



STATE OF MINNESOTA

Summary of 1999 Actuarial Valuations

Presented by:
Milliman & Robertson, Inc.



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January 21, 2000

Minnesota Legislative Commission
on Pensions and Retirement
55 State Office Building
St. Paul, Minnesota 55155-1201

ATTENTION: Mr. Lawrence A. Martin

Commission Members:

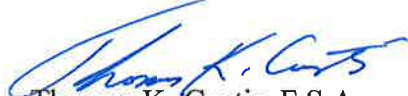
We have completed all of the July 1, 1999 Actuarial Valuations pursuant to the terms of our Actuarial Services Contract. This report summarizes the results of these actuarial valuations, with particular emphasis on changes occurring since the prior year's actuarial valuations.


This report covers commentary on the 1999-2000 funding levels, as well as summaries of significant plan changes and actuarial assumptions used. The analysis of purchased service credits, required by Minnesota Statutes Chapter 390, Article 4, is included as Table I-E.

We hope that you will find this summary report informative as a supplement to the more detailed reports for each of the funds.

Respectfully submitted,

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STATE OF MINNESOTA

SUMMARY OF 1999 ACTUARIAL VALUATIONS

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I. 1999-2000 FUNDING LEVELS

(Tables 1-A, 1-B, 1-C and I-D)

As the Commission Actuary, we have determined the actuarial funding requirements in accordance with the requirements of Section 356.215, Minnesota Statutes, for each of the Funds covered by those statutes. Each employer contributes to their respective Fund on the basis of statutory requirements set by statutes for the individual Fund.

In Table I-A, we provide a detailed comparison of the requirements under Section 356.215 and the statutory employer contribution. It is this comparison which allows an analysis of the Fund's ability to meet its long-term commitments. Table I-B provides a three-year history of the sufficiency determination. The pattern of these results gives a more complete picture of emerging concerns as to the adequacy of statutory requirements.

Another measure of funding adequacy is the ratio of plan assets to the present value of accrued benefits. These ratios are summarized for the last three valuations in Table I-C. Since this is more of a termination measure of adequacy, it is generally considered a less important measure for public plans than the sufficiency determination summarized in Tables I-A and I-B. Nonetheless, it does give a somewhat different and useful perspective when viewed in conjunction with other factors. If proper funding progress is made, these numbers should move toward a ratio of slightly over 100%.

Below we comment by plan on our analysis of the actuarial valuations.

PERA

1. The Public Employees plan continues to see a modest increase in participation. There were one percent more active members in our July 1, 1999 valuation than in our July 1, 1998 valuation. Actuarial liabilities in total are close to expected. Plan assets generated a significant gain over this twelve-month period resulting in continued improvement in the plan's funding ratios. This plan now shows a small sufficiency based on currently adopted assumptions as statutory contribution rates are modestly higher than required contributions.

Favorable plan experience and improved funding status of this plan are based on the current set of actuarial assumptions. New assumptions based on a recent experience study have been developed and recommended (but not yet formally adopted by the Legislative Commission on Pensions and Retirement). On page 13 is a table of funding requirements developed using the newly recommended assumptions. On this basis, the plan shows a substantial funding deficiency. We believe that this is a more accurate representation of the plan's funding position, and recommend action by the legislature to adopt the new assumptions and to increase statutory contribution rates.

2. The Police and Fire plan continues to be in a well-funded positions even after the merger of the Consolidated Fund. While statutes require that rates be reduced this year (and that is appropriate), we caution against reduction all the way to the current measure of required contributions. Since that would put statutory contributions substantially below ongoing normal costs, such a change may lead to the need for dramatic rate increases in the future.

Adoption of the changes in actuarial methods that have been recommended would help to alleviate the possibility of dramatic swings in required contributions over the next several years.

3. The Police and Fire Consolidation Fund is terminated and merged into the PERA Police and Fire Fund effective July 1, 1999. Tables 1-D1 and 1-D2 on pages 9 and 10 summarize the final funded status of each account as of June 30, 1999.
4. The Local Government Correctional plan is a new plan first effective July 1, 1999. The modest deficiency shown for this plan should not be a major concern since lower normal costs for newly hired eligible members should bring future costs down over time.

MSRS

5. The State General Employees plan continues to show a modest contribution sufficiency. The sufficiency measure would be significantly greater if the required contribution determination recognized the fact that the plan has assets well in excess of its actuarial accrued liability. Favorable asset experience has contributed to further increases in all funding ratios. Results reflecting recommended assumptions and methods are shown on page 15.
6. Favorable asset experience more than offset modest liability losses in the State Patrol plan. All funding ratios improved as did the sufficiency measure, which is driven in large part by the method of recognizing the negative unfunded actuarial liability. Even if the recommended changes in actuarial methods were adopted, this plan would still show a substantial funding sufficiency. Consideration of reductions in statutory contribution rates may be warranted.
7. While the Correctional Employees plan enjoyed favorable asset experience like the other plans, changes on the liability side created modest deterioration in funding ratios and in the sufficiency measure. New job classifications continue to be allowed to transfer into the Correctional plan (we saw a 2.31% increase in active membership in this plan). In most cases, the assets transferred in from MSRS General were not adequate to fully cover

the actuarial accrued liability of these new participants. The plan still has assets in excess of its actuarial accrued liability and it is still sufficient due to a modest increase in statutory contribution rates. The sufficiency measure needs to be monitored carefully, however, since the statutory contribution rates are still less than ongoing normal costs of the plan.

8. The Legislators plan is funded on a terminal funding basis. This funding basis means that the State (as employer) does not pre-fund for benefits earned while service is being performed. Rather, at the time of retirement of one of these participants, the State must fund that portion of the retirement benefit not covered by member contributions. This funding approach has several disadvantages:
 - a. It can lead to substantial fluctuations in year-to-year funding requirements;
 - b. Due to lack of investment income, it means ultimate State costs are higher; and
 - c. It defers funding obligations from one generation of taxpayers to the next.

The Elective State Officers plan is handled on a pay-as-you-go basis. This funding basis means there is no accumulated funding (other than Member contributions held by the State's general fund). Actual retirement benefits are paid from the general funds via direct disbursements to the retirees (or beneficiaries). There are no longer any active employees in this plan.

Not surprisingly, Table I-C continues to show low funding ratios for these plans year-after-year. Since both of these plans have been closed to new members, it is probably not prudent to consider pre-funding at this time.

9. We note modest increases in the funding ratios and sufficiency measure for the Judges plan. These increases result from both asset and liability gains. Continued funding at the current statutory rates has driven the funding ratios higher and has substantially diminished any ongoing concern relating to short-term cash shortages.

TEACHERS

10. Results for the Teachers Retirement Association are virtually unchanged from the July 1, 1998 valuation. Modest asset gains were almost exactly offset by liability losses, most of which are attributable to the IMP benefits. Page 14 shows that this plan remains in a favorable funding position under the recommended assumptions and methods.
11. The Duluth Teachers plan showed further improvement in funding ratios and funding status despite salary increase losses associated with a recent contract settlement. Favorable asset experience more than offset this and other liability losses.

12. Generally favorable experience has contributed to modestly improved funding ratios in the St. Paul Teachers plan. While the plan still shows a modest deficiency, the deficiency percentage is down from last year. Furthermore, this plan has the largest cushion of unrecognized gains as a percentage of current assets of any of the plans. While it may be premature to declare this plan safely out of danger, it does seem to be on track. This favorable assessment is contingent, of course, on the current level of State supplemental contributions.
13. The Minneapolis Teachers plan also enjoyed generally favorable overall experience. Asset gains, triggered in part by realized gains attributable to a manager change, more than offset modest liability losses. The continuing deficiency percentage is modest but warrants continued close monitoring. Absent significant State supplemental contributions, this plan would be substantially deficient.

MERF

14. The Minneapolis Employees Retirement Fund also had very favorable asset experience in the 1998-99 year which was only modestly offset by liability losses. Required contribution rates dropped over 2.0% of pay and the State's portion of the supplemental contribution dropped even further below its statutory maximum.

ANALYSIS OF PURCHASED SERVICE CREDITS

Provisions under Minnesota Statutes Chapter 390, Article 4, provide a modified methodology for determining the amounts required to purchase prior service credits under certain circumstances. Those provisions also require the Commission Actuary to provide an analysis by individual and by plan of the impact on the plan's funded status of the service credits actually purchased during the 12 months preceding the valuation. Accordingly, we included Table I-E. In the period ending June 30, 1999, the Teachers Retirement Association and the Duluth Teachers Retirement Fund were the only plans to have any actual purchases executed. The methodology used to complete this analysis was to calculate the actuarial accrued liability for each individual using our valuation routine (based on status as of July 1, 1999) first reflecting the additional service and then with service adjusted to remove the added service. Table I-E compares the difference in calculated actuarial accrued liability to the amounts paid for the added service. Since many of the purchases involve fractional years of service (and our valuation routine deals with projected benefits using whole years), the results by individual can look strange. We see some participants with no change in calculated liability and others with increases much greater than the purchase amount. In total, however, the service credits purchase amounts in the 1998-99 year were more than the increase in liability, thus generating a small aggregate gain to the funded status of these plans.

We believe that the nature of financial oversight of the operation of the Minnesota public employee retirement plans may be entering a new era. With few exceptions, these plans are now near or above full funding of their actuarial accrued liability. Even the plans that have not yet reached that level have seen significant improvement in their funding ratios over the last several years.

What implications does this have for the Legislative Commission on Pensions and Retirement? We believe that the primary issues of concern for this body will increasingly become focused on the asset side of the ledger. Clearly investment performance is key, and we have observed good efforts to require complete and consistent reporting in these areas. From an actuarial perspective, we see the following issues:

- Volatility in asset performance has the potential of creating large year-to-year swings in the required contribution levels. Once again we urge the Commission to consider and adopt the proposed asset valuation method. We believe that it will do a substantially better job of dampening future market fluctuations than the present method.
- What is the proper treatment of negative Unfunded Actuarial Accrued Liabilities? We do not believe that it is prudent to treat some plans differently than others. In our opinion, the PERA P&F, State Patrol, and Correctional Employees plans give too great a recognition of this component while Teachers and State General Employees give none. We would like to see a consistent treatment of this to be adopted as part of the funding method applied to all plans.

