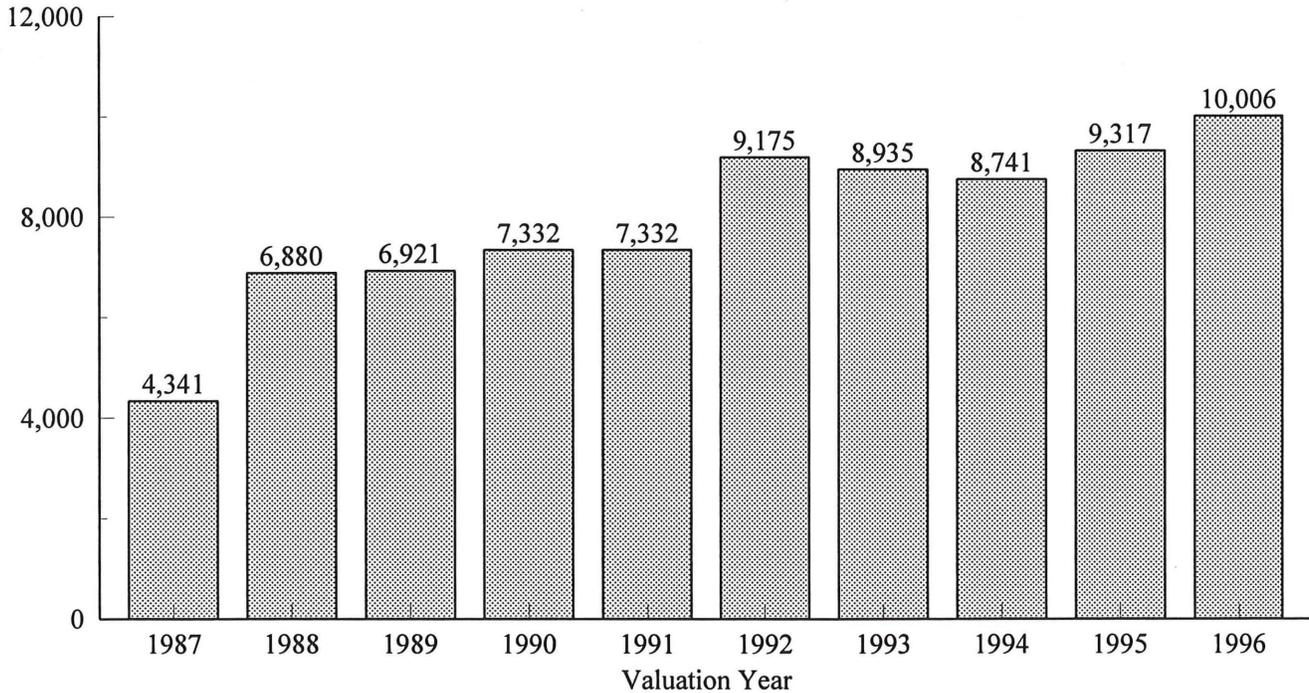
**RETIRANTS AND BENEFICIARIES DECEMBER 31, 1996
BY ATTAINED AGES**

| Attained Ages | Number | | |
|------------------|------------------|------------|-------------------------------|
| | Age & Service | Disability | Death Before Retirement |
| 50-54 | 1 | 1 | |
| 55-59 | 4 | | |
| 60-64 | 1 | | |
| 70-74 | 2 | | |
| 75-79 | 1 | | |
| 80-84 | 1 | | |
| 90-94 | 1 | | |
| Totals | 11 | 1 | |

**RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS
COMPARATIVE STATEMENT**

| Valuation Date December 31 | No. Added to Rolls | No. Removed from Rolls | Rolls End of Year | | Discounted Value of Total Allowances |
|----------------------------------|-----------------------|---------------------------|-------------------|----------------------|---|
| | | | No. | Annual Allowances | |
| 1987 | 2 | 1 | 10 | \$ 43,414 | \$ 478,440 |
| 1988 | 2 | | 12 | 82,560 | 1,039,332 |
| 1989 | | | 12 | 83,056 | 1,025,412 |
| 1990 | | 1 | 11 | 80,653 | 1,001,616 |
| 1991 | | | 11 | 80,653 | 979,440 |
| 1992 | 1 | 1 | 11 | 100,930 | 1,237,272 |
| 1993 | 1 | | 12 | 107,214 | 1,307,196 |
| 1994 | 1 | 1 | 12 | 104,891 | 1,255,212 |
| 1995 | | 1 | 11 | 102,488 | 1,227,804 |
| 1996 | 1 | | 12 | 120,070 | 1,466,460 |

Average Annual Allowances



ACTIVE MEMBERS DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

| Attained Age | Years of Service to Valuation Date | | | | | | | Totals | |
|---------------|------------------------------------|-----|-------|----------|----------|-------|---------|----------|-------------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus | No. | Valuation Payroll |
| 40-44 | | | | 2 | | | | 2 | \$ 85,758 |
| 50-54 | | | | | | | | 1 | 37,999 |
| Totals | | | | 2 | 1 | | | 3 | \$123,757 |

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

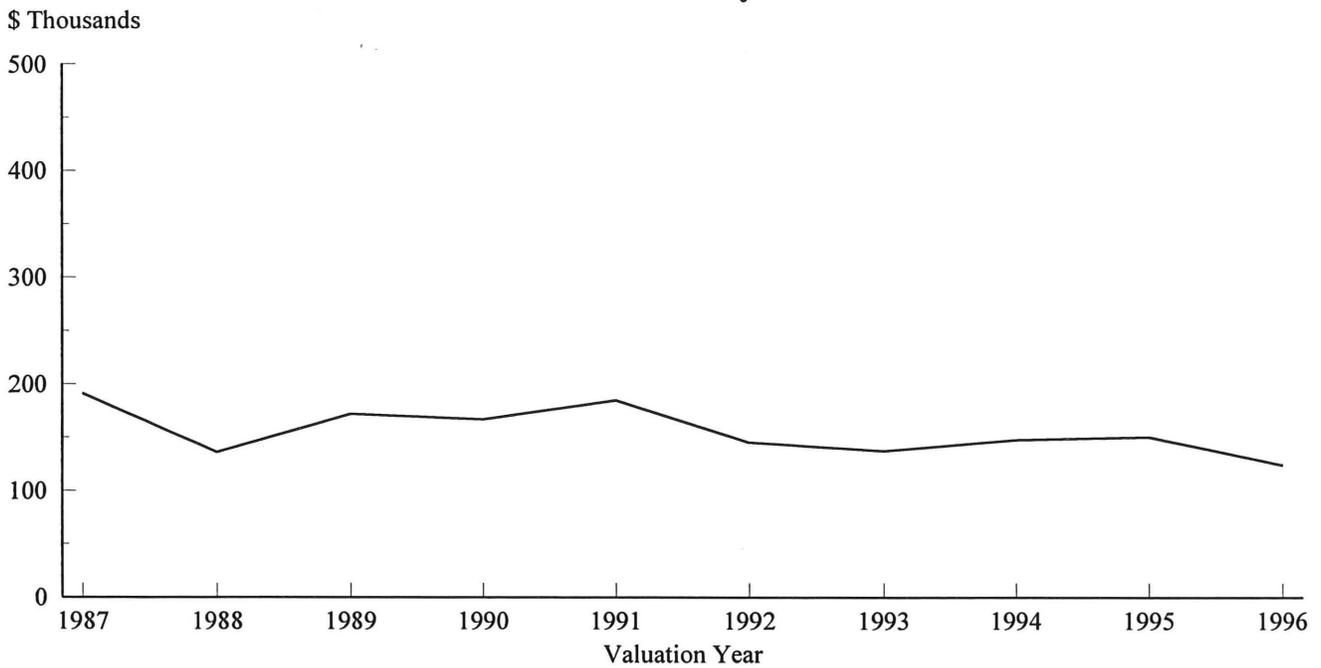
Group Averages:

