ELECTIVE STATE OFFICERS RETIREMENT PLAN

ACTUARIAL VALUATION REPORT

JULY 1, 1989

THE Wyatt COMPANY

ACTUARIAL SERVICES
COMPENSATION PROGRAMS
ADMINISTRATIVE SYSTEMS
INTERNATIONAL SERVICES
ORGANIZATION SURVEYS

15TH FLOOR
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EMPLOYEE BENEFITS
EMPLOYEE COMMUNICATIONS
RISK MANAGEMENT
INSURANCE CONSULTING
HEALTH CARE CONSULTING

December 22, 1989

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

RE: ELECTIVE STATE OFFICERS RETIREMENT PLAN

Commission Members:

We have prepared an actuarial valuation of the Plan as of July 1, 1989 based on membership and financial data supplied by the Plan.

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 September 20, 1989.

Respectfully submitted,

THE WYATT COMPANY

Robert E. Perkins

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Consulting Actuary

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Michael C. Gunvalson, FSA
Actuary

ELECTIVE STATE OFFICERS RETIREMENT PLAN

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ELECTIVE STATE OFFICERS RETIREMENT PLAN

REPORT HIGHLIGHTS
(DOLLARS IN THOUSANDS)

	07/01/88 VALUATION		07/01/89 VALUATION
A. CONTRIBUTIONS (TABLE 11)			
1. Statutory Contributions - Chapter 352C % of Payroll	34.91%	*	35.35%
2. Required Contributions - Chapter 356 % of Payroll	39.43%		33.75%
3. Sufficiency (Deficiency) (A1-A2)	-4.52%	*	1.60%
B. FUNDING RATIOS			
1. Accrued Benefit Funding Ratio			
a. Current Assets (Table 1)	$281		$315
b. Current Benefit Obligations (Table 8)	$1,757		$1,938
c. Funding Ratio (a/b)	15.99%		16.25%
2. Accrued Liability Funding Ratio			
a. Current Assets (Table 1)	$281		$315
b. Actuarial Accrued Liability (Table 9)	$1,929		$2,101
c. Funding Ratio (a/b)	14.57%		14.99%
3. Projected Benefit Funding Ratio (Table 8)			
a. Current and Expected Future Assets	$2,004	*	$2,577
b. Current and Expected Future Benefit Obligations	$2,311		$2,430
c. Funding Ratio (a/b)	86.72%	*	106.05%
C. PLAN PARTICIPANTS			
1. Active Members			
a. Number (Table 3)	6		6
b. Projected Annual Earnings	$386		$406
c. Average Annual Earnings (Actual $)	$64,399		$67,618
d. Average Age	50.1		51.1
e. Average Service	8.2		9.2
2. Others			
a. Service Retirements (Table 4)	3		3
b. Disability Retirements (Table 5)	NA		NA
c. Survivors (Table 6)	5		5
d. Deferred Retirements (Table 7)	5		6
e. Terminated Other Non-vested (Table 7)	1		0
f. Total	14		14

* Restated to recognize employer statutory contributions.

ELECTIVE STATE OFFICERS RETIREMENT PLAN

COMMENTARY

Purpose

The purpose of this valuation is to determine the financial status of the Plan. 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 member contributions and an estimate of employer contributions, for the Elective State Officers Retirement Plan are 35.35%. Thus, the statutory contributions exceed the required contribution level of 33.75% by 1.60%. This is the first year that employer contributions have been recognized and the final section of this commentary describes the process.

The financial status of the Plan can be measured by three different funding ratios.

- 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 Statement No. 5 of the Governmental Accounting Standards Board. This year's ratio is 16.25%. The corresponding ratio for the prior year was 15.99%.

- 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 by the State. For 1989 the ratio is 14.99%, which is an increase from the 1988 value of 14.57%.

- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 106.05% verifies that the current statutory contributions are sufficient. Since the State will make only the necessary contributions to pay benefits as they come due, this Funding Ratio may be considered to be 100% over the lifetime of the Plan.

<u>Asset Information (Tables 1 and 2)</u>

Minnesota Statutes require that the asset value used for actuarial purposes recognize only a third of the unrealized gains and losses. This requirement exists because market values (which include all unrealized gains and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year.

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

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.

The term MPRIF appears on some of the tables with a corresponding value of zero. MPRIF stands for Minnesota Post Retirement Investment Fund, which is used by many of the public funds. For purposes of consistency all of the actuarial reports follow the same format.

Membership Data (Tables 3, 4, 6 and 7)

Tables 3 through 6 summarize statistical information about 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 members with deferred benefits who have attained retirement age and started receiving benefits. The survivors category (Table 6) includes spouses and children of deceased members.

