Wisconsin Retirement System
Twenty-Third Annual Actuarial Valuation

as of December 31, 2003

Presented to the Wisconsin Department of Employee Trust Funds

Gabriel, Roeder, Smith & Company

GRS

Actuaries & Consultants

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REPORT OF ANNUAL ACTUARIAL VALUATIONS
WISCONSIN DEPARTMENT OF EMPLOYEE TRUST FUNDS

June 1, 2004

Employee Trust Funds Board
Wisconsin Department of Employee
Trust Funds
801 West Badger Road
Madison, Wisconsin 53713

Ladies and Gentlemen:

The results of the **December 31, 2003 annual actuarial valuations of non-retired members covered by the Wisconsin Retirement System** are presented in this report. The valuations establish contribution rates for the 2005 calendar year in conformance with Chapter 40 of the Wisconsin Statutes.

The valuations are based upon all current plan provisions related to General, Executive and Elected, and Protective Occupation employment with and without Social Security. The provisions evaluated are summarized in Section One of this report.

The individual member statistical data required for the valuations was furnished by the Department of Employee Trust Funds, together with pertinent data on financial operations. The cooperation of DETF staff in furnishing these materials is acknowledged with appreciation.

The actuarial assumptions used in the valuations are summarized in Section III of this report. The assumptions are internally consistent and are based on the results of the Triennial Experience Study covering 2000-2002 experience.

The valuations were completed by qualified actuaries in accordance with accepted actuarial procedures as prescribed by the Actuarial Standards Board. The qualified actuaries are members of the American Academy of Actuaries and are experienced in performing actuarial valuations of public employee retirement systems. To the best of our knowledge this report is complete and accurate and the actuarial methods and assumptions produced results that are reasonable. **It is our opinion that the Wisconsin Retirement System is in excellent financial condition in accordance with actuarial principles of level percent of payroll financing.**

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Norman L. Jones, F.S.A. Brian B. Murphy, F.S.A.

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SECTION ONE

Actuarial Results

OVERVIEW

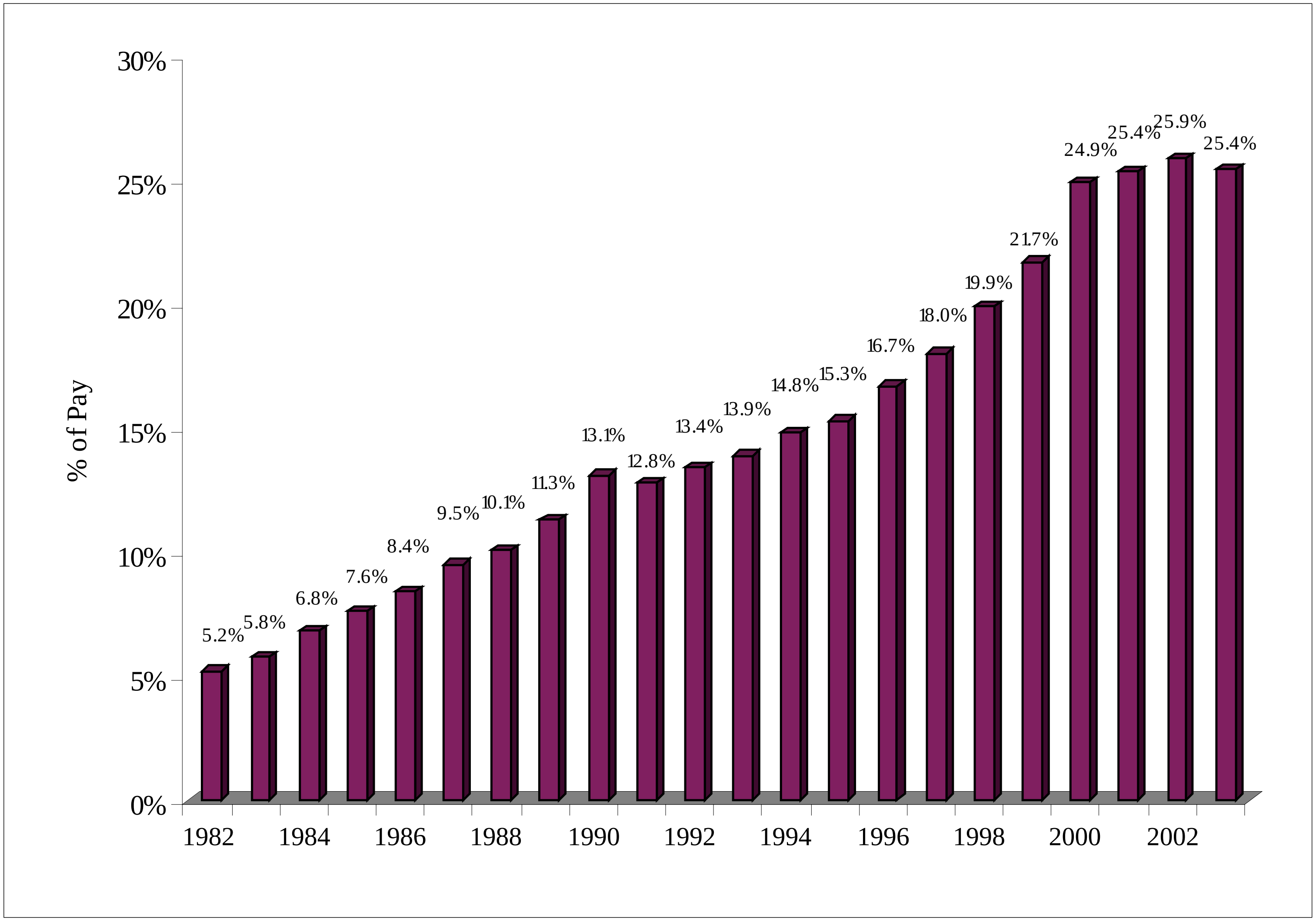
COMPARATIVE SUMMARY OF VALUATION RESULTS
CONTRIBUTION RATES FOR INDICATED YEARS
EXPRESSED AS A % OF PARTICIPANT PAYROLL

	General Participants		Executives & Elected Officials		Protective Occupation With Soc. Sec.		Protective Occupation Without Soc. Sec.	
	2005	2004	2005	2004	2005	2004	2005	2004
Employer Normal Cost	4.4%	4.2%	8.3%	8.1%	8.0%	7.6%	10.7%	10.6%
Benefit Adjustment Contribution	0.8%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Participant Normal Cost	5.0%	5.0%	2.8%	2.6%	4.9%	4.5%	3.3%	3.2%
Total Normal Cost	10.2%	9.8%	11.1%	10.7%	12.9%	12.1%	14.0%	13.8%
Unfunded Actuarial Accrued Liability (UAAL)	0.3%	1.0%	0.1%	0.8%	0.1%	0.4%	0.6%	1.2%
WRS Average Total	**10.5%**	**10.8%**	**11.2%**	**11.5%**	**13.0%**	**12.5%**	**14.6%**	**15.0%**

Under Section 40.05 of Wisconsin statutes, contribution rate changes are generally split evenly between the employer normal cost and the benefit adjustment contribution. If there is no benefit adjustment contribution and the rate change is a decrease, the participant normal cost is decreased. If there is no benefit adjustment contribution and the rate change is an increase *and* the participant normal cost is below the statutory rate, the participant normal cost is increased.

Rates shown for UAAL are weighted averages of rates that vary by employer units. In addition to the WRS rates shown above are contributions to support the Section 40.65 Duty Disability Program and the Accumulated Sick Leave Conversion Credit Program.

TOTAL ANNUITIES AS A % OF PAYROLL



Annuities are expected to continue to increase as a percent of payroll for several more decades. By pursuing the level percent of payroll objective, the future increase in the payout percent is expected to be paid from income generated by retirement system assets.

COMPARATIVE STATEMENT OF COMPUTED CONTRIBUTION RATES

Valuation 12/31	Rate Effective 1/1	General Participant	General Benefit Adj. Contr.	General Employer*	General Total	Executive and Elected Participant	Executive and Elected Benefit Adj. Contr.	Executive and Elected Employer*	Executive and Elected Total
1981	1983	5.0 %		6.5 %	11.5 %	5.5 %		11.9 %	17.4 %
1982	1984	5.0 %		6.5 %	11.5 %	5.5 %		11.9 %	17.4 %
1983	1985	5.0 %		6.5 % #	11.5 %	5.5 %		11.9 % #	17.4 %
1984@	1986	5.0 %	1.0 %	6.5 %	12.5 %	5.5 %		11.6 %	17.1 %
1985	1987	5.0 %	1.0 %	6.1 %	12.1 %	5.5 %		11.3 %	16.8 %
1986	1988	5.0 %	1.0 %	6.0 %	12.0 %	5.5 %		11.9 %	17.4 %
1987	1989	5.0 %	1.0 %	6.0 %	12.0 %	5.5 %		11.9 %	17.4 %
1988	1990	5.0 %	1.0 %	6.0 %	12.0 %	5.5 %		11.9 %	17.4 %
1989@	1991	5.0 %	1.1 %	6.1 %	12.2 %	5.5 %	0.1 %	12.0 %	17.6 %
1990	1992	5.0 %	1.2 %	6.2 %	12.4 %	5.5 %	0.1 %	12.0 %	17.6 %
1991	1993	5.0 %	1.2 %	6.2 %	12.4 %	5.5 %	0.1 %	12.0 %	17.6 %
1992	1994	5.0 %	1.2 %	6.1 %	12.3 %	5.5 %	0.1 %	12.0 %	17.6 %
1993	1995	5.0 %	1.2 %	6.1 %	12.3 %	5.5 %	0.1 %	12.0 %	17.6 %
1994	1996	5.0 %	1.5 %	6.4 %	12.9 %	4.6 %	0.0 %	11.1 %	15.7 %
1995	1997	5.0 %	1.4 %	6.3 %	12.7 %	4.7 %	0.0 %	11.2 %	15.9 %
1996	1998	5.0 %	1.2 %	6.1 %	12.3 %	4.7 %	0.0 %	11.2 %	15.9 %
1997	1999	5.0 %	0.8 %	5.8 %	11.6 %	4.3 %	0.0 %	10.8 %	15.1 %
1998	2000	5.0 %	0.5 %	5.5 %	11.0 %	4.1 %	0.0 %	10.6 %	14.7 %
1999	2001	5.0 %	0.2 %	5.1 %	10.3 %	3.9 %	0.0 %	10.4 %	14.3 %
2000	2002	5.0 %	0.2 %	5.1 %	10.3 %	3.1 %	0.0 %	9.6 %	12.7 %
2001 &	2003	5.0 %	0.4 %	5.2 %	10.6 %	2.6 %	0.0 %	9.1 %	11.7 %
2002	2004	5.0 %	0.6 %	5.2 %	10.8 %	2.6 %	0.0 %	8.9 %	11.5 %
2003	2005	5.0 %	0.8 %	4.7 %	10.5 %	2.8 %	0.0 %	8.4 %	11.2 %

\# *By statute, 1984 rates determined by the 12/31/82 regular valuation continued through 1985. The actuarially computed 1985 rate was 6.3% for the general group.*

