Wisconsin Retirement System
Twenty-First Annual Actuarial Valuations

as of December 31, 2001

Presented to the Wisconsin Department
of Employee Trust Funds

GABRIEL, ROEDER, SMITH & COMPANY
ACTUARIES • CONSULTANTS

OUTLINE OF CONTENTS

REPORT OF ANNUAL ACTUARIAL VALUATIONS
WISCONSIN DEPARTMENT OF EMPLOYEE TRUST FUNDS

GABRIEL, ROEDER, SMITH & COMPANY
Consultants & Actuaries

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June 6, 2002

Employee Trust Funds Board
Wisconsin Retirement System
801 West Badger Road
Madison, Wisconsin 53713

Ladies and Gentlemen:

The results of the **December 31, 2001 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 2003 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 valuation includes recognition of 1999 Wisconsin Act 11. On June 12, 2001, the Wisconsin Supreme Court issued a decision upholding all provisions of Act 11, and removing an injunction that had barred implementation of the Act.

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 Three of this report. The assumptions are internally consistent and are based on the results of the Triennial Experience Study covering 1997-99 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

WISCONSIN RETIREMENT SYSTEM
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.	
	2003	2002	2003	2002	2003	2002	2003	2002
Employer Normal Cost	4.0%	3.8%	8.1%	8.6%	7.1%	7.1%	9.8%	10.4%
Benefit Adjustment Contribution	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Participant Normal Cost	5.0%	5.0%	2.6%	3.1%	4.0%	4.0%	2.4%	3.0%
Total Normal Cost	9.4%	9.0%	10.7%	11.7%	11.1%	11.1%	12.2%	13.4%
Unfunded Actuarial Accrued Liability (UAAL)	1.2%	1.3%	1.0%	1.0%	0.6%	0.7%	1.5%	1.5%
WRS Average Total	**10.6%**	**10.3%**	**11.7%**	**12.7%**	**11.7%**	**11.8%**	**13.7%**	**14.9%**

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.

WISCONSIN RETIREMENT SYSTEM
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 %**

\# *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.*

Based upon this valuation, contribution rates for calendar year 2003 will increase for the General group, and will decrease for other groups. These rate changes are due in part to Act 11 of 1999 as well as to experience that occurred during 2001.

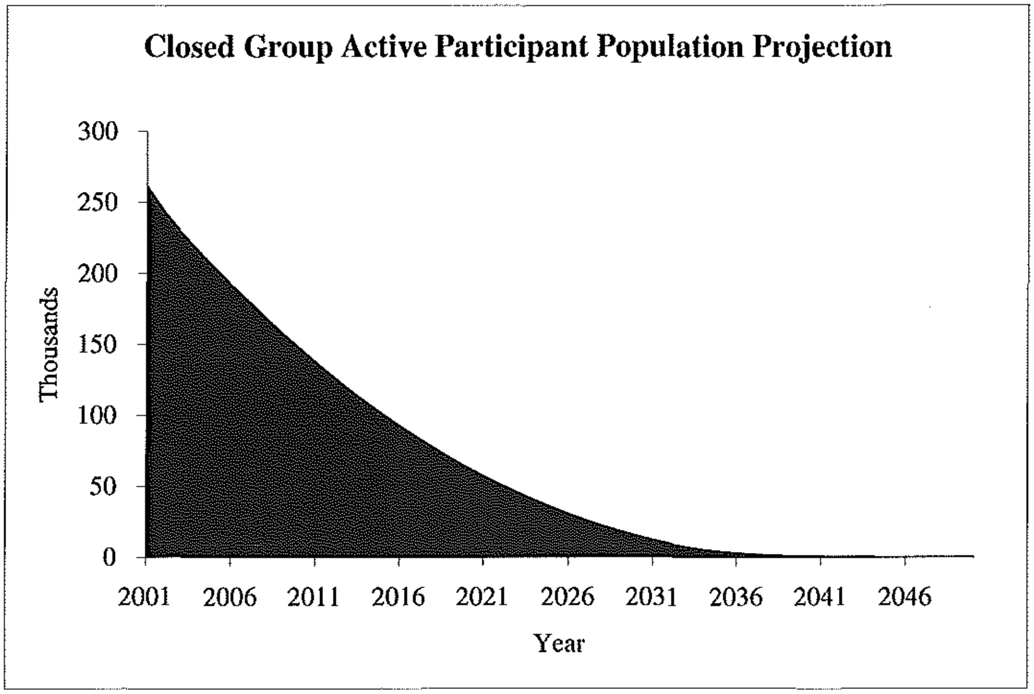
In total, during 2001, investment return was well below the assumed level of 8% on a market value basis (please see pages I-17 and III-3). The asset valuation method, when combined with the TAA distribution mandated by Act 11 of 1999, greatly reduced the amount of the loss that would otherwise have been shown. The end result is that the funding value of assets recognized in the valuation exceeds the market value for the first time in many years. Detail concerning experience gains and losses in individual risk areas will be presented at a later date in the annual Gain Loss Analysis.