The reconciliation of members in Table 7 provides a method for tracking what happened to members during the past year.

Actuarial Balance Sheet (Table 8)

An actuarial balance sheet provides a method for evaluating 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. Current and future funding levels are evaluated by comparing the Total Current and Expected Future Assets on line C to the Total Current and Expected Future Benefit Obligations on line F.

The Current Benefit Obligation used to measure current funding levels is calculated in accordance with Statement No. 5 of the Governmental Accounting Standards Board (GASB). Those requirements are:

- For active members - salary and service are projected to retirement to determine benefits for each member and the ratio of credited service to total service establishes the portion of the projected benefit to be used in calculating the current funding level.

- For non-active members - the discounted value of benefits, including augmentation in cases where benefits have not commenced.

<u>GASB Disclosure</u>

The Current Benefit Obligation amounts in Table 8 are required to be disclosed by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 uses the terms "Actuarial Present Value of Credited Projected Benefits" and "Pension Benefit Obligation" rather than "Current Benefit Obligation".

The July 1, 1989 Pension Benefit Obligation reported in Table 8 is reformatted for GASB reporting purposes in the table on the following page. This table shows the impact of the changes in actuarial assumptions. See page 9 for an explanation of the changes in actuarial assumptions.

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	Old Assumptions	New Assumptions
	$1,073,000	$1,067,000
Current Employees -		
Accumulated employee contributions including allocated investment income	291,000	291,000 *
Employer-financed vested	486,000	472,000
Employer-financed nonvested	115,000	108,000
Total Pension Benefit Obligation	$1,965,000	$1,938,000

* Estimated

Actuarial Cost Method (Table 9)

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Actuarial 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) illustrates the two techniques 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. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal Actuarial 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 that remain a constant percentage of payroll each year.

The payments will increase 6.5% each year because 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.

Sources of Actuarial Gains and Losses (Table 10)

The assumptions used in making the calculations using the Entry Age Normal Actuarial Cost Method are based on long-term expectations. Each year the actual experience will deviate from the long-term expectation. The major sources of gain and loss, which have been identified, are:

- No gain or loss from salaries because the average increase was equal to the expected increase.

- A loss from Current Assets because no interest or investment return is credited.

- A loss of $35,000 (reported on line D5) due to a data change in a terminated participant's record.

Contribution Sufficiency (Table 11)

This report answers the question of "How adequate are the Statutory

Contributions?" by comparing the Statutory Contributions to the Required Contributions.

The Required Contributions, set forth in Chapter 356, consist of:

- Normal Costs based on the Entry Age Normal Actuarial Cost Method
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability
- An Allowance for Expenses

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 35.35% compared to the Required Contribution Rate of 33.75%.

<u>Projected Cash Flow (Table 12)</u>

Table 12 illustrates the anticipated cash flow over the amortization period. The cash flow begins with the Current Assets. Contributions are then added based on the present statutory rate for employees and our estimate of the employer contributions. As members become eligible for payments, disbursements are made from the Plan.

This projected cash flow assumes that future payrolls increase by 6.5%. This is the only table in the report where 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 interest return is

$0 because member contributions are retained in the State general fund and amounts contributed by the State are paid out in the form of benefits.

Changes in Actuarial Assumptions

The pre-retirement interest rate assumption has been increased from 8.0% to 8.5%. Also, the amortization target date has been changed to July 1, 2020.

	Impact Due To Changes In Actuarial Assumptions	
	Interest Rate Change	Amortization Date Change
Actuarial Accrued Liability	($29,000)	$0
Pension Benefit Obligation for GASB No. 5	(27,000)	0
Normal Cost	(.74%)	0.00%
Supplemental Contribution	.78%	(7.95%)
Required Contribution	.04%	(7.95%)

Changes in Plan Provisions

This valuation does not reflect any changes in plan provisions since the prior valuation.

Recognition of Employer Contributions

Each year the State pays the amounts required to make benefit payments during the year. (No benefits are paid from MPRIF.) Since these contribution amounts can vary considerably from year to year, they have not been included in prior actuarial reports for measuring contribution sufficiency. As a result, large contribution deficiencies have been reported.

This report recognizes employer contributions for the first time and, as a result, a contribution sufficiency is reported. Employer contributions have been estimated based on the projected cash flows found in Table 12. One hundred percent of the other disbursements for next year are assumed to represent employer contributions needed to make benefit payments and cover expenses. No refunds are assumed for fiscal year 1990.