* *Employer normal cost plus weighted average of unfunded actuarial accrued liability contribution rates.*

@ *Benefit change.*

& *Act 11 of 1999 was implemented in 2001.*

COMPARATIVE STATEMENT OF COMPUTED CONTRIBUTION RATES

Valuation 12/31	Rate Effective 1/1	Protective With Social Security				Protective Without Social Security			
		Participant	Benefit Adj. Contr.	Employer*	Total	Participant	Benefit Adj. Contr.	Employer*	Total
1981	1983	6.0 %		12.1 %	18.1 %	8.0 %		19.8 %	27.8 %
1982	1984	6.0 %		12.1 %	18.1 %	8.0 %		19.8 %	27.8 %
1983	1985	6.0 %		12.1 %#	18.1 %	8.0 %		19.8 %#	27.8 %
1984@	1986	6.0 %	1.0 %	12.3 %	19.3 %	8.0 %		19.1 %	27.1 %
1985	1987	6.0 %	1.0 %	12.4 %	19.4 %	8.0 %		18.5 %	26.5 %
1986	1988	6.0 %	1.0 %	12.0 %	19.0 %	8.0 %		18.0 %	26.0 %
1987	1989	6.0 %	1.0 %	11.3 %	18.3 %	8.0 %		16.9 %	24.9 %
1988	1990	6.0 %	0.9 %	11.2 %	18.1 %	8.0 %		16.9 %	24.9 %
1989@	1991	6.0 %	0.7 %	10.9 %	17.6 %	7.5 %		16.4 %	23.9 %
1990	1992	6.0 %	0.7 %	10.9 %	17.6 %	7.5 %		16.4 %	23.9 %
1991	1993	6.0 %	0.6 %	10.7 %	17.3 %	7.5 %		16.4 %	23.9 %
1992	1994	6.0 %	0.6 %	10.7 %	17.3 %	7.5 %		16.3 %	23.8 %
1993	1995	6.0 %	0.5 %	10.6 %	17.1 %	7.2 %		16.0 %	23.2 %
1994	1996	6.0 %	0.1 %	10.2 %	16.3 %	6.8 %		15.7 %	22.5 %
1995	1997	5.8 %	0.0 %	9.8 %	15.6 %	6.2 %		15.1 %	21.3 %
1996	1998	5.4 %	0.0 %	9.4 %	14.8 %	5.8 %		14.6 %	20.4 %
1997	1999	4.9 %	0.0 %	8.9 %	13.8 %	5.4 %		14.3 %	19.7 %
1998	2000	4.1 %	0.0 %	8.0 %	12.1 %	4.4 %		13.3 %	17.7 %
1999	2001	3.8 %	0.0 %	7.6 %	11.4 %	3.3 %		12.2 %	15.5 %
2000	2002	4.0 %	0.0 %	7.8 %	11.8 %	3.0 %		11.9 %	14.9 %
2001 &	2003	4.0 %	0.0 %	7.7 %	11.7 %	2.4 %		11.3 %	13.7 %
2002	2004	4.5 %	0.0 %	8.0 %	12.5 %	3.2 %		11.8 %	15.0 %
2003	2005	4.9 %	0.0 %	8.1 %	13.0 %	3.3 %		11.3 %	14.6 %

\# *By statute, 1984 rates determined by the 12/31/82 regular valuation continued through 1985.*
* *Employer normal cost plus weighted average of unfunded actuarial accrued liability contribution rates.*
@ *Benefit change.*
& *Act 11 of 1999 was implemented in 2001.*

COMMENTS ON DECEMBER 31, 2003 RESULTS

The Normal Cost will increase in 2005 for all valuation groups, while the average employer contribution for unfunded accrued liabilities will decrease. The increase in Normal Cost is due to the effect of experience in 2003 combined with assumption changes made in conjunction with a routine study of 2000-2002 experience. The decrease in unfunded accrued liability contributions is mostly due to employers paying down the unfunded liability ahead of schedule. In particular, the State and several local government employers issued Pension Obligation Bonds in 2003 whose proceeds were used to pay down unfunded liabilities.

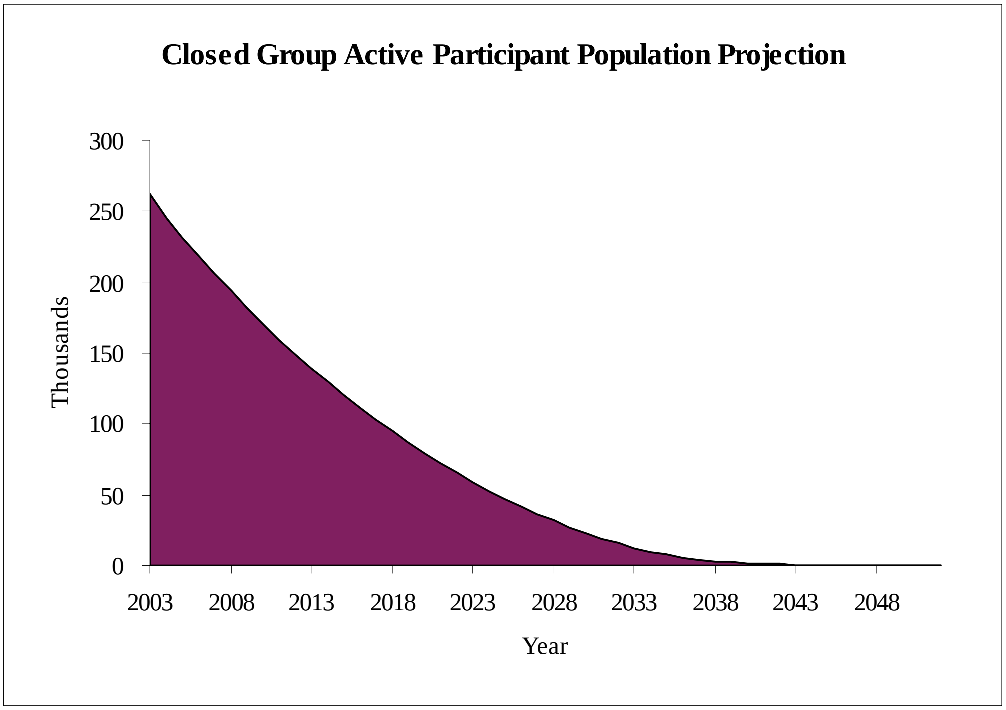
In total, during 2003, investment return was well above the assumed level of 7.8% on a market value basis (please see pages I-17 and III-3). The asset valuation method, when combined with the TAA distribution mandated by Act 11 of 1999 and the phase-in of investment losses for the prior three years, resulted in a net loss for the year. The Actuarial Value of Assets exceeds the market value by less than 2% as of the valuation date, well within commonly accepted bounds. Last year, the actuarial value of assets exceeded market value by 17%. Detail concerning experience gains and losses in individual risk areas will be presented at a later date in the annual Gain Loss Analysis.

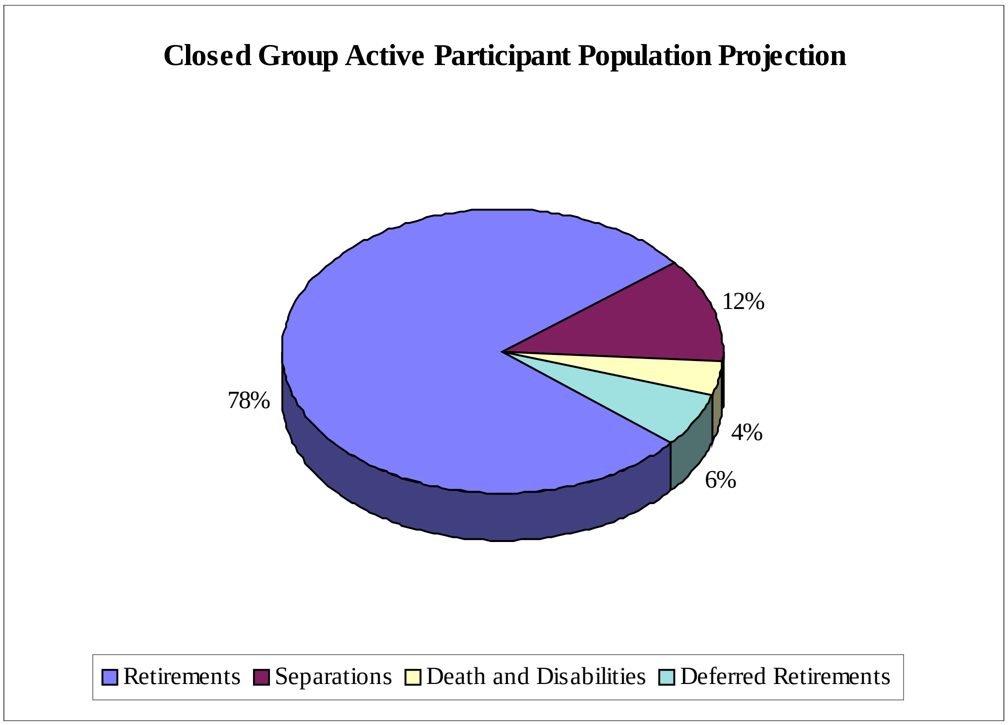
The statutory allocation of the rate change among Participant Normal Cost, Employer Normal Cost, and Benefit Adjustment Contribution is shown on page I-23. The Participant Normal Cost contributions are, in most cases, paid by the employers rather than by the participants. This means the reductions in the Participant Normal Cost that occurred over the last several years in the Executive and Protective groups will directly reduce death and other separation benefits, as well as money purchase benefits, but will not actually increase the take home pay of participants. (The past two years were an exception to this longer term trend, and had the opposite effect.) The original intent of the statutory allocation of the rate changes was most likely to permit participants to share in good and bad investment and other experiences. The actual result however, seems to be that, for some members, good experience causes benefits to be decreased, and bad experience causes benefits to be increased. *The actuary continues to recommend that the appropriate legislative bodies reconsider the contribution rate allocation statute.*

This valuation includes liabilities for future claims under the Long Term Disability Insurance (LTDI) program that became operational late in 1992. Inter-fund transfers between WRS and the LTDI program to support claims currently payable are addressed in a separate report to the Group Insurance and Employee Trust Funds Boards.

Conclusion. Based upon the results of the December 31, 2003 regular annual actuarial valuation, it is our opinion that ***the Wisconsin Retirement System continues to be in excellent financial condition in accordance with actuarial principles of level percent of payroll financing.***

EXPECTED DEVELOPMENT OF PRESENT POPULATION
DECEMBER 31, 2003





The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 262,538 active members. Eventually, 12% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Nearly 84% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. 4% of the present population is expected to become eligible for death-in-service or disability benefits. **Within 10 years, over half of the covered membership is expected to consist of new hires.**

Benefit Provisions

Normal Retirement Eligibility

The age a participant becomes eligible for an unreduced age and service annuity is:

General		Protective		Executive & Elected	
Age	**Service**	**Age**	**Service**	**Age**	**Service**
65	Any*	54	Any*	62	Any*
57	30	53	25	57	30

* *Participants first employed after 1989 and terminated before April 24, 1998 must have creditable service in 5 calendar years.*

Normal Retirement Annuity

The age and service annuity payable at Normal Retirement Age is based on Final Average Earnings (FAE) and Creditable Service (CS) as follows:

Multiplier for Service Rendered		
After 1999	**Before 2000**	**Group**
2.0%	2.165%	Executive group, elected officials and protective occupation participants covered by Social Security
2.5%	2.665%	Protective occupation participants not covered by Social Security
1.6%	1.765%	All other participants

FAE is generally the average of the 3 highest years of earnings (July 1 - June 30 for teachers, educational support staff, and judges; calendar year for others) preceding retirement. These years do not have to be consecutive. For legislators and state constitutional officers who are ineligible to receive pay increases during their term, FAE is the statutory rate of earnings at termination.

