

JUDGES RETIREMENT FUND

ACTUARIAL VALUATION REPORT

JULY 1, 1986

THE *Wyatt* COMPANY

ACTUARIES AND CONSULTANTS

EMPLOYEE BENEFITS
COMPENSATION PROGRAMS
EMPLOYEE COMMUNICATIONS
ADMINISTRATIVE SYSTEMS
RISK MANAGEMENT
INTERNATIONAL SERVICES

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OFFICES IN PRINCIPAL CITIES
AROUND THE WORLD

November 21, 1986

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

RE: JUDGES RETIREMENT FUND

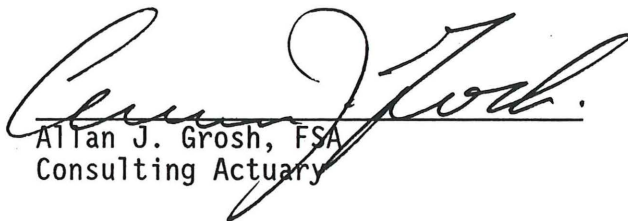
Gentlemen:

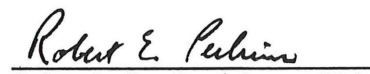
We have prepared an actuarial valuation of the Fund as of July 1, 1986 based on membership and financial data supplied by the Fund.

We certify that to the best of our knowledge and belief this actuarial valuation was performed in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards for Actuarial Work, adopted by the Commission on June 30, 1986 and amended on July 21 and July 28 of 1986.

Respectfully submitted,

THE WYATT COMPANY


Allan J. Grosh, FSA
Consulting Actuary


Robert E. Perkins, FSA
Consulting Actuary

JUDGES RETIREMENT FUND

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JUDGES RETIREMENT FUND

REPORT HIGHLIGHTS (DOLLARS IN THOUSANDS)

	<u>07/01/85</u> <u>VALUATION</u>	<u>07/01/86</u> <u>VALUATION</u>
A. CONTRIBUTIONS (TABLE 11)		
1. Statutory Contributions - Chapter 490 % of Payroll	4.13%	4.11%
2. Required Contributions - Chapter 356 % of Payroll	24.86%	25.32%
3. Sufficiency (Deficiency) (A1-A2)	-20.73%	-21.21%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$13,785	\$15,982
b. Current Benefit Obligations (Table 8)	\$47,074	\$51,178
c. Funding Ratio (a/b)	29.28%	31.23%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$13,785	\$15,982
b. Actuarial Accrued Liability (Table 9)	\$46,662	\$51,360
c. Funding Ratio (a/b)	29.54%	31.12%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$21,459	\$23,279
b. Current and Expected Future Benefit Obligations	\$72,435	\$77,843
c. Funding Ratio (a/b)	29.63%	29.91%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	240	243
b. Projected Annual Earnings	\$15,521	\$16,718
c. Average Annual Earnings (Actual \$)	\$64,671	\$68,800
d. Average Age	53.2	53.6
e. Average Service	11.5	11.8
2. Others		
a. Service Retirements (Table 4)	83	83
b. Disability Retirements (Table 5)	4	5
c. Survivors (Table 6)	52	50
d. Deferred Retirements (Table 7)	7	7
e. Terminated Other Non-vested (Table 7)	0	0
f. Total	146	145

JUDGES RETIREMENT FUND

COMMENTARY

Purpose

The purpose of this valuation is to determine the financial status of the Fund. In order to achieve this purpose, an actuarial valuation is made at the beginning of each fiscal year as required by Section 356.215 of Minnesota Statutes.

Report Highlights

The statutory contributions, representing only member contributions, for the Judges Retirement Fund are 4.11%. The remaining 21.21% needed to reach the required contribution level of 25.32% will be paid by the State as needed in future years according to Chapter 490 of Minnesota Statutes.

The financial status of the Fund can be measured by three different funding ratios:

- o The Accrued Benefit Funding Ratio is a measure of current funding status, and when viewed over a period of years, presents a view of the funding progress. This ratio is based on the Proposed Statement of Governmental Accounting Standards. This year's ratio is 31.23%. The corresponding ratio for the prior year was 29.28%.
- o The Accrued Liability Funding Ratio is also a measure of funding status and funding progress. It is based on the actuarial cost method that has historically been used. For 1986 the ratio is 31.12%, which is an increase from the 1985 value of 29.54%.