As Commission Actuary, we stand ready to assist the Commission with these and other issues.

TABLE 1-A: 1999-2000 FUNDING LEVELS (PERCENTAGES)

Fund	Section 356.215 Requirements				Statutory Requirements			Sufficiency/ Deficiency
	Normal Cost	Supplemental Cost	Expense	Total	Employee	Employer	Total	
Public Employees (Chapter 353)	7.49%	1.67%	0.28%	9.44%	4.78%	5.23%	10.00%	0.56%
Police and Fire (Chapter 353)	20.30%	(8.85%)	0.23%	11.68%	6.20%	9.30%	15.50%	3.82%
Local Correctional (Chapter 353E)	14.75%	0.00%	0.28%	15.03%	5.83%	8.75%	14.58%	(0.45%)
State Employees (Chapter 352)	7.52%	0.00%	0.15%	7.67%	4.00%	4.00%	8.00%	0.33%
State Patrol (Chapter 352B)	22.62%	(9.57%)	0.16%	13.21%	8.40%	12.60%	21.00%	7.79%
Correctional (Chapter 352)	14.85%	(1.69%)	0.15%	13.31%	5.69%	7.98%	13.67%	0.36%
Legislators (Chapter 3A)	18.33%	33.96%	0.43%	52.72%	9.00%	Terminal Funding	N/A	N/A
Elective State Officers (Chapter 352C)**	0	316	5	321	0	Paygo Funding	N/A	N/A
Judges (Chapter 490)	16.11%	10.49%	0.15%	26.75%	8.00%	20.50%	28.50%	1.75%
Teachers (Chapter 354)	9.55%	0.00%	0.31%	9.86%	5.00%	5.00%	10.00%	0.14%
Duluth Teachers (Chapter 354A)	8.19%	0.23%	0.74%	9.16%	5.50%	6.70% *	12.20%	3.04%
St. Paul Teachers (Chapter 354A)	9.37%	8.49%	0.23%	18.09%	6.12%	11.40% *	17.52%	(0.57%)
Minneapolis Teachers (Chapter 354A)	10.90%	12.75%	0.23%	23.88%	6.21%	17.58% *	23.79%	(0.09%)
Minneapolis Employees (Chapter 422A)	18.17%	14.83%	1.65%	34.65%	9.75%	24.90% *	34.65%	0.00%

* Includes State contributions of 0.91% for Duluth Teachers, 8.50% for Minneapolis Teachers, 2.24% for St. Paul Teachers, and 4.84% for Minneapolis Employees.

** Amounts in thousands of dollars

TABLE 1-B: PATTERN OF SUFFICIENCY/DEFICIENCY: 1997-1999

Fund	Actuarial Requirements			Statutory Requirements			Sufficiency/(Deficiency)		
	1997	1998	1999	1997	1998	1999	1997	1998	1999
Public Employees	9.80%	9.84%	9.44%	9.46%	10.03%	10.00%	(0.34%)	0.19%	0.56%
Police and Fire	15.21%	11.40%	11.68%	19.00%	19.00%	15.50%	3.79%	7.60%	3.82%
Local Correctional	N/A	N/A	15.03%	N/A	N/A	14.58%	N/A	N/A	(0.45%)
State Employees	7.61%	7.73%	7.67%	8.00%	8.00%	8.00%	0.39%	0.27%	0.33%
State Patrol	15.67%	14.14%	13.21%	21.00%	21.00%	21.00%	5.33%	6.86%	7.79%
Correctional	12.49%	12.99%	13.31%	13.20%	13.20%	13.67%	0.71%	0.21%	0.36%
Legislators	48.03%	47.19%	52.72%	T.F.	T.F.	T.F.	N/A	N/A	N/A
Elective State Officers	51.07%	51.66%	321*	P.G.	P.G.	P.G.	N/A	N/A	N/A
Judges	27.60%	27.32%	26.75%	28.29%	28.28%	28.50%	0.69%	0.96%	1.75%
Teachers	9.85%	9.82%	9.86%	11.64%	10.00%	10.00%	1.79%	0.18%	0.14%
Duluth Teachers	12.87%	10.24%	9.16%	12.30%	12.30%	12.20%	(0.57%)	2.06%	3.04%
St. Paul Teachers	20.35%	18.82%	18.09%	19.24%	17.59%	17.52%	(1.11%)	(1.23%)	(0.57%)
Minneapolis Teachers	28.23%	25.80%	23.88%	28.61%	25.39%	23.79%	0.38%	(0.41%)	(0.09%)
Minneapolis Employees	42.41%	36.80%	34.65%	42.29%	36.50%	34.65%	(0.12%)	(0.30%)	0.00%

* Amount in thousands of dollars

TABLE 1-C: ACCRUED BENEFIT FUNDING RATIOS: 1997-1999*(Dollars in Millions)*

Fund	Current Assets			P.V. of Accrued Benefit			A.B. Funding Ratio		
	1997	1998	1999	1997	1998	1999	1997	1998	1999
Public Employees	\$6,658	\$7,637	\$8,489	\$7,330	\$7,956	\$8,607	90.84%	95.98%	98.63%
Police and Fire	\$1,975	\$2,337	\$3,680	\$1,491	\$1,638	\$2,878	132.41%	142.68%	127.86%
Local Correctional	N/A	N/A	\$0	N/A	N/A	\$0	N/A	N/A	0.00%
State Employees	\$4,665	\$5,391	\$5,969	\$4,079	\$4,513	\$4,951	114.34%	119.45%	120.56%
State Patrol	\$376	\$430	\$473	\$322	\$360	\$395	116.73%	119.32%	119.65%
Correctional	\$242	\$295	\$335	\$191	\$235	\$277	126.80%	125.86%	120.96%
Legislators	\$26	\$31	\$33	\$57	\$60	\$64	44.88%	51.70%	52.35%
Elective State Officers	\$0.5	\$0.5	\$0.2	\$3.1	\$3.2	\$3.4	14.85%	15.52%	5.87%
Judges	\$75	\$87	\$98	\$112	\$125	\$133	66.46%	69.41%	73.25%
Teachers	\$11,104	\$12,728	\$14,011	\$10,262	\$11,332	\$12,534	108.20%	112.31%	111.79%
Duluth Teachers	\$170	\$187	\$219	\$187	\$187	\$210	90.94%	100.30%	104.25%
St. Paul Teachers	\$556	\$625	\$704	\$756	\$810	\$888	73.64%	77.17%	79.26%
Minneapolis Teachers	\$673	\$810	\$939	\$1,124	\$1,217	\$1,343	59.89%	66.55%	69.97%
Minneapolis Employees	\$1,081	\$1,207	\$1,328	\$1,250	\$1,319	\$1,404	86.47%	91.53%	94.53%

**Table 1-D1: Summary of Accounts with Positive
Amortizable Bases at June 30, 1999**

Account	June 30, 1999 Assets			Net Amortizable Base	10 Year Amortization Payment
	MPRIF	Accumulated Employee Contributions	Total Assets		
Anoka Police	\$3,703,264	\$80,550	\$3,826,232	\$96,702	\$14,149
Columbia Heights Police	\$3,809,578	\$138,388	\$4,787,155	\$387,560	\$56,706
Crookston Fire	\$1,092,707	\$181,548	\$2,037,738	\$26,276	\$3,845
Crookston Police	\$1,482,074	\$9,167	\$1,993,975	\$216,647	\$31,699
Duluth Fire	\$45,282,211	\$2,936,203	\$46,966,817	\$20,526,006	\$3,003,285
Duluth Police	\$42,814,182	\$2,066,260	\$53,924,331	\$5,610,532	\$820,911
Faribault Fire	\$6,424,797	\$200,720	\$6,630,687	\$1,615,265	\$236,339
Faribault Police	\$3,889,325	\$399,916	\$5,935,110	\$191,233	\$27,980
Hibbing Fire	\$7,986,000	\$551,588	\$8,675,679	\$3,124,146	\$457,113
Hibbing Police	\$5,805,966	\$501,918	\$7,645,971	\$1,368,173	\$200,186
Mankato Fire	\$8,283,361	\$55,842	\$8,885,270	\$918,827	\$134,439
St. Cloud Fire	\$13,845,080	\$468,569	\$14,188,424	\$2,896,905	\$423,864
St. Paul Fire	\$143,340,838	\$10,444,511	\$205,078,689	\$279,992	\$40,967
South St. Paul Fire	\$6,095,070	\$424,567	\$7,954,278	\$1,532,328	\$224,204
South St. Paul Police	\$9,216,531	\$378,209	\$11,021,553	\$726,244	\$106,261
Winona Fire	\$10,782,740	\$594,269	\$12,646,850	\$2,936,286	\$429,626
Winona Police	\$9,749,843	\$492,488	\$10,977,117	\$1,868,983	\$273,462
Total	\$323,603,567	\$19,924,713	\$413,175,876	\$44,322,105	\$6,485,036