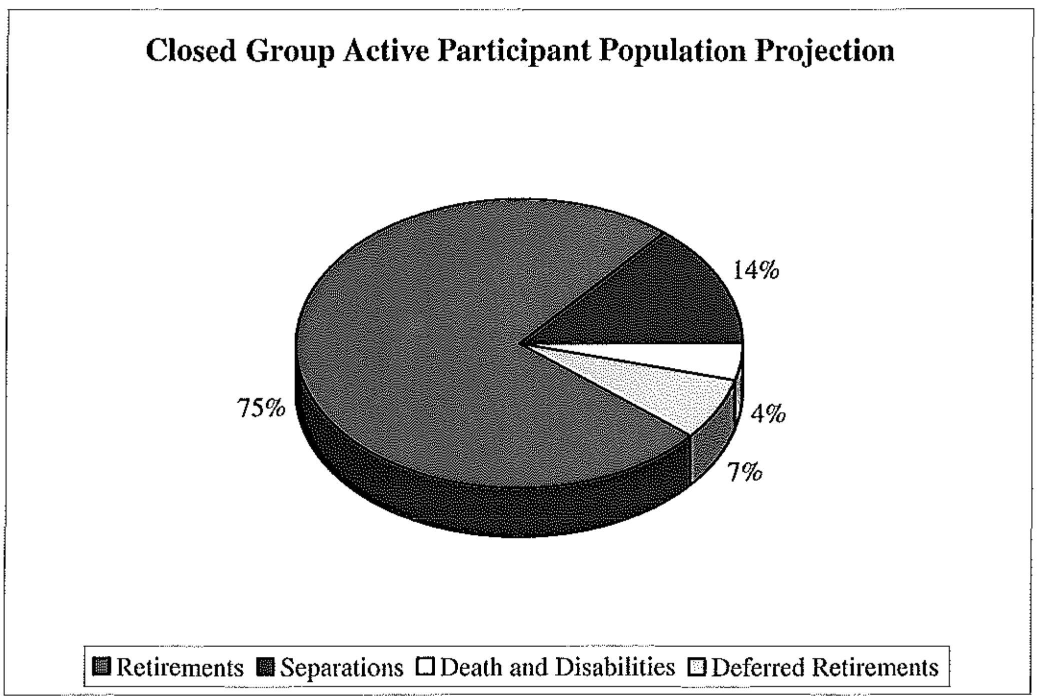
The statutory allocation of the rate change among Participant Normal Cost, Employer Normal Cost, and Benefit Adjustment Contribution is shown on page I-23. The Participant Normal Cost contributions are, in most cases, paid by the employers rather than by the participants. This means that the reductions in the Participant Normal Cost that are indicated for 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 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 recommends 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, 2001 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, 2001





The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 261,126 active members. Eventually, 14% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Nearly 82% 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 11 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 2%. Slightly different provisions apply to variable annuities.

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 by January 2, 1997.	Participants entering after 10/15/92 and participants on 10/15/92 who elect LTDI coverage before January 4, 1999.
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 spouse, child, or other dependent.

