Report of
AN ACTUARIAL VALUATION
December 31, 1978 of the
CITY OF FAIRMONT
POLICEMEN'S BENEFIT ASSOCIATION
Fairmont, Minnesota

filed
6/21/79

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Table of Contents

June 13, 1979

Policemen's Benefit Association

Fairmont, Minnesota

Submitted in this report are the results of an actuarial valuation of the Pension Plan. The date of the valuation was December 31, 1978.

It is essential that the concepts contained in the financing diagram on page 6 be understood.

The covered person data and financial operations data necessary for an actuarial valuation were furnished by the Plan.

Result pages 11-14 will probably be of particular interest.

The financial assumptions and the funding methods used in the actuarial valuation are summarized on pages 15-17.

The assumptions are the same as used in the December 31, 1976 actuarial valuation. The economic assumptions, investment return and rates of pay increase, are established by State Law.

An experience study is required by State Law. Such a study shows, for a given period of time, how actual experiences have compared with previously established assumptions. Upon completion of the study, recommendations will be made concerning the assumptions.

Generally accepted actuarial principles and practices were used in mathematically combining the data, the assumptions, and the funding methods.

Respectfully submitted,

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Fairmont Policemen's Benefit Association

Brief Summary (12-31-78) of Benefit Provisions Evaluated and/or Considered

Age & Service Retirement

Eligibility. 20 years of service and 50 years of age.

Amount. For first 20 years service, 50% of base pay. For years in excess of 20 an additional 2% is added to a maximum of 60% of base pay for 25 years service. (Service after attainment of age 55 is not considered for benefit purposes.)

Pay Used For Plan Purposes. "Base pay" means maximum salary paid to an active patrolman.

Disability Retirement

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

Amount. $900 per year.

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.

Amount.

Spouse. 25% of base pay.

Child. 6.25% of base pay. Children's maximum is 25% of base pay if spouse is receiving or 50% of base pay if no spouse is receiving.

Vested Deferred. 20 years of service and separated before age 50. Payment beginning is deferred to attainment of age 50.

Post Retirement Adjustments ("Escalator"). Each time base pay is changed, payments to benefit recipients, other than disability retirants, are simultaneously changed by the same percent that base pay is changed.

Member Contributions. 8% of base pay. Total member contributions are refundable, without interest, if no monthly benefit is payable upon separation from service.

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 one year's worth of retirement benefits, payments 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 traditional principle of sound retirement plan financing is that 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 on page 6 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 its 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.

An alternate 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 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.

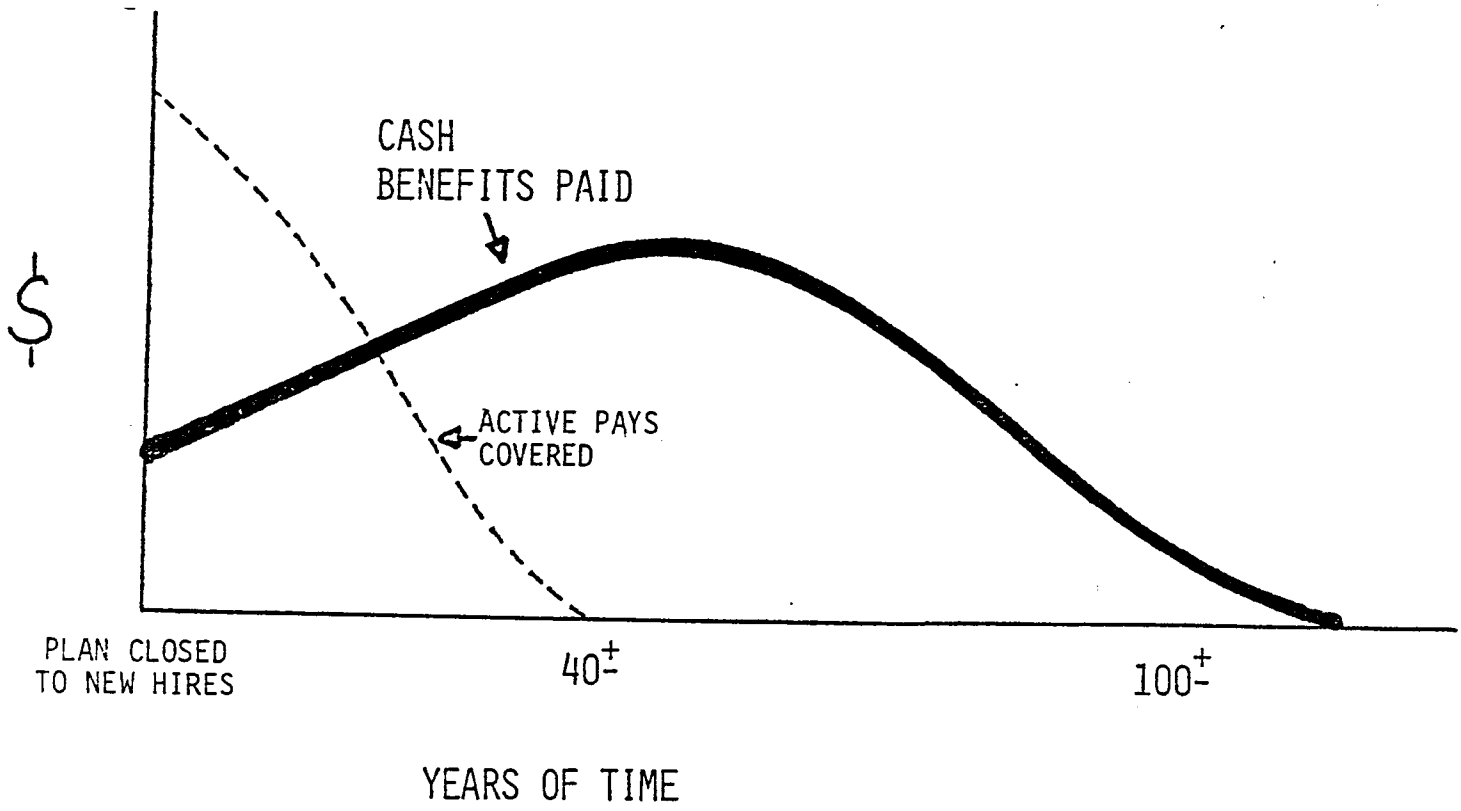
Computing Contributions to Support Plan Benefits. From a given schedule of benefits and from the employee data and asset data furnished him, the actuary determines the contribution rates to support the benefits by means of an actuarial valuation and a funding method.