**Table 1-D2: Summary of Accounts with Negative
Amortizable Bases at June 30, 1999**

Account	June 30, 1999 Assets						Total Non-MPRIF Assets Transferred To PERA P&F
	MPRIF	Accumulated Employee Contributions	Non-MPRIF Market Value	Non-MPRIF Actuarial Value	Non-MPRIF Accrued Liability	Residual Asset Amount (RAA)	
Albert Lea Fire	\$8,082,696	\$348,530	\$11,050,714	\$10,012,081	\$2,291,677	\$7,064,580	\$3,986,134
Albert Lea Police	\$7,265,898	\$404,148	\$7,482,185	\$6,778,950	\$2,956,789	\$2,977,254	\$4,504,931
Austin Fire	\$7,889,036	\$0	\$1,498,987	\$1,358,100	\$153,494	\$1,163,009	\$335,978
Austin Police	\$9,295,556	\$257,405	\$5,194,012	\$4,705,838	\$2,751,259	\$1,190,608	\$4,003,404
Bloomington Police	\$30,098,586	\$1,507,148	\$44,776,424	\$40,567,982	\$11,287,253	\$26,046,223	\$18,730,201
Brainerd Police	\$2,413,738	\$340,166	\$3,569,826	\$3,234,306	\$2,201,467	\$491,371	\$3,078,455
Buhl Police	\$676,973	\$0	\$902,699	\$817,856	\$0	\$817,856	\$84,843
Chis olm Fire	\$2,419,525	\$0	\$303,442	\$274,922	\$75,887	\$178,470	\$124,972
Chis olm Police	\$1,642,641	\$298	\$117,400	\$106,366	\$70,839	\$17,764	\$99,636
Columbia Heights Fire	\$1,905,426	-\$16	\$705,952	\$639,601	\$0	\$639,601	\$66,351
Crystal Police	\$6,727,208	\$399,834	\$7,063,891	\$6,399,971	\$2,733,945	\$2,883,846	\$4,180,045
Fridley Police	\$5,803,352	\$448,605	\$6,759,919	\$6,124,568	\$3,089,192	\$2,151,912	\$4,608,007
Mankato Police	\$9,508,905	\$128,941	\$2,011,283	\$1,822,247	\$466,384	\$1,225,781	\$785,502
New Ulm Police	\$3,746,172	\$117,226	\$3,296,985	\$2,987,108	\$824,007	\$1,936,992	\$1,359,993
Red Wing Fire	\$5,778,469	\$97,420	\$3,557,507	\$3,223,144	\$927,627	\$2,039,368	\$1,518,139
Red Wing Police	\$6,215,945	\$120,844	\$8,291,995	\$7,512,648	\$856,804	\$6,413,503	\$1,878,492
Richfield Fire	\$6,762,012	\$351,863	\$5,931,970	\$5,374,437	\$2,431,420	\$2,229,254	\$3,702,716
Richfield Police	\$7,081,744	\$965,382	\$14,584,946	\$13,214,137	\$6,213,738	\$5,223,284	\$9,361,662
Rochester Fire	\$25,190,903	\$1,283,724	\$17,229,604	\$15,610,230	\$9,349,195	\$3,616,916	\$13,612,688
Rochester Police	\$26,966,439	\$1,954,300	\$15,980,063	\$14,478,130	\$13,584,504	\$367,420	\$15,612,643
St. Cloud Police	\$11,702,827	\$120,142	\$5,133,402	\$4,650,924	\$1,864,511	\$2,276,508	\$2,856,894
St. Louis Park Fire	\$7,045,002	\$565,299	\$10,554,860	\$9,562,831	\$4,974,322	\$3,176,624	\$7,378,236
St. Louis Park Police	\$13,329,323	\$1,215,063	\$17,798,227	\$16,125,409	\$9,568,571	\$3,849,017	\$13,949,210
St. Paul Police	\$136,224,951	\$14,007,610	\$140,392,987	\$127,197,744	\$114,532,228	\$5,812,934	\$134,580,053
Virginia Police	\$3,943,943	\$434,824	\$7,923,488	\$7,178,776	\$2,245,438	\$4,268,221	\$3,655,267
West St. Paul Fire	\$4,584,051	\$274,087	\$6,830,184	\$6,188,229	\$3,204,723	\$2,081,793	\$4,748,391
West St. Paul Police	\$5,999,910	\$352,036	\$5,585,528	\$5,060,556	\$3,092,772	\$1,070,705	\$4,514,823
Total	\$358,301,231	\$25,694,879	\$354,528,480	\$321,207,091	\$201,748,046	\$91,210,814	\$263,317,666

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 1999**

Teachers Retirement Plan

	TRA Number	TRA Employer Unit	Service Purchased	Employee Payment	Employer Payment	Change in Accrued Liability	Gain/(Loss) to Plan
Active Members:	178277	82-916	6.000	\$96,003.40	\$0.00	\$87,329	\$8,674
	140168	73-739	2.583	\$39,048.62	\$0.00	\$33,814	\$5,235
	108339	82-834	0.140	\$2,276.43	\$0.00	\$0	\$2,276
	066144	99-4	1.000	\$9,476.44	\$0.00	\$9,308	\$168
	125298	85-858	0.800	\$5,190.00	\$11,533.38	\$8,508	\$8,215
	078453	62-621	0.830	\$30,250.01	\$0.00	\$0	\$30,250
	101791	27-279	0.350	\$15,048.50	\$0.00	(\$15,336)	\$30,385
	113438	27-277	1.220	\$19,671.17	\$0.00	\$10,856	\$8,815
	159319	93-9317	3.040	\$56,366.64	\$0.00	\$38,583	\$17,784
	103874	19-196	0.082	\$1,539.61	\$0.00	\$0	\$1,540
	139953	66-659	3.000	\$43,633.20	\$0.00	\$31,679	\$11,954
	108051	27-279	0.510	\$7,129.14	\$0.00	\$13,661	(\$6,532)
	152178	45-2176	4.000	\$46,227.47	\$0.00	\$37,259	\$8,968
	115972	11-115	1.480	\$20,274.45	\$0.00	\$8,492	\$11,782
	096654	10-110	1.000	\$20,814.86	\$0.00	\$12,177	\$8,638
	110263	77-2753	0.510	<u>\$6,995.99</u>	<u>\$0.00</u>	<u>\$13,125</u>	<u>(\$6,129)</u>
Active subtotal:				\$419,945.93	\$11,533.38	\$289,455	\$142,024
Deferred Vested Members:	None						
Deferred Vested subtotal:				\$0.00	\$0.00	\$0	\$0
Retired Members:	106543	73-742	1.000	\$16,005.79	\$0.00	\$107,863	(\$91,857)
	104191	73-742	0.060	\$1,059.68	\$0.00	\$101,020	(\$99,960)
	133878	93-9318	1.893	\$23,197.93	\$0.00	\$20,248	\$2,950
	100357	69-701	0.340	\$10,554.95	\$0.00	(\$70,069)	\$80,624
	106850	85-861	0.410	\$13,553.81	\$0.00	(\$32,110)	\$45,664
	115191	18-181	0.660	<u>\$11,418.10</u>	<u>\$0.00</u>	<u>(\$28,415)</u>	<u>\$39,833</u>
Retired subtotal:				\$75,790.26	\$0.00	\$98,537	(\$22,746)
TOTAL (TRA)				\$495,736.19	\$11,533.38	\$387,992	\$119,278

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 1999**

Duluth Teachers Retirement Plan

	Employee Number	Employer Unit	Amount of Service Purchased	Employee Purchase Payment	Employer Purchase Payment	Change in Actuarial Accrued Liability	Gain/(Loss) to Plan
Active Members:	None						
Active subtotal:				\$0.00	\$0.00	\$0	\$0
Deferred Vested Members:	None						
Deferred Vested subtotal:				\$0.00	\$0.00	\$0	\$0
Retired Members:	1548	Duluth	4.34	<u>\$74,908.32</u>	<u>\$0.00</u>	<u>\$73,731</u>	<u>\$1,177</u>
Retired subtotal:				\$74,908.32	\$0.00	\$73,731	\$1,177
TOTAL (DTRA)				\$74,908.32	\$0.00	\$73,731	\$1,177

Table 1-F
Sufficiency / (Deficiency) for Revised Assumptions and Methods

Public Employees Retirement Fund

	Results from		
	Original Valuation	Revised Assumptions	Revised Methods
(1) Present Value of Benefits	11,549,347	13,449,605	13,449,605
(2) Present Value of Future Normal Costs	2,105,669	3,312,328	3,312,328
(3) Actuarial Accrued Liability [(1) - (2)]	9,443,678	10,137,277	10,137,277
(4) Assets	8,489,177	8,489,177	8,538,902
(5) UAAL [(3) - (4)]	954,501	1,648,100	1,598,375
(6) Amortization Period (in Years)	21	25	25
(7) PV Future Payrolls	56,985,461	62,314,888	62,314,888
(8) Payroll	3,349,614	3,200,203	3,200,203
(9) Raw NC	265,778	317,524	317,524
(10) Supplemental Contribution Rate [(5) / (7)]	1.67%	2.64%	2.56%
(11) Normal Cost	7.49%	9.35%	9.35%
(12) Administration Expenses	0.28%	0.28%	0.28%
(13) Total Requirements [(10) + (11) + (12)]	9.44%	12.27%	12.19%
(14) Statutory Contributions	10.00%	10.01%	10.01%
(15) Sufficiency/(Deficiency) [(14) - (13)]	0.56%	(2.26%)	(2.18%)

Table 1-F
Sufficiency / (Deficiency) for Revised Assumptions and Methods

Teachers Retirement Association Fund

	Results from		
	Original Valuation	Revised Assumptions	Revised Methods
(1) Present Value of Benefits	15,719,403	15,865,317	15,865,317
(2) Present Value of Future Normal Costs	2,459,834	2,304,270	2,304,270
(3) Actuarial Accrued Liability [(1) - (2)]	13,259,569	13,561,047	13,561,047
(4) Assets	14,011,247	14,011,247	14,166,727
(5) UAAL [(3) - (4)]	(751,678)	(450,200)	(605,680)
(6) Amortization Period (in Years)	21	21	30
(7) PV Future Payrolls	39,763,417	40,071,490	50,405,776
(8) Payroll	2,541,016	2,566,291	2,566,291
(9) Raw NC	257,386	244,354	244,354
(10) Supplemental Contribution Rate [(5) / (7)]	0.00%	0.00%	(1.20%)
(11) Normal Cost	9.55%	9.00%	9.00%
(12) Administration Expenses	0.31%	0.31%	0.31%
(13) Total Requirements [(10) + (11) + (12)]	9.86%	9.31%	8.11%
(14) Statutory Contributions	10.00%	10.00%	10.00%
(15) Sufficiency/(Deficiency) [(14) - (13)]	0.14%	0.69%	1.89%

Table 1-F
Sufficiency / (Deficiency) for Revised Assumptions and Methods

State Employees Retirement Fund

	Results from		
	Original Valuation	Revised Assumptions	Revised Methods
(1) Present Value of Benefits	6,557,330	6,576,019	6,576,019
(2) Present Value of Future Normal Costs	1,093,123	1,394,075	1,394,075
(3) Actuarial Accrued Liability [(1) - (2)]	5,464,207	5,181,944	5,181,944
(4) Assets	5,968,692	5,968,692	6,082,475
(5) UAAL [(3) - (4)]	(504,485)	(786,748)	(900,531)
(6) Amortization Period (in Years)	21	21	30
(7) PV Future Payrolls	25,953,885	25,979,654	32,679,709
(8) Payroll	1,662,578	1,662,578	1,662,578
(9) Raw NC	131,986	147,062	147,062
(10) Supplemental Contribution Rate [(5) / (7)]	0.00%	0.00%	(2.76%)
(11) Normal Cost	7.52%	8.36%	8.36%
(12) Administration Expenses	0.15%	0.15%	0.15%
(13) Total Requirements [(10) + (11) + (12)]	7.67%	8.51%	5.75%
(14) Statutory Contributions	8.00%	8.00%	8.00%
(15) Sufficiency/(Deficiency) [(14) - (13)]	0.33%	(0.51%)	2.25%

II. PLAN PROVISIONS

This section of our summary presents a brief summary of those changes made to the statutes since last year's report that had an impact on the actuarial funding of a plan. This section is not designed to provide a comprehensive summary of all changes that were made. For a more detailed description of the plan provisions, please refer to the individual report for each Fund.