- o The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 29.91% verifies that the current statutory contributions by members are going to cover only a portion of the plan benefits. Since the State will make the necessary payments to fund annuities payable from MPRIF and to pay other benefits as they come due, this Funding Ratio may be considered to be 100%.

Asset Information

Beginning in 1984, changes in Section 356.215 of Minnesota Statutes require that the asset value used for actuarial purposes reflect a portion of the unrealized gains and losses. Only a portion of these gains and losses are considered because market values are typically volatile and could produce erratic changes in the contribution requirements from year to year.

The calculation of assets for actuarial purposes begins with the reporting of Total Assets by the Fund (Table 1, line B). These Total Assets reduced by any Amounts Currently Payable (line C) produces the Assets Available for Benefits (line D5), which is the starting value for determining the Actuarial Value of Assets.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines F1 to F6. It combines the cost value and one-third of the difference between market value and cost value.

The term "Actuarial Value of Assets" is used to indicate that the value was

determined for use in this actuarial valuation. Since Minnesota Statutes refer to this value as "Current Assets", the latter phrase will be used in the remainder of this report.

Since this Fund participates in the Minnesota Post Retirement Investment Fund, referred to as MPRIF, the asset value shown on line A3 is initially calculated by the State Board of Investment(SBI), and is the expected amount of MPRIF participation assuming the Fund earns 5% interest. The actual amount is determined by calculating the liability based on annuitant information supplied by the Fund. If the actual liability is larger than expected, the difference is labeled a mortality loss and if smaller a gain.

Investment performance by SBI above the 5% level is not shown in the assets but will be added in on January 1, 1987 when benefits will be increased for those annuitants who have been receiving payments for 18 months. Next year's valuation will include the 1987 benefit increase in determining the MPRIF value.

After the MPRIF liability has been calculated for each participating Fund, SBI will determine each Fund's portion of the January benefit increase as well as the Fund's market share of MPRIF. An approximation of these values on June 30, 1986 provides the following relative comparison.

MPRIF Reserves	\$ 10,620,000
Reserves Plus Excess Earnings	11,500,000
MPRIF Market Value	13,300,000

The non-MPRIF Reserves amount of \$11,035,000 on line D4 of Table 1 represents the liability for benefits that are paid directly by the Fund.

Membership Data

Tables 3 through 6 summarize statistical information on members by category. Active members are grouped by age and completed years of service in Table 3. The earnings shown for these members are for the prior fiscal year.

The service retirements in Table 4 include not only those retiring from active status but also disabled members who have attained retirement age. Disabled members under retirement age are shown in Table 5. The survivors category (Table 6) includes spouses and children of deceased members.

Actuarial Balance Sheet

An actuarial balance sheet is required by Section 356.215, Subdivision 4f of Minnesota Law. This balance sheet (Table 8) establishes a method for evaluating both current and future levels of funding.

Current funding levels are evaluated by comparing Current Assets on line A to Current Benefit Obligations on line D5. The difference between the obligations and the assets is shown as Current Unfunded Liability on line G.

The measurement of the Current Benefit Obligation is based on the Proposed Statement of Governmental Accounting Standards published by the Governmental Accounting Standards Board (GASB) in August 1985. This value is known as the Actuarial Present Value of Credited Projected Benefits.

The first step in the GASB calculation for active members involves projecting salaries and service to determine future benefits payable under the plan and

then discounting those projected benefits to the date of the valuation. The second step is to determine the discounted value of benefits for the non-active members. For those non-active members whose benefits have not commenced, the liability includes augmentation of benefits to date of commencement. The result of the first two steps is shown on line F, Total Current and Expected Future Benefit Obligations.

The third step is to determine the portion that represents Current Benefit Obligations. In the case of active members the Current Benefit Obligation is computed by attributing an equal benefit amount to each year of credited and expected future employee service. For all others, their entire liability is considered a Current Benefit Obligation.

Current and future funding levels are evaluated by comparing Current and Future Expected Assets on line C to Current and Expected Future Benefit Obligations on line F. The difference between the obligations and the assets is shown as the Current and Future Unfunded Liability on line H.

Since line F has already been calculated, the remaining step is to determine the Expected Future Assets. Since the State does not have a set statutory contribution rate, only future member contributions (net of expenses) are included in Expected Future Assets on line B2.

The Current Unfunded Liability, line G, is a measurement of the status of the funding to the date of the valuation. The Current and Future Unfunded Liability is a measurement of the adequacy of the current statutory contribution level.