Maximum formula annuity is 85% of FAE for protective occupation participants not covered by Social Security, 65% of FAE for protectives covered by Social Security, and 70% for all other participants. If greater than the formula amount, an annuity equal to the actuarial equivalent of two times the required accumulated contributions is paid in lieu of the formula amount.

Early Retirement. Any participant who has attained age 55 and any protective occupation participant who has attained age 50 may apply for an early retirement annuity. The benefit is reduced 0.4% for each month that the annuity effective date precedes the Normal Retirement Age. For non-protective participants terminating after 6/30/90, the 0.4% is reduced for months after the attainment of age 57 and before the annuity effective date by .001111% for each month of creditable service.

Voluntary Termination Before Immediate Benefit Eligibility. Participant may either (i) receive a refund of accumulated contributions, or (ii) leave contributions on deposit and apply for a retirement annuity on or after the minimum retirement age based upon age and accrued service at time of termination.

Post-Retirement Adjustments. Annuities are increased annually if the investment income credited to retired life funds is in excess of the assumed rate (presently 5%), other plan experiences are within projected ranges, and the resulting adjustment would be at least 0.5%.

Disability Annuity. Eligibility: generally total and permanent incapacity to engage in gainful employment. Participant must have completed at least 6 months of creditable service in each of at least 5 out of the last 7 calendar years preceding application for disability. Service requirement is waived if disability is from service-related causes.

Disability Amounts. Amounts payable in case of disability depend upon the plan from which payment is made and are described below.

	Pre-10/16/92 WRS Plan	**Post-10/15/92 LTDI Plan**
Participants covered	Participants hired before 10/16/92 who do not elect LTDI coverage.	Participants entering after 10/15/92 and participants on 10/15/92 who elect LTDI coverage.
Benefit to age 65*	WRS formula benefit based on service projected to normal retirement age.	40% of FAE for participants covered by Social Security; 50% of FAE for non-covered participants who cannot qualify for Social Security disability benefits.
Benefit at age 65*	Continuation of pre-65 amount.	WRS benefit accrued to date of disability plus 7% of FAE money purchase benefit during disability period, both of which are adjusted in accordance with dividend rate.

* *Conversion age is later for participants becoming disabled after age 61.*

Death-in-Service. (a) Prior to age 50 for protective participants, age 55 for others, the benefit is the equivalent of twice the accumulated employee required and all additional contributions and employer amounts contributed prior to 1974 for teachers, or 1966 for others.

(b) After age 50 for protective participants, age 55 for others, the benefit is the amount that would have been paid if participant had retired and elected 100% survivor option. Benefit is payable to any natural living person.

Interest Credits. For years after 1999, and for people with some active service after 1999, participant accounts are credited with interest at the full (fixed) effective rate. For others, accounts are credited with interest as follows:

	Rate Credited For Purpose of	
Date of Participation	**Money Purchase Minimum**	**Refunds**
Prior to 1982	Actual	Actual
January 1, 1982 & Later	5%	3%

Contribution Rates. The financial objective of WRS is to establish and receive contributions that will remain level from year to year and decade to decade.

Statutory required participant contributions are as follows:

General	5.0%
Executives & Elected Officials	5.5
Protectives	
- With Social Security	6.0
- Without Social Security	8.0

Non-refundable benefit adjustment contributions are also required by statute and may be paid by the employer or by the employee depending upon the employer's compensation plan. The employers contribute the remaining amounts necessary to fund the retirement system on an actuarially sound basis. As differences between actual and assumed experience emerge, adjustments are made to contributions to maintain financial balance as follows:

- ♦ One-half of the increase or decrease is reflected in the employer normal cost rate.
- ♦ One-half of the increase or decrease is reflected in the participant-paid portion of the benefit adjustment contribution. If a decrease would reduce a benefit adjustment contribution to less than zero, participant normal contributions are reduced.

Non-Retired Participant Data

ACTIVE PARTICIPANTS INCLUDED IN VALUATIONS
DECEMBER 31, 2003

Active participants included in the valuations totaled 262,538 with an annual payroll totaling $10,368.5 million, as follows:

			Group Averages			
Valuation Group	**Number**	**Annual Earnings ($Millions)**	**Earnings**	**Age**	**Years of Service**	**Contribs.**
General	239,696	$9,272.8	$38,686	45.1	11.4	$47,302
Executive Group & Elected Officials	1,468	85.6	58,336	53.2	11.9	72,250
Protective Occupation with Social Security	18,660	856.3	45,891	38.8	11.1	47,810
Protective Occupation without Social Security	2,714	153.8	56,673	40.3	13.5	85,007
Total Active Participants	**262,538**	**$10,368.5**	**$39,494**	**44.6**	**11.4**	**$47,867**
Prior Year	263,500	10,046.2	38,126	44.4	11.2	46,836

Group averages are not used in the valuation, but are shown here for their general interest.

INACTIVE PARTICIPANTS INCLUDED IN VALUATIONS
DECEMBER 31, 2003

Inactive participants included in the valuations totaled 121,452 as follows:

Valuation Group	Number	Group Averages		
		Age	Service	Money Purchase Balance
General	117,488	44.9	3.0	$12,532
Executive Group & Elected Officials	577	52.5	5.6	37,441
Protective Occupation with Social Security	3,221	38.5	3.7	16,857
Protective Occupation without Social Security	166	42.3	7.5	60,781
Total Inactive Participants	**121,452**	**44.8**	**3.0**	**$12,831**
Prior Year	116,847	44.6	3.1	13,596

The valuations also included 3,383 QDRO cases whose average age was 48.9 years. These accounts for divorced spouses of WRS participants have been established in accordance with Wisconsin Domestic Relations Law.

GENERAL PARTICIPANTS AS OF DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
15-19	283							283	$ 4,199,578
20-24	5,415	27						5,442	115,204,113
25-29	15,629	2,079	14					17,722	529,561,811
30-34	11,068	9,669	1,458	11				22,206	773,311,415
35-39	10,413	7,534	7,794	1,300	15			27,056	1,004,242,400
40-44	11,786	7,483	7,145	6,125	1,678	90		34,307	1,280,522,606
45-49	10,403	7,796	7,029	6,089	6,078	2,827	68	40,290	1,590,000,597
50-54	7,418	6,537	7,080	6,302	5,812	8,315	3,120	44,584	1,951,755,754
55	1,117	1,040	1,269	1,119	1,038	1,282	1,732	8,597	396,005,119
56	994	869	1,129	1,159	862	986	1,443	7,442	335,175,656
57	986	849	1,075	1,081	883	890	1,292	7,056	320,607,784
58	678	579	672	664	574	459	709	4,335	190,179,980
59	658	520	613	652	526	450	593	4,012	172,075,621
60	581	427	586	543	453	379	479	3,448	145,388,679
61	513	445	485	539	385	312	390	3,069	125,561,708
62	419	334	395	376	295	227	299	2,345	93,299,562
63	360	250	242	240	200	144	204	1,640	62,425,510
64	265	214	225	206	142	115	158	1,325	49,638,141
65	213	151	169	156	118	82	142	1,031	38,063,809
66	200	104	102	85	67	51	78	687	23,602,654
67	190	75	63	51	54	32	41	506	15,177,212
68	188	81	52	41	38	29	53	482	14,762,743
69	156	62	41	38	23	24	28	372	9,996,496
70	133	47	41	26	18	9	25	299	7,463,115
71	99	29	28	18	11	9	16	210	5,022,684
72	95	44	19	12	10	4	16	200	4,174,417
73	75	37	17	10	8	7	12	166	4,069,696
74	76	21	19	7	3	3	11	140	3,134,453
75 & Up	239	89	44	23	11	5	33	444	8,219,887
Totals	**80,650**	**47,392**	**37,806**	**26,873**	**19,302**	**16,731**	**10,942**	**239,696**	**$9,272,843,200**

EXECUTIVE GROUP AND ELECTED OFFICIALS
AS OF DECEMBER 31, 2003
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	2							2	$ 54,743
25-29	5							5	244,383
30-34	28	9						37	1,781,647
35-39	36	18	15	1				70	3,271,562
40-44	62	26	31	25	4	2		150	8,005,405
45-49	76	45	31	33	35	13	2	235	13,703,394
50-54	79	48	33	50	48	37	12	307	19,734,605
55	17	4	9	13	8	10	8	69	5,033,316
56	20	10	8	9	8	12	7	74	4,448,201
57	20	2	4	12	7	11	5	61	4,878,944
58	12	6	8	8	9	6	7	56	4,136,096
59	13	8	10	8	6	5	3	53	3,483,506
60	17	10	9	8	4	8	2	58	3,611,318
61	13	8	3	8	4	5	3	44	2,577,805
62	7	4	4	3	4	3	1	26	1,806,669
63	10	4	3	4	4	2	4	31	2,282,497
64	6	7	3	4	1	1	3	25	987,103
65	11	4	2	5	1	5	2	30	1,413,947
66	2	4	1	1	1	3	2	14	666,394
67	9	2			2		2	15	657,190
68	5	2	3	2	1		1	14	602,839
69	9	2	1		3	1		16	472,804
70	9						1	10	194,966
71	4	3	2			1	1	11	389,596
72	5	2	1		1		1	10	271,138
73	4	2			1			7	89,751
74	4	2	1	1		2		10	372,314
75 & Up	16	5	3	2			2	28	464,433
Totals	**501**	**237**	**185**	**197**	**152**	**127**	**69**	**1,468**	**$85,636,566**

PROTECTIVE OCCUPATION PARTICIPANTS WITH SOCIAL SECURITY AS OF DECEMBER 31, 2003 BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
15-19	12							12	$ 309,922
20-24	819	17						836	26,277,972
25-29	1,896	711	4					2,611	100,550,023
30-34	1,016	1,993	471	1				3,481	151,379,097
35-39	577	998	1,344	341	1			3,261	151,495,534
40-44	372	463	787	938	297	7		2,864	140,195,169
45-49	276	256	431	581	876	393	6	2,819	144,174,235
50	30	29	62	75	99	154	19	468	24,784,429
51	34	42	50	73	80	125	23	427	22,216,161
52	32	29	44	70	81	133	36	425	22,492,964
53	34	22	30	54	57	87	41	325	16,857,989
54	20	16	37	37	40	70	40	260	13,729,025
55	24	20	28	33	41	33	34	213	10,384,473
56	24	19	26	23	23	33	25	173	8,654,633
57	22	13	27	31	20	19	19	151	7,277,946
58	9	15	17	11	15	16	19	102	5,063,668
59	12	6	3	9	9	14	9	62	3,095,729
60	4	6	6	6	5	3	7	37	1,623,007
61	7	2	8	8	7	2	5	39	1,831,075
62	10	1	12	8	4	2	3	40	1,698,965
63	2	4	6	5	3		2	22	1,151,016
64	3	1	1	1	2	1	1	10	417,404
65		2		1		2	1	6	288,479
66	2		1		1			4	111,529
67		1			1			2	49,309
68	2	1					1	4	144,148
69		1						1	23,057
70 & Up	4		1					5	40,570
Totals	**5,243**	**4,668**	**3,396**	**2,306**	**1,662**	**1,094**	**291**	**18,660**	**$856,317,528**