For the July 1, 1999 Actuarial Valuation, we highlight the following:

Public Employees (Chapter 353): None

Police and Fire (Chapter 353):

- Police and Fire Consolidation Fund merged into the Police and Fire Fund effective July 1, 1999.
- Contribution rates for both Members and Employer decreased.
- Early retirement reduction factors decreased for retirement ages less than 55.

Police and Fire Consolidation:

Added one new account – Crookston Police.

The increase in the highest benefit accrual factor from 2.65% to 3.0% implemented in 1997 is not to be effective until each respective municipality approves the increase. All new accounts come in at 3.0%. As of June 30, 1999, the following municipalities had not taken formal additional action to approve the change in the benefit accrual factor and our pre-merger valuation reflects continuation of the 2.74 or 2.9% multiplier for these municipalities:

<u>Relief Association</u>	<u>Factor</u>
Crookston Fire	2.9%
Duluth Fire	2.9%
Duluth Police	2.9%
Faribault Fire	2.9%
Faribault Police	2.9%
Mankato Fire	2.74%
Mankato Police	2.9%
Rochester Fire	2.9%
Rochester Police	2.9%
St. Paul Fire	2.9%
St. Paul Police	2.9%

Special one-time election of existing non-MPRIF retirees and beneficiaries into MPRIF for prospective determinations of dividend adjustments have been reflected.

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 2000**

Teachers Retirement Plan

TRA Number	TRA Employer Unit	Service Purchased	Employee Payment	Employer Payment	Change in Accrued Liability	Gain/(Loss) to Plan	
185463	099-00010	3.252	\$17,984	\$0	\$10,097	\$7,887	
187760	071-00727	0.250	\$3,592	\$0	\$5,785	(\$2,193)	
194848	027-00284	1.000	\$12,404	\$0	\$12,236	\$168	
197379	082-00916	6.600	\$95,858	\$0	\$39,681	\$56,177	
204970	027-00279	0.390	\$4,236	\$0	\$1,769	\$2,467	
208929	040-02143	3.030	\$17,227	\$0	\$18,636	(\$1,409)	
213662	003-00022	0.590	\$3,952	\$0	\$3,842	\$110	
217971	027-00272	1.000	\$5,848	\$0	\$6,450	(\$602)	
220517	056-00542	1.000	\$6,683	\$0	\$4,585	\$2,098	
228292	027-00272	0.740	\$3,537	\$0	\$3,280	\$257	
228337	074-00761	0.140	\$1,463	\$0	(\$60)	\$1,523	
232327	019-00196	2.623	\$23,593	\$0	\$12,800	\$10,793	
235421	027-00278	1.000	\$3,001	\$0	\$2,562	\$439	
236165	019-00196	0.080	\$265	\$0	\$50	\$215	
238420	047-00465	2.000	\$6,258	\$0	\$5,854	\$404	
238610	004-00038	3.000	\$11,344	\$0	\$13,901	(\$2,557)	
245070	002-00015	3.000	\$9,208	\$0	\$8,507	\$701	
252813	027-00281	10.000	\$54,312	\$0	\$67,945	(\$13,633)	
253360	019-00192	4.000	\$12,602	\$0	\$11,943	\$659	
254312	027-00272	0.340	<u>\$905</u>	<u>\$0</u>	<u>\$2,009</u>	<u>(\$1,104)</u>	
Active subtotal:			\$2,374,925	\$64,973	\$1,817,984	\$621,914	
Deferred Vested Members:	257547	027-00276	4.000	<u>\$15,316</u>	<u>\$0</u>	<u>\$2,881</u>	<u>\$12,435</u>
Deferred Vested subtotal:			\$15,316	\$0	\$2,881	\$12,435	
Retired Members:	070339	027-00279	0.550	\$13,401	\$0	\$6,218	\$7,183
	082824	099-00007	0.550	\$9,749	\$0	\$41,158	(\$31,409)
	082842	027-00276	0.120	\$7,283	\$0	\$55,518	(\$48,235)
	091129	002-00011	0.330	\$7,086	\$0	\$57,437	(\$50,351)
	092296	010-00112	0.380	\$12,198	\$0	\$41,781	(\$29,583)
	092351	069-00706	0.959	\$26,331	\$0	\$10,609	\$15,723
	092728	078-00803	0.220	\$7,323	\$0	\$58,500	(\$51,177)

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 2000**

Teachers Retirement Plan

TRA Number	TRA Employer Unit	Service Purchased	Employee Payment	Employer Payment	Change in Accrued Liability	Gain/(Loss) to Plan
094019	027-00272	0.640	\$12,966	\$0	\$65,348	(\$52,383)
094471	069-00706	0.330	\$4,438	\$0	\$3,331	\$1,106
096058	027-00271	1.500	\$20,347	\$0	\$68,858	(\$48,511)
099192	002-00011	0.460	\$10,269	\$0	\$73,492	(\$63,223)
100058	027-00270	1.000	\$25,665	\$0	\$73,345	(\$47,680)
102079	060-00593	0.420	\$6,019	\$0	(\$3,982)	\$10,001
106100	027-00273	0.180	\$3,273	\$0	\$18,496	(\$15,223)
106878	028-00299	0.500	\$6,292	\$0	\$3,526	\$2,766
107751	063-00630	0.490	\$9,931	\$0	\$38,431	(\$28,501)
108068	027-00279	1.020	\$18,003	\$0	\$33,508	(\$15,505)
108134	060-00601	0.300	\$4,184	\$0	\$3,641	\$544
108439	050-00492	0.240	\$4,358	\$0	\$2,169	\$2,189
108539	062-00621	0.310	\$13,306	\$0	\$57,571	(\$44,265)
109134	072-02310	1.000	\$14,394	\$0	\$857	\$13,537
109670	021-00206	0.710	\$16,007	\$0	\$36,467	(\$20,461)
112006	018-00181	0.300	\$4,690	\$0	(\$5,395)	\$10,085
112963	062-00621	0.150	\$6,864	\$0	\$35,331	(\$28,467)
113411	050-00492	1.240	\$26,386	\$0	\$51,718	(\$25,331)
113524	082-00834	0.040	\$931	\$0	\$34,489	(\$33,558)
114975	027-00270	0.450	\$8,702	\$0	\$59,644	(\$50,943)
115568	043-00423	0.010	\$212	\$0	(\$4,497)	\$4,709
117838	062-00622	0.540	\$13,432	\$0	\$7,529	\$5,903
118401	027-00281	0.660	\$6,438	\$0	\$7,345	(\$907)
119126	049-00484	0.160	\$2,045	\$0	(\$8,251)	\$10,296
119559	060-00595	0.220	\$8,860	\$0	\$38,260	(\$29,400)
119618	027-00279	0.360	\$10,226	\$0	\$36,030	(\$25,804)
120292	077-02753	0.620	\$12,115	\$0	\$32,789	(\$20,675)
122142	082-00833	1.000	\$20,856	\$0	\$11,093	\$9,763
124718	002-00011	0.450	\$8,122	\$0	\$4,320	\$3,802
132435	073-00742	0.830	\$17,473	\$0	\$52,144	(\$34,671)
132556	029-00309	0.550	\$11,633	\$0	\$40,082	(\$28,449)

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 2000**

Teachers Retirement Plan

	TRA Number	TRA Employer Unit	Service Purchased	Employee Payment	Employer Payment	Change in Accrued Liability	Gain/(Loss) to Plan
	133326	040-02397	0.650	\$11,419	\$0	\$33,699	(\$22,280)
	138345	042-00413	3.000	\$31,862	\$0	\$40,232	(\$8,370)
	153748	031-00318	4.790	<u>\$86,072</u>	<u>\$0</u>	<u>\$95,197</u>	<u>(\$9,125)</u>
Retired subtotal:				\$541,161	\$0	\$1,308,040	(\$766,879)
TOTAL (TRA)				\$2,931,402	\$64,973	\$3,128,905	(\$132,530)

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 2000**

Duluth Teachers Retirement Plan

	Employee Number	Employer Unit	Amount of Service Purchased	Employee Purchase Payment	Employer Purchase Payment	Change in Actuarial Accrued Liability	Gain/(Loss) to Plan
Active Members:	5850	Duluth	1.00000	\$13,592	\$0	\$16,887	(\$3,295)
	6440	Duluth	1.00000	\$8,983	\$0	\$10,115	(\$1,132)
	5123	Duluth	0.13000	<u>\$5,138</u>	<u>\$0</u>	<u>\$0</u>	<u>\$5,138</u>
Active subtotal:				\$27,713	\$0	\$27,002	\$711
Deferred Vested Members:	None						
Deferred Vested subtotal:				\$0	\$0	\$0	\$0
Retired Members:	9158	Duluth	2.50000	\$8,690	\$0	\$9,165	(\$475)
	5222	Duluth	2.00000	\$18,758	\$0	\$17,755	\$1,003
	5046	Duluth	1.59000	\$32,166	\$0	\$56,079	(\$23,913)
	6307	Duluth	3.00000	<u>\$18,586</u>	<u>\$0</u>	<u>\$21,728</u>	<u>(\$3,142)</u>
Retired subtotal:				\$78,200	\$0	\$104,727	(\$26,527)
TOTAL (DTRA)				\$105,913	\$0	\$131,729	(\$25,816)