Contribution Sufficiency

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Cost Method. The primary characteristic of this method is that it allocates costs as a level percentage of payroll.

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) shows similarities and differences. The similarity is that both approaches calculate the value of all future benefits the same way. This can be verified by comparing line F of Table 8 to line A6, column 1, of Table 9. The difference arises from the technique for allocating liabilities of active members to past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll.

An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal Cost Method by comparing the liabilities allocated to past service (Actuarial Accrued Liability) to the Current Assets. This amount, line B3, is funded over the remaining years to the amortization date by a series of payments. Prior to 1984 these payments were calculated to be a level dollar amount similar to a fixed interest rate mortgage. The method of funding was changed in 1984 to produce a series of payments that remain a constant percentage of payroll each year.

Under this new approach the payments will increase 6.5% each year since that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier

years will not be sufficient to cover the interest on the unfunded liability. After a few years the annual payment will cover the interest and also repay a portion of the unfunded.

Projected Cash Flow

Table 12 illustrates the anticipated cash flow over the amortization period. The cash flow begins with the Non-MPRIF Assets, which are the Current Assets reduced by the MPRIIF Reserves. Contributions are then added based on the present statutory rates for employees. As members become eligible for payments from MPRIIF an amount of reserve is transferred to SBI. The other disbursements represent benefit payments made directly by the Fund. Future payments required by the State may be approximated from Table 12 by assuming that the State pays 90% of the amount transferred to MPRIIF (the remaining 10% coming from member contributions) and 100% of the other disbursements.

This projected cash flow assumes that future payrolls increase by 6.5%. For purposes of this table only, new members are assumed to be hired in order to replace those who terminate from the active group. This open group method provides a more realistic picture of future cash flow. The statutory interest rate of 8% is used to project future investment return.

The amounts transferred to MPRIIF will be affected by the number of members who reach the assumed retirement age during a given year. The amount for 1988 is large because it includes those already over age 68 who are assumed to retire a year from the valuation date.

TABLE 1

JUDGES RETIREMENT FUND
ACCOUNTING BALANCE SHEET
(DOLLARS IN THOUSANDS)

July 1, 1986

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS		
1. Cash and Cash Equivalents	\$1,376	\$1,376
2. Investments		
a. Fixed Income	1,107	1,106
b. Equity	3,444	2,682
c. Real Estate	0	0
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	10,620	10,620
4. Other	47	47
	-----	-----
B. TOTAL ASSETS	\$16,594	\$15,831
	=====	=====
C. AMOUNTS CURRENTLY PAYABLE	\$103	\$103
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$3,670	\$3,670
2. State Reserves	(8,834)	(9,597)
3. MPRIF Reserves	10,620	10,620
4. Non-MPRIF Reserves	11,035	11,035
	-----	-----
5. Total Assets Available for Benefits	\$16,491	\$15,728
	-----	-----
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	\$16,594	\$15,831
	=====	=====
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$15,728
2. Market Value (D5)	\$16,491	
3. Cost Value (D5)	15,728	

4. Market Over Cost (F2-F3)	\$763	
5. 1/3 of Market Over Cost(F4)/3		254

6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		\$15,982
		=====

TABLE 2

JUDGES RETIREMENT FUND
CHANGES IN ASSETS AVAILABLE FOR BENEFITS
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1986

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$13,993	\$13,681
B. OPERATING REVENUES		
1. Member Contributions	\$562	\$562
2. Employer Contributions	2,173	2,173
3. Investment Income	549	549
4. MPRIF Income	1,057	1,057
5. Net Realized Gain (Loss)	54	54
6. Other	81	81
7. Net Change in Unrealized Gain (Loss)	451	0
	-----	-----
8. Total Revenue	\$4,927	\$4,476
	-----	-----
C. OPERATING EXPENSES		
1. Service Retirements	\$1,837	\$1,837
2. Disability Benefits	47	47
3. Survivor Benefits	507	507
4. Refunds	0	0
5. Expenses	38	38
6. Other	0	0
	-----	-----
7. Total Disbursements	\$2,429	\$2,429
	-----	-----
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	\$16,491	\$15,728
	=====	=====

TABLE 3

JUDGES RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1986

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29									0
30-34		1							1
35-39	2	18	1						21
40-44	1	20	9	4					34
45-49	3	7	12	11	2				35
50-54	2	3	9	9	7	1			31
55-59		2	9	17	5	6	2	2	43
60-64	1	4	5	12	11	9	11	2	55
65+		1	1	7	5	5	2	2	23
TOTAL	9	56	46	60	30	21	15	6	243

