PUBLIC EMPLOYEES' RETIREMENT SYSTEM of the STATE OF MONTANA

ACTUARIAL VALUATION as of JULY 1, 2002

Prepared by

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Retirement Board
Public Employees' Retirement System
State of Montana

Dear Members of the Board:

At your request, we have completed an actuarial valuation of the Public Employees' Retirement System as of July 1, 2002. The results of the valuation are contained in the following report and summarized in Section 2.

Details about the Actuarial Valuation are contained in the enclosed report. We have several comments about the preparation of the valuation, including references to the professional guidelines used in preparing this report, and the sources and the reliability of both the data and the actuarial assumptions upon which our findings depend. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

Sincerely,

Mark O. Johnson, F.S.A.
Consulting Actuary

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ACTUARIAL CERTIFICATION

To the best of our knowledge and belief, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the Public Employees' Retirement System as of July 1, 2002.

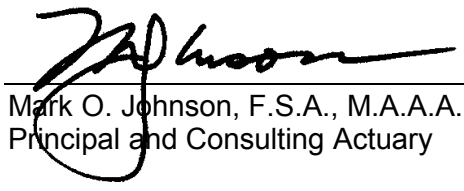
In preparing the valuation, we relied upon the financial and membership data furnished by the System. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficiently accurate for the purposes of our calculations.

The Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the System. The Board adopted all of the actuarial methods and assumptions used in the 2002 valuation.

The findings have been determined according to actuarial assumptions and methods that were chosen on the basis of recent experience of the System and of current expectations concerning future economic conditions. In our opinion, the assumptions used in the actuarial valuation are appropriate for purposes of the valuation, are internally consistent, and reflect reasonable expectations. The assumptions represent our best estimate of future conditions affecting the System. Nevertheless, the emerging costs of the System will vary from those presented in this report to the extent that actual experience differs from that projected by the assumptions.

The actuarial valuation was prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Standards of Practice adopted by the Actuarial Standards Board of the American Academy of Actuaries. In addition, the assumptions and methods used meet the parameters set for disclosures by Governmental Accounting Standards Board Statement No. 25.

The undersigned is an independent actuary, a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, an Enrolled Actuary, and experienced in performing valuations for large public employee retirement systems.



Mark O. Johnson, F.S.A., M.A.A.A., E.A.
Principal and Consulting Actuary

SECTION 1
SCOPE OF THE REPORT

This report presents the results of our actuarial valuation of the System as of July 1, 2002.

A summary of the findings resulting from this valuation is presented in Section 2 of the report and the underlying calculations are summarized in more detail in Section 3.

All of the calculations of the valuation were carried out using certain assumptions as to the future experience of the System in matters affecting the actuarial cost. Section 4 summarizes the most important of these assumptions and describes the actuarial methods used to calculate costs.

Section 5 outlines the benefit provisions of the System.

The membership data which were supplied to us are summarized in Section 6.

SECTION 2
SUMMARY OF FINDINGS AND ANALYSIS OF THE FUNDING LEVEL

The costs of a retirement system are not determined by the actuary. The ultimate costs of a system are determined by adding all of the benefits and expenses that are paid, and subtracting all investment earnings. These costs cannot be determined exactly until the last member or beneficiary has received the final benefit payment due.

The purpose of an actuarial valuation is to provide a timely best estimate of the ultimate costs in order to allocate them to the appropriate generation of members and taxpayers. The ideal goal is for contributions to remain essentially a constant percentage of covered payroll as long as the assumptions and methods reflect the emerging experience of the system and its members with reasonable accuracy.

MEMBERSHIP DATA

We have developed the following comparisons between the membership in this and the prior actuarial valuations:

	June 30, 2002	June 30, 2000
Number of Members		
Retirees and Beneficiaries	14,116	13,572
Vested Terminated	2,150	1,813
Non-vested Terminated*	10,944	9,966
Active	29,808	29,500
Total Membership	57,108	54,851

* Includes members with a zero account balance.