PROTECTIVE OCCUPATION PARTICIPANTS WITHOUT SOCIAL SECURITY AS OF DECEMBER 31, 2003 BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	42							42	$ 1,594,884
25-29	201	74						275	12,673,832
30-34	151	254	79					484	25,252,539
35-39	68	159	188	42				457	25,059,907
40-44	20	69	159	210	68			526	30,714,831
45-49	7	19	86	134	163	68		477	29,233,476
50	2	3	11	18	31	42	2	109	6,896,395
51	1		4	13	25	35	3	81	5,004,757
52		2	2	13	23	42	7	89	5,912,810
53	1	2	1	9	15	30	5	63	4,278,486
54	1		2	6	11	16	7	43	2,819,134
55			1	1	8	6	5	21	1,362,509
56			1	1	7	9	5	23	1,460,849
57	1	1		1	3		5	11	734,465
58				1		1		2	138,638
59	1					2	1	4	206,096
60				1	1			2	136,748
61				1		1		2	106,696
62									
63							2	2	171,217
64							1	1	52,525
Totals	**496**	**583**	**534**	**451**	**355**	**252**	**43**	**2,714**	**$153,810,794**

ACTIVE PARTICIPANTS
AS OF DECEMBER 31, 2003
BY YEARS OF SERVICE AND GENDER

Completed Years of Service	Males	Females	Totals	Valuation Payroll Total	Valuation Payroll Average
0	6,125	13,327	19,452	$ 387,250,719	$ 19,908
1	5,726	12,585	18,311	460,296,297	25,138
2	6,341	11,860	18,201	535,954,845	29,446
3	5,916	10,742	16,658	528,050,575	31,700
4	5,020	9,248	14,268	478,825,449	33,559
5	4,830	8,335	13,165	460,321,008	34,966
6	4,239	7,221	11,460	413,248,224	36,060
7	3,532	6,457	9,989	370,305,623	37,071
8	3,458	5,819	9,277	356,745,444	38,455
9	3,275	5,714	8,989	358,263,183	39,856
10	3,013	5,165	8,178	333,839,000	40,822
11	2,976	5,347	8,323	350,292,440	42,087
12	3,054	5,109	8,163	354,312,209	43,405
13	3,737	5,491	9,228	422,038,245	45,735
14	3,175	4,854	8,029	369,256,183	45,990
15 & Up	36,725	44,122	80,847	4,189,608,646	51,821
Totals	**101,142**	**161,396**	**262,538**	**$10,368,608,090**	**$39,494**

	Males	Females	Totals
Average			
Age	44.7	44.6	44.6
Service	12.7	10.5	11.4

COMPARATIVE STATEMENT OF ACTIVE PARTICIPANTS IN VALUATIONS

Valuation 12/31	General				Executive and Elected			
		Earnings				Earnings		
	No.	$ Millions	Average	% Incr.	No.	$ Millions	Average	% Incr.
1981	169,389	$2,746	$16,213		1,280	$27	$21,320	
1982	169,415	2,948	17,400	7.3%	1,277	28	22,276	4.5%
1983	171,928	3,200	18,612	7.0%	1,314	30	22,510	1.0%
1984	174,193	3,339	19,167	3.0%	1,329	32	24,418	8.5%
1985	176,220	3,522	19,987	4.3%	1,449	39	26,721	9.4%
1986	178,895	3,812	21,309	6.6%	1,444	41	28,371	6.2%
1987	180,041	4,109	22,821	7.1%	1,491	46	30,664	8.1%
1988	183,498	4,362	23,770	4.2%	1,491	48	31,916	4.1%
1989	187,925	4,579	24,365	2.5%	1,492	50	33,450	4.8%
1990	196,101	4,948	25,234	3.6%	1,502	63	35,193	5.2%
1991	202,048	5,357	26,517	5.1%	1,496	56	37,535	6.7%
1992	207,882	5,747	27,643	4.2%	1,463	58	39,598	5.5%
1993	210,627	6,084	28,886	4.5%	1,452	60	41,476	4.7%
1994	214,280	6,342	29,595	2.5%	1,450	63	43,528	4.9%
1995	216,434	6,597	30,479	3.0%	1,475	67	45,135	3.7%
1996	219,265	6,832	31,160	2.2%	1,459	67	45,967	1.8%
1997	222,888	7,128	31,980	2.6%	1,455	71	48,881	6.3%
1998	227,017	7,457	32,847	2.7%	1,450	73	50,664	3.6%
1999*	229,657	7,704	34,445	4.9%	1,468	77	53,263	5.1%
2000	234,076	8,335	35,610	3.4%	1,486	83	55,582	4.4%
2001	238,944	8,746	36,605	2.8%	1,486	85	57,060	2.7%
2002	240,990	9,007	37,377	2.1%	1,476	87	58,865	3.2%
2003	239,696	9,273	38,686	3.5%	1,468	86	58,336	(0.9)%

** After change in method of calculating average pay.*

COMPARATIVE STATEMENT OF ACTIVE PARTICIPANTS IN VALUATIONS

Valuation 12/31	Protective With Social Security				Protective Without Social Security			
		Earnings				Earnings		
	No.	$ Millions	Average	% Incr.	No.	$ Millions	Average	% Incr.
1981	8,945	$178	$19,871		2,573	$56	$21,822	
1982	9,029	195	21,573	8.6%	2,572	61	23,703	8.6%
1983	9,084	208	22,866	5.7%	2,556	65	25,257	6.6%
1984	9,226	217	23,551	3.0%	2,535	67	26,414	4.6%
1985	9,607	236	24,596	4.4%	2,641	72	27,388	3.7%
1986	9,852	255	25,875	5.2%	2,612	76	29,072	6.2%
1987	10,220	274	26,845	3.7%	2,585	79	30,503	4.9%
1988	10,392	286	27,560	2.7%	2,607	83	31,671	3.8%
1989	10,551	300	28,414	3.1%	2,582	83	32,267	1.9%
1990	11,167	332	29,738	4.7%	2,603	88	33,806	4.8%
1991	11,666	357	30,606	2.9%	2,585	92	35,650	5.5%
1992	12,160	390	32,049	4.7%	2,622	100	38,007	6.6%
1993	12,388	408	32,928	2.7%	2,611	103	39,371	3.6%
1994	12,825	436	34,005	3.3%	2,612	106	40,633	3.2%
1995	13,434	467	34,747	2.2%	2,630	112	42,478	4.5%
1996	13,820	495	35,807	3.1%	2,625	116	44,063	3.7%
1997	14,232	536	37,625	5.1%	2,654	121	45,568	3.4%
1998	14,810	570	38,509	2.3%	2,658	127	47,733	4.8%
1999*	16,483	649	39,864	3.5%	2,691	131	48,947	2.5%
2000	16,970	717	42,263	6.0%	2,685	135	50,423	3.0%
2001	17,981	772	42,914	1.5%	2,715	142	52,339	3.8%
2002	18,325	804	43,871	2.2%	2,709	148	54,603	4.3%
2003	18,660	856	45,891	4.6%	2,714	154	56,673	3.8%

** After change in method of calculating average pay.*

Financial Data

Development of Participant and Employer Reserves during the Year

	Participant Accumulation			Employer Accumulation		
	Fixed	**Variable**	**Total**	**Fixed**	**Variable**	**Total**
Ending Balance December 31, 2002	$13,007,590,778	$877,503,566	$13,885,094,344	$16,725,911,178	$877,503,566	$17,603,414,744
Closing Adjustments	-	-	-	(306,043)	-	(306,043)
Beginning Balance January 1, 2003	13,007,590,778	877,503,566	13,885,094,344	16,725,605,134	877,503,566	17,603,108,700
Revenues:						
Employer Contributions	-	-	-	1,692,594,649	77,639,748	1,770,234,397
Participant Contributions	442,676,483	78,663,799	521,340,281	-	-	-
Total Revenues	442,676,483	78,663,799	521,340,281	1,692,594,649	77,639,748	1,770,234,397
Expenses:						
Separations	23,953,203	484,158	24,437,362	-	-	-
Retirement Single Sums	7,243,344	159,422	7,402,766	8,031,539	144,613	8,176,152
Death Benefits	16,833,791	1,383,731	18,217,522	12,735,368	1,207,458	13,942,826
Disability Insurance	-	-	-	-	-	-
	48,030,338	2,027,311	50,057,649	20,766,907	1,352,071	22,118,979
Transfers:						
Earnings Allocation	915,790,927	258,255,136	1,174,046,063	1,192,873,512	239,510,187	1,432,383,699
Annuities Awarded	(1,054,304,348)	(115,689,992)	(1,169,994,340)	(1,376,956,550)	(128,961,784)	(1,505,918,334)
Intra-Fund Transfers	2,646,487	786,995	3,433,483	259,008	44,367	303,375
Inter-Fund Transfers	21,895,840	(21,895,840)	-	21,895,840	(21,895,840)	-
	(113,971,094)	121,456,299	7,485,205	(161,928,189)	88,696,930	(73,231,260)
Ending December 31, 2003	**$13,288,265,828**	**$1,075,596,353**	**$14,363,862,181**	**$18,235,504,687**	**$1,042,488,172**	**$19,277,992,859**
Internal Rate of Return	7.2%	30.5%	8.7%	7.1%	28.5%	8.1%

RESERVES FOR NON-RETIRED PARTICIPANTS
BALANCES BY VALUATION GROUP

	Reserve for Year Ended			
	December 31, 2003			December 31, 2002
	Participant	Employer	Total	(Total in $ Millions)
General	$12,977,734,637	$16,886,669,173	$29,864,403,810	$27,972.3
Executives & Elected	116,434,998	156,262,628	272,697,626	262.6
Protective with Soc. Sec.	955,167,584	1,765,953,309	2,721,120,893	2,521.2
Protective w/o Soc. Sec.	314,524,962	469,107,745	783,632,707	732.4
Total	**$14,363,862,181**	**$19,277,992,855**	**$33,641,855,036**	**$31,488.5**

The above schedule shows the distribution of Participant and Employer reserves among the valuation groups according to WRS accounting records. This separation of assets is needed because the valuation groups are separately experience rated. The assets are pooled for investment purposes.