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

WISCONSIN RETIREMENT SYSTEM
ACTIVE PARTICIPANTS INCLUDED IN VALUATIONS
DECEMBER 31, 2001

Active participants included in the valuations totaled 261,126 with an annual payroll totaling $9,745.0 million, as follows:

Valuation Group	Number	Annual Earnings ($Millions)	Group Averages			
			Earnings	Age	Years of Service	Contribs.
General	238,944	$8,746.5	$36,605	44.6	11.1	$46,436
Executive Group & Elected Officials	1,486	84.8	57,060	53.2	12.2	74,386
Protective Occupation with Social Security	17,981	771.6	42,914	38.2	10.7	48,090
Protective Occupation without Social Security	2,715	142.1	52,339	39.6	12.9	85,523
Total Active Participants	**261,126**	**$9,745.0**	**$37,319**	**44.1**	**11.1**	**$47,115**
Prior Year	255,217	9,270.6	36,324	44.0	11.2	41,987

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

WISCONSIN RETIREMENT SYSTEM
INACTIVE PARTICIPANTS INCLUDED IN VALUATIONS
DECEMBER 31, 2001

Inactive participants included in the valuations totaled 112,561 as follows:

Valuation Group	Number	Group Averages		
		Age	Service	Money Purchase Balance
General	109,163	44.6	3.1	$12,935
Executive Group & Elected Officials	529	52.0	5.4	35,900
Protective Occupation with Social Security	2,719	38.1	3.8	18,470
Protective Occupation without Social Security	150	42.6	8.7	76,492
Total Inactive Participants	**112,561**	**44.5**	**3.1**	**$13,261**
Prior Year	107,332	44.4	3.2	12,317

The valuations also included 2,989 QDRO cases whose average age was 48.4 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, 2001
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	338							338	$ 5,239,847
20-24	6,015	24						6,039	122,453,208
25-29	15,889	1,664	14					17,567	495,847,170
30-34	12,396	9,040	1,652	24				23,112	754,676,294
35-39	11,856	7,156	7,633	1,481	51			28,177	967,933,324
40-44	13,029	7,173	7,377	5,862	2,418	69		35,928	1,261,658,724
45-49	10,621	7,434	7,266	5,750	7,443	2,887	23	41,424	1,579,741,233
50-54	7,322	6,239	7,093	5,737	6,491	8,805	3,338	45,025	1,905,736,051
55	1,190	986	1,287	1,137	1,112	1,242	1,822	8,776	387,808,829
56	778	669	828	720	669	697	1,040	5,401	233,091,726
57	708	624	806	663	644	600	928	4,973	211,867,358
58	694	500	697	620	571	462	658	4,202	173,266,620
59	622	529	641	594	528	409	580	3,903	159,234,206
60	510	416	521	429	407	311	424	3,018	118,784,212
61	442	329	361	360	331	222	338	2,383	91,426,145
62	362	291	333	290	237	225	249	1,987	74,613,358
63	280	205	261	233	197	115	176	1,467	52,758,939
64	253	167	190	164	128	98	147	1,147	40,796,813
65	238	119	149	130	113	65	86	900	28,698,966
66	218	100	77	70	67	42	77	651	20,878,721
67	174	83	67	49	35	33	56	497	14,765,584
68	145	65	65	38	29	15	40	397	11,178,138
69	127	36	38	17	14	20	27	279	6,967,181
70	124	45	35	17	18	9	19	267	5,500,309
71	104	40	25	13	16	7	20	225	5,352,743
72	101	27	21	8	7	4	17	185	3,909,040
73	79	31	15	9	10	1	13	158	2,650,319
74	52	21	17	9	4	2	8	113	1,985,113
75 & Up	225	63	41	20	9	11	36	405	7,652,730
Totals	**84,892**	**44,076**	**37,510**	**24,444**	**21,549**	**16,351**	**10,122**	**238,944**	**$8,746,472,901**