Age: 45.0 years
 Service: 19.4 years
 Annual Pay: \$41,252

COMPARATIVE SCHEDULE OF ACTIVE MEMBERS

| Valuation Date December 31 | Active Members | Valuation Payroll | Average | | | |
|----------------------------------|-------------------|----------------------|-----------|-----------|----------|---------|
| | | | Age | Service | Pay | % Incr. |
| 1987 | 7 | \$190,800 | 43.1 yrs. | 17.0 yrs. | \$27,257 | 3.4% |
| 1988 | 5 | 135,847 | 41.4 | 14.0 | 27,169 | (0.3) |
| 1989 | 5 | 171,395 | 42.4 | 15.0 | 34,279 | 26.2 |
| 1990 | 5 | 166,447 | 43.4 | 16.0 | 33,289 | (2.9) |
| 1991 | 5 | 183,975 | 44.4 | 17.0 | 36,795 | 10.5 |
| 1992 | 4 | 144,996 | 42.5 | 16.0 | 36,249 | (1.5) |
| 1993 | 4 | 136,676 | 43.5 | 17.0 | 34,169 | (5.7) |
| 1994 | 4 | 147,317 | 44.5 | 18.0 | 36,829 | 7.8 |
| 1995 | 4 | 149,956 | 45.5 | 19.0 | 37,489 | 1.8 |
| 1996 | 3 | 123,757 | 45.0 | 19.4 | 41,252 | 10.0 |

Valuation Payroll



**BRIEF SUMMARY (12/31/96) OF BENEFIT PROVISIONS
EVALUATED AND/OR CONSIDERED**

AGE & SERVICE RETIREMENT

Eligibility. 10 years of service and 50 years of age.

Amount. For first 10 years of service, 25% of final salary. For each year in excess of 10, an additional 2-1/2% is added to a maximum of 75% of final salary for 30 or more years of service.

DISABILITY RETIREMENT

Eligibility. Disabled to the extent that unable to perform duties of police officer before being eligible for age and service retirement.

Amount. For service up to 11 years, 25% of final salary. For each year in excess of 11, 2-1/2% is added. In addition, \$300 per year is payable for dependent child who is under age 18. Maximum benefit is 50% of final salary.

MEMBER'S DEATH WHILE ACTIVE, OR IN DEFERRED STATUS, OR RETIRED

Eligibility.

Spouse. Legally married to member at separation from service and residing with member at time of death. Benefits terminate upon remarriage.

Child. Younger than age 18, or age 21 if full-time student.

Amount.

Spouse. 30% of final salary.

Child. 10% of final salary per child.

Maximum Family Benefit. \$5,400 per year.

VESTED DEFERRED. 10 years of service and separated before age 50. Payment beginning is deferred to attainment of age 50.

MEMBER CONTRIBUTIONS. 8% of compensation. Total member contributions are refundable, without interest, if no benefit is payable upon separation from service.

SECTION C



**Valuation Methods and
Assumptions**

VALUATION METHODS AND ASSUMPTIONS

The Entry Age Normal Cost method was used to determine the normal cost of all benefits. The rate of investment return (interest) as required by state law used in making the valuation was 5.0 percent per annum, compounded annually. Age & service retirement was assumed to occur at age 58, attained age if older.

Mortality Table*

| Sample Ages | Single Life Values: Present Value of \$1 Monthly | | | | Future Life Expectancy (Years) | |
|----------------|---|----------|---------------------------|----------|-----------------------------------|-------|
| | Level For Life | | Increasing 3.5% Yearly | | | |
| | Men | Women | Men | Women | Men | Women |
| 45 | \$177.21 | \$189.58 | \$280.82 | \$314.75 | 29.50 | 34.00 |
| 50 | 163.12 | 177.21 | 246.55 | 280.82 | 25.20 | 29.50 |
| 55 | 147.50 | 163.12 | 212.60 | 246.55 | 21.16 | 25.20 |
| 60 | 130.52 | 147.50 | 179.49 | 212.60 | 17.42 | 21.16 |
| 65 | 112.87 | 130.52 | 148.28 | 179.49 | 14.05 | 17.42 |
| 70 | 95.20 | 112.87 | 119.70 | 148.28 | 11.09 | 14.05 |
| 75 | 77.77 | 95.20 | 93.83 | 119.70 | 8.52 | 11.09 |
| 80 | 61.71 | 77.77 | 71.69 | 93.83 | 6.39 | 8.52 |

* UP-1984 Table set forward 2 years for males and set back 3 years for females.