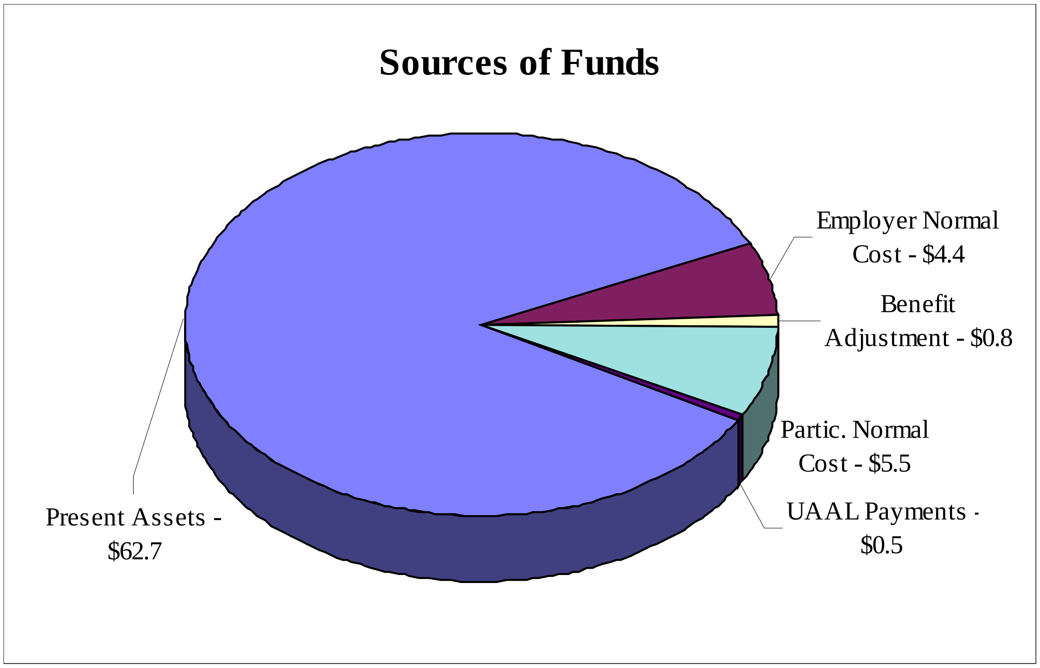
UNFUNDED ACTUARIAL ACCRUED LIABILITY
DECEMBER 31, 2003

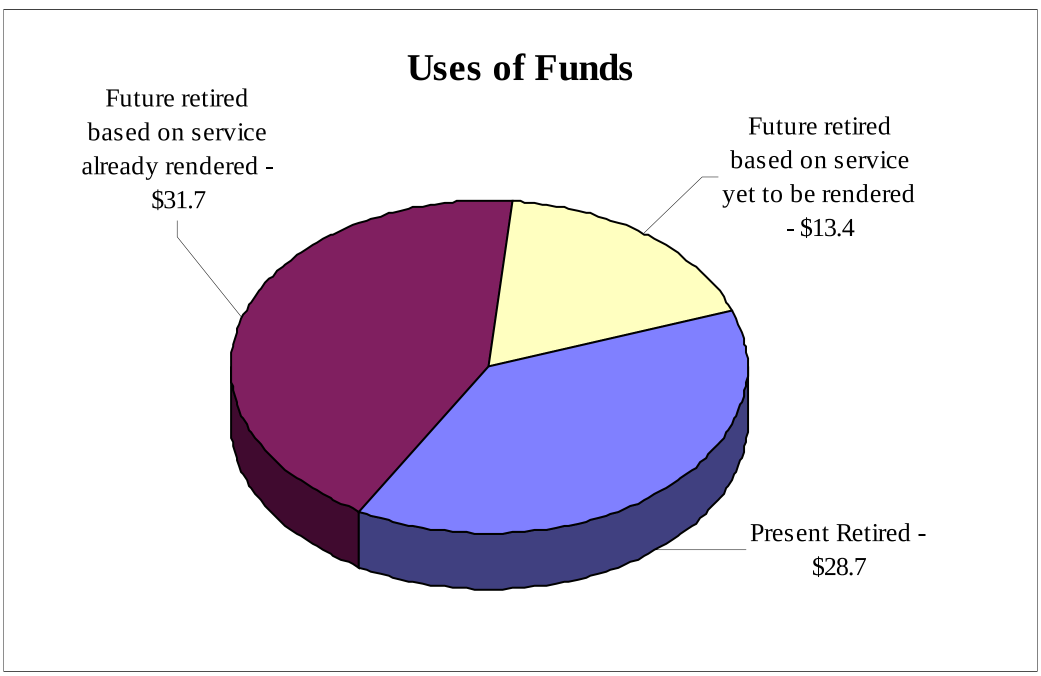
	General	Executives & Elected Officials	Protective Occupation With Soc. Sec	Protective Occupation Without Soc. Sec	Totals
Balance January 1, 2003	$1,622,213,971	$12,540,193	$60,993,140	$31,875,880	$1,727,623,184
Plus: New Employers	875,474	3,624	12,731	0	891,829
Less: Adjustments	(12,317)	4,954	7,343	0	(20)
Less: Payments	(1,190,622,641)	(11,279,174)	(45,421,708)	(18,121,735)	(1,265,445,258)
Plus: Interest	33,731,450	99,029	1,216,137	1,072,823	36,119,439
Balance December 31, 2003	**$466,185,937**	**$1,368,626**	**$16,807,643**	**$14,826,968**	**$499,189,174**

The UAAL is affected year to year by new employers entering the Wisconsin Retirement System, amortization payments, interest assessments, and statutory changes in benefits provided by the Retirement System. The UAAL is being amortized as a level percent of payroll. Since the payroll is assumed to increase with inflation, UAAL payments will also increase. During the first several years of such an amortization program, the payments are less than the interest assessment and the UAAL balance expressed in terms of nominal dollars increases from year to year. However, it increases at a lower rate than the payroll. After several years the payments exceed the interest assessment and the outstanding dollar balance will begin to decline.

Valuation Results

FINANCING $73.9 BILLION* OF BENEFIT PROMISES FOR PRESENT ACTIVE AND RETIRED PARTICIPANTS DECEMBER 31, 2003





* *Present value of future benefits; all divisions combined.*

DEVELOPMENT OF ACTUARIAL PRESENT VALUES
DECEMBER 31, 2003
($ MILLIONS)

Present Value of Future Benefits for	General	Executives & Elected Officials	Protectives With Soc. Sec.	Protectives Without Soc. Sec.	Total
Active Participants					
Service Retirement	$32,539.7	$258.7	$3,573.3	$891.0	$37,262.7
Withdrawal	1,659.2	7.0	124.7	17.6	1,808.5
Death in Service	544.2	10.0	52.9	10.7	617.8
Disability	866.1	2.9	68.4	27.0	964.4
Variable Excess	169.8	1.8	5.6	1.1	178.3
Total Active	35,779.0	280.4	3,824.9	947.4	40,831.7
Inactive Participants	3,805.0	71.4	218.3	31.7	4,126.4
	39,584.0	351.8	4,043.2	979.1	44,958.1
Additional Contributions					139.2
Present Retired					28,707.8
Actuarial Present Value of Future Benefits					**$73,805.1**

Computing the actuarial present value of future benefits is the first step in the actuarial valuation process. If the WRS had assets equal to that value, and if future experience were exactly in accordance with assumptions, then the present assets together with future investment income on those assets would be sufficient to pay promised benefits to all present participants, retirants and beneficiaries. *There is no need for the Retirement System to have* $73,805.1 *million immediately. What is needed, however, is a plan for obtaining the money in an orderly fashion. That is the purpose of the remainder of the actuarial valuation.*

EXPERIENCE AMORTIZATION RESERVE (EAR)

Actuarial gains or losses arising from the difference between actual and assumed experience are reflected in the determination of the normal cost. The computed normal cost is made up of two parts: (i) the pure entry-age normal cost (EANC) determined without regard to past gains or losses, and (ii) an experience amortization component. Section 40.04(1) of the Wisconsin Statutes provides authority to maintain accounts and reserves determined to be "useful in achieving the funds' purposes..." A fundamental WRS objective is stable contribution rates. Accordingly, the experience portion of the normal cost is separately calculated each year and the amortization period is varied upward or downward in order to minimize short-term rate fluctuations. A positive EAR indicates amortization of gains. A negative EAR indicates amortization of losses.

DEVELOPMENT OF EAR AS OF DECEMBER 31, 2003

	General	Executives & Elected Officials	Protective Occupation With Soc. Sec	Protective Occupation Without Soc. Sec.	Total
	$ Millions				
1. Present Value of Future Benefits for non-retired	$39,584.0	$351.8	$4,043.2	$979.1	$44,958.1
2. Present Value of Future Entry Age Normal Costs	11,344.0	96.1	1,626.9	321.4	13,388.4
3. Entry Age Accrued Liability: (1)-(2)	28,240.0	255.7	2,416.3	657.7	31,569.7
4. Non-Retired Assets-WRS	29,864.4	272.7	2,721.1	783.6	33,641.8
-LTDI	196.4	1.2	21.4	4.7	223.7
-Total	30,060.8	273.9	2,742.5	788.3	33,865.5
5. Entry Age Unfunded Accrued Liability:(3)-(4)	(1,820.8)	(18.2)	(326.2)	(130.6)	(2,295.8)
6. WRS Frozen Unfunded Accrued Liability	466.2	1.4	16.8	14.8	499.2
7. EAR:(6)-(5)	**$2,287.0**	**$19.6**	**$343.0**	**$145.4**	**$2,795.0**

DEVELOPMENT OF CONTRIBUTION RATES FOR CALENDAR YEAR 2005

	General	Executive & Elected Officials	Protective Occupation With Soc. Sec	Protective Occupation Without Soc. Sec.	Total
	$ Millions				
Total Reported Earnings	$ 9,272.8	$ 85.6	$ 856.3	$ 153.8	$ 10,368.5
Present Value of Future Earnings	94,222.3	755.1	9,965.2	1,566.5	106,509.1
Present Value of Future Benefits	39,584.0	351.8	4,043.2	979.1	44,958.1
Non-Retired Assets	30,060.8	273.9	2,742.5	788.3	33,865.5
Unfunded Liability	466.2	1.4	16.8	14.8	499.2
Present Value of Future Normal Costs					
Future Service Portion	11,344.0	96.1	1,626.9	321.4	13,388.4
Exp. Amort. Res. Portion	(2,287.0)	(19.6)	(343.0)	(145.4)	(2,795.0)
Total	9,057.0	76.5	1,283.9	176.0	10,593.4
Normal Cost Amortization Years					
Future Service Portion	12.9	10.8	15.3	12.9	13.0
Exp. Amort. Res. Portion	20.0	20.0	15.2	20.0	
Unfunded Liability Amortization Years	25.0	25.0	25.0	25.0	25.0
	% 's of Active Member Payroll				
Normal Cost					
Future Service Portion	12.0 %	12.7 %	16.3 %	20.5 %	12.6 %
Exp. Amort. Res. Portion	(1.7)%	(1.6)%	(3.3)%	(6.5)%	(1.9)%
Total	10.3 %	11.1 %	13.0 %	14.0 %	10.7 %
2004 Total Normal Cost Rates	9.8 %	10.7 %	12.1 %	13.8 %	10.1 %
Change from 2004 (current)	0.5 %	0.4 %	0.9 %	0.2 %	0.6 %
Allocation of Change					
Employer Normal Cost	0.2 %	0.2 %	0.4 %	0.1 %	0.2 %
Benefit Adjustment	0.2 %	0.0 %	0.0 %	0.0 %	0.2 %
Participant Normal Cost	0.0 %	0.2 %	0.4 %	0.1 %	0.0 %
Total Allocated Change	0.4 %	0.4 %	0.8 %	0.2 %	0.4 %
Unallocated Change *	0.1 %	0.0 %	0.1 %	0.0 %	0.2 %
2005 Normal Cost Rates					
Employer Normal Cost	**4.4 %**	**8.3 %**	**8.0 %**	**10.7 %**	**4.8 %**
Benefit Adjustment	**0.8 %**	**0.0 %**	**0.0 %**	**0.0 %**	**0.7 %**
Participant Normal Cost	**5.0 %**	**2.8 %**	**4.9 %**	**3.3 %**	**4.9 %**
Total Normal Cost	**10.2 %**	**11.1 %**	**12.9 %**	**14.0 %**	**10.4 %**
Average Unfunded Liability Amortization	0.3 %	0.1 %	0.1 %	0.6 %	0.3 %
Average Total Rate	**10.5 %**	**11.2 %**	**13.0 %**	**14.6 %**	**10.7 %**