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29									0
30-34		61,710							61,710
35-39	52,881	60,984	61,710						60,247
40-44	54,703	61,926	62,005	62,710					61,827
45-49	55,063	62,089	61,735	61,951	61,710				61,300
50-54	60,128	61,710	61,777	61,710	62,375	61,710			61,777
55-59		65,739	62,005	58,268	61,710	61,710	61,710	63,036	60,660
60-64	51,321	63,036	64,933	62,382	62,443	62,299	61,089	62,035	62,188
65+		67,116	61,710	61,710	63,322	63,322	69,080	61,710	63,287
ALL	55,248	61,936	62,195	60,980	62,402	62,346	62,237	62,260	61,621

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
497	3,468	2,861	3,659	1,872	1,309	934	374	14,974

TABLE 4

JUDGES RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1986

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50								0
50-54								0
55-59								0
60-64		2	1					3
65-69	1	5						6
70-74	3	14	11	1				29
75-79		1	15	6				22
80-84			2	9	1			12
85+				5	4	2		11
TOTAL	4	22	29	21	5	2	0	83

AVERAGE ANNUAL ANNUITY

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50								0
50-54								0
55-59								0
60-64		16,593	14,098					15,761
65-69	21,230	28,297						27,119
70-74	26,253	27,517	25,507	10,844				26,049
75-79		5,416	18,053	19,467				17,864
80-84			20,382	19,987	24,444			20,424
85+				17,307	13,159	22,814		16,800
ALL	24,997	25,696	20,905	18,765	15,416	22,814	0	21,546

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
100	565	606	394	77	46	0	1,788

TABLE 5

JUDGES RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1986

AGE	YEARS DISABLED							TOTAL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50								0
50-54								0
55-59								0
60-64					1			1
65-69		2						2
70-74		1	1					2
75-79								0
80-84								0
85+								0
TOTAL	0	3	1	0	1	0	0	5

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50								0
50-54								0
55-59								0
60-64					17,925			17,925
65-69		25,974						25,974
70-74		18,182	13,691					15,937
75-79								0
80-84								0
85+								0
TOTAL	0	23,377	13,691	0	17,925	0	0	20,349

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
0	70	14	0	18	0	0	102

TABLE 6

JUDGES RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1986

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59		1	1	1				3
60-64		3	1	1	2			7
65-69	1	1						2
70-74		1	1	1	2	1		6
75-79	1	3	3	3	1		1	12
80-84		2	4		1	3		10
85+		1	2	1	2	4		10
TOTAL	2	12	12	7	8	8	1	50

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59		12,968	11,182	7,801				10,650
60-64		14,587	4,722	7,177	12,222			11,444
65-69	5,381	22,385						13,883
70-74		16,904	8,630	12,222	7,764	5,729		9,835
75-79	9,208	13,485	12,256	9,064	3,305		5,538	10,206
80-84		12,222	9,145		12,222	7,766		9,654
85+		12,222	14,475	12,222	12,222	10,551		12,004
ALL	7,295	14,428	10,569	9,516	9,993	8,904	5,538	10,758

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
15	172	127	67	80	71	6	538

TABLE 7

JUDGES RETIREMENT FUND
RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On June 30, 1985	240	7	0
B. Additions	10	1	NA
C. Deletions:			
1. Service Retirement	(5)	0	
2. Disability	0		
3. Death	(1)	0	
4. Terminated-Deferred	(1)		
5. Terminated-Refund	0	0	
6. Terminated-Other Non-vested	0		
7. Returned as Active		0	NA
D. Data Adjustments	0	(1)	0
	Vested	132	
	Non-Vested	111	
E. Total on June 30, 1986	243	7	0

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On June 30, 1985	83	4	52
B. Additions	5	1	2
C. Deletions:			
1. Service Retirement		0	
2. Death	(5)	0	(4)
3. Annuity Expired	0		0
4. Returned as Active	0	0	
D. Data Adjustments	0	0	0
E. Total on June 30, 1986	83	5	50

TABLE 8

JUDGES RETIREMENT FUND

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1986

A. CURRENT ASSETS (TABLE 1, F6)				\$15,982
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				0
2. Present Value of Future Normal Costs				7,297