More detailed membership statistics are shown in Section 6.

DETERMINATION OF NORMAL COST

The **Normal Cost** represents the cost assigned to an average member for a given year such that it would meet the continuing costs of that particular benefit, if contributed each year starting with the date of membership. The Entry Age Actuarial Cost Method is designed to produce a Normal Cost that remains a level percentage of salaries, so it is best expressed as a rate.

The following chart shows the Normal Cost from the 2000 valuation compared to the Normal Cost in this valuation. **TABLE 1** provides more details on the Normal Cost. We have calculated the Normal Cost two times for the 2002 valuation: first based on the prior benefit levels, and secondly including the impact of the 2001 legislated benefit enhancements.

	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Normal Cost Rate			
Service Retirement	9.09%	7.63%	7.53%
Disability Retirement	0.32	0.27	0.27
Death	0.56	0.54	0.54
Withdrawal	2.24	2.32	2.35
Total Normal Cost Rate	**12.21%**	10.76%	10.69%

The Normal Cost Rate is expected to remain fairly stable as long as the benefits are not amended, experience emerges as assumed, and the demographic characteristics of the membership remain reasonably consistent.

DETERMINATION OF THE ACTUARIAL LIABILITY

The next step in the actuarial valuation process is to project all future benefit payments from the System for current members and retirees. The level of benefits currently being paid is known, but assumptions are needed to estimate how long they will be paid, and the amount and timing of the payment of future benefits for active and inactive members who are not currently receiving payments.

The summation of the discounted values of all of the projected benefit payments for all current members, at the assumed rate of return, is called the **Actuarial Present Value of Projected Benefits**. Details are shown in **TABLE 2** and summarized below.

($000)	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Actuarial Present Value of Projected Benefits			
Retired Members	$ 1,264,638	$ 1,097,847	$ 965,191
Inactive Members	101,996	109,945	83,821
Active Members	2,538,273	2,092,991	1,899,993
Total Value of Projected Benefits	**$ 3,904,907**	$ 3,300,783	$ 2,949,005

The **Actuarial Present Value of Future Normal Costs** is the value of all remaining Normal Costs expected to be received over the future working lifetime of current active members. The Actuarial Present Value of Future Normal Costs is subtracted from the Actuarial Present Value of Projected Benefits to arrive at the **Actuarial Liability,** the assets that would exist if the current Normal Cost Rate had been paid for all members since entry into the System, and if all actuarial assumptions had been realized. The following is a summary from **TABLE 2**.

($000)	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Actuarial Present Value of:			
Projected Benefits	$ 3,904,907	$ 3,300,783	$ 2,949,005
Future Normal Costs	827,143	711,482	675,598
Actuarial Liability	**$ 3,077,764**	$ 2,589,301	$ 2,273,407

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

The next step in the valuation process is to calculate the **Actuarial Value of Assets** that will be used to determine the funding status of the System. The market value of assets was reported to us as of June 30, 2002. However, because the underlying calculations in the actuarial valuation are long-term in nature, it is advantageous to smooth out short-term fluctuations in the market value of assets.

The asset smoothing method projects an Expected Value of Assets using the assumed rate of investment return, then recognizes the difference between the Expected Value and the Market Value over a four-year period. The calculation of the Actuarial Value of Assets is shown in **TABLE 3** and summarized below.

($000)	Gain or (Loss)	Reserve Factor	Smoothing Reserve	Value of Assets
Market Value on June 30, 2002				$ 2,564,498
1990-00	$ (3,881)	25%	$ (970)	
1900-01	(385,081)	50%	(192,541)	
2001-02	(425,030)	75%	(318,772)	
Smoothing Reserve			$ (512,283)	512,283
Actuarial Value of Assets				**$ 3,076,781**

UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS

The **Unfunded Actuarial Liability** is the excess of the Actuarial Liability over the Actuarial Value of Assets, which represents a liability that must be funded over time. Contributions in excess of the Normal Cost are used to amortize the Unfunded Actuarial Liability.