The argument can be made that there should be no contribution sufficiency or deficiency because the State will pay whatever is required to provide benefits. However, the pay-as-you-go method of payment is not one of the acceptable actuarial methods and does not provide for advance funding. Therefore, this report continues the tradition of measuring statutory contributions (now increased to acknowledge the employer portion) against an acceptable actuarial calculation (the entry age normal method) as the standard benchmark used by all major funds in the State of Minnesota for purposes of evaluating contribution sufficiency (deficiency).

TABLE 1

ELECTIVE STATE OFFICERS RETIREMENT PLAN

ACCOUNTING BALANCE SHEET
(DOLLARS IN THOUSANDS)

July 1, 1989

	MARKET VALUE	COST VALUE
A. ASSETS		
1. Cash, Equivalents, Short-Term Securities	$0	$0
2. Investments		
a. Fixed Income	0	0
b. Equity	0	0
c. Real Estate	0	0
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	0	0
4. Other	316	316
B. TOTAL ASSETS	$316	$316
C. AMOUNTS CURRENTLY PAYABLE	$1	$1
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	$313	$313
2. State Reserves	(708)	(708)
3. MPRIF Reserves	0	0
4. Non-MPRIF Reserves	710	710
5. Total Assets Available for Benefits	$315	$315
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	$316	$316

F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

1. Cost Value of Assets Available for Benefits (D5)		$315
2. Market Value (D5)	$315	
3. Cost Value (D5)	315	
4. Market Over Cost (F2-F3)	$0	
5. 1/3 of Market Over Cost(F4)/3		0
6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		$315

TABLE 2

ELECTIVE STATE OFFICERS RETIREMENT PLAN

CHANGES IN ASSETS AVAILABLE FOR BENEFITS
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1989

	MARKET VALUE	COST VALUE
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$281	$281
B. OPERATING REVENUES		
1. Member Contributions	$35	$35
2. Employer Contributions	141	141
3. Investment Income	0	0
4. MPRIF Income	0	0
5. Net Realized Gain (Loss)	0	0
6. Other	0	0
7. Net Change in Unrealized Gain (Loss)	0	0
8. Total Revenue	$176	$176
C. OPERATING EXPENSES		
1. Service Retirements	$59	$59
2. Disability Benefits	0	0
3. Survivor Benefits	46	46
4. Refunds	0	0
5. Expenses	1	1
6. Other	0	0
7. Total Disbursements	$106	$106
D. OTHER CHANGES IN RESERVES	(36)	(36)
E. ASSETS AVAILABLE AT END OF PERIOD	$315	$315

TABLE 3

ELECTIVE STATE OFFICERS RETIREMENT PLAN

ACTIVE MEMBERS AS OF JUNE 30, 1989

AGE	YEARS OF SERVICE <1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
<25									0
25-29									0
30-34									0
35-39									0
40-44			1						1
45-49		1	1						2
50-54				2					2
55-59									0
60-64				1					1
65+									0
TOTAL	0	1	2	3	0	0	0	0	6

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE <1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25									0
25-29									0
30-34									0
35-39									0
40-44			54,821						54,821
45-49		51,859	77,858						64,859
50-54				57,310					57,310
55-59									0
60-64				99,655					99,655
65+									0
ALL	0	51,859	66,340	71,425	0	0	0	0	66,469

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
0	52	133	214	0	0	0	0	399

TABLE 4

ELECTIVE STATE OFFICERS RETIREMENT PLAN

SERVICE RETIREMENTS AS OF JUNE 30, 1989

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

AVERAGE ANNUAL ANNUITY

	YEARS RETIRED							
AGE	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50								0
50-54								0
55-59								0
60-64								0
65-69								0
70-74			16,440					16,440
75-79				22,070				22,070
80-84								0
85+								0
ALL	0	0	16,440	22,070	0	0	0	20,193

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT							
≤1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
0	0	17	44	0	0	0	61

TABLE 6

ELECTIVE STATE OFFICERS RETIREMENT PLAN

SURVIVORS AS OF JUNE 30, 1989

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

AVERAGE ANNUAL BENEFIT

	YEARS SINCE DEATH							
AGE	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50								0
50-54								0
55-59								0
60-64								0
65-69								0
70-74		13,023						13,023
75-79		3,840						3,840
80-84								0
85+					11,581	7,427		10,196
ALL	0	8,432	0	0	11,581	7,427	0	9,490

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH							
≤1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
0	17	0	0	23	7	0	47