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 2000**

St. Paul Teachers Retirement Plan

	Employee Number	Employer Unit	Amount of Service Purchased	Employee Purchase Payment	Employer Purchase Payment	Change in Actuarial Accrued Liability	Gain/(Loss) to Plan
Active Members:	134085	St. Paul	7.40000	\$103,436	\$0	\$99,762	\$3,674
	137781	St. Paul	0.10000	\$1,661	\$0	\$1,384	\$277
	145713	St. Paul	2.30000	\$15,971	\$0	\$12,289	\$3,682
	159476	St. Paul	0.11000	\$2,148	\$0	\$678	\$1,470
	311628	St. Paul	0.10000	\$189	\$0	\$39	\$150
	159351	St. Paul	0.10000	\$278	\$0	\$138	\$140
	160635	St. Paul	1.74483	\$24,372	\$0	\$26,326	(\$1,954)
	161361	St. Paul	0.20000	\$5,736	\$0	\$2,545	\$3,191
	424000	St. Paul	1.91111	\$4,279	\$0	\$206	\$4,073
	166962	St. Paul	0.20000	\$4,180	\$0	\$1,800	\$2,380
	170168	St. Paul	0.33333	\$7,500	\$0	\$3,824	\$3,676
	176750	St. Paul	0.40000	\$7,591	\$0	\$4,291	\$3,300
	178631	St. Paul	1.00000	\$6,481	\$0	\$548	\$5,933
	323880	St. Paul	10.00000	\$111,875	\$0	\$45,809	\$66,066
	188671	St. Paul	3.00000	\$35,642	\$0	\$32,569	\$3,073
	189078	St. Paul	5.00000	\$71,634	\$0	\$50,900	\$20,734
	194669	St. Paul	0.60000	\$5,051	\$0	\$2,021	\$3,030
	196374	St. Paul	2.00000	\$29,769	\$0	\$21,035	\$8,734
	201992	St. Paul	3.00000	\$30,254	\$0	\$17,823	\$12,431
	204080	St. Paul	2.00000	<u>\$28,795</u>	<u>\$0</u>	<u>\$19,741</u>	<u>\$9,054</u>
Active subtotal:				\$496,842	\$0	\$343,728	\$153,114
Deferred Vested Members:	None						
Deferred Vested subtotal:				\$0	\$0	\$0	\$0

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 2000**

St. Paul Teachers Retirement Plan

Retired Members:	3090	St. Paul	0.02778	\$975	\$0	\$456	\$519
	3043	St. Paul	3.00000	\$43,210	\$0	\$43,051	\$159
	3088	St. Paul	1.30000	\$16,953	\$0	\$18,901	(\$1,948)
	3046	St. Paul	3.00000	\$20,036	\$0	\$41,472	(\$21,436)
	60209	St. Paul	1.00000	<u>\$12,427</u>	<u>\$0</u>	<u>\$12,794</u>	<u>(\$367)</u>
Retired subtotal:				\$93,600	\$0	\$116,674	(\$23,073)
TOTAL (SPTRA)				\$590,442	\$0	\$460,402	\$130,041

**TABLE 1-E: ANALYSIS OF SERVICE CREDIT PURCHASES
MADE IN PERIOD ENDING JUNE 30, 2000**

Minneapolis Teachers' Retirement Fund Association

	Employee Number	Employer Unit	Amount of Service Purchased	Employee Purchase Payment	Employer Purchase Payment	Change in Actuarial Accrued Liability	Gain/(Loss) to Plan
Active Members:	15765	Minneapolis	1.00000	\$43,789	\$0	\$15,972	\$27,817
	16811	Minneapolis	0.07200	\$1,247	\$0	\$1	\$1,246
	18251	Minneapolis	1.00000	\$10,123	\$0	\$11,953	(\$1,830)
	20101	Minneapolis	8.00000	<u>\$68,509</u>	<u>\$0</u>	<u>\$73,097</u>	<u>(\$4,588)</u>
Active subtotal:				\$123,668	\$0	\$101,023	\$22,645
Deferred Vested Members:	None						
Deferred Vested subtotal:				\$0	\$0	\$0	\$0
							<i>Page 21</i>
Retired Members:	15556	Minneapolis	1.00000	\$20,299	\$0	\$19,731	\$568
	15608	Minneapolis	2.00000	<u>\$85,697</u>	<u>\$0</u>	<u>\$138,247</u>	<u>(\$52,550)</u>
Retired subtotal:				\$105,996	\$0	\$157,978	(\$51,982)
TOTAL (MTRFA)				\$229,664	\$0	\$259,001	(\$29,337)

II. PLAN PROVISIONS

This section of our summary presents a brief summary of those changes made to the statutes since last year's report that had an impact on the actuarial funding of a plan. This section is not designed to provide a comprehensive summary of all changes that were made. For a more detailed description of the plan provisions, please refer to the individual report for each Fund.

For the July 1, 2000 Actuarial Valuation, we highlight the following:

Public Employees (Chapter 353): None

Police and Fire (Chapter 353): None

Local Government Correctional Service (Chapter 353E): None

State Employees (Chapter 352): None

State Patrol (Chapter 352B): None

Correctional Employees (Chapter 352): None

Legislators (Chapter 3A): None

Elective State Officers (Chapter 352C): None

Judges (Chapter 490):

Benefit cap changed from 70% of salary in final 12 months preceding retirement to 76.8% of average salary for high five years preceding retirement. Employee contributions are directed to the Unclassified Plan after the maximum benefit is reached.

Teachers Retirement Association (Chapter 354): None

Duluth Teachers (Chapter 354A): None

St. Paul Teachers (Chapter 354A): None

Minneapolis Teachers (Chapter 354A): None

Minneapolis Employees (Chapter 422A): None

III. ACTUARIAL ASSUMPTIONS AND METHODS

(Tables III-A, III-B and III-C)

In projecting costs to be incurred by a pension plan in future years, it is necessary to provide actuarial assumptions relating to the future events which trigger those costs. To provide for all **significant** events, a wide range of assumptions must be utilized. These assumptions may be classified into three different categories.

The *first category* involves the economic assumptions. These assumptions include assumed investment return, salary increases, social security increases and cost-of-living increases on plan benefits. These assumptions are characterized as economic because they generally tend to be affected by interrelated factors that also affect economic growth.

The *second category* relates to assumptions which affect the expected working lifetime (and retired lifetime) of a member. These assumptions include mortality rates, disability rates and rates of separation due to other causes. Within a particular group classification (such as teachers or policemen), year-to-year mortality and disability rates may be reasonably represented by standard published tables. Separation due to other causes may vary considerably and should be reviewed and monitored on an individual group basis. In particular, where a subsidized benefit exists (such as for early retirement), extra care must be provided with respect to the rate of separation which is assumed to occur (such as the rate of early retirement).

The *third category* relates to miscellaneous assumptions which are needed to accommodate special plan provisions which are not adequately covered in the first two categories. These would include (but are not limited to) items such as assumed family composition, plan expenses, election to specific benefit forms, etc. These assumptions need to be monitored so that they remain consistent with the plan provisions which are in effect.

In Tables III-A, III-B and III-C, we have prepared a summary of some of the assumptions being used by each plan in all three categories. For a comprehensive review of all assumptions being used for a particular plan, please refer to the July 1, 2000 Actuarial Valuation for that Fund.

In our opinion the assumptions used for July 1, 2000 valuations are reasonable and well within the mainstream of current actuarial practice. Experience during the 1992-96 period has been analyzed for the three large statewide plans and the approved changes in the assumptions for these plans have been included in the July 1, 2000 actuarial valuations.

CHANGES IN ACTUARIAL METHODS

Asset Valuation Method

Effective with the July 1, 2000 actuarial valuation, Minnesota Statutes require that the asset value used for actuarial purposes spread differences between actual return (measured on a market-value basis) and expected return on non-MPRIF (non-RBF assets for MERF) assets over five years, in a manner similar to that already being used within the MPRIF. The previous method required under Minnesota Statutes recognized one third of the unrealized gains and losses. An Asset Valuation Method 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 intent of the change to the current method is to employ a more effective asset smoothing technique which is market-value based and which eliminates artificial bias related to manager style. The effective date of this requirement is July 1, 2000 with full transition to be accomplished as of July 1, 2003.

The calculation of the Actuarial Value of Assets for each fund is determined as:

Market Value of Assets at June 30, 2000, *less*

80% of the current year Unrecognized Asset Return at July 1, 2000 (the difference between actual net return on Market Value of Assets between 06/30/99 and 06/30/2000 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 1999 Actuarial Valuation); *less*

60% of the Unrecognized Asset Return at July 1, 1999 (the difference between Market Value of Assets on 06/30/99 and the Actuarial Value of Assets used in the July 1, 1999 Actuarial Valuation).

The term "Actuarial Value of Assets" is used to indicate that the value was determined for use in the actuarial valuations. Minnesota Statutes refer to this value as "Current Assets."

Payment on the Unfunded Actuarial Accrued Liability

Effective with the July 1, 2000 actuarial valuations, if the Current assets exceed the Actuarial Accrued Liability for any fund, the surplus amount shall be amortized over 30 years as a level percentage of payroll. Prior to July 1, 2000, some of the funds did not amortize the surplus amount, while others amortized to a fixed amortization date.

TABLE III-A: JULY 1, 2000 ACTUARIAL ASSUMPTIONS - CATEGORY 1
(Highlighted box indicates change from prior year.)