* *Rate changes that do not round to an even 0.2% are not immediately allocated.*

SUMMARY STATEMENT OF PRESENT AND FUTURE RESOURCES
($ MILLIONS)

Present Resources and Expected Future Resources	December 31 2003	2002
A. Book Value of Present System Assets		
Annuity Reserves		
Fixed	$25,071.9	$23,142.4
Variable	3,635.9	2,899.3
Total Annuity Reserves	28,707.8	26,041.7
Non-Retired Participant Reserves		
Participant Contribution Balance	14,363.9	13,885.1
Additional Contributions	139.2	137.8
Employer Accumulation Balance	19,277.9	17,603.4
Adjustment for 62.13 Contributions	(27.2)	(29.3)
LTDI Reserve for Future Claims	223.7	223.2
Total Non-Retired Reserves	33,977.5	31,820.2
Total System Assets Used in Valuation	62,685.3	57,861.9
B. Actuarial Present Value of Future Participant Contributions	5,475.9	5,397.4
C. Actuarial Present Value of Future Benefit Adjustment Contributions	753.8	557.8
D. Actuarial Present Value of Future Employer Contributions for		
Unfunded Accrued Liabilities	499.2	1,727.6
Section 62.13	27.2	29.3
Normal Costs	4,363.7	3,708.4
Total	4,890.1	5,465.3
E. Total Present and Expected Future Resources	**$73,805.1**	**$69,282.4**

SUMMARY STATEMENT OF RETIREMENT SYSTEM OBLIGATIONS
($ MILLIONS)

Retirement System Obligations	December 31 2003	December 31 2002
A. To Annuitants and Beneficiaries Receiving Benefits		
Fixed Annuities		
Reported at Year End	$24,724.0	$23,202.9
Dividend Adjustment and Reserve	347.9	(60.5)
Total Fixed Annuities	25,071.9	23,142.4
Variable Annuities		
Reported at Year End	2,892.2	3,993.1
Distribution and Reserve	743.7	(1,093.8)
Total Variable Annuities	3,635.9	2,899.3
Total for Benefits in Pay Status	28,707.8	26,041.7
B. To Active and Inactive Participants For Benefits Based on		
Participant Contributions Made		
In the Past	14,363.9	13,885.1
In the Future	5,475.9	5,397.4
Additional Contributions Made in the Past	139.2	137.8
Benefit Adjustment Contributions Made in the Future	753.8	557.8
Employer Contributions	24,364.5	23,262.6
Total for Benefits Not Yet in Pay Status	45,097.3	43,240.7
C. Total Actuarial Value of Expected Future Benefits	**$73,805.1**	**$69,282.4**

SECTION TWO

Financial Reporting

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Valaution Date	December 31, 2003
Actuarial Cost Method	Frozen Entry Age
Amortization Method	Level Percent -- Closed Period
Remaining Period	25 years (completion in 2029)
Asset Valuation Method	5-Year Smoothed Market (Closed)
Actuarial Assumptions	
Investment Rate of Return	7.8%
Projected Salary Increases*	4.1% to 8.6%
Payroll Growth Rate	4.1%
Population Growth Rate	0.0%
Cost of Living Adjustments#	2.67%

* *Includes merit and seniority increases that vary by service plus wage inflation of 4.1%/year.*

\# *Non-guaranteed. Actual increases are based on recognized investment return in excess of 5%.*

STATEMENT OF NET PLAN ASSETS

	2002*	2001
Assets		
Equity in Pooled Cash & Cash Equivalents	$ 951,976	$ 1,014,292
Securities Lending Collateral	2,189,877	2,933,732
Prepaid Expenses	1,868	2,162
Total Short Term Assets	3,143,721	3,950,186
Receivables		
Contributions	356,716	54,392
Prior Service Contributions	1,727,317	2,076,696
Benefits Overpayment	1,901	1,631
Due from other Trust Funds	1,165	906
Due from other State Agencies	0	0
Due from the Federal Government	0	0
Miscellaneous	146	154
Interest and dividends	200,276	197,609
Investment Sales	55,636	295,127
Total receivables	2,343,157	2,626,515
Investments at Fair Value		
Bonds	10,556,120	11,153,212
Private Placements	3,397,058	3,867,712
Stocks	32,144,057	38,165,042
Limited Partnerships	2,624,447	2,712,836
Mortgages	696,266	690,206
Real Estate	429,426	505,557
Other	0	4,733
Total investments	49,847,374	57,099,298
Capital Assets	99	0
Total Assets	**55,334,351**	**63,675,999**
Liabilities:		
Fixed Investment due Other Programs	1,014,076	1,147,304
VariableInvestment Due other Programs	12,666	11,449
Securities lending collateral	2,189,877	2,933,732
Annuities payable	188,140	203,122
Advance Contributions	352	352
Due to Other State Agencies	1,199	2,913
Miscellaneous Payables	69,291	52,009
Investment Payables	117,624	92,019
Total Liabilities	**3,593,225**	**4,442,900**
Net Assets in Trust for Pension Benefits	**$51,741,126**	**$59,233,099**

**2003 Summary not yet available.*

STATEMENT OF CHANGES IN ASSETS ($ THOUSANDS)

	Activity During Year	
	2002*	**2001**
Additions:		
Contributions:		
Employer Contributions	$ 437,192	$ 418,319
Employe Contributions	526,149	506,712
Total Contributions	963,341	925,031
Investment Income:		
Net Appreciation (Depreciation)		
in Fair Value of Investments	(6,949,780)	(3,367,457)
Interest	726,766	1,030,654
Dividends	243,884	353,034
Securities Lending Income	52,167	160,319
Other	117,879	104,454
Less		
Current Income Distributed	(114,042)	(33,883)
SWIB Investment Expense	144,153	161,853
Investment Income Distributed to		
Securities Lending Rebates and Fees	41,404	138,997
Net Investment Income	(5,880,599)	(1,985,963)
Interest on Prior Service Receivable	127,972	153,991
Miscellaneous Income	4,082	211
Total Additions	(4,785,204)	(906,730)
Deductions:		
Benefits and Refunds:		
Retirement, Disability,		
and Beneficiary	2,650,778	2,489,998
Separation Benefits	38,470	40,740
Total Benefits and Refunds	2,689,248	2,530,738
Unusual Writeoff of receiveable	(33)	(784)
Administrative Expense	19,651	16,419
Total Deductions	2,708,866	2,546,373
Net Increase (Decrease)	(7,494,070)	(3,453,103)
Net Assets Held in Trust:		
Beginning of Year	$59,235,196 **	$62,686,199
End of Year	**$51,741,126**	**$59,233,099**

** 2003 Summary not yet available.*
*** Beginning year value was adjusted from prior year ending value.*

SCHEDULE OF FUNDING PROGRESS
$ MILLIONS

Valuation Date 31-Dec	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Frozen Entry Age (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as a Percent of Covered Payroll [(b) - (a)] / (c)
1992	$22,943.2	$24,984.7	$2,041.5	91.8 %	$6,448.6	31.7 %
1993	25,436.5	27,533.0	2,096.5	92.4 %	6,834.9	28.1 %
1994	26,954.3	29,012.1	2,057.8	92.9 %	7,135.6	28.8 %
1995	30,246.2	32,348.9	2,102.7	93.5 %	7,454.3	28.2 %
1996	33,962.6	36,097.0	2,134.4	94.1 %	7,721.6	27.6 %
1997	38,584.6	40,762.0	2,177.4	94.7 %	8,084.6	26.9 %
1998	43,390.5	45,617.1	2,226.6	95.1 %	8,481.1	26.3 %
1999	49,403.7	51,549.5	2,145.8	95.8 %	8,826.0	24.3 %
2000	51,824.6	53,993.6	2,169.0	96.0 %	9,322.5	23.3 %
2001	58,024.3	60,134.7	2,110.4	96.5 %	9,917.7	21.3 %
2002	57,861.9	59,618.8	1,756.9	97.1 %	10,126.6	17.4 %
2003*	62,685.3	63,211.7	526.4	99.2 %	10,502.4	5.0 %

**Affected by prepayment of UAAL in connection with Pension Obligation Bond issued by the state and various local government employers.*

SOLVENCY TEST

Valuation Date 31-Dec	Valuation Assets	Accrued Liability For				Percent Funded For			
		Annuitants and Beneficiaries	Member Contribs.	Active & Inactive Members	Total	Annuitants and Beneficiaries	Participant Contributions	Active & Inactive Members	Total
1992	$22,943.2	$ 8,991.0	$ 7,026.3	$ 8,967.4	$24,984.7	100.0%	100.0%	77.2%	91.8%
1993	25,436.5	10,016.1	7,800.2	9,716.7	27,533.0	100.0%	100.0%	78.4%	92.4%
1994	26,954.3	10,704.2	8,197.6	10,110.3	29,012.1	100.0%	100.0%	79.6%	92.9%
1995	30,246.2	12,205.9	9,022.5	11,120.5	32,348.9	100.0%	100.0%	81.1%	93.5%
1996	33,962.6	13,964.6	9,865.1	12,267.3	36,097.0	100.0%	100.0%	82.6%	94.1%
1997	38,584.6	15,985.1	11,072.5	13,705.3	40,762.9	100.0%	100.0%	84.1%	94.7%
1998	43,390.5	18,352.3	11,710.3	15,554.5	45,617.1	100.0%	100.0%	85.7%	95.1%
1999	49,403.7	21,290.7	12,769.6	17,489.2	51,549.5	100.0%	100.0%	87.7%	95.8%
2000	51,824.6	22,918.0	12,869.7	18,205.9	53,993.6	100.0%	100.0%	88.1%	96.0%
2001	58,024.3	25,881.5	14,275.3	19,977.9	60,134.7	100.0%	100.0%	89.4%	96.5%
2002	57,861.9	26,041.7	14,022.9	19,554.2	59,618.8	100.0%	100.0%	91.0%	97.1%
2003	62,685.3	28,707.8	14,503.1	20,000.8	63,211.7	100.0%	100.0%	97.4%	99.2%

CONTRIBUTIONS REQUIRED AND CONTRIBUTIONS MADE

Year Ended December 31	Annual Required Contribution	Percent Contributed
1992	350.0	100.0%
1993	370.1	100.0%
1994	385.9	100.0%
1995	402.6	100.0%
1996	435.3	100.0%
1997	445.9	100.0%
1998	449.6	100.0%
1999	435.2	100.0%
2000	422.1	96.3%
2001	412.9	99.6%
2002	426.9	99.8%
2003	462.7	100.0%

Employers did not make the full actuarially required contribution for 2000 and 2001 in accordance with the provisions of Act 11 of 1999.