TABLE 7

ELECTIVE STATE OFFICERS RETIREMENT PLAN

RECONCILIATION OF MEMBERS

		TERMINATED	
	ACTIVES	DEFERRED RETIREMENT	OTHER NON-VESTED
A. On June 30, 1988	6	5	1
B. Additions	0	0	0
C. Deletions:			
1. Service Retirement	0	0	0
2. Disability	0		
3. Death	0	0	0
4. Terminated-Deferred	0		
5. Terminated-Refund	0	0	0
6. Terminated-Other Non-vested	0		
7. Returned as Active		0	0
D. Data Adjustments	0	1	(1)
Vested	3		
Non-Vested	3		
E. Total on June 30, 1989	6	6	0

	RECIPIENTS		
	RETIREMENT ANNUITANTS	DISABLED	SURVIVORS
A. On June 30, 1988	3	NA	5
B. Additions	0		0
C. Deletions:			
1. Service Retirement			
2. Death	0		0
3. Annuity Expired	0		0
4. Returned as Active	0		
D. Data Adjustments	0		0
E. Total on June 30, 1989	3	NA	5

TABLE 8

ELECTIVE STATE OFFICERS RETIREMENT PLAN

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1989

A. CURRENT ASSETS (TABLE 1, F6)			$315
B. EXPECTED FUTURE ASSETS			
1. Present Value of Expected Future Statutory Supplemental Contributions			1,933
2. Present Value of Future Normal Costs			329
3. Total Expected Future Assets			$2,262
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$2,577
D. CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
1. Benefit Recipients			
a. Retirement Annuities		$408	$408
b. Disability Benefits		0	0
c. Surviving Spouse and Child Benefits		302	302
2. Deferred Retirements with Future Augmentation		357	357
3. Former Members without Vested Rights		0	0
4. Active Members			
a. Retirement Annuities	86	714	800
b. Disability Benefits	0	0	0
c. Survivors' Benefits	22	0	22
d. Deferred Retirements	0	0	0
e. Refund Liability Due to Death or Withdrawal	0	49	49
5. Total Current Benefit Obligations	$108	$1,830	$1,938
E. EXPECTED FUTURE BENEFIT OBLIGATIONS			$492
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$2,430
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$1,623
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($147)

TABLE 9

ELECTIVE STATE OFFICERS RETIREMENT PLAN

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

JULY 1, 1989

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS (1)	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS (2)	ACTUARIAL ACCRUED LIABILITY (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	$1,264	$237	$1,027
b. Disability Benefits	0	0	0
c. Survivors Benefits	35	16	19
d. Deferred Retirements	0	0	0
e. Refunds Due to Death or Withdrawal	64	76	(12)
f. Total	$1,363	$329	$1,034
2. Deferred Retirements with Future Augmentation	$357		$357
3. Former Members Without Vested Rights	0		0
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	710		710
6. Total	$2,430	$329	$2,101

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$2,101
2. Current Assets (Table 1,F6)	315
3. UAAL (B1-B2)	$1,786
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls through the Amortization Date of July 1, 2020	$9,229
2. Supplemental Contribution Rate (B3/C1)	19.35%

TABLE 10

ELECTIVE STATE OFFICERS RETIREMENT PLAN

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

YEAR ENDING JUNE 30, 1989

A. UAAL AT BEGINNING OF YEAR	$1,648
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	$59
2. Contribution	(176)
3. Interest on A, B1, and B2	127
4. Total (B1+B2+B3)	$10
C. EXPECTED UAAL AT END OF YEAR (A+B4)	$1,658
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	$0
2. Investment Return	24
3. MPRIF Mortality	0
4. Mortality of Other Benefit Recipients	61
5. Other Items	72
6. Total	$157
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	$1,815
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	$0
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	($29)
H. UAAL AT END OF YEAR (E+F+G)	$1,786

TABLE 11

ELECTIVE STATE OFFICERS RETIREMENT PLAN

DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1989

	% OF PAYROLL	$ AMOUNT
A. STATUTORY CONTRIBUTIONS - CHAPTER 352C		
1. Employee Contributions	9.00%	$37
2. Employer Contributions	26.35%	107
3. Total	35.35%	$144
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	10.10%	$41
b. Disability Benefits	0.00%	0
c. Survivors	0.74%	3
d. Deferred Retirement Benefits	0.00%	0
e. Refunds Due to Death or Withdrawal	3.20%	13
f. Total	14.04%	$57
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL of $1,786	19.35%	$79
3. Allowance for Expenses	0.36%	$1
4. Total	33.75%	$137
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)	1.60%	$7

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1989 is $406.