3. Total Expected Future Assets				7,297

C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$23,279
				=====
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>	
1. Benefit Recipients				
a. Retirement Annuities		\$15,721		\$15,721
b. Disability Benefits		1,127		1,127
c. Surviving Spouse's Benefits		4,807		4,807
d. Surviving Children's Benefits		0		0
2. Deferred Retirements		776		776
3. Former Members without Vested Rights		0		0
4. Active Members				
a. Retirement Annuities	3,099	19,639		22,738
b. Disability Benefits	407	1,321		1,728
c. Survivors' Benefits	1,246	2,912		4,158
d. Deferred Retirements	0	0		0
e. Refund Liability Due to Death or Withdrawal	17	106		123

5. Total Current Benefit Obligations	\$4,769	\$46,409		\$51,178

E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$26,665

F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$77,843
				=====
G. CURRENT UNFUNDED LIABILITY (D5-A)				\$35,196
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				\$54,564

TABLE 9

JUDGES RETIREMENT FUND

**DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)**

JULY 1, 1986

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS <u>(1)</u>	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS <u>(2)</u>	ACTUARIAL ACCRUED LIABILITY <u>(3)=(1)-(2)</u>
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$44,239	\$19,041	\$25,198
b. Disability Benefits	3,290	2,030	1,260
c. Survivors Benefits	7,658	5,301	2,357
d. Deferred Retirements	0	0	0
e. Refunds Due to Death or Withdrawal	225	111	114
f. Total	<u>\$55,412</u>	<u>\$26,483</u>	<u>\$28,929</u>
2. Deferred Retirements	\$776		\$776
3. Former Members Without Vested Rights	0		0
4. Annuitants in MPRIF	10,620		10,620
5. Recipients Not in MPRIF	11,035		11,035
6. Total AAL	<u>\$77,843</u>	<u>\$26,483</u>	<u>\$51,360</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$51,360
2. Current Assets (Table 1,F6)			15,982
3. UAAL (B1-B2)			<u>\$35,378</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls to the Amortization Date of July 1, 2009			\$317,584
2. Supplemental Contribution Rate (B3/C1)			11.14%

TABLE 10

JUDGES RETIREMENT FUND

CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1986

A. UAAL AT BEGINNING OF YEAR	\$32,877
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$1,920
2. Contribution	(2,735)
3. Interest on A, B1, and B2	2,598
4. Total (B1+B2+B3)	<u>\$1,783</u>
C. EXPECTED UAAL AT END OF YEAR (A+B4)	\$34,660
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$110
2. Investment Return	709
3. MPRIF Mortality	(33)
4. Mortality of Other Benefit Recipients	(694)
5. Other Items	626
6. Total	<u>\$718</u>
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D6)	\$35,378
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	\$0
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	\$0
H. UAAL AT END OF YEAR (E+F+G)	<u><u>\$35,378</u></u>

TABLE 11

JUDGES RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1986

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 490		
1. Employee Contributions	4.11%	\$687
2. Employer Contributions	0.00%	0
3. Total	----- 4.11% =====	----- \$687 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	9.85%	\$1,647
b. Disability Benefits	1.03%	172
c. Survivors	2.96%	495
d. Deferred Retirement Benefits	0.00%	0
e. Refunds Due to Death or Withdrawal	0.06%	10
f. Total	----- 13.90% -----	----- \$2,324 -----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$35,378	11.14%	\$1,862
3. Allowance for Expenses	0.28%	\$47
4. Total	----- 25.32%	----- \$4,233
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY)		
(A3-B4)	-21.21%	(\$3,546)

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1986 is \$16,718

TABLE 12

JUDGES RETIREMENT FUND

PROJECTED CASH FLOW
(DOLLARS IN THOUSANDS)

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>NON-MPRIF ASSETS YEAR END</u>
1986					\$5,362
1987	\$687	\$750	\$1,178	\$379	4,500
1988	700	3,848	1,132	189	409
1989	766	2,097	1,089	(64)	(2,075)
1990	796	3,837	1,045	(329)	(6,490)
1991	851	3,686	995	(672)	(10,992)
1992	905	3,709	949	(1,029)	(15,774)
1993	965	7,451	903	(1,557)	(24,720)
1994	1,031	3,557	856	(2,113)	(30,215)
1995	1,110	4,309	811	(2,578)	(36,803)
1996	1,197	4,628	767	(3,112)	(44,113)
1997	1,293	6,739	719	(3,776)	(54,054)
1998	1,395	4,102	677	(4,460)	(61,898)
1999	1,519	5,796	632	(5,148)	(71,955)
2000	1,631	5,423	586	(5,932)	(82,265)
2001	1,772	4,236	546	(6,702)	(91,977)
2002	1,908	2,587	509	(7,406)	(100,571)
2003	2,068	4,986	472	(8,181)	(112,142)
2004	2,260	10,447	433	(9,316)	(130,078)
2005	2,452	8,579	390	(10,667)	(147,262)
2006	2,668	7,442	358	(11,986)	(164,380)
2007	2,927	12,486	317	(13,545)	(187,801)
2008	3,184	8,615	288	(15,253)	(208,773)
2009	3,479	11,220	262	(17,022)	(233,798)
2010	3,813	14,781	235	(19,152)	(264,153)
2011	4,133	9,322	213	(21,348)	(290,903)