EXECUTIVE GROUP AND ELECTED OFFICIALS
AS OF DECEMBER 31, 2001
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
25-29	8	1						9	$ 286,101
30-34	23	12						35	1,438,478
35-39	30	23	16	4				73	3,873,049
40-44	48	31	38	25	10			152	8,234,184
45-49	62	40	33	33	38	12	1	219	12,364,665
50-54	88	47	46	63	63	38	9	354	23,115,867
55	17	6	6	15	11	11	7	73	5,408,504
56	8	9	9	12	10	7	5	60	4,465,334
57	14	14	10	8	4	7	4	61	3,799,543
58	15	7	12	8	8	6	2	58	3,726,664
59	17	7	5	8	6	5	2	50	2,899,939
60	9	5	4	4	4	2	3	31	1,888,225
61	10	3	7	4	4	7	5	40	2,850,277
62	10	8	7	2	1	3	1	32	1,272,061
63	11	3	4	6	7	4	3	38	2,140,721
64	5	5	3	5	1	7	3	29	1,607,796
65	8	2	2	1	2	1	2	18	883,614
66	7	5	2	3	1	1	2	21	1,049,694
67	10	1	3	2	3	1	1	21	779,807
68	12	1					1	14	281,192
69	7	2	2		1	1		13	407,706
70	9	3	1	1	1		1	16	501,681
71	5	2			1		1	9	167,215
72	5	1	2	2		2	1	13	492,328
73	4	1	2					7	95,661
74	5	1	2					8	82,897
75 & Up	15	11	1		3		2	32	678,449
Totals	**462**	**251**	**217**	**206**	**179**	**115**	**56**	**1,486**	**$84,791,652**

Protective Occupation Participants With Social Security
As of December 31, 2001
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	28							28	$ 594,650
20-24	945	9						954	26,964,009
25-29	2,096	518	1					2,615	94,506,108
30-34	1,245	1,825	492	3				3,565	144,611,905
35-39	600	825	1,242	356	3			3,026	133,721,342
40-44	373	415	655	870	443	7		2,763	128,669,534
45-49	237	238	358	527	883	348	4	2,595	124,547,304
50	33	35	45	81	114	142	13	463	22,850,685
51	28	26	35	59	83	114	20	365	18,266,949
52	22	27	41	45	60	126	35	356	17,748,755
53	36	22	31	42	71	83	45	330	16,188,659
54	27	16	32	26	54	50	44	249	12,145,385
55	16	18	32	29	38	27	37	197	9,307,327
56	14	16	14	19	23	22	25	133	6,387,835
57	12	4	4	14	13	17	12	76	3,649,924
58	7	10	8	9	7	6	16	63	2,862,094
59	7	4	12	10	11	8	5	57	2,542,207
60	12	6	10	7	6	4	9	54	2,200,945
61	1	6	6	7	4	1	7	32	1,665,488
62	3	1	3	2	2	2	2	15	612,243
63	2	1	3	1	2	1	2	12	500,303
64	2	3	1	3	1	1		11	410,987
65	1	2	1		2	1	2	9	340,807
66	1	1	1	1			1	5	200,979
67	1							1	19,249
68				1				1	51,277
69	1							1	25,276
70 & Up	4	1						5	42,050
Totals	5,754	4,029	3,027	2,112	1,820	960	279	17,981	$771,634,276

PROTECTIVE OCCUPATION PARTICIPANTS WITHOUT SOCIAL SECURITY
AS OF DECEMBER 31, 2001
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	70							70	$ 2,452,083
25-29	251	50						301	12,758,196
30-34	184	212	73					469	22,239,796
35-39	67	151	212	56				486	24,937,164
40-44	27	60	161	197	81			526	29,189,965
45-49	4	24	84	117	189	66	1	485	27,634,515
50		3	9	16	35	33		96	5,796,760
51	2	1	5	9	26	27	3	73	4,413,671
52			3	8	13	34	7	65	3,988,343
53			3	2	12	23	10	50	3,056,126
54		1	1	7	10	14	8	41	2,434,817
55	1	1	1	4	2	9	9	27	1,681,231
56				1		2		3	175,017
57	1				2	3	2	8	432,460
58			1	1			2	4	242,712
59			1		1			2	98,148
60		1			1	1		3	183,031
61				1			2	3	208,577
62							1	1	51,193
63			1	1				2	125,667
Totals	**607**	**504**	**555**	**420**	**372**	**212**	**45**	**2,715**	**$142,099,472**