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 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.

THE ACTUARIAL VALUATION PROCESS

The actuarial valuation is the mathematical process by which the contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

A. Covered people data, furnished by plan administrator including;

Retired lives now receiving benefits

Former employees with vested benefits not yet payable

Active employees

B. + Asset data (cash & investments), furnished by plan administrator

C. + Assumptions of various future financial experiences

D. + The funding method for employer contributions (the long-term, planned pattern for employer contributions)

E. + Mathematically combining the assumptions, the funding method, and the data

F. = Determination of:

Plan Financial Position

and/or New Employer Contribution Rate

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Retirants and Beneficiaries December 31, 1978

By Type of Annuity Being Paid

Type of Annuity Being Paid	No.	Monthly Amounts	Computed Accrued Liabilities
Age & service annuity:			
Retirant receiving	8	$4,600.00	$ 933,420
Spouse receiving	1	287.50	66,864
Child receiving	1	71.88	1,272
Total	10	4,959.38	1,001,556
Disability annuity:			
Retirant receiving			
Spouse receiving			
Child receiving			
Total			
Death before retirement:			
Spouse receiving	1	60.00	11,412
Child receiving	1	15.00	3,300
Total	2	75.00	14,712
Deferred Annuity:			
Totals	12	$5,034.38	$1,016,268

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Retirants and Beneficiaries December 31, 1978

By Attained Ages

Attained Ages	Number		
	Age & Service	Disability	Death Before Retirement
15-19	1		1
40-44			1
50-54	1		
55-59	5		
60-64	1		
65-69	2		
Totals	10		2

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Active Members December 31, 1978

Tabulated by Attained Age Groups and Years of Accrued Service

Attained Age Groups	Number at Indicated Years of Accrued Service to January 1, 1979							Total No.
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
20-24	1							1
30-34	2	2	1					5
35-39		1						1
40-44			2	1				3
50-54					1			1
Totals	3	3	3	1	1			11

Average age: 36.5 years.

Average accrued service: 10.1 years.

Valuation Payroll: $151,800 ($13,800 each)

There are no inactive members entitled to a deferred annuity.

The people data included in the valuation is shown in groups or summaries, for reading convenience.

Financial calculations were made individually for each covered person.

The accrued assets of the Plan were reported to be as follows at December 31, 1978:

Cash	$ 5,049.74
State Investment Accounts	71,796.90
Other Fixed-Income Investments	387,177.45
Other Equity Investments	-0-
Total	$464,024.09

COMPUTED ACCRUED LIABILITIES & UNFUNDED ACCRUED LIABILITIES ("UAL")

One of the results of the actuarial valuation is computed accrued liabilities.

