

DULUTH FIREMEN'S RELIEF ASSOCIATION

ACTUARIAL CALCULATIONS PRELIMINARY  
TO CONSOLIDATION

STATE OF MINNESOTA  
DEPARTMENT OF STATE  
FILED

SEP 12 1988

*John Andrew Howe*  
Secretary of State

38386

Revised August 16, 1988

THE *Wyatt* COMPANY

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August 16, 1988

Legislative Commission on  
Pensions and Retirement  
55 State Office Building  
St. Paul, Minnesota 55155

**RE: DULUTH FIREMEN'S RELIEF ASSOCIATION**

Commission Members:

We have revised our actuarial calculations in our February 3, 1988 report. This revision shows the financial impact of the new mortality table recently adopted by the PERA Board.

This change in mortality table increases the Additional Municipal Contribution (Table 1, line 6), assuming all elect the greater value, from \$3,036,488 to \$3,303,101.

If all current benefit recipients elect PERA Police and Fire benefits, the assets will be insufficient to cover the reserves that must be transferred to the MPRIF (Minnesota Post Retirement Investment Fund). Any insufficiency would have to be covered by immediate municipal contributions. The new mortality table increased the maximum insufficiency from \$8,020,854 to \$8,851,253. The payment of any insufficiency would increase the funding level of the plan and produce a smaller Additional Municipal Contribution than the amount shown above.

We certify that to the best of our knowledge and belief this actuarial work was performed in accordance with the requirements of Sections 353A.05 and 356.215,

Revised August 16, 1988

OFFICES IN PRINCIPAL CITIES AROUND THE WORLD

Commission Members  
August 16, 1988  
Page Two

Minnesota Statutes, and the requirements of the Standards for Actuarial Work,  
adopted by the Commission on August 26, 1987.

Respectfully submitted,

THE WYATT COMPANY

Robert E. Perkins  
Robert E. Perkins, FSA  
Consulting Actuary

Michael C. Gunvalson  
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cc: The Honorable Arne Carlson, State Auditor  
The Honorable Joan Anderson Growe, Secretary of State  
Howard Bicker, State Board of Investment  
James Hacking, Public Employees Retirement Association  
James Noble, Legislative Auditor  
Thomas J. Triplett, Commissioner of Finance  
Martin Mehling, Duluth Firemen's Relief Association  
Kjell Rodne, Administrative Assistant, City of Duluth

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THE *Wyatt* COMPANY

## REPORT PRELIMINARY TO CONSOLIDATION

The purpose of this report is to estimate the cost of consolidating the Pension Association with PERA Police and Fire (P&F) as specified in Minnesota Statutes, Chapter 353A prior to potential final municipal approval of the consolidation question.

The consolidation process provides the Pension Association members and their beneficiaries an opportunity to change their retirement benefit plan coverage by electing between Pension Association and P&F benefits. In order to evaluate the financial aspects of consolidation, the costs in Table 1 have been determined under three possible outcomes - all individuals elect Pension Association benefits (column 2), all individuals elect P&F benefits (column 3) and each individual elects the benefit plan which has the greater total benefit plan actuarial value (column 4).

Table 1 illustrates each outcome by using the same market value of assets. But, the assets would not be sufficient to provide the required reserve if all individuals elect Pera Police and Fire benefits. In Table 1A, the assets are increased by the \$8,851,253 needed for the required reserves and a revised Additional Municipal Contribution is calculated.

Table 1 also compares the consolidation calculations to those found in the actuarial valuation of the Pension Association as of December 31, 1986, prepared

by Gabriel, Roeder, Smith & Company. Since the Relief Association benefits are identical for columns 1 and 2, the differences in liabilities and costs are due primarily to the use of different actuarial assumptions as required by statute and to a lesser extent, to the differences in data and the date of the calculation. Table 2 shows the data differences and lists the major assumptions.

Whenever a retired member or the retired member's surviving spouse elects P&F benefits, the reserve for that benefit must be transferred to the Minnesota Post Retirement Investment Fund (MPRIF). The amount to be transferred if all benefit recipients who are eligible for MPRIF elect P&F benefits is \$19,333,283, which is \$8,851,253 more than the current market value of assets. This amount includes the increase of 8.054% for those who meet the MPRIF eligibility rules for a January 1, 1988 benefit adjustment.

Current benefit recipients who are not eligible for MPRIF will be paid directly by PERA. Their benefits will be escalated by the same percentage that applies to MPRIF annuitants, however no funds are required to be transferred to MPRIF.

Although the costs shown in Table 1 represent an appropriate range of estimates available today, the costs are subject to change in future years following the consolidation. The true cost of any pension plan is not completely determined until the last benefit payment has been made to the last benefit recipient. Prior to that date, annual budgets are determined by making assumptions regarding future experience.

Each year in the future following consolidation, municipal costs will be

redetermined based on the elections made by members and beneficiaries and will consist of the following components:

- Regular contributions (line 7) - a variable cost which will depend on the compensation of members still active.
  
- Additional contributions (line 6) - a fixed cost which is an annual amount of \$3,303,101, the amount required to amortize the initial unfunded consolidation actuarial liability shown in column 4 of Table 1 by the year 2010.
  