An **Actuarial Surplus** exists if the Actuarial Value of Assets exceeds the Actuarial Liability. The calculation of the Unfunded Actuarial Liability or Actuarial Surplus is shown in **TABLE 4** and summarized below.

($000)	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Actuarial Liability	$ 3,077,764	$ 2,589,301	$ 2,273,407
Actuarial Value of Assets	3,076,781	3,076,781	2,843,347
Unfunded Actuarial Liability or (Actuarial Surplus)	**$ 983**	$ (487,480)	$ (569,940)
Funded Ratio – Actuarial Value	**100%**	119%	125%
Funded Ratio – Market Value	**83%**	99%	129%

The **Funded Ratio** is equal to the Actuarial Value of Assets divided by the Actuarial Liability. A Funded Ratio of 100% means the Actuarial Value of Assets equals the Actuarial Liability, and the System could be financed by contributions equal to the Normal Cost, if all future experience emerges as assumed.

A Funded Ratio over 100% indicates the System has an Actuarial Surplus.

ACTUARIAL GAINS AND LOSSES

Comparing the Unfunded Actuarial Liability as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. The correct comparison is between the Unfunded Actuarial Liability on the valuation date and the Expected Unfunded Actuarial Liability projected from the prior valuation date using the actuarial assumptions in effect for the two-year period.

TABLE 5 shows the Actuarial Liability as of June 30, 2000, and the elements to project that figure forward to June 30, 2002: the Normal Cost, less benefits paid, plus a charge for interest at the assumed rate of 8% per year. The same table shows the Actuarial Value of Assets as of June 30, 2000, and the elements to project that figure forward to June 30, 2002: The net cash flow (contributions less benefits and expenses), plus a charge for interest at the assumed rate of 8%.

The following is a summary of the actuarial gains or losses during the two-year period.

	($000)
Unfunded Actuarial Liability	
Actual as of June 30, 2000	$ (569,940)
Expected as of June 30, 2002	$ (730,273)
Actual as of June 30, 2002	983
Actuarial (Gain) or Loss	**$ (731,256)**
(Gain) or Loss by Source	
Investment Loss	$ 226,733
Demographic Loss	16,061
2001 Benefit Enhancements	488,462
Net from All Sources	$ 731,256

CALCULATION OF CONTRIBUTION RATE

The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment for the Unfunded Actuarial Liability, if any, over no more than 30 years. The calculations are shown in **TABLE 6** and summarized below.

Rates as a Percentage of Active Member Payroll	2002 Actuarial Valuation		2000 Actuarial Valuation
	Revised Benefits	Previous Benefits	
Statutory Funding Rate	13.80%	13.80%	13.80%
Normal Cost Rate	12.21	10.76	10.69
Available for Amortization	1.59%	3.04%	3.11%
UAL (Surplus) ($000)	$983	$(487,480)	$(569,940)
Years to Amortize	0.1	30.0	30.0
Rate of Amortization	1.59%	(3.05)%	(3.93)%
Calculated Contribution Rate			
Normal Cost Rate	12.21%	10.76%	10.69%
Rate of Amortization	1.59	-	-
Total Contribution Rate	13.80%	10.76%	10.69%

Based on the assumptions contained in this report, the current statutory funding rate of 13.80% of payroll is sufficient to fund the current and projected benefits from the System.

DISCLOSURE INFORMATION - GASB NO. 25

The disclosure of the Schedule of Funding Progress calculated in accordance with Statement No. 25 of the Governmental Accounting Standards Board and is shown in **TABLES 7 AND 8**.

The Annual Required Contribution is equal to the Statutory Funding Rate of 13.80% for the 2001-02 fiscal year because the statutory funding rate met the parameters of Statement No. 25 in the previous valuation.

SECTION 3
ACTUARIAL VALUATION RESULTS

The following tables document the findings of the actuarial valuation.