Fund	Interest Rates Pre-retire/Post-retire	Salary Increase %/ Data Used	Social Security	COLA on Benefits
Public Employees (Chapter 353)	8.5%/6.0%	(2)/Prior Year Salary Increased	N/A	2.5% Implied by 6.0% Interest Rate
Police and Fire (Chapter 353)	8.5%/6.0%	(1)/ Prior Year Salary Increased	N/A	2.5% Implied by 6.0% Interest Rate
Local Government Correctional Service (Chapter 353E)	8.5%/6.0%	(1)/Prior Year Salary Increased	N/A	2.5% Implied by 6.0% Interest Rate
State Employees (Chapter 352)	8.5%/6.0%	(2)/Prior Year Salary Increased	N/A	2.5% Implied by 6.0% Interest Rate
State Patrol (Chapter 352B)	8.5%/6.0%	(1)/Prior Year Salary Increased	N/A	2.5% Implied by 6.0% Interest Rate
Correctional (Chapter 352)	8.5%/6.0%	(1)/Prior Year Salary Increased	Current Law and 6.0% Salary Scale	2.5% Implied by 6.0% Interest Rate
Legislators (Chapter 3A)	8.5%/5.0%	Statutory salary, Then 5.0%	N/A	3.5% Implied by 5.0% Interest Rate
Elective State Officers (Chapter 352C)	8.5%/5.0%	Statutory Salary, Then 5.0%	N/A	3.5% Implied by 5.0% Interest Rate
Judges (Chapter 490)	8.5%/6.0%	Statutory Salary, Then 5.0%	N/A	2.5% Implied by 6.0% Interest Rate
Teachers (Chapter 354)	8.5%/6.0%	(2)/Prior Year Salary Increased	N/A	2.5% Implied by 6.0% Interest Rate
Duluth Teachers (Chapter 354A)	8.5%/6.5%	(1)/Reported Salary Increased	N/A	2% Implied by 6.5% Interest Rate
St. Paul Teachers (Chapter 354A)	8.5%/8.5%	(1)/Reported Salary Increased	N/A	2% Per Annum
Minneapolis Teachers (Chapter 354A)	8.5%/8.5%	(1)/Reported Salary Increased	N/A	2% Per Annum
Minneapolis Employees (Chapter 422A)	6.0%/5.0%	4.0%/Reported Pay Increased 1.0198%	N/A	1.0% Implied by 5.0% Interest Rate

(1) Graded rates using a 5.0% base increase plus a merit scale.

(2) Select and ultimate rates using a 5.0% base increase plus a merit scale plus a 10-year select period.

TABLE III-B: JULY 1, 2000 ACTUARIAL ASSUMPTIONS - CATEGORY 2
(Highlighted box indicates change from prior year.)

Fund	Mortality Table (male rates shown)	Disability Table (male rates shown)	Retirement Age (Coordinated)	Other Separation (male rates shown)
Public Employees (Chapter 353)	1983 GAM Male set back 8 years	Graded: .05% @ 35 .49% @ 55	Graded from age 55 and separate graded rates for Rule of 90	Select and ultimate graded
Police and Fire (Chapter 353)	1983 GAM Male set back 5 years	Graded: .19% @ 35 1.35% @ 55	Graded from age 50	Graded: 1.83% @ 35 .11% @ 55
Local Government Correctional Service (Chapter 353E)	1983 GAM Male set back 1 year	Graded: .11% @ 35 .88% @ 55	Graded from age 50	Graded: 6.00% @ 35 1.40% @ 55
State Employees (Chapter 352)	1983 GAM Male set back 5 years	Graded: .05% @ 35 .35% @ 55	Graded from age 55 and separate graded rates for Rule of 90	Select and ultimate graded
State Patrol (Chapter 352B)	1983 GAM Male set back 1 year	Graded: .11% @ 35 .88% @ 55	Graded from age 50	Graded: 0.70% @ 35 0.00% @ 55
Correctional (Chapter 352)	1983 GAM Male set back 1 year	Graded: .11% @ 35 .88% @ 55	Graded from age 50	Graded: 6.00% @ 35 1.40% @ 55
Legislators (Chapter 3A)	1983 GAM Male set back 4 years	None	Age 62	Varies based upon service; 0% @ 9 years
Elective State Officers (Chapter 352C)	1983 GAM Male set back 4 years	None	Age 62	Varies based upon service; 0% @ 9 years
Judges (Chapter 490)	1983 GAM Male set back 4 years	Graded: .02% @ 35 .34% @ 55	Graded from age 62	None
Teachers (Chapter 354)	1983 GAM Male set back 10 years	Graded: .01% @ 35 .10% @ 55	Graded from age 55 and separate graded rates for Rule of 90	Select and ultimate graded
Duluth Teachers (Chapter 354A)	1983 GAM Male set back 4 years	Graded: .06% @ 35 .36% @ 55	Graded from age 55 40% under Rule of 90	Graded: 4.91% @ 35 .13% @ 55
St. Paul Teachers (Chapter 354A)	1983 GAM Male set back 5 years	Graded: .06% @ 35 .36% @ 55	Graded from age 55	Graded: 4.50% @ 35 0.50% @ 55
Minneapolis Teachers (Chapter 354A)	1983 GAM Male set back 6 years	Graded: .05% @ 35 .36% @ 55	Graded from age 55	Graded: 4.50% @ 35 0.50% @ 55
Minneapolis Employees (Chapter 422A)	1986 Projected Exp. Table set back 1 year	Graded: .30% @ 35 1.60% @ 55	Age 61	Graded: 1.50% @ 35 1.00% @ 55

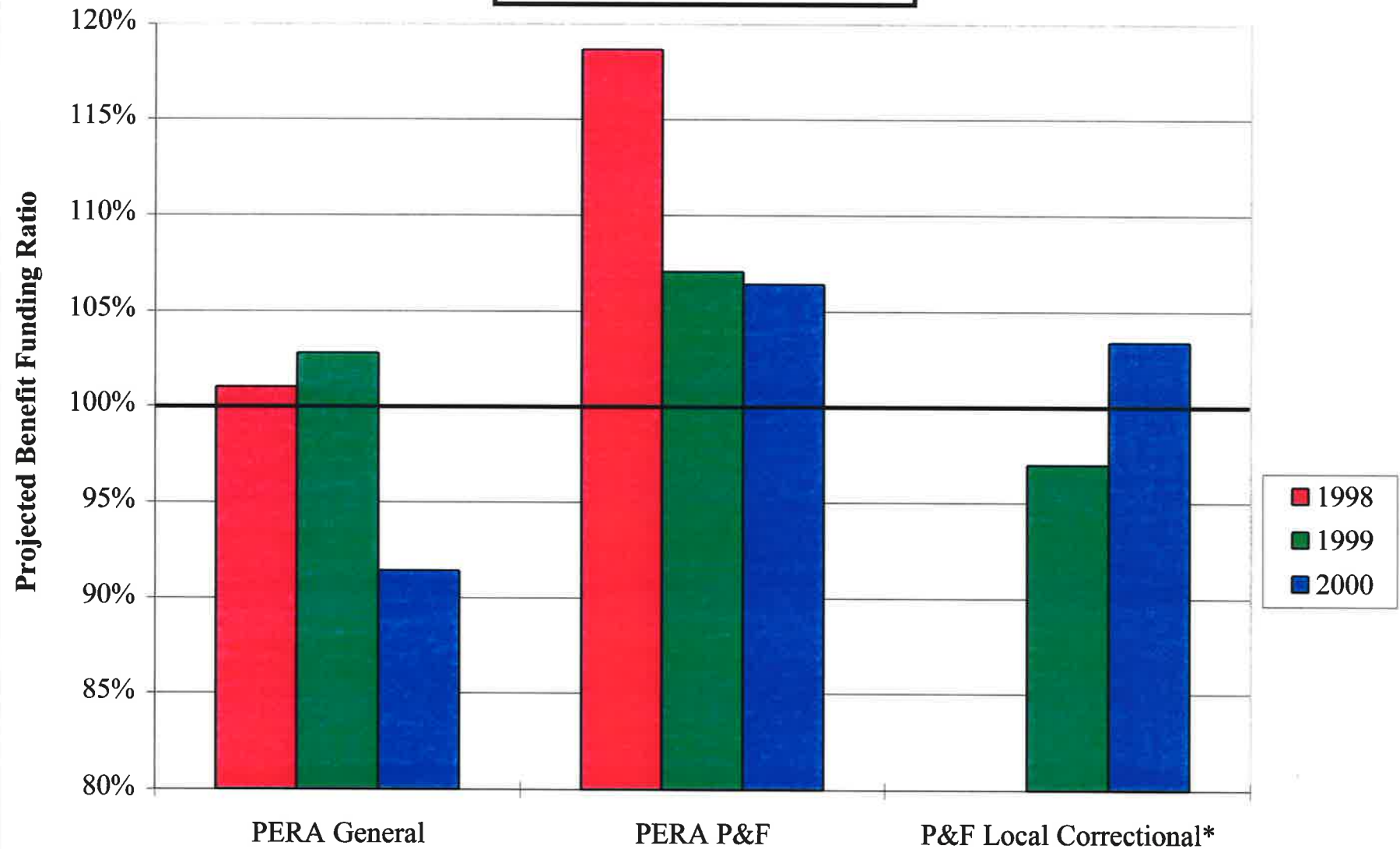
TABLE III-C: JULY 1, 2000 ACTUARIAL ASSUMPTIONS - CATEGORY 3

(Highlighted box indicates change from prior year.)

