

1978 ACTUARIAL REPORT

for

PINE CITY VOLUNTEER FIRE
DEPARTMENT RELIEF ASSOCIATION

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Section 1. A Brief Summary of the Census Data

The data on which this actuarial valuation is based is summarized below. Information on each member and beneficiary included in the valuation is presented in Appendix C.

Members Not Yet Receiving Benefits

	<u>Number</u>	<u>Prospective Retirement Annuities</u>
Active Members	28	\$16,800
Deferred Annuitant Members	-	-0-

Members Currently Receiving Benefits

	<u>Number</u>	<u>Annual Annuity Payments</u>
Retired Members	10	\$ 6,000
Disabled Members	-	-0-
Widows of Deceased Members	-	-0-
Children of Deceased Members	-	-0-

Section 2. The Actuarial Valuation

The results of the valuation based upon the benefits in effect on January 1, 1978 are shown below.

1. Accrued Liability	\$102,708
2. Special Fund Assets	<u>77,408</u>
3. Unfunded Accrued Liability (Prior Service Deficit)	\$ 25,300
4. Normal Cost	\$ 7,460

The actuarial assumptions used in determining these results will be found in Appendix A.

Explanation of Actuarial Terminology

Accrued Liability: The present value of benefits earned for service prior to the valuation date under the actuarial method used. The actuarial method used spreads the cost of total expected benefits equally over each member's anticipated period of active membership. The dollar amount shown as the Accrued Liability represents the number of dollars that should be in the Special Fund to provide for benefits already earned.

Unfunded Accrued Liability (Prior Service Deficit): This amount is the difference between the Accrued Liability (the amount that should be in the Special Fund to fully provide for benefits already earned) and the actual amount of Special Fund assets.

Normal Cost: The amount necessary, according to the actuarial method used, to pay for benefits earned in 1977 (and each future year until another actuarial valuation is completed).

Section 3. Contributions

The Volunteer Firemen's Relief Association Guidelines Bill of 1971 (Chapter 261 of Minnesota Statutes 1971) specifies minimum support rates required on an annual basis. The minimum support rates from the municipality and state aid are determined as the amount required to meet the Normal Cost plus amortizing any existing prior service deficit over a 20-year period. This total contribution is shown below.

The contribution required by the municipality for any year is determined by taking Item 3 below, and subtracting one year's estimated state aid expected from the state pursuant to Minnesota Statutes, Chapter 69.

Contribution to Amortize Unfunded Accrued Liability (Prior Service Deficit) Over 20 Years

1. Normal Cost	\$7,460
2. Amortization Payment on Unfunded Accrued Liability (Prior Service Deficit)	<u>1,933</u>
3. Total Contribution Required, if made 1/1/78, (Including State Aid)	\$9,393
4. Interest at 5% to 12/31/78	<u>470</u>
5. Total contribution, if made 12/31/78	\$9,863

Section 4. Income of Funding During 1977

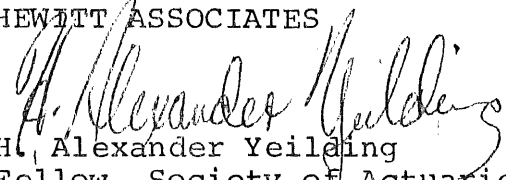
Members' Contributions	\$ -0-
Contributions by Municipality	\$ 4,565.86
State Aid	\$ 6,358.52
Other	\$ 505.56
Total Contributions	\$11,429.94
Investment Income	\$ 3,985.44

Section 5. The Preparation of the Report

This report has been prepared in accordance with generally accepted actuarial principles and practices. This actuarial survey was made in accordance with our understanding of the requirements of Chapter 261 of Minnesota Statutes 1971. The usual care has been exercised in making the calculations and presenting the results. The contents of this report are, therefore, believed to be a correct appraisal of the state of affairs of the Plan.

Respectfully submitted,

HEWITT ASSOCIATES


H. Alexander Yeilding
Fellow, Society of Actuaries

APPENDIX A
ACTUARIAL ASSUMPTIONS

Mortality Rates

The mortality rates used are based on the United States Life Table, 1959-61, White Males and White Females. These tables were used for active members, retired members and for survivors.

Withdrawal Rates

The rate of withdrawal of .060 at age 20 decreasing uniformly to zero at age 45 with no withdrawal after that age.

Disability Rates

The expected Normal Cost of any short term weekly income benefits has been determined as follows, and the resulting cost has been included in the Normal Cost shown on page 2:

- a. If these benefits are insured, the 1970 annual insurance premium.
- b. If these benefits are not insured, the cost is determined using appropriate claim statistics published by the Society of Actuaries from intercompany claims experience.

Retirement Age

The assumed average retirement age is 53.

Interest Rate

Five percent compounded annually.

Actuarial Method

The Entry Age Normal Cost Method has been used with the Normal Cost determined as a level amount each year from the date of joining the Department to the assumed retirement age.

APPENDIX B

SUMMARY OF PLAN PROVISIONS

Retirement Benefit

Requirements

Twenty years of service and 50 years of age.

Amount

Benefit When Minimum Requirements Are Met: \$600 per year.

Additional Benefits for Service Beyond Minimum Requirements: None.

Vesting Benefit

Requirements

Not applicable.

Amount

None.

Disability Benefit

Requirements

None.

Amount

On Duty only: \$1,000 Accidental Death and Dismemberment plus \$50 per week for life.

Lump Sum Death Benefit

Requirements

None.

Amount

\$1,500 plus \$1,000 Accidental Death and Dismemberment.

APPENDIX C

CENSUS DATA

PINE CITY VOLUNTEER FIRE
DEPARTMENT RELIEF ASSOCIATION

ACTIVE MEMBERS

CODE NUMBER -----	AGE NEAREST BIRTHDAY -----	COMPLETED YEARS OF SERVICE -----	PROJECTED ANNUAL ANNUITY -----
1	47	23	\$ 600
2	46	17	\$ 600
3	45	20	\$ 600
4	47	14	\$ 600
5	48	14	\$ 600
6	42	20	\$ 600
7	44	12	\$ 600
8	40	18	\$ 600
9	37	14	\$ 600
10	41	7	\$ 600
11	36	9	\$ 600
12	37	7	\$ 600
13	35	11	\$ 600
14	36	11	\$ 600
15	35	6	\$ 600
16	40	5	\$ 600
17	38	4	\$ 600
18	34	11	\$ 600
19	39	4	\$ 600
20	34	3	\$ 600
21	23	1	\$ 600
22	22	2	\$ 600

PINE CITY VOLUNTEER FIRE
DEPARTMENT RELIEF ASSOCIATION (CONTINUED)

ACTIVE MEMBERS

<u>CODE NUMBER</u> -----	<u>AGE NEAREST BIRTHDAY</u> -----	<u>COMPLETED YEARS OF SERVICE</u> -----	<u>PROJECTED ANNUAL ANNUITY</u> -----
23	26	1	\$ 600
24	23	1	\$ 600
25	34	12	\$ 600
26	38	4	\$ 600
27	20	0	\$ 600
28	29	0	\$ 600

RETIRED MEMBERS

PINE CITY VOLUNTEER FIRE DEPARTMENT RELIEF ASSOCIATION

<u>CODE NUMBER</u>	<u>AGE</u>	<u>ANNUAL BENEFIT</u>
1	81	600
2	75	600
3	74	600
4	73	600
5	72	600
6	68	600
7	58	600
8	57	600
9	53	600
10	42	600