JUDGES RETIREMENT FUND
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement: 8% per annum Post-Retirement: 5% per annum
Salary Increases:	Reported salary at valuation date increased 2% to current fiscal year and 6.5% annually for each future year.
Mortality:	Pre-Retirement: Male - 1971 Group Annuity Mortality Table Female - 1971 Group Annuity Mortality Table male rates set back 8 years Post-Retirement: Male - Same as above Female - Same as above Post-Disability: Male - Same as above Female - Same as above
Retirement Age:	Judges: Age 68, or if over age 68, one year from the valuation date. Supreme Court Justices in Pre-1974 Plan: Latest of Age 70, 12 years of service, or one year from valuation date.
Separation:	None.
Disability:	Rates adopted by MSRS based on actual experience, most recently adjusted in 1979, as shown in rate table.
Expenses:	Prior year expenses expressed as percentage of prior year payroll. (0.28% of payroll)
Return of Contributions:	NA
Family Composition:	Marital status as indicated by data. Female is three years younger than male.
Social Security:	Maximum Current Primary amount (\$760/month for 1986), increasing with salary scale. Covered annual wages: \$42,000 Contribution rate: 7.15% for 1986-87, 7.51% for 1988-89, 7.65% for 1990 and later.

TABLE 13
(cont)

Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.
Special Consideration:	NA
Actuarial Cost Method:	Entry Age Actuarial Cost Method based on earnings and the date the employee entered the plan is applied to all plan benefits. Under this method Actuarial Gains(Losses) reduce(increase) the Unfunded Actuarial Accrued Liability.
Asset Valuation Method:	Cost Value plus one-third Unrealized Gains or Losses.
Payment on the Unfunded Actuarial Accrued Liability:	A level percentage of payroll each year to the statutory amortization date assuming payroll increases 6.5% per annum.
Projected Cash Flow Method:	Cash flows for the non-MPRIF portion of the Fund were projected based on the current plan benefits, participant data, and actuarial assumptions. In addition new entrants were assumed so that the total payroll would increase by 6.5% per annum.

TABLE 13
(cont)

SEPARATIONS EXPRESSED AS THE
NUMBER OF OCCURRENCES PER 10,000

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
20	5	4	0	0	0	0	0	0
21	5	4	0	0	0	0	0	0
22	5	4	0	0	0	0	0	0
23	6	4	0	0	0	0	0	0
24	6	4	0	0	0	0	0	0
25	6	5	0	0	0	0	0	0
26	7	5	0	0	0	0	0	0
27	7	5	0	0	0	0	0	0
28	7	5	0	0	0	0	0	0
29	8	5	0	0	0	0	0	0
30	8	5	0	0	2	0	0	0
31	9	6	0	0	2	0	0	0
32	9	6	0	0	2	0	0	0
33	10	6	0	0	2	0	0	0
34	10	7	0	0	2	0	0	0
35	11	7	0	0	2	1	0	0
36	12	7	0	0	2	1	0	0
37	13	8	0	0	2	1	0	0
38	14	8	0	0	2	1	0	0
39	15	9	0	0	2	2	0	0
40	16	9	0	0	2	2	0	0
41	18	10	0	0	2	2	0	0
42	20	10	0	0	2	4	0	0
43	23	11	0	0	3	4	0	0
44	26	12	0	0	3	4	0	0
45	29	13	0	0	3	5	0	0
46	33	14	0	0	5	6	0	0
47	38	15	0	0	7	7	0	0
48	42	16	0	0	9	7	0	0
49	47	18	0	0	11	10	0	0
50	53	20	0	0	14	10	0	0
51	59	23	0	0	16	12	0	0
52	65	26	0	0	20	14	0	0
53	71	29	0	0	24	16	0	0
54	78	33	0	0	28	20	0	0