TABLE 1 NORMAL COSTS
TABLE 2 SUMMARY OF ACTUARIAL REQUIREMENTS
TABLE 3 ACTUARIAL VALUE OF ASSETS
TABLE 4 UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS
TABLE 5 ACTUARIAL GAINS AND LOSSES
TABLE 6 CALCULATION OF CONTRIBUTION RATE
TABLE 7 SCHEDULE OF FUNDING PROGRESS
TABLE 8 SOLVENCY TEST

TABLE 1
NORMAL COSTS

	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Normal Cost Rate			
Service Retirement	9.09%	7.63%	7.53%
Disability Retirement	0.32	0.27	0.27
Death	0.56	0.54	0.54
Withdrawal	2.24	2.32	2.35
Total Normal Cost Rate	12.21%	10.76%	10.69%
Annual Normal Cost ($000)	$ 102,041	$ 89,915	$ 81,127
Present Value of Future Normal Costs ($000)	$ 827,143	$ 711,482	$ 675,598

TABLE 2
SUMMARY OF ACTUARIAL REQUIREMENTS

($000)	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Retired Members			
Service Retirement	$ 1,107,546	$ 966,923	$ 849,330
Disability Retirement	47,366	40,026	36,615
Beneficiaries	109,726	90,898	79,246
Retired Member Total	$ 1,264,638	$ 1,097,847	$ 965,191
Inactive Members	$ 101,996	$ 109,945	$ 83,821
Active Members			
Service Retirement	$ 2,186,212	$ 1,775,357	$ 1,584,827
Disability Retirement	57,559	46,818	44,878
Pre-retirement Death	116,451	91,408	93,833
Withdrawal	178,051	179,408	176,455
Active Member Total	$ 2,538,273	$ 2,092,991	$ 1,899,993
Present Value of Future Projected Benefits	$ 3,904,907	$ 3,300,783	$ 2,949,005
Present Value of Future Normal Costs	827,143	711,482	675,598
Actuarial Liability	$ 3,077,764	$ 2,589,301	$ 2,273,407

TABLE 3
ACTUARIAL VALUE OF ASSETS

Fiscal Year	Cash Flow	Expected Value	Gain or (Loss)	Market Value
1998-99				$ 2,722,875
1999-00	$ (5,878)	$ 2,934,592	$ (3,881)	2,930,711
2000-01	(2,644)	3,162,419	(385,081)	2,777,338
2001-02	(9,613)	2,989,527	(425,030)	2,564,498

Fiscal Year	Gain or (Loss)	Reserve Factor	Smoothing Reserve
1999-00	$ (3,881)	25%	$ (970)
2000-01	(385,081)	50%	(192,541)
2001-02	(425,030)	75%	(318,772)
			$ (512,283)

Fair Market Value on June 30, 2002	$ 2,564,498
Less, Asset Smoothing Reserve	(512,283)
Actuarial Value of Assets on June 30, 2002	$ 3,076,781

TABLE 4
UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS

($000)	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Actuarial Value			
Actuarial Liability	$ 3,077,764	$ 2,589,301	$ 2,273,407
Actuarial Value of Assets	3,076,781	3,076,781	2,843,347
Unfunded Actuarial Liability or (Actuarial Surplus)	$ 983	$ (487,480)	$ (569,940)
Funded Ratio (AV)	100%	119%	125%
Market Value			
Actuarial Liability	$ 3,077,764	$ 2,589,301	$ 2,273,407
Market Value of Assets	2,564,498	2,564,498	2,935,779
Unfunded Actuarial Liability or (Actuarial Surplus)	$ 513	$ 24,803	$ (662,372)
Funded Ratio (MV)	83%	99%	129%