Amounts at 12-31-1978	Retired Lives & Inactives	Active Members	TOTAL PLAN
Computed accrued liabilities	$1,016,268	$609,527	$1,625,795
Reported accrued assets	402,562	61,462	464,024
Unfunded Accrued Liabilities	$ 613,706	548,065	$1,161,771
Assets divided by Liabilities	40%	10%	29%

Assets Divided by Liability %s. If a plan has been following the disciplines of level contribution financing in past years, the Retired % will probably be 100%.

If the Retired % is now less than 100%, it is likely to remain under 100% until the completion of the funding period.

At the completion of the funding period, the TOTAL PLAN % will be 100%.

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 equalled the plan's "accrued liabilities", the plan would be termed "fully funded". This is a rare condition.

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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.

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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.

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CLOSED PLAN CONTRIBUTION RATES TO PROVIDE BENEFITS

Member portion & Employer portion

Effective January 1, 1980

Contributions for	If $ Paid Equally Throughout Year % of Active Payroll	+	 UAL Dollars
Normal cost of annuities:			
Age & service: to member	25.87%		
Age & service: to survivors	4.59		
Disability	0.01		
Death before retirement	1.87		
Total Normal Cost	32.34		
Unfunded accrued liabilities(UAL) (31 year level payment to 2010):			
Retired lives			$38,406
Active members			34,298
Total			72,704
Total Annuities	32.34%	+	$72,704
Member contributions	8.00%		
less termination benefit	0.67		
Usable for annuities	7.33%		
COMPUTED EMPLOYER RATES:			
(a) If Equal $ Instalments Throughout Year	25.01	+	$72,704
(b) If $ PAID AT CALENDAR YEAR END	25.63	+	$74,500

The December 31, 1976 actuarial valuation computed contributions equal to 5% of unfunded accrued liabilities("UAL"). Applying that funding method to UAL would produce a (b) contribution of $58,089, instead of the $ shown.

CONTRIBUTION $ FOR CALENDAR YEAR FOR CLOSED PLAN

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 upon the timing of contributions within the year. The later the contribution date, the more the dollar amount.

The municipality's dollar contributions for a coming calendar year may be determined as follows:

(1) Active member covered payroll projected for coming year (preferably the payroll budgeted for the year) $_____

(2) Employer normal cost rate % for year, assuming payment at year end: Rate (b) _____%

(3) Employer normal cost contributions for year: (1) times (2) $_____

(4) UAL contribution $ for year, assuming payment at year end: $ amount (b) $_____

(5) Employer total dollar contributions: (3) plus (4) $_____

(6) State contributions received during year $_____

(7) MUNICIPALITY CONTRIBUTIONS AT YEAR END: (5) minus (6) $_____

If Employer contribution dollars are paid in equal installments throughout the year, Employer Rate (a) may be substituted in steps (2) and (4) above.

Valuation Financial Assumptions & Funding Methods

The rate of investment return (interest) used in making the valuation was 5.0 percent per annum, compounded annually.

The mortality table used was the United States Life Table, 1959-61, White Males and White Females.

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	$169.61	$186.84	$263.23	$304.86	27.33	32.52
50	154.85	174.20	229.51	270.80	23.22	28.08
55	139.29	159.62	197.24	236.11	19.45	23.81
60	122.79	142.73	166.26	200.76	16.01	19.69
65	106.31	124.22	137.82	166.16	12.97	15.88
70	89.86	104.31	111.71	132.82	10.29	12.38
75	73.39	83.92	87.66	101.94	7.92	9.28
80	57.54	64.24	66.29	74.77	5.89	6.67

Age & service retirement was assumed to occur at age 53, or attained age if older.

Sample Rates of Separation From Active Employment Before Retirement, Death or Disability

Sample Ages	% of Active Members Separating Within Next Year
20	3.00%
25	2.50
30	2.00
35	1.50
40	1.00
45	0.50
50+	0.00

Sample Pay Adjustment Factors used to Project Current Pays

Sample Ages	Present Pay Resulting in Pay of $1,000 at Age 60	Percent 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

Total covered payroll for active members is assumed to increase 3.5% annually.

An entry age-normal cost method of valuation was used in determining the normal cost of age & service benefits (including benefits for death after age & service retirement), and in determining accrued liabilities.

The end-of-year contribution rate for unfunded accrued liabilities ("UAL") represents the level $ payment required to amortize the UAL.

These steps conform to State law.

Disability & Death-before-retirement. Contributions for these casualty benefits were determined using a terminal funding method.

Disability retirements were assumed to occur as indicated below (these assumptions differ from 12-31-76 assumptions):

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