Fund	Family Composition (Male/Female)	Expenses (Admin. Only)	Bounceback Annuity Election (Male/Female)	Other
Public Employees (Chapter 353)	85%/65% married; no children	Prior year as % of payroll	30%/15% for 50% J&S 45%/15% for 100% J&S	2.5% load on withdrawal and retirement decrements for Combined Service Annuities
Police and Fire (Chapter 353)	85%/65% married; no children	Prior year as % of payroll	40%/15% for 50% J&S 45%/15% for 100% J&S	None
Local Government Correctional Service (Chapter 353E)	85%/85% married;	Prior year as % of payroll	25%/5% for 50% J&S 25%/5% for 100% J&S	None
State Employees (Chapter 352)	85%/85% married	Prior year as % of payroll	25%/10% for 50% J&S 45%/10% for 100% J&S	1% load on withdrawal and retirement decrements for Combined Service Annuities
State Patrol (Chapter 352B)	100%/100% married; two children	Prior year as % of payroll	25%/ 5% for 50% J&S 25%/ 5% for 100% J&S	None
Correctional (Chapter 352)	85%/85% married	Prior year as % of payroll	25%/ 5% for 50% J&S 25%/ 5% for 100% J&S	None
Legislators (Chapter 3A)	85%/85% married; two children	Prior year as % of payroll	None	\$4,800 per diem income
Elective State Officers (Chapter 352C)	85%/85% married; two children	Prior year as % of payroll	None	No refunds after 8 years
Judges (Chapter 490)	Actual data	Prior year as % of payroll	None	No refunds
Teachers (Chapter 354)	85%/65% married; no children	Prior year as % of payroll	15%/20% for 50% J&S 15%/10% for 75% J&S 50%/30% for 100% J&S	1% load on withdrawal and retirement decrements for Combined Service Annuities
Duluth Teachers (Chapter 354A)	80%/80% married	Prior year as % of payroll	30%/30% for 50% J&S 55%/20% for 100% J&S	None
St. Paul Teachers (Chapter 354A)	85%/60% married; two children	Prior year as % of payroll	15%/10% for 50% J&S 50%/10% for 100% J&S	Benefit increase = (5 yr. return - 8.50%) x (1 - contribution deficiency)
Minneapolis Teachers (Chapter 354A)	80%/60% married	Prior year as % of payroll	15%/15% for 50% J&S 20%/ 5% for 75% J&S 40%/10% for 100% J&S	Benefit increase = (5 yr. return - 8.50%) x (1 - contribution deficiency)
Minneapolis Employees (Chapter 422A)	67%/67% married	Prior year increased by 4% as % of payroll	None	Investment expense amortized to a required date

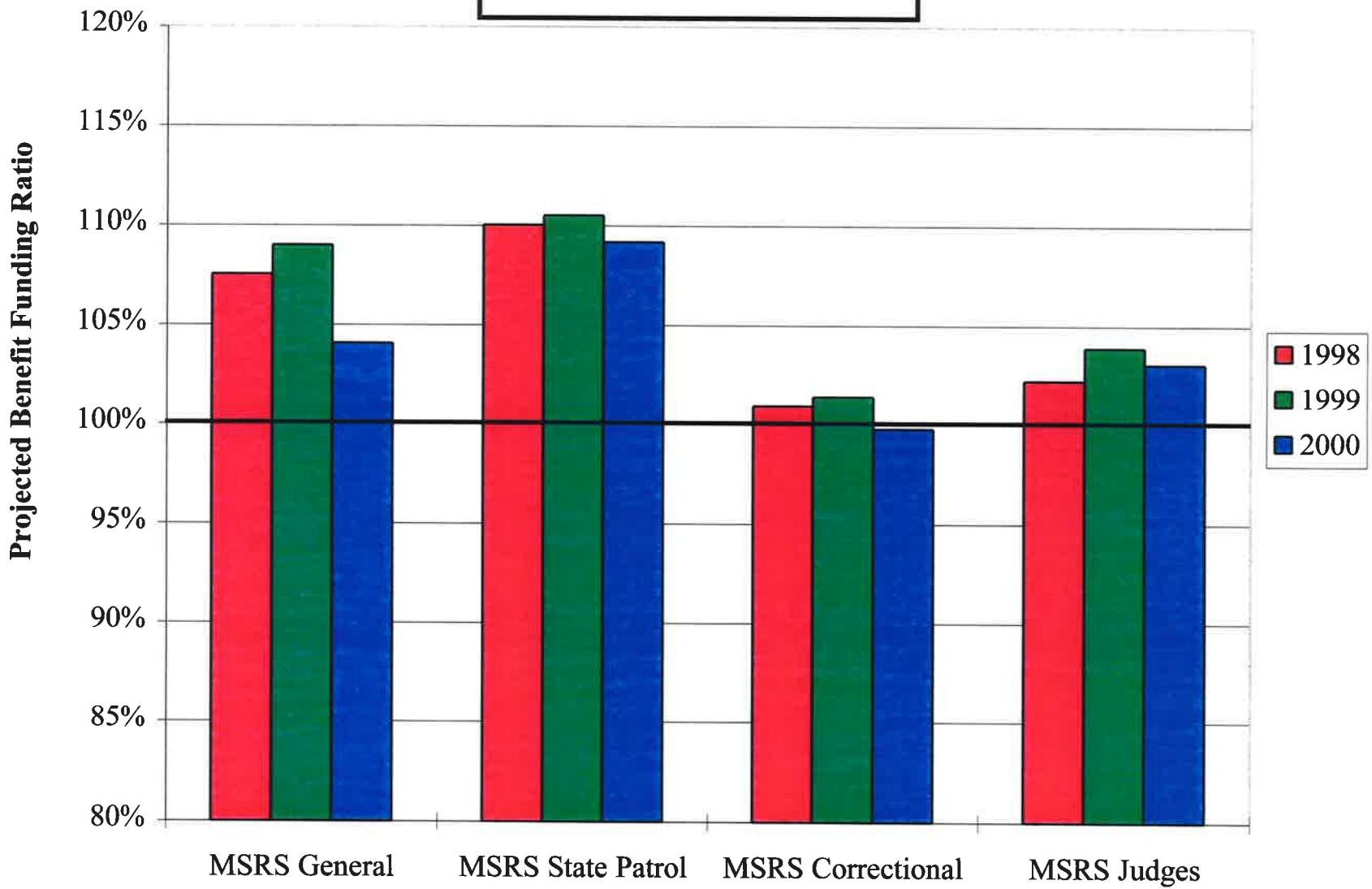
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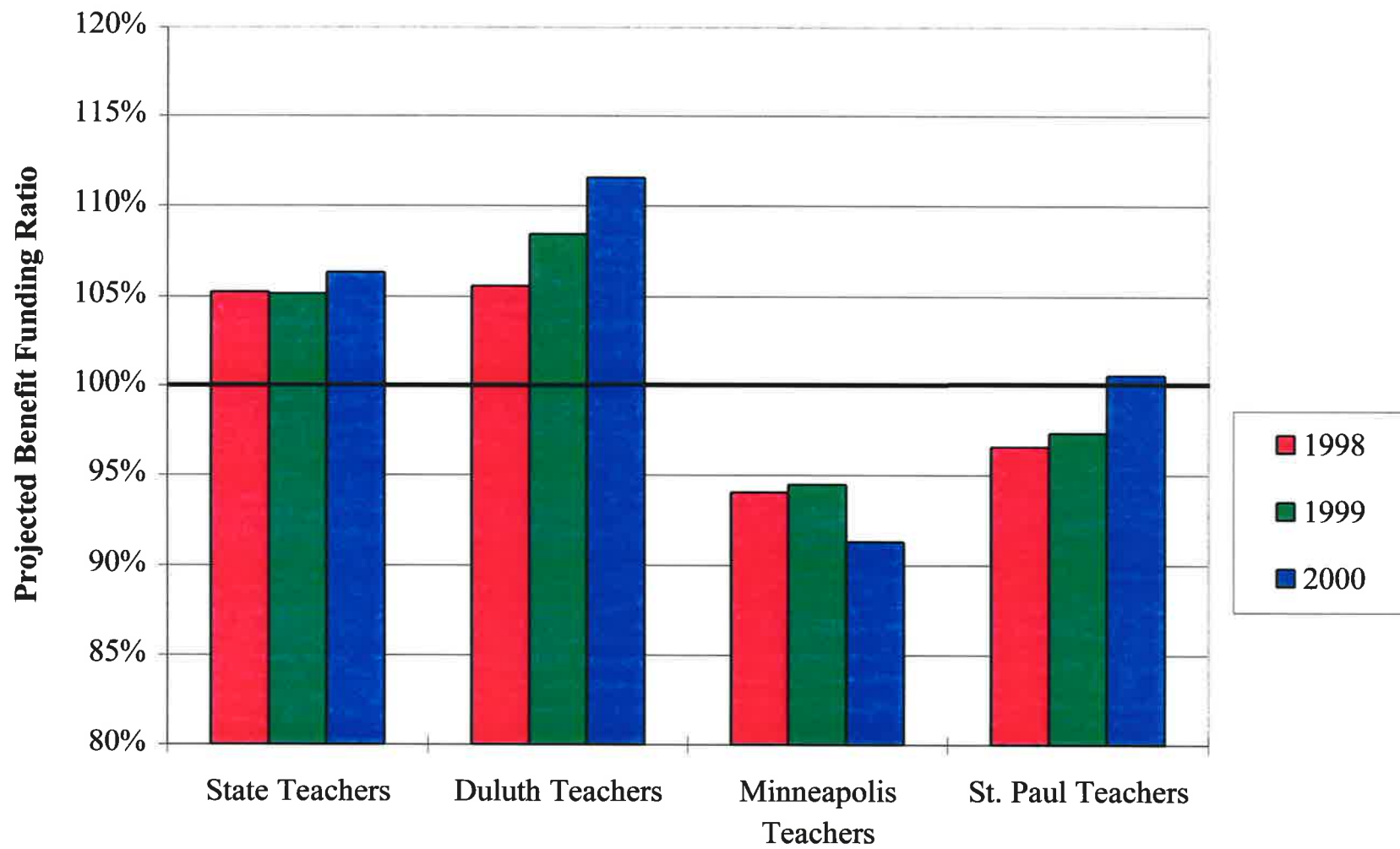