TABLE 5
ACTUARIAL GAINS AND LOSSES

($000)	Expected		Actual	(Gain) or Loss
2000 Actuarial Liability	$ 2,273,407			
Normal Costs	165,906			
Benefits Paid	(238,766)			
Expected Earnings at 8%	372,694			
Actuarial Liability		$ 2,573,241	$ 3,077,764	$ 504,523
2000 Actuarial Value of Assets	$ 2,843,347			
Net Cash Flow	(12,256)			
Expected Earnings at 8%	472,423			
Actuarial Value of Asset		3,303,514	3,076,781	226,733
Unfunded Actuarial Liability or (Actuarial Surplus) before Changes in Actuarial Methods and Assumptions as of June 30, 2002		$ (730,273)	$ 983	$ 731,255
Summary Actuarial (Gain) or Loss by Source				
Investment (Gain) or Loss				$ 226,733
Demographic (Gain) or Loss				16,061
2001 Benefit Enhancements				488,462
Total Actuarial (Gain) or Loss				$ 731,256

TABLE 6
CALCULATION OF CONTRIBUTION RATE

	2002 Actuarial Valuation		2000
	Revised Benefits	Previous Benefits	Actuarial Valuation
Statutory Funding Rate			
Members	6.90%	6.90%	6.90%
Employers	6.80%	6.80%	6.80%
State	0.10%	0.10%	0.10%
Total	13.80%	13.80%	13.80%
Normal Cost Rate	12.21%	10.76%	10.69%
Funding Rate Available for Amortization	1.59%	3.04%	3.11%
Unfunded Actuarial Liability (Surplus) ($000)	$ 983	$ (487,480)	$ (569,940)
Years to Amortize	0.1	30.0	30.0
Rate of Amortization Contribution or (Credit)	1.59%	(3.05)%	(3.93)%
Calculated Contribution Rate			
Normal Cost Rate	12.21%	10.76%	10.69%
Amortization Payment	1.59%	-	-
Total Calculated Rate	13.80%	10.76%	10.69%

DISCLOSURE INFORMATION - GASB NO. 25

TABLE 7

SCHEDULE OF FUNDING PROGRESS
(DOLLARS IN THOUSANDS)

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
June 30, 1994	$1,366,864	$1,625,720	84%	$258,856	$572,973	45%
June 30, 1996	1,629,707	1,826,207	89	196,500	608,592	32
June 30, 1998	2,128,065	2,300,328	93	172,263	660,579	26
June 30, 2000	2,843,347	2,273,407	125	(569,940)	725,692	(79)
June 30, 2002	3,076,781	3,077,764	100	983	808,747	0

TABLE 8

SOLVENCY TEST
(DOLLARS IN THOUSANDS)

	(1)	(2)	(3)		Coverage Ratios		
Actuarial Valuation Date	Active Member Accounts	Inactive Actuarial Liability	Employer Financed Active Liability	Actuarial Value of Assets	(1)	(2)	(3)
June 30, 1994	$255,260	$743,551	$626,908	$1,366,864	100%	100%	59%
June 30, 1996	307,368	768,949	749,888	1,629,706	100	100	74
June 30, 1998	360,422	949,365	988,915	2,113,314	100	100	81
June 30, 2000	572,536 (1)	1,049,012	651,859	2,843,347	100	100	187
June 30, 2002	645,403	1,366,634	1,065,727	3,076,781	100	100	100

Note:

(1) Prior to 2000, "active member accounts" included Regular Contributions without interest for active and inactive members. Beginning in 2000, "active member accounts" includes Regular and Additional Contributions with interest, and excludes all accounts of inactive members.

SECTION 4
ACTUARIAL METHODS AND ASSUMPTIONS

This section of the report describes the actuarial methods and assumptions used in this valuation. These methods and assumptions have been chosen by the Retirement Board based on our recommendations. The Retirement Board has the sole authority to select the methods and assumptions used in this actuarial valuation. The recommendations were formed on the basis of recent experience of the System and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the System and the members of the System in areas which affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the System's benefits.

In our opinion, the current actuarial methods and assumptions are reasonable and appropriate for this System. The assumptions were developed in accordance with generally recognized and accepted actuarial principles and practices that are consistent with applicable Standards of Practice adopted by the American Academy of Actuaries.