TABLE 13
(cont)

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
55	85	38	0	0	34	24	0	0
56	93	42	0	0	40	30	0	0
57	100	47	0	0	46	36	0	0
58	109	53	0	0	56	44	0	0
59	119	59	0	0	66	52	0	0
60	131	65	0	0	76	62	0	0
61	144	71	0	0	90	74	0	0
62	159	78	0	0	110	88	0	0
63	174	85	0	0	136	104	0	0
64	192	93	0	0	174	122	0	0
65	213	100	0	0	0	0	0	0
66	236	109	0	0	0	0	0	0
67	263	119	0	0	0	0	0	0
68	292	131	0	0	0	0	10,000	10,000
69	324	144	0	0	0	0	0	0
70	361	159	0	0	0	0	0	0

JUDGES RETIREMENT FUND**TABLE 14
BASIC****SUMMARY OF PLAN PROVISIONS**

Eligibility	A judge or justice of any court who is not covered under the Social Security Act. If the Member was active prior to 1/1/74, benefits may be computed according to provisions of the prior plan.
Contributions Member	0.5% of Salary plus the Social Security tax rate. Members who were active prior to 1/1/74 may contribute 4% to a special survivor retirement account.
Employer	Terminal funding basis.
Allowable Service	Service as a judge. Half credit is received for service not compensated at an annual salary or for service while entitled to practice law. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary	Salary set by law
Average Salary	Average of the 5 highest years of Salary of the last 10 years prior to retirement.
RETIREMENT	
Normal Retirement Benefit	
Eligibility	Age 65 and 10 years of Allowable Service. Age 70.
Amount	2.5% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3% of Average Salary for each year of Allowable Service after 6/30/80. Maximum benefit of 65% of salary for the 12 months preceding retirement.
Early Retirement Benefit	
Eligibility	Age 62 and 10 years of Allowable Service.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 65 at time of retirement.
Form of Payment	Life annuity. Actuarially equivalent options are: 50% or 100% joint and survivor 10 or 15 year certain and life.

TABLE 14
BASIC
(cont)

Benefit Increases	Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF).
DISABILITY	
Disability Benefit Eligibility	Permanent inability to perform the functions of judge.
Amount	No benefit is paid by the Fund. Instead salary is continued for 2 years, but not beyond age 70. Employee and Employer contributions continue and Allowable Service is earned.
Retirement After Disability Eligibility	Member is still disabled after salary payments cease after 2 years, or at age 70, if earlier.
Amount	Larger of 25% of Average Salary or the Normal Retirement Benefit, without reduction.
Benefit Increases	Same as for retirement.
DEATH	
Survivors' Benefit Eligibility	Active or disabled Member dies before retirement or a former Member eligible for a deferred annuity dies.
Amount	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit had the Member retired at date of death. Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full time student).
Benefit Increases	Same as for retirement.
Prior Survivors' Benefit Eligibility	Retired Member dies who did not elect an optional annuity and such Member retired prior to 1/1/74 or was in office prior to 1/1/74 and continued contributing 4% of pay to provide this post-retirement death benefit.
Amount	50% of the retired Member's benefit continues to the surviving spouse if married 3 years. Benefit begins immediately unless spouse is not yet age 40 and continues to the earlier of remarriage or death.

TABLE 14
BASIC
(cont)

Benefit Increases	Adjusted by MSRS to provide same increase as MPRIF.
Refund of Contributions Eligibility	Member dies prior to retirement or former Member eligible for a deferred annuity dies and survivors' benefits are not payable.
Amount	Member's contributions with 5% interest.
TERMINATION	
Refund of Contributions Eligibility	Termination of service as a judge.
Amount	Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.
Deferred Benefit Eligibility	10 years of Allowable Service.
Amount	Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement annuity.

JUDGES RETIREMENT FUND
SUMMARY OF PLAN PROVISIONS

TABLE 14
COORDINATED
(cont)

Eligibility	A judge or justice of any court who is covered under the Social Security Act.
Contributions	
Member	0.5% of Salary plus the Social Security tax rate reduced by the Member's Social Security tax.
Employer	Terminal funding basis.
Allowable Service	Service as a judge. Half credit is received for service not compensated at an annual salary or for service while entitled to practice law. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary	Salary set by law
Average Salary	Average of the 5 highest years of Salary of the last 10 years prior to retirement.