TABLE 12

ELECTIVE STATE OFFICERS RETIREMENT PLAN

PROJECTED CASH FLOW
(DOLLARS IN THOUSANDS)

FISCAL YEAR	STATUTORY CONTRIBUTIONS	TRANSFERS TO MPRIF	OTHER DISBURSEMENTS	INVESTMENT RETURN	CURRENT ASSETS YEAR END
1989					$315
1990	$144	$0	$107	$0	352
1991	228	0	189	0	391
1992	173	0	132	0	432
1993	194	0	150	0	476
1994	189	0	142	0	523
1995	196	0	146	0	573
1996	203	0	150	0	626
1997	235	0	178	0	683
1998	270	0	210	0	743
1999	269	0	205	0	807
2000	260	0	191	0	876
2001	261	0	188	0	949
2002	272	0	194	0	1,027
2003	273	0	190	0	1,110
2004	266	0	178	0	1,198
2005	319	0	225	0	1,292
2006	329	0	229	0	1,392
2007	338	0	231	0	1,499
2008	348	0	235	0	1,612
2009	401	0	280	0	1,733
2010	428	0	299	0	1,862
2011	425	0	288	0	1,999
2012	463	0	317	0	2,145
2013	474	0	319	0	2,300
2014	515	0	349	0	2,466
2015	497	0	321	0	2,642
2016	555	0	367	0	2,830
2017	583	0	383	0	3,030
2018	637	0	424	0	3,243
2019	658	0	431	0	3,470
2020	718	0	476	0	3,712

TABLE 13

ELECTIVE STATE OFFICERS RETIREMENT PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:

Pre-Retirement:
Effective July 1, 1989: 8.5% per annum
Prior to July 1, 1989: 8.0% per annum

Post-Retirement: 5.0% per annum

Salary Increases:

Reported salary at valuation date increased 2.5% 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 - NA
Female - NA

Retirement Age:

Age 62, or if over age 62, one year from the valuation date.

Separation:

Rates based on years of service:

Year	Rate
1	0%
2	0
3	0
4	50
5	0
6	0
7	0
8	50

Disability:

None

Expenses:

Prior year expenses expressed as percentage of prior year payroll. (0.36% of payroll)

Return of Contributions:

All employees withdrawing after 8 years of service were assumed to leave their contributions on deposit and receive a deferred annuitant benefit.

TABLE 13
(cont)

Family Composition:	85% of Members are married. Female is three years younger than male. Each Member may have up to two dependent children depending on the Member's age.
Social Security:	NA
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.
Special Considerations:	NA
Actuarial Cost Method:	Entry Age Normal 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 Plan 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 14

ELECTIVE STATE OFFICERS RETIREMENT PLAN

SUMMARY OF PLAN PROVISIONS

Eligibility	Employment as a "Constitutional Officer".
Contributions	
Member	9% of Salary.
Employer	No statutory contributions.
Allowable Service	Service while in an eligible position.
Salary	Salary upon which Elective State Officers Retirement Plan contributions have been made.
Average Salary	Average of the 5 highest successive years of Salary.
RETIREMENT	
Normal Retirement Benefit	
Eligibility	Age 62 and 8 years of Allowable Service.
Amount	2.5% of Average Salary per year of Allowable Service.
Early Retirement Benefit	
Eligibility	Age 60 and 8 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 62 at time of retirement.
Form of Payment	Life annuity.
Benefit Increases	Adjusted by MSRS to provide same increase as MPRIF.
DISABILITY	None.
DEATH	
Surviving Spouse Benefit	
Eligibility	Death while active or after retirement or with at least 8 years of Allowable Service.
Amount	Survivor's payment of 50% of the retirement benefit of the Member assuming the Member had attained age 62 and had a minimum of 8 years of Allowable Service. Benefit is paid for life or until remarriage. A former Member's benefit is augmented the same as a Deferred Annuity to date of death before determining the portion payable to the spouse.

TABLE 14
(cont)

Surviving Dependent Children's Benefit	
Eligibility	Same as spouse's benefit.
Amount	Benefit for first child is 25% of the retirement benefit (computed as for surviving spouse) with 12.5% for each additional child. Maximum payable (including spouse) is 100% of the retirement benefit. Benefits cease when a child marries or attains age 18 (22 if a full time student).
Benefit Increases	Adjusted by MSRS to provide same increase as MPRIF.
TERMINATION	
Refund of Contributions	
Eligibility	Termination of Service.
Amount	Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.
Deferred Benefit	
Eligibility	8 years of Allowable Service.
Amount	Benefit computed under law in effect at termination and increased by the following annual percentage: 0% before 7/1/79, 5% from 7/1/79 to 1/1/81, and 3% thereafter until the annuity begins. Amount is payable as a normal or early retirement.