RECORDS AND DATA

The data used in the valuation consist of financial information and records of age, service and income of contributing members, former contributing members and their survivors. All of the data were supplied by the System and are accepted for valuation purposes without audit.

ACTUARIAL COST METHOD

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to when they are earned, rather than when they are paid. There are a number of methods in use for making a determination.

The funding method used in this valuation is the Entry Age Cost Method. Under this method the actuarial present value of projected benefits for each individual member included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future Normal Costs is called the Actuarial Liability.

The excess of the Actuarial Liability over the Actuarial Value of Assets is called the Unfunded Actuarial Liability. If the Actuarial Value of Assets exceeds the Actuarial Liability, the difference is called the Actuarial Surplus.

ASSET VALUATION METHOD

Asset values were supplied by the System and were accepted without audit by us. The Actuarial Value of Assets is the market value, adjusted by a four-year recognition of gains and losses.

INVESTMENT RETURN

The future investment earnings of the assets of the plan are assumed to accrue at a net annual rate of 8.00%, net of all administrative and investment-related expenses.

INTEREST ON MEMBER CONTRIBUTIONS

Interest on member contributions is assumed to accrue at a net annual rate of 5.00%.

FUTURE SALARIES

Estimates of future salaries are based on two types of assumptions. Rates of increase in the general wage level of the membership are directly related to inflation, while individual salary changes due to promotion and longevity, referred to as the merit scale, occur even in the absence of inflation. The assumed increase in future salaries due to general wage growth is 4.50% per year. The merit scale, assumed in addition to general wage growth, is shown below.

Service	Wage Growth	Merit Scale	Total Increase
0	4.5%	6.0%	10.5%
1	4.5	4.9	9.4
2	4.5	3.9	8.4
3	4.5	3.1	7.6
4	4.5	2.4	6.9
5	4.5	1.8	6.3
6	4.5	1.4	5.9
7	4.5	1.0	5.5
8	4.5	0.7	5.2
9	4.5	0.5	5.0
10-14	4.5	0.3	4.8
15-19	4.5	0.1	4.6
20 & over	4.5	0.0	4.5

MORTALITY

The probabilities of mortality are based on the following published tables:

Healthy Retirees, Beneficiaries and Non-Retired Members

Males	1994 Male Uninsured Pensioner Table
Females	1994 Female Uninsured Pensioner Table (-1)

Disabled Retirees

Males IRS Revenue Ruling 96-7 Male Table (-1)
Females IRS Revenue Ruling 96-7 Female Table (+3)

	Healthy Members		Disabled Retirees	
Age	Male	Female	Male	Female
50	0.277%	0.141%	2.264%	1.800%
55	0.476	0.224	2.826	2.111
60	0.858	0.415	3.470	2.522
65	1.563	0.819	4.272	3.060
70	2.552	1.367	5.447	3.935
75	4.001	2.192	7.288	5.279
80	6.670	3.802	9.418	7.256
85	10.456	6.557	12.195	10.508
90	16.444	11.247	16.177	15.558
95	25.119	18.352	21.911	24.390

SERVICE RETIREMENT

The assumed rates of retirement used in this valuation are shown below.

Age	< 30 Yrs	w/ 30 Yrs	Age	< 30 Yrs	w/ 30 Yrs
Under 50	-	10%	61	15%	15%
			62	25	25
50 - 54	3%	10	63	15	15
			64	15	15
55	8	15	65	30	30
56	5	15	66	30	30
57	5	15	67	25	25
58	5	15	68	25	25
59	5	15	69	25	25
60	8	15	70 & over	100	100

All vested terminated members are assumed to retire when first eligible for an unreduced benefit.

DISABLEMENT

The assumed rates of disablement are illustrated below at specified ages. We further assume that 10% of all disabilities are duty-related. We also assume that all disabilities are permanent, and no disabled member will recover and return to work.