RETIREMENT

Normal Retirement Benefit

Eligibility	Age 65 and 10 years of Allowable Service. Age 70.
Amount	2.5% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3% of Average Salary for each year of Allowable Service after 6/30/80 reduced by 75% of the member's primary Social Security. Maximum benefit of 65% of salary for the 12 months preceding retirement.

Early Retirement Benefit

Eligibility	Age 62 and 10 years of Allowable Service.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 65 at time of retirement.

Form of Payment

Life annuity.
Actuarially equivalent options are:
 50% or 100% joint and survivor
 10 or 15 year certain and life.

**TABLE 14
COORDINATED
(cont)**

Benefit Increases	Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF).
DISABILITY	
Disability Benefit Eligibility	Permanent inability to perform the functions of judge.
Amount	No benefit is paid by the Fund. Instead salary is continued for 2 years, but not beyond age 70. Employee and Employer contributions continue and Allowable Service is earned.
Retirement After Disability Eligibility	Member is still disabled after salary payments cease after 2 years, or at age 70, if earlier.
Amount	Larger of 25% of Average Salary reduced by 75% of the Member's primary Social Security or the Normal Retirement Benefit, without reduction for age.
Benefit Increases	Same as for retirement.
DEATH	
Survivors' Benefit Eligibility	Active or disabled Member dies before retirement or a former Member eligible for a deferred annuity dies.
Amount	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit had the Member retired at date of death. The primary Social Security is the amount upon which Social Security survivors' benefits are based. Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full time student).
Benefit Increases	Same as for retirement.
Refund of Contributions Eligibility	Member dies prior to retirement or former Member eligible for a deferred annuity dies and survivors' benefits are not payable.

**TABLE 14
COORDINATED
(cont)**

Amount	Member's contributions with 5% interest.
TERMINATION	
Refund of Contributions	
Eligibility	Termination of service as a judge.
Amount	Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.
Deferred Benefit	
Eligibility	10 years of Allowable Service.
Amount	Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement annuity.

TABLE 15

JUDGES RETIREMENT FUND

MEMBERSHIP CHANGES
(DOLLARS IN THOUSANDS)

JUNE 30, 1986

		<u>NUMBER</u>	<u>PAYROLL</u>
A. ACTIVE MEMBERS			
1. As of the Last Valuation Date		240	\$15,217
2. New Entrants		10	670
3. Total		250	15,887
4. Separations from Active Service			
a. Refund of Contributions		0	0
b. Separation with Deferred Annuity		(1)	(63)
c. Separation with neither Refund nor Deferred Annuity		0	0
d. Disability		0	0
e. Death		(1)	(63)
f. Retirement with Service Annuity		(5)	(317)
5. Total Separations		(7)	(443)
6. Data Adjustments		0	946
7. As of Current Valuation Date		243	\$16,390
B. SERVICE RETIREMENT ANNUITANTS			
		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		83	\$1,650
2. New Entrants		5	114
3. Total		88	1,764
4. Terminations			
a. Deaths		(5)	(131)
b. Others		0	0
5. Total Terminations		(5)	(131)
6. Data Adjustments		0	155
7. As of Current Valuation Date		83	\$1,788
C. DISABLED ANNUITANTS			
		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		4	\$79
2. New Entrants		1	18
3. Total		5	97
4. Terminations			
a. Deaths		0	0
b. Others		0	0
5. Total Terminations		0	0
6. Data Adjustments		0	5
7. As of Current Valuation Date		5	\$102

TABLE 15
(cont)

D. SURVIVING SPOUSE ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	52	\$514
2. New Entrants	2	15
3. Total	54	529
4. Terminations		
a. Deaths	(4)	(30)
b. Others	0	0
5. Total Terminations	(4)	(30)
6. Data Adjustments	0	39
7. As of Current Valuation Date	50	\$538
E. SURVIVING CHILDREN ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	0	\$0
2. New Entrants	0	0
3. Total	0	0
4. Terminations		
a. Deaths	0	0
b. Others	0	0
5. Total Terminations	0	0
6. Data Adjustments	0	0
7. As of Current Valuation Date	0	\$0
F. DEFERRED ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	7	\$115
2. New Entrants	1	22
3. Total	8	137
4. Terminations		
a. Deaths	0	0
b. Others	0	0
5. Total Terminations	0	0
6. Data Adjustments	(1)	(19)
7. As of Current Valuation Date	7	\$118