SECTION THREE

Actuarial Methods and Assumptions

ACTUARIAL VALUATION METHOD

The actuarial funding method prescribed in the statute for WRS is the **Frozen Initial Liability Method**. Under this method, the amount of remaining unfunded accrued actuarial liabilities at any valuation date is affected only by the monthly amortization payments, compound interest, the added liability created by new employer units, and any added liabilities caused by changes in benefit provisions.

Actuarial gains or losses arising from the difference between actual and assumed experience are reflected in the determination of the normal cost. In this manner, experience gains or losses in any year are amortized (spread) over the average future working lifetime of the active participant group - a period of approximately 13 years. Hence, the computed normal cost is made up of two parts:

- The pure entry-age normal cost (EANC) determined without regard to past gains or losses, and

- an experience amortization component.

Section 40.04(1) of the Wisconsin Statutes provides authority to maintain accounts and reserves determined to be "useful in achieving the funds' purposes - - -". A fundamental WRS objective is stable contribution rates. Accordingly, based on the authority granted under Section 40.04, the experience portion of the normal cost is separately calculated each year and the amortization period is varied upward or downward in order to minimize short-term rate fluctuations.

ASSET VALUATION METHOD

An essential step in the valuation process is comparing valuation assets with computed liabilities. Computed liabilities result from actuarial calculations involving the covered population, the benefits, and actuarial assumptions. Valuation assets are those assets that are recognized and available to fund the System's liabilities. WRS assets are invested in the Fixed Investment Trust, and in the Variable Investment Trust, both of which are managed by the State of Wisconsin Investment Board (SWIB). Assets in the Variable Investment Trust are marked to market each year. Assets in the Fixed Investment Trust (most of the assets) are valued (or recognized) using an "asset valuation method."

Asset valuation methods are distinguished by the timing of the recognition of investment return. Total investment return is the sum of ordinary income and capital value changes. Under a book value approach, ordinary income is recognized immediately and capital gains (or losses) are recognized only when securities are sold. Book value investment return is directly affected by the timing of sales activity and underlying experience may be distorted. Under a pure market value approach, ordinary investment income and all capital value changes are recognized immediately. Because of market volatility, use of pure market values in retirement funding can result in volatile contribution rates and unstable financial ratios, contrary to WRS objectives.

The asset valuation method used for WRS valuations is statutory, and is referred to as the "Market Recognition Account" or MRA. Act 11 of 1999 closed the former Transaction Amortization Account (TAA) and created the Market Recognition Account. The MRA recognizes assumed return fully each year. Differences between actual and assumed return are phased in over a closed 5-year period. Through 2004, the amount recognized will include an additional gain of $1.9 billion per year related to the close out of the TAA. The objective is to give recognition to long-term changes in asset values while the minimizing effect of short-term fluctuations in the capital markets. In accordance with its smoothing objective, the MRA will tend to exceed the market value when the markets are doing poorly, and will fall short of the market value when markets are doing well. Some retirement systems set limits on the amount by which the recognized value of assets can differ from the market value.

The development of the Market Recognition Account is shown on the following page. The Fixed Investment Trust includes assets for other programs, such as Sick Leave, that are not related to the funding of the Wisconsin Retirement System, and does not include assets related to the Variable Investment Trust. Consequently, the asset value developed on the next page will not balance to the total system assets shown on page I-24. ETF Staff maintains the breakdown of the separate asset accounts.

FIXED INVESTMENT TRUST: MARKET RECOGNITION ACCOUNT

	For the Year Ended December 31				
	2001	**2002**	**2003**	**2004**	**2005**
Beginning of year					
a. Funding Value	$49,874,777,351	$52,808,943,798	$54,333,668,260	$58,885,095,550	$58,543,410,514
b. Market value	54,503,938,418	52,012,351,144	46,389,194,485	57,945,143,011	57,945,143,011
End of year					
c. Market value	52,012,351,144	46,388,922,709	57,945,143,011	57,945,143,011	57,945,143,011
d. Non-investment cash flow (contributions minus benefits)	(1,101,913,600)	(986,559,051)	630,496,826		
e. Investment income					
e1. Total Investment Income	(1,389,673,675)	(4,636,869,385)	10,925,451,701		
e2. Assumed rate	8.0%	8.0%	7.8%		
e3. Amount for immediate recognition	3,945,905,644	4,185,253,142	4,262,615,501	-	-
e4. Amount for phased-in recognition: e1-e3	(5,335,579,319)	(8,822,122,527)	6,662,836,200	-	-
f. Phased-in recognition of investment income					
f1. Current year: .2 x e4	(1,067,115,864)	(1,764,424,505)	1,332,567,240	-	-
f2. First prior year	(824,740,722)	(1,067,115,864)	(1,764,426,680)	1,332,567,240	-
f3. Second prior year	-	(824,740,722)	(1,067,115,864)	(1,764,426,680)	1,332,567,240
f4. Third prior year	-	-	(824,740,722)	(1,067,115,864)	(1,764,426,680)
f5. Fourth prior year	-	-	-	(824,740,722)	(1,067,115,864)
f6. Total MRA recognition	(1,891,856,586)	(3,656,281,091)	(2,323,716,025)	(2,323,716,025)	(1,498,975,303)
f7. Amount for TAA recognition	1,982,030,989	1,982,030,989	1,982,030,989	1,982,030,989	-
f8. Total recognized gain (loss)	90,174,403	(1,674,250,102)	(341,685,036)	(341,685,036)	(1,498,975,303)
g. Total Recognized Investment Income: e3 + f8	4,036,080,047	2,511,003,040	3,920,930,464	(341,685,036)	(1,498,975,303)
h. Funding value end of year: a + d + e3 + f8	52,808,943,798	54,333,387,787	58,885,095,550	58,543,410,514	57,044,435,211
i. Difference between market and funding values	(796,592,654)	(7,944,465,079)	(939,952,539)	(598,267,503)	900,707,801
j. Recognized Rate of Return	8.2%	4.8%	7.2%		
k. Market Rate of Return	(2.6)%	(9.3)%	21.1%		

SUMMARY OF ASSUMPTIONS
USED FOR ANNUAL ACTUARIAL VALUATIONS
ASSUMPTIONS ADOPTED BY ETF BOARD AFTER
CONSULTING WITH ACTUARY

ECONOMIC ASSUMPTIONS

The long-term rates of investment return used in making the valuation was 7.8% a year, compounded yearly.

Dividends for present and future retirees are assumed to be 2.67% each year.

Salary adjustment factors used to project earnings for each participant between the valuation date and the participant's retirement age are shown below for sample years of service. This assumption is used to project a participant's current earnings to the earnings upon which benefits will be based.

% Merit and Longvity Increase Next Year						
		University	Public School	Protective		Exec. &
Service	Gen.	Teachers	Teachers	With S.S.	w/o S.S.	Elec.
1	3.5 %	4.4 %	5.8 %	4.0 %	4.5 %	1.2 %
2	3.5 %	4.4 %	5.8 %	4.0 %	4.5 %	1.2 %
3	3.2 %	4.3 %	5.3 %	3.6 %	4.0 %	1.2 %
4	2.9 %	4.3 %	4.9 %	3.2 %	3.5 %	1.2 %
5	2.6 %	4.2 %	4.4 %	2.8 %	3.0 %	1.1 %
10	1.6 %	3.4 %	2.6 %	1.7 %	1.1 %	1.0 %
15	1.3 %	2.5 %	1.5 %	1.2 %	0.5 %	0.9 %
20	1.1 %	2.2 %	1.0 %	1.0 %	0.5 %	0.8 %
25	0.9 %	2.0 %	0.6 %	1.0 %	0.5 %	0.6 %
30	0.7 %	1.8 %	0.2 %	1.0 %	0.5 %	0.4 %

In addition to the merit and longevity increase, each person is assumed to get an economic increase of 4.1% each year. While this economic increase includes price inflation as a component, this valuation does not require a specific price inflation assumption, and none is made.

Population and Payroll Growth: The active population is assumed to remain constant. The active payroll is assumed to grow 4.1% per year. This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities.

DECREMENT PROBABILITIES

The mortality table used to measure mortality for retired participants was the Wisconsin Projected Experience Table - 2002 for men and women, as adopted by the Board in connection with the 2000-2002 Experience Study. Sample retirement values from this table are shown below. This assumption is used to measure the probabilities of participants dying before retirement and the probabilities of each benefit payment being made after retirement.

SINGLE LIFE RETIREMENT VALUES
WISCONSIN PROJECTED EXPERIENCE TABLE - 2002 WITH 5% INTEREST

Sample Attained Ages	Present Value of $1 Monthly for Life		Future Life Expectancy (years)	
	Males	Females	Males	Females
40	$204.60	$213.51	40.3	45.1
45	194.52	205.50	35.5	40.3
50	182.57	195.63	30.8	35.4
55	168.60	183.57	26.3	30.7
60	152.23	168.96	21.9	26.1
65	133.38	151.77	17.8	21.6
70	113.07	131.92	14.0	17.3
75	92.87	110.50	10.7	13.4
80	73.24	89.29	7.9	10.1
85	56.59	69.03	5.8	7.3

The values shown above are for non-disabled participants. For disabled participants, the following table was used:

Sample Attained Ages	Present Value of $1 Monthly for Life		Future Life Expectancy (years)	
	Males	Females	Males	Females
40	$183.98	$195.34	31.3	35.6
45	169.92	183.77	26.7	30.9
50	154.02	169.96	22.4	26.4
55	136.46	153.62	18.3	22.0
60	116.83	134.58	14.5	17.7
65	95.34	113.44	11.0	13.8
70	73.99	90.47	8.0	10.2
75	55.14	68.00	5.6	7.2
80	38.40	48.81	3.7	4.9
85	26.03	33.04	2.4	3.1

ACTIVE PARTICIPANT MORTALITY RATES

Sample Attained Ages	Mortality Rates	
	Males	Females
20	0.000145	0.000085
25	0.000179	0.000113
30	0.000234	0.000153
35	0.000324	0.000212
40	0.000472	0.000305
45	0.000844	0.000454
50	0.001526	0.000699
55	0.002460	0.001057
60	0.003788	0.001782
65	0.006433	0.003126
70	0.011998	0.005513
75	0.020418	0.011278
80	0.035773	0.020671

This assumption is used to measure the probability of participants dying while in service.