Age	Male	Female
22	-	-
27	0.01%	0.01%
32	0.01	0.01
37	0.06	0.03
42	0.09	0.15
47	0.17	0.15
52	0.36	0.30
57	0.62	0.36
62	0.00	0.00

OTHER TERMINATIONS OF MEMBERSHIP

The assumed rates of termination, other than for retirement, death, or disability, are shown in the following table.

	Male Members			Female Members		
Service	Age <29	30-39	Age>40	Age <29	30-39	Age>40
0	30%	22%	15%	30%	22%	18%
1	25	15	12	25	16	13
2	16	12	10	16	14	10
3	14	10	8	14	11	9
4	10	8	6	10	8	8
5-9	6	6	5	5	5	5
10-14	3	3	3	4	4	3
15 & over	-	2	2	-	2	2

The probability of a terminating member electing a refund of the member account balance is shown in the following table.

Age at Termination	Non-Vested	Vested
Under 35	100%	60%
35 - 39	100	50
40 - 44	100	40
45 - 49	100	25
50 & over	100	25

SECTION 5
SUMMARY OF BENEFIT PROVISIONS

All of the calculations contained in this report are based on our understanding of the benefit and eligibility provisions of the system. The provisions used in this valuation are summarized below for reference purposes.

Normal Retirement	Eligibility:	Age 65 regardless of membership service, or Age 60 and 5 years of membership service, or 30 years of membership service regardless of age.
	Benefit:	Years of membership service, multiplied by highest average compensation (highest 36 consecutive months), multiplied by 1/56th if membership service at retirement is less than 25 years, or multiplied by 1/50th if membership service at retirement is at least 25 years.
	Normal Form:	Monthly benefit for the life of the member, with a death benefit equal to the remaining balance of the member's contribution account.
Early Retirement	Eligibility:	Age 50 and 5 years of membership service, or 25 years of membership service regardless of age.
	Benefit:	Actuarial equivalent of the accrued benefit based on retirement at age 60.
Disability Retirement	Eligibility:	5 years of membership service
	Benefit:	If hired on or before February 24, 1991, the greater of (a) and (b) below: (a) Years of service credit, multiplied by highest average compensation, multiplied by 90% of 1/56th (1/50th if 25 or more years of membership service) , or (b) Highest average compensation multiplied by 25%. If hired after February 24, 1991: (a) Years of service credit, multiplied by highest average compensation, multiplied by 1/56th (1/50th if 25 or more years of membership service).

Death before Retirement	Eligibility:	Prior to 5 years of membership service
	Benefit:	The sum of (a) and (b) below: (a) Return of member contributions with interest, (b) Lump sum payment of one month's salary up to a maximum of six months' salary.
	Eligibility:	5 years of membership service
	Benefit:	Either the sum of (a) and (b), or (c) below: (a) Return of member contributions with interest, and (b) Lump sum payment of one month's salary up to a maximum of six months' salary, or (c) Actuarial equivalent of the accrued benefit at the time of death of the member.
Termination Benefit	Eligibility:	Prior to 5 years of membership service
	Benefit:	Return of member contributions with interest.
	Eligibility:	5 years of membership service
	Benefit:	Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Actuarial equivalent of the accrued benefit based on a retirement age of 60.
Benefit Adjustments	Eligibility:	Retired members and beneficiaries beginning one year after retirement.
	Benefit:	An annual adjustment (GABA) of 3.0%.
Contributions	Members:	6.90% of members' compensation
	Employers:	6.90% of members' compensation (offset by 0.10% of members' compensation paid by the State for local government and school district employers).

SECTION 6
SUMMARY OF MEMBERSHIP DATA

The following tables depict the participant data that was used in the valuation. Table 9 is a history of participant characteristics for the System. Table 10 displays the distribution of Active Members by age and service showing average annual salaries. Table 11 is a distribution of the retirees by age, showing average monthly benefits.