*-1999 was the first year for the P&F Local Correctional Plan

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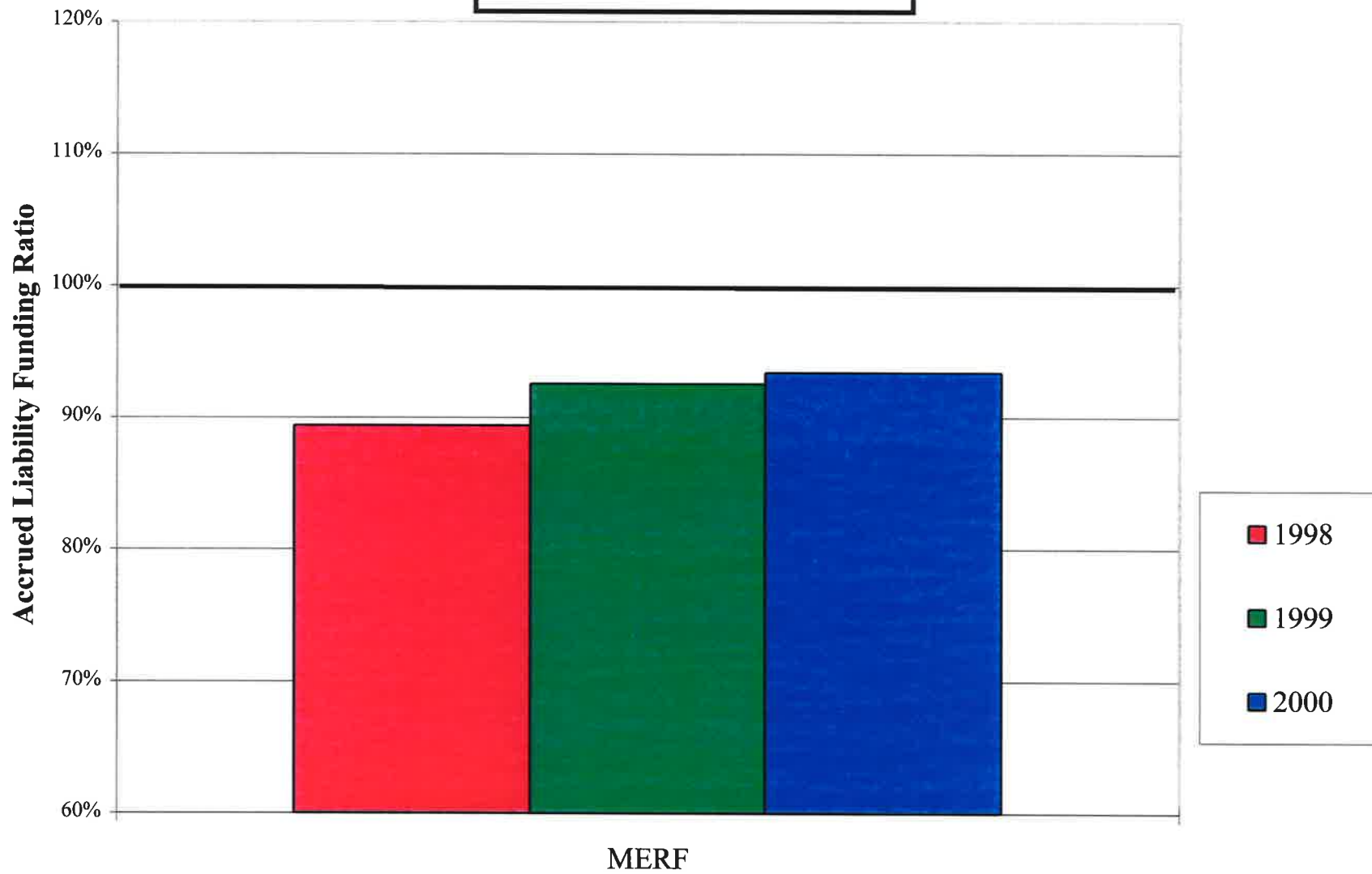


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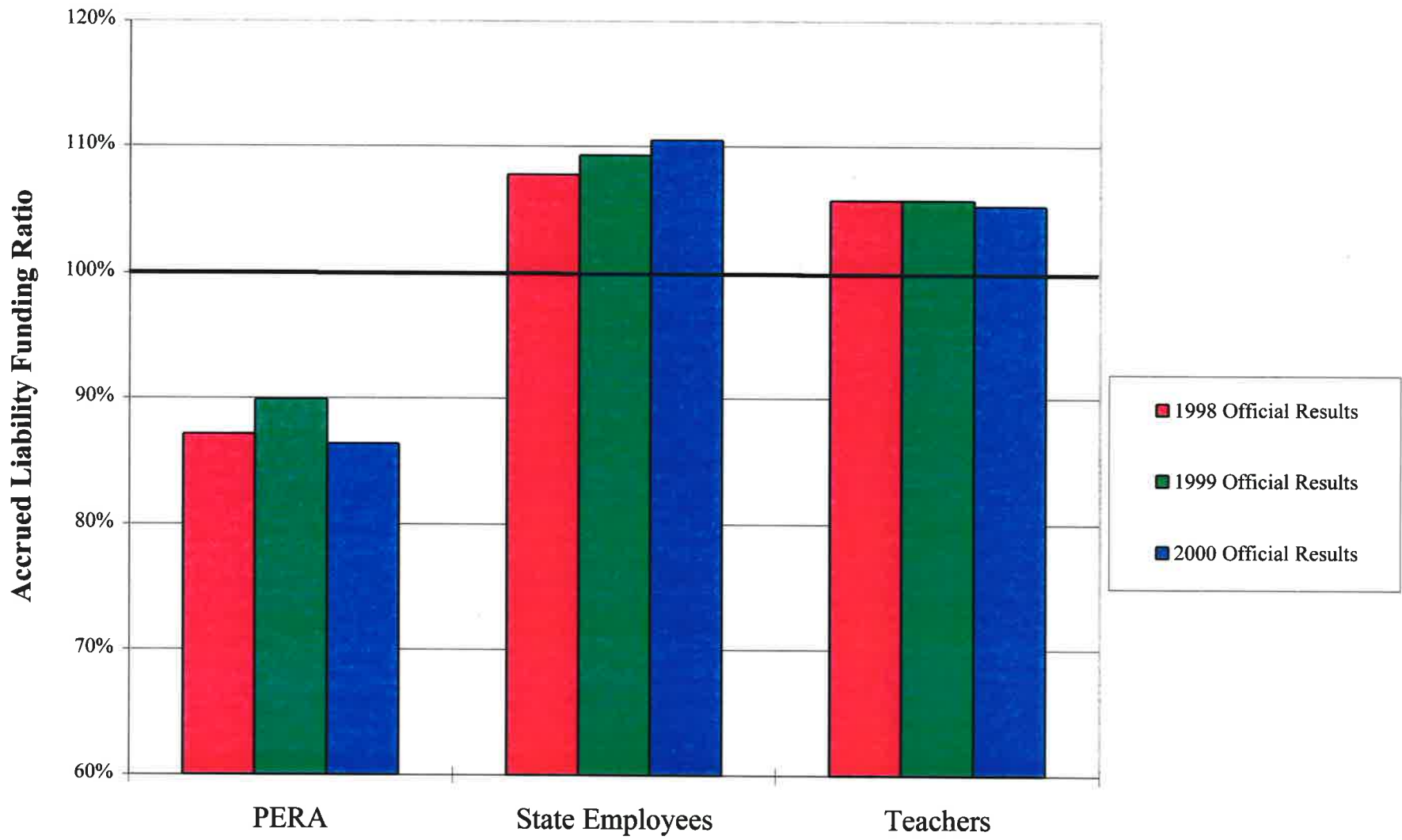


FUNDING RATIOS

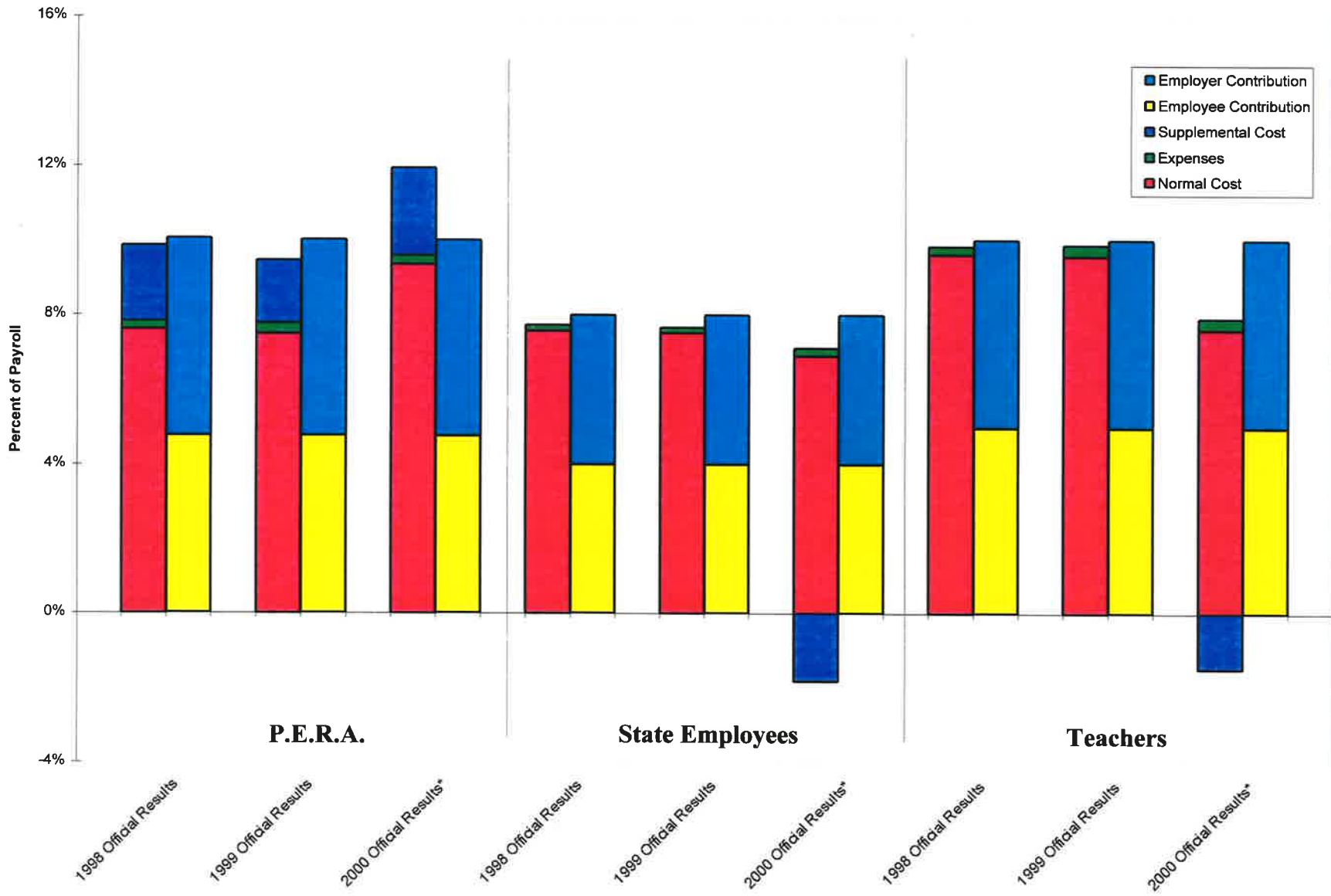
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FUNDING RATIOS



Required vs. Statutory Comparison



*-Incorporates assumption and method changes