- Additional contributions (undeterminable at this time) - a variable cost which will depend on actual experience. Any actuarial gains (for example, investment results in excess of 8%) will reduce future contributions and actuarial losses (for example, salary increases in excess of 6.5%) will increase future contributions.

DULUTH FIREMEN'S RELIEF ASSOCIATION  
ACTUARIAL CALCULATIONS

TABLE 1

	<u>Prior Valuation</u>	<u>Election Of Benefits Under The Consolidation</u>		
	<u>Relief Association</u> (1) 12/31/86	<u>All Elect Relief Association</u> (2) 11/1/87	<u>All Elect PERA P&amp;F</u> (3) 11/1/87	<u>All Elect Greater Value</u> (4) 11/1/87
Date of Calculations				
Actuarial Present Value of Projected Benefits	\$50,884,486	\$54,306,430	\$41,476,476	\$54,463,007
Actuarial Accrued Liability	41,644,941	46,872,669	35,248,045	46,993,452
Normal Cost	771,254	684,818	532,684	690,161
<u>Determination of Municipality Contributions (Before Adjustment For State Aid)</u>				
1. Actuarial Present Value of Projected Benefits	\$ NA	\$54,306,430	\$41,476,476	\$54,463,007
2. Present Value of Future Member Contributions	NA	2,976,959	3,277,280	2,988,238
3. Present Value of Future Regular Municipal Contributions	NA	4,465,439	4,915,920	4,482,357
4. Market Value of Assets	10,539,035	10,482,030 *	10,482,030 *	10,482,030 *
5. Unfunded Amount to be Amortized (1-2-3-4)	31,136,162 **	36,382,002	22,801,246	36,510,382
6. Additional Municipal Contribution (5 amortized by 2010)	2,252,482	3,291,486 ***	2,062,833 ***	3,303,101 ***
7. Regular Municipal Contribution	502,992 ****	419,809	418,952	419,809
8. Total Municipal Contribution (6+7)	2,755,474	3,711,295	2,481,785	3,722,910

\* Equal to market value reported by Duluth and assuming no changes by the State Board of Investments.

\*\* Based on the Actuarial Accrued Liability less the Current Assets of \$10,508,779.

\*\*\* An increase (decrease) in Market Value of \$100,000 will decrease (increase) the municipal contribution by \$9,047.

\*\*\*\* Equals the Employer Normal Cost.

Revised August 16, 1988 - New Mortality Table

DULUTH FIREMEN'S RELIEF ASSOCIATION  
ACTUARIAL CALCULATIONS

TABLE 1A

Election Of Benefits Under The Consolidation

	All Elect PERA P&F
Date of Calculations	11/1/87
Actuarial Present Value of Projected Benefits	\$41,476,476
Actuarial Accrued Liability	35,248,045
Normal Cost	532,684
<u>Determination of Municipality Contributions (Before Adjustment For State Aid)</u>	
1. Actuarial Present Value of Projected Benefits	\$41,476,476
2. Present Value of Future Member Contributions	3,277,280
3. Present Value of Future Regular Municipal Contributions	4,915,920
4. Market Value of Assets	19,333,283 *
5. Unfunded Amount to be Amortized (1-2-3-4)	13,949,993
6. Additional Municipal Contribution (5 amortized by 2010)	1,262,058
7. Regular Municipal Contribution	418,952
8. Total Municipal Contribution (6+7)	1,681,010

\* Amount required to be transferred to the Minnesota Post Retirement Investment Fund assuming that all elect PERA P&F. This amount consists of assets of \$10,482,030 and \$8,851,253 that the City of Duluth would have to contribute to bring the market value of the Relief Association assets up to the level required for transfer to the Post Fund.

Revised August 16, 1988 - New Mortality Table

DULUTH FIREMEN'S RELIEF ASSOCIATION  
DATA AND ASSUMPTIONS

TABLE 2

	<u>Prior Valuation</u>	<u>Consolidation Calculation</u>	
	<u>Relief Association</u> (1)	<u>All Elect Relief Association</u> (2)	<u>All Elect PERA P&amp;F</u> (3)
Number in Plan			
Active Members	112	109	109
Deferred Former Members	2	1	1
Retired Members and Beneficiaries	173	171	171
Member Contribution			
Percentage	8.0%	8.0%	8.0%
Compensation Base	\$3,353,280	3,498,408	3,491,268
Contribution	\$268,262	279,873	279,301
Municipal Contribution			
Percentage	NA	12.0%	12.0%
Compensation Base	NA	3,498,408	3,491,268
Contribution	NA	419,809	418,952
Interest - Before Retirement	5.0%	8.0%	8.0%
After Retirement	5.0%	8.0%	5.0%
Salary Increase	3.5%	6.5%	6.5%
Post Retirement Benefit Increase	3.5%	6.5%	NA
Retirement Age/Service	58/20	58/20	60/5
Other Assumptions	per Duluth Relief Association Report	per PERA P&F Report	per PERA P&F Report

THE  
Ogilvy  
COMPANY

STATE OF MINNESOTA  
DEPARTMENT OF STATE  
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