SAMPLE RATES OF SEPARATING FROM ACTIVE EMPLOYMENT BEFORE RETIREMENT, DEATH OR DISABILITY

| Sample Ages | % of Active Members Separating within Next Year |
|----------------|--|
| 20 | 1.50% |
| 25 | 1.25 |
| 30 | 1.00 |
| 35 | 0.75 |
| 40 | 0.50 |
| 45 | 0.25 |
| 50+ | 0.00 |

PAY ADJUSTMENT FACTOR USED TO PROJECT CURRENT PAYS

| Sample Ages | Present Pay Resulting in Pay of \$1,000 at Age 60 | Present Increase in Pay During Next Year |
|----------------|---|--|
| 20 | \$ 253 | 3.5% |
| 25 | 300 | 3.5 |
| 30 | 356 | 3.5 |
| 35 | 423 | 3.5 |
| 40 | 503 | 3.5 |
| 45 | 597 | 3.5 |
| 50 | 709 | 3.5 |
| 55 | 842 | 3.5 |
| 60 | 1,000 | 3.5 |

Use of the pay adjustment factor illustrated above is required by state law.

ANTICIPATED DISABILITY RETIREMENTS

| Sample Ages | % of Active Members Becoming Disabled within Next Year |
|----------------|---|
| 20 | 0.08% |
| 25 | 0.08 |
| 30 | 0.08 |
| 35 | 0.08 |
| 40 | 0.20 |
| 45 | 0.26 |
| 50 | 0.49 |
| 55 | 0.89 |

SECTION D



Financial Reporting

Statement Of Plan Net Assets
Market Value
As Of December 31, 1995 And 1996

| | 1996 | 1995 |
|--|-------------|-------------|
| Assets: | | |
| Cash and short-term investments | \$1,043,884 | \$1048,764 |
| Receivables: | | |
| Accrued interest | 14,998 | 16,015 |
| Accounts Payable: | (180) | (260) |
| Investments, at fair value: | | |
| Common Stocks | - | 191,470 |
| Mutual Funds | 192,550 | 184,624 |
| Mortgages | - | - |
| Bonds | 586,589 | 365,970 |
| Real Estate | - | - |
| Total | \$ 779,139 | \$ 742,064 |
| Net assets held in trust for pension benefits* | \$1,837,841 | \$1,806,583 |

* A schedule of funding progress for the plan is presented on page D-4.

Statement Of Changes In Plan Net Assets
For The Fiscal Years Ended December 31, 1995 and December 31, 1996

| | <u>December 31, 1996</u> | <u>December 31, 1995</u> |
|--------------------------------|--------------------------|--------------------------|
| Additions: | | |
| Contributions | | |
| Employer | \$ 59,302 | \$ 10,512 |
| Plan members | <u>8,412</u> | <u>83,700</u> |
| Total | 67,714 | 94,212 |
| Investment Income | <u>83,129</u> | <u>123,055</u> |
| Total Additions | \$ 150,843 | \$ 217,267 |
| Deductions: | | |
| Benefits Paid | 109,814 | 103,489 |
| Refund of Contributions | - | - |
| Expenses | <u>9,771</u> | <u>7,165</u> |
| Total Deductions | \$ 119,585 | \$ 110,654 |
| Net Increase | \$ 31,258 | \$ 106,613 |
| Net assets held in Trust Fund: | | |
| Beginning of year | \$1,806,583 | \$1,699,970 |
| End of year | <u>\$1,837,841</u> | <u>\$1,806,583</u> |

Plan Description. The Crookston Police Relief Association is a single-employer defined benefit pension plan that covers the police department employees of the City of Crookston.