RATES OF RETIREMENT FOR THOSE ELIGIBLE TO RETIRE

Normal Retirement Pattern

Age	General		Public School		University		Protective*		Exec. & Elected
	Male	Female	Male	Female	Male	Female	With S.S.	W/O S.S.	
50							6%	2%	
51							7%	2%	
52							7%	9%	
53							38%	38%	
54							20%	36%	
55							20%	36%	
56							25%	36%	
57	28%	27%	25%	30%	25%	20%	20%	36%	8%
58	28%	27%	25%	30%	20%	20%	20%	40%	8%
59	28%	25%	25%	30%	20%	20%	20%	30%	12%
60	28%	25%	30%	30%	20%	20%	20%	30%	14%
61	30%	25%	35%	35%	20%	20%	20%	30%	35%
62	40%	30%	60%	40%	20%	25%	20%	15%	10%
63	40%	35%	50%	35%	20%	30%	30%	15%	10%
64	35%	35%	50%	25%	20%	30%	20%	15%	10%
65	35%	30%	70%	30%	20%	25%	30%	40%	10%
66	35%	30%	70%	25%	20%	25%	25%	40%	20%
67	15%	20%	50%	25%	20%	25%	25%	40%	20%
68	15%	15%	50%	20%	20%	20%	25%	40%	20%
69	15%	15%	50%	20%	20%	20%	25%	40%	20%
70	15%	15%	50%	20%	20%	20%	100%	100%	10%
71	15%	15%	50%	20%	20%	20%	100%	100%	10%
72	15%	15%	50%	20%	20%	20%	100%	100%	10%
73	15%	15%	50%	20%	20%	20%	100%	100%	10%
74	15%	15%	50%	20%	20%	20%	100%	100%	10%
75	100%	100%	100%	100%	100%	100%	100%	100%	100%

* *Includes early retirements.*

Early Retirement Pattern

Age	% Retiring Next Year						
	General		Public School		University		Exec. & Elected
	Male	Female	Male	Female	Male	Female	
55	8%	6%	15%	11%	5%	5.0%	5%
56	8%	6%	15%	11%	5%	5.0%	5%
57	4%	5%	15%	11%	4%	5.0%	4%
58	6%	5%	15%	12%	4%	5.0%	4%
59	6%	5%	10%	12%	5%	10.0%	4%
60	8%	8%	15%	15%	5%	10.0%	4%
61	8%	8%	15%	15%	5%	10.0%	4%
62	20%	18%	25%	25%	10%	10.0%	
63	20%	18%	25%	20%	10%	10.0%	
64	15%	14%	15%	15%	10%	10.0%	

The assumed rates of separation from employment prior to service retirement due to disability and other causes are shown below for sample ages. For other terminations it was assumed that a percentage depending on age of participants terminating after age 35 with 5 or more years service will leave their contributions on deposit and be paid a benefit at normal retirement age and that the remaining participants would take a separation benefit. The percentage taking a separation benefit is 100% at age 35, grading downward to 0% at retirement eligibility. All participants terminating prior to normal retirement age with less than 5 years of service were assumed to take a separation benefit.

ASSUMED TERMINATION RATES BY ATTAINED AGE AND YEARS OF SERVICE

		% of Active Participants Terminating								
		Protective								
		With Soc. Sec.	Without Soc. Sec.	Public Schools		University		Exec. &	General	
Age &	Service			Males	Females	Males	Females	Elected	Males	Females
	0	11.0%	5.0%	11.0%	10.0%	18.0%	18.0%	9.0%	18.0%	18.0%
	1	6.0%	2.5%	7.0%	8.0%	13.0%	15.0%	8.5%	10.0%	11.0%
	2	3.5%	2.2%	5.0%	6.0%	10.0%	13.0%	8.0%	8.0%	9.0%
	3	3.2%	2.0%	4.5%	5.4%	9.0%	10.0%	7.0%	6.0%	7.0%
	4	3.2%	1.7%	3.5%	4.4%	7.0%	9.0%	5.0%	5.0%	6.0%
25	5 & Over	1.6%	1.0%	3.5%	4.0%	7.0%	9.0%	5.0%	5.0%	5.5%
30		1.5%	0.9%	2.7%	3.5%	6.7%	7.8%	4.7%	4.1%	4.9%
35		1.3%	0.8%	1.5%	2.3%	6.2%	6.1%	4.2%	2.8%	3.6%
40		1.2%	0.8%	1.2%	1.5%	4.8%	4.7%	3.4%	2.0%	2.7%
45		1.1%	0.7%	1.0%	1.2%	3.1%	3.4%	2.4%	1.6%	2.2%
50		0.8%	0.7%	0.9%	1.2%	1.9%	2.6%	2.0%	1.3%	2.0%
55		0.6%	0.7%	0.9%	1.2%	1.5%	2.4%	2.0%	1.3%	2.0%
60		0.6%	0.7%	0.9%	1.2%	1.5%	2.4%	2.0%	1.3%	2.0%

DISABILITY RATES

	% of Active Participants Becoming Disabled									
	Protective		Public Schools		University		Exec. & Elected		General	
Age	With SS	W/O SS	Males	Females	Males	Females	Males	Females	Males	Females
20	0.01%	0.04%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
25	0.01%	0.04%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
30	0.01%	0.05%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%
35	0.03%	0.06%	0.01%	0.01%	0.01%	0.04%	0.01%	0.01%	0.02%	0.05%
40	0.05%	0.11%	0.02%	0.02%	0.01%	0.06%	0.01%	0.01%	0.06%	0.07%
45	0.09%	0.19%	0.05%	0.08%	0.03%	0.05%	0.02%	0.02%	0.11%	0.10%
50	0.30%	0.59%	0.15%	0.16%	0.05%	0.10%	0.05%	0.05%	0.25%	0.16%
55	1.00%	0.65%	0.27%	0.23%	0.15%	0.15%	0.18%	0.18%	0.48%	0.29%
60	0.68%	0.50%	0.45%	0.34%	0.20%	0.23%	0.22%	0.22%	0.85%	0.41%

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Expenses	Assumed investment return is net of administrative and investment expenses.
Marriage Assumption	Everyone is assumed married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing	Beginning of (calendar) year for most people. Middle of calendar year for teachers.
Decrement Timing	Decrements of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and total service (in all benefit groups) nearest whole year on the date the decrement is assumed to occur.
Benefit Service	Exact fractional service on the decrement date is used to determine the amount of benefit payable.
Non-Benefit Service	Liabilities for service in divisions other than the division in which the individual is currently active are calculated as indexed deferred vested benefits. Benefits are indexed in accordance with the salary adjustment factors (shown on page III-4) for the division where the member was formerly employed. People are assumed to retire at the earliest age that full benefits will become available. The liabilities are assigned to the division in which the service was rendered.
Decrement Relativity	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

SECTION FOUR

The Valuation Process

FINANCIAL PRINCIPLES & OPERATIONAL TECHNIQUES OF THE WISCONSIN RETIREMENT SYSTEM

Benefit Promises Made Which Must be Paid For. A retirement program is an orderly means of handing out, keeping track of, and financing contingent retirement promises. As each participant of the Retirement System acquires a unit of service credit he is, in effect, handed an "IOU" which reads: "The Wisconsin Retirement System promises to pay you one unit of annuity benefits, payments in cash commencing when you retire."

The principal related financial question is: ***When shall the money required to cover the "IOU" be contributed?*** This year, when the benefit of the participant's unit of service is received? Or, some future year, when the "IOU" becomes a cash demand?

The law governing the Wisconsin Retirement System financing intends that the money to cover an "IOU" is contributed in the year the "IOU" is handed out. In this way contribution rates expressed as percents of participant payroll can be determined so as to remain approximately level from year to year and decade to decade as long as the basic experience and make-up of the group of participants does not change significantly. This means that for equivalent benefits each generation of Wisconsin taxpayers will contribute at approximately the same payroll rates.

Translated into actuarial terminology, the level percent-of-payroll contribution objective means that the contribution rate must total at least:

> **Normal Cost** (the current discounted value of benefits likely to be paid on account of participants' service rendered in the current year)
>
> ... plus ...
>
> **Interest on Unfunded Actuarial Accrued Liabilities** (unfunded actuarial accrued liabilities are the difference between (i) the present value of future benefits and (ii) the present value of future normal costs, and reduced by the assets on hand at the valuation date).

If contributions to the system are less than the preceding amount, the difference, **plus investment earnings not realized thereon**, will have to be contributed at some later time, or benefits will have to be reduced, to satisfy the fundamental equation under which all retirement programs must operate; that is:

B = C + I - E

Benefit payments to any group of participants and their beneficiaries cannot exceed

Contributions received on behalf of the group
... plus ...
Investment earnings on those contributions
... minus ...
Expenses incurred in operating the program.

There are retirement programs (Social Security is an example) designed to defer the bulk of contributions far into the future. The present contribution rate for such systems is artificially low, but is destined to increase relentlessly to a level which may be greatly in excess of the level percent-of-payroll rate.

A by-product of a level percent-of-payroll contribution objective is the accumulation of invested assets for varying periods of time. Investment income becomes the 3rd and largest contributor to the retirement system and the amount is directly related to the amount of contributions and investment performance.

Computing Contribution Rates To Finance Benefits. From a given schedule of benefits and from the data furnished, the actuary calculates the contribution rates **by means of an actuarial valuation** - the technique of assigning monetary values to the risks assumed in operating a retirement program.

The principal areas of risk assumption are:

- long-term ***rates of investment income*** likely to be generated by system assets
- ***rates of mortality*** among participants, retirants and beneficiaries
- ***rates of withdrawal*** of active participants
- ***rates of disability*** among participants
- ***patterns of salary increases*** to be experienced by participants
- the age and service ***distribution of actual retirements.***

In an actuarial valuation, the actuary projects the monetary effect of each risk assumption for each distinct experience group, for the next year and for each year over the next half-century or longer.

Once actual risk experience has occurred and been observed, it will not coincide exactly with assumed risk experience, regardless of the skill of the actuary, the completeness of the data, and the precision of the calculations. Each valuation provides a complete recalculation of assumed future risk experience and takes into account all past differences between assumed and actual risk experience. The result is a continual series of small adjustments to the computed contribution rate. From time to time it becomes necessary to adjust the package of risk measurements to reflect basic experience trends -- but not random year to year fluctuations.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assumed, under the actuarial funding method, for current and subsequent plan years. Sometimes referred to as "current service cost". Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no future accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going-concern" basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

Valuation Assets. The value of current plan assets recognized for valuation purposes. Generally based on book value plus a portion of unrealized appreciation or depreciation.

June 1, 2004

Ms. Julie Reneau
Wisconsin Department of Employee
Trust Funds
801 West Badger Road
Madison, Wisconsin 53713

Re: Report of Twenty-Third Annual Actuarial Valuation

Dear Julie:

Enclosed are 75 copies of the December 31, 2003 regular annual actuarial valuations.

Sincerely,

Norman L. Jones

NLJ/lr
Enclosures