TABLE 9
MEMBERSHIP HISTORY

	2002	2000	1998	1996	1994
Active Members					
Number	29,808	29,500	28,091	27,895	27,044
Average Age	46.2	45.4	44.9	-	-
Average Service	9.1	8.8	8.8	-	-
Average Salary	27,346	$25,079	$23,516	$22,703	$21,186
Inactive Members					
Service Retirement	11,748	11,336 (1)	12,363	11,790	10,853
Disability Retirement	656	628 (2)	303	310	867
Survivors	1,712	1,608 (3)	258	244	241
Vested Deferred	2,150	1,813	1,653	1,391	1,173
Non-vested Terminated	10,944	9,966	8,474	7,075	6,614
Total Inactive Members	27,210	25,351	23,051	20,810	19,748
Total Membership	57,018	54,851	51,142	48,705	46,792

Notes:

(1) Beginning in 2000, service retirements exclude members who originally retired on a disability, and beneficiaries of members who died after retirement.

(2) Beginning in 2000, disability retirements include all members who originally retired on a disability, regardless of their current age.

(3) Beginning in 2000, survivors include beneficiaries of members who died after retirement, as well as beneficiaries of members who died prior to retirement.

TABLE 10
DISTRIBUTION OF ACTIVE MEMBERS

Age	Years of Service							
	Under 5		5 to 9		10 to 14		15 to 19	
	Number	Average Salary	Number	Average Salary	Number	Average Salary	Number	Average Salary
Under 25	654	19,257	2	24,405	-	-	-	-
25-29	1,389	23,069	106	28,355	1	23,127	-	-
30-34	1,476	24,354	514	31,478	107	32,457	1	33,306
35-39	1,895	22,479	700	29,691	481	33,860	101	33,228
40-44	2,152	21,604	998	28,584	842	33,593	443	35,947
45-49	2,056	21,071	1,138	26,236	987	31,818	621	35,343
50-54	1,646	21,769	1,046	25,400	973	30,385	667	33,594
55-59	1,018	20,605	657	25,310	659	28,305	488	30,700
60-64	449	18,527	335	23,579	377	27,139	282	29,371
65-69	169	14,151	97	18,014	74	25,310	46	26,313
70 & over	92	11,026	38	16,107	29	21,750	27	20,604
Totals	12,996	21,663	5,631	26,968	4,530	30,999	2,676	33,147

Age	Years of Service							
	20 to 24		25 to 29		30 & Up		All Years	
	Number	Average Salary	Number	Average Salary	Number	Average Salary	Number	Average Salary
Under 25	-	-	-	-	-	-	656	19,272
25-29	-	-	-	-	-	-	1,496	23,444
30-34	-	-	-	-	-	-	2,098	26,517
35-39	7	34,026	-	-	-	-	3,184	26,150
40-44	246	36,140	16	41,946	2	23,985	4,699	27,418
45-49	572	38,815	300	40,477	26	39,455	5,700	28,404
50-54	536	37,130	495	42,095	175	43,225	5,538	29,374
55-59	416	34,293	281	38,717	289	43,872	3,808	28,641
60-64	220	30,461	149	35,451	126	40,608	1,938	26,745
66-69	45	28,004	23	31,988	24	38,950	478	21,240
70 & over	17	26,115	4	27,026	6	32,572	213	16,718
Totals	2,059	35,893	1,268	39,950	648	42,537	29,808	27,329

TABLE 11
DISTRIBUTION OF RETIRED MEMBERS

Age	Service Retirees		Disabled Retirees		Survivors	
	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit
Under 40	-	-	1	489	38	354
40-44	-	-	13	399	31	304
45-49	25	1,563	48	502	41	398
50-54	324	1,243	107	542	56	463
55-59	767	1,042	134	556	87	669
60-64	1,624	847	133	534	115	724
65-69	2,258	746	114	466	181	605
70-74	2,246	649	60	507	266	621
75-79	1,895	583	12	896	301	550
80-84	1,462	543	14	675	279	514
85-89	812	520	17	883	207	593
90-94	282	616	3	652	81	627
95-99	45	622	-	-	21	704
100 & over	8	752	-	-	8	959
TOTALS	11,748	706	656	540	1,712	576