The plan provides retirement, disability, and death benefits to plan members and their beneficiaries.

Contributions. Plan members contributions as specified on page B-7.

The employer's funding policy provides for periodic employer contributions based upon a *fundamental financial objective of having rates of contribution which remain relatively level from generation to generation of the City of Crookston citizens.* To determine the employer contribution rates and to assess the extent to which the fundamental financial objective is being achieved, the System has actuarial valuations prepared annually. In preparing those valuations, the entry age actuarial cost method is used to determine normal cost and actuarial accrued liabilities.

Unfunded actuarial accrued liabilities (full funding credit) are amortized by level percent-of-payroll contributions over a period of future years as outlined on page A-2.

On the basis of the December 31, 1996 actuarial valuation, the employer rates were determined to be as follows:

| Contributions for | |
|--|---|
| <u>Normal Cost as a Percent of Active Member Payroll</u> | <u>Unfunded Actuarial Accrued Liabilities</u> |
| 14.50% | \$37,658 |

Required Supplementary Information
Schedule of Funding Progress
(Dollar amounts in thousands)

| Actuarial Valuation Date | (a) Actuarial Value of Assets | (b) Entry Age Actuarial Accrued Liability (AAL) | (b)-(a) Unfunded AAL (UAAL) | (a)/(b) Funded Ratio | (c) Covered Payroll | [(b-a)/c] UAAL as a Percent of Covered Payroll |
|---|--|--|--|-------------------------------------|------------------------------------|---|
| 12/31/92 | \$1,638 | \$2,022 | \$384 | 81.0% | \$145 | 264.8% |
| 12/31/93 | 1,690 | 2,025 | 335 | 83.5 | 137 | 244.5 |
| 12/31/94 | 1,724 | 2,068 | 344 | 83.4 | 147 | 234.0 |
| 12/31/95 | 1,785 | 2,099 | 314 | 85.0 | 150 | 209.3 |
| 12/31/96 | 1,846 | 2,209 | 363 | 83.6 | 124 | 292.7 |

Schedule of Employer Contributions

| <u>Year Ended December 31</u> | <u>Annual Employer Contributions</u> |
|-----------------------------------|--|
| 1992 | \$75,641 |
| 1993 | 75,849 |
| 1994 | 80,396 |
| 1995 | 83,700 |
| 1996 | 59,302 |

Summary of Actuarial Methods and Assumptions

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

| | |
|-----------------------------------|---------------------------------|
| Valuation date | December 31, 1996 |
| Actuarial cost method | Entry age actuarial cost method |
| Amortization method | Level percent of payroll |
| Remaining amortization period | See page A-2 |
| Asset valuation method | Mandated by state law |
| Actuarial assumptions: | |
| Investment rate of return (net) | 5.0% |
| Projected salary increases | 3.5% |
| Assumed rate of payroll growth | 3.5% |
| Assumed rate of membership growth | 0% |
| Cost-of-living adjustments | 0% |

APPENDICES



APPENDIX I

FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES

Promises Made, and Eventually Paid. As each year is completed, the plan in effect hands an "IOU" to each member then acquiring a year of service credit -- the "IOU" says: "The Pension Plan owes you a portion of your retirement benefits, payments to be made in cash, commencing when you qualify for retirement."

The related key financial questions are: Which generation of taxpayers contributes the money to cover the IOU? The present taxpayers, who receive the benefit of the member's present year of service? Or the future taxpayers, who happen to be in town paying taxes at the later time when the IOU becomes a cash demand?

A sound principle of sound retirement plan financing is to have this year's taxpayers contribute the money to cover the IOUs being handed out this year. By following this principle, THE CONTRIBUTION RATE WILL REMAIN APPROXIMATELY LEVEL FROM GENERATION TO GENERATION -- our children and grandchildren will contribute the same percents of active payroll we contribute now.

A PENSION PLAN BECOMES CLOSED

The diagram in this appendix shows two important activities which occur after a plan has been closed to employees hired in the future.

Cash benefits paid continue to increase for decades, while active member payroll begins to decrease to zero.

Funding Method. A funding method is the long-term, planned pattern for employer contributions.

For an open plan (a plan covering future employees), the level-percent-of-active-member payroll funding method is the basic funding method.

The level-percent funding method can also be applied to a closed plan. However, the resulting contribution percent usually jumps to a high rate, because the number of covered active members is decreasing.

A preferred funding method for a closed plan consists of: level-percent funding for normal cost (the cost of members' service now being rendered); plus a level dollar contribution for unfunded actuarial accrued liabilities over a limited period of years. The period of years must be limited so that plan assets don't become zero while benefits are still payable.

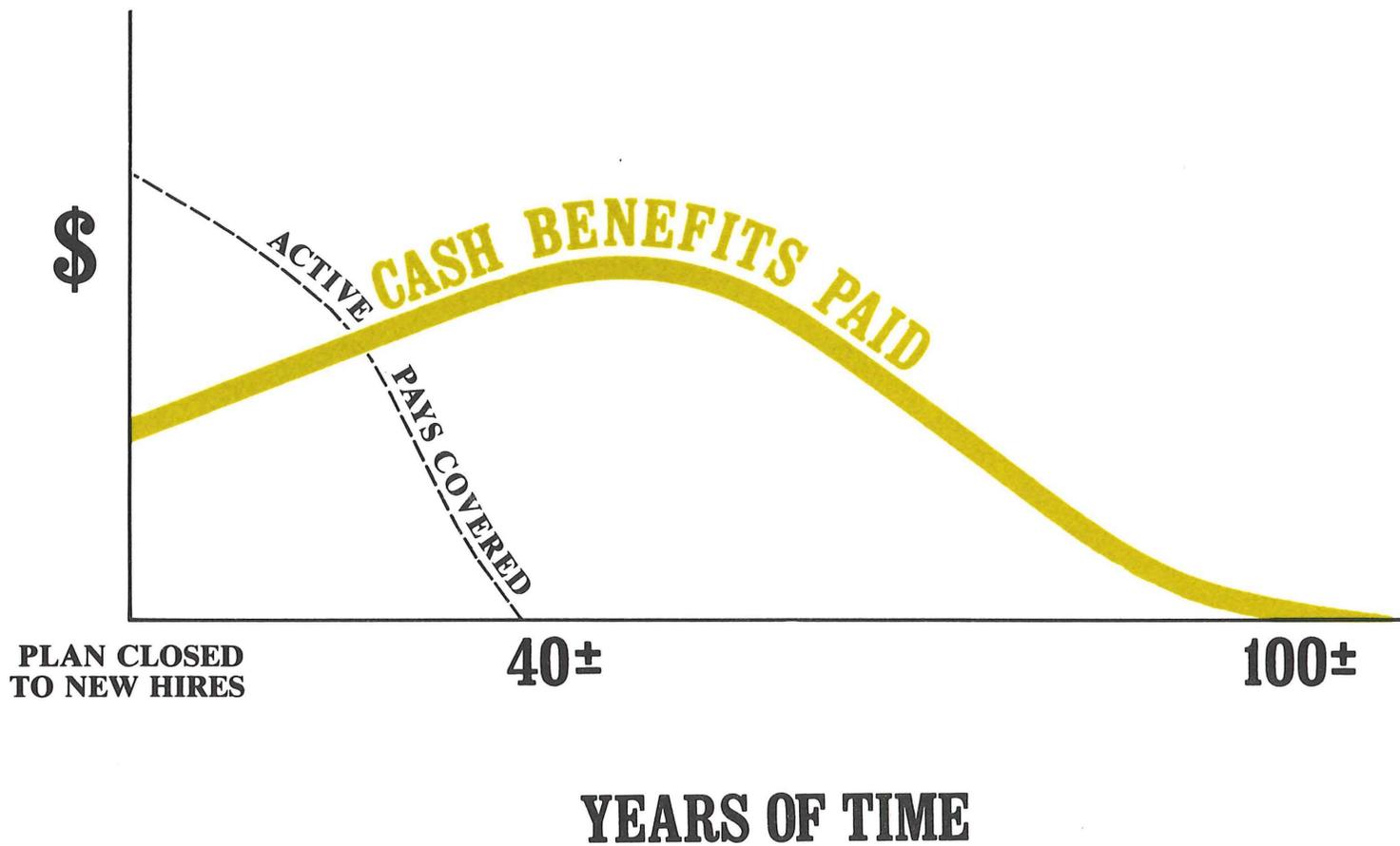
Computing Contributions To Support Plan Benefits. From a given schedule of benefits and from the employee data and asset data furnished him, the actuary determines the contribution rates to support the benefits by means of an actuarial valuation and a funding method.

In making an actuarial valuation, assumptions must be made regarding anticipated financial experiences for the next year and for decades in the future. Only the subsequent actual experience of the plan can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and been observed, it will not coincide exactly with assumed experience, regardless of the wisdom of the assumptions or the skill of the actuary and the millions of calculations he made. The future can be predicted with considerable but not 100% precision, except for inflation which seems to defy reliable prediction.

A well-managed plan copes with these continually changing differences by having periodic actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is continuing adjustment in financial position.

A CLOSED PENSION PLAN



A plan becomes closed when no new hires are admitted to active membership. The persons covered by the plan at the time of closing continue their normal activities and continue to be covered by the plan, until the last survivor dies.

CASH BENEFITS LINE. After a pension plan becomes closed, the usual pattern is for cash benefits to continue to increase for decades of time. Eventually the cash benefits will peak, and then gradually decrease over more decades of time, ultimately to zero. The last cash benefit is likely to occur a century after the time the plan is closed.

The precise amounts of cash benefits cannot be known now, and must be estimated by assumptions of future experiences in a variety of financial risk areas.

APPENDIX II

MEANING OF UNFUNDED ACCRUED LIABILITIES

Almost every pension plan (public or private) has "unfunded accrued liabilities," so whatever they are, they aren't rare. Since the term is not part of everyday conversation, it needs some definition.

"Accrued liabilities" are the present value \$ of plan promises to pay benefits in the future based upon service already rendered - - - a liability has been established ("accrued") because the service has been rendered, but the resulting monthly cash benefit may not be payable until years in the future. Accrued liabilities \$ are the result of complex mathematical calculations, which are made by the plan's actuary (which is the name given to the specialist who makes such calculations).

If "accrued liabilities" at any time exceed the plan's accrued assets (cash & investments), the difference is "unfunded accrued liabilities." This is the common condition. If the plan's assets equaled the plan's "accrued liabilities," the plan would be termed "fully funded." This is a rare condition.

Each time a plan adds a new benefit which applies to service already rendered, an "accrued liability" is created, which is also an "unfunded accrued liability" because the plan can't print instant cash to cover the accrued liability. Payment for such unfunded accrued liabilities is spread over a period of years, commonly in the 20-40 year range.

Unfunded accrued liabilities can occur in another way: If actual financial experience is less favorable than assumed financial experience, the difference is added to unfunded accrued liabilities. In plans where plan benefits are directly related to an employee's pay near time of retirement (a common plan provision) rather than his average pay throughout his working career, unfunded accrued liabilities have been increasing in recent years because unexpected rates of pay increase have created additional accrued liabilities which could not be matched by reasonable investment results. Some of these unexpected pay increases are the direct result of inflation, which is a very destructive force on financial stability.

The existence of unfunded accrued liabilities is not bad, then (any more than a mortgage on your house is "bad"), but the changes from year to year in amount of unfunded accrued liabilities are important - - - "bad" or "good" or somewhere in between.

Nor are unfunded accrued liabilities a bill payable immediately (your food costs are payable immediately), but it is important that policy-makers prevent the amount from becoming unreasonably high and it is vital that your plan have a sound method for making payments toward them so that they are controlled.

The existence of large amounts of unfunded accrued liabilities indicates that total contributions in past years were less than level - - - an almost certain history if retired life liabilities are not fully funded now.