ACTIVE PARTICIPANTS
AS OF DECEMBER 31, 2001
BY YEARS OF SERVICE AND GENDER

Completed Years of Service	Males	Females	Totals	Valuation Payroll Total	Valuation Payroll Average
0	8,130	17,235	25,365	$ 497,691,546	$ 19,621
1	7,290	14,019	21,309	539,101,690	25,299
2	5,842	11,144	16,986	480,786,764	28,305
3	5,395	9,750	15,145	456,702,515	30,155
4	4,651	8,259	12,910	408,403,249	31,635
5	3,810	7,205	11,015	362,476,321	32,908
6	3,655	6,563	10,218	345,592,338	33,822
7	3,554	6,221	9,775	349,600,409	35,765
8	3,132	5,699	8,831	322,373,236	36,505
9	3,166	5,855	9,021	340,742,017	37,772
10	3,215	5,623	8,838	346,222,472	39,174
11	3,923	6,016	9,939	412,969,454	41,550
12	3,372	5,322	8,694	364,604,810	41,938
13	2,850	4,499	7,349	317,965,757	43,267
14	2,512	3,977	6,489	283,622,644	43,708
15 & Up	37,354	41,888	79,242	3,916,143,082	49,420
Totals	**101,851**	**159,275**	**261,126**	**$9,744,998,304**	**$37,319**

Average	Males	Females	Totals
Age	44.3	44.0	44.1
Service	12.6	10.2	11.1

COMPARATIVE STATEMENT OF ACTIVE PARTICIPANTS IN VALUATIONS

Valuation 12/31	Protective With Social Security					Protective Without Social Security				
	No.	Earnings $ Millions	Earnings Average	Earnings % Incr.		No.	Earnings $ Millions	Earnings Average	Earnings % 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%	

* 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	Grand Total
Ending Balance 12/31/2000	$11,212,674,954	$1,490,973,561	$12,703,648,515	$14,382,311,253	$1,488,389,096	$15,870,700,349	$28,574,348,865
Act 11 Adjustments	1,360,455,684	-	1,360,455,684	1,057,505,521	-	1,057,505,521	2,417,961,205
Closing Adjustments	5,831,438	16,193,778	22,025,216	(11,206,878)	19,125,580	7,918,702	29,943,918
Beginning Balance - 1/1/2001	12,578,962,076	1,507,167,339	14,086,129,415	15,428,609,897	1,507,514,676	16,936,124,573	31,022,253,988
Revenues:							
Employer Contributions	-	-	-	570,611,683	72,776,824	643,388,507	643,388,507
Participant Contributions	411,500,045	72,886,279	484,386,324	-	-	-	484,386,324
Total Revenues	411,500,045	72,886,279	484,386,324	570,611,683	72,776,824	643,388,507	1,127,774,831
Expenditures:							
Separations	25,023,489	1,165,637	26,189,126	-	-	-	26,189,126
Retirement Single Sums	5,422,772	143,662	5,566,434	6,615,606	91,819	6,707,425	12,273,859
Death Benefits	13,065,343	1,561,714	14,627,058	7,213,691	377,208	7,590,899	22,217,957
Disability Insurance	-	-	-	-	-	-	-
	43,511,604	2,871,013	46,382,617	13,829,297	469,028	14,298,325	60,680,942
Transfers:							
Earnings Allocation	963,096,039	(110,447,958)	852,648,081	1,298,298,924	(110,620,802)	1,187,678,123	2,040,326,203
Annuities Awarded	(991,712,365)	(267,936,274)	(1,259,648,639)	(816,592,038)	(265,852,023)	(1,082,444,061)	(2,342,092,700)
Intra-Fund Transfers	61,342	176,475	237,816	2,232,210	152,645	2,384,855	2,622,671
Inter-Fund Transfers	12,226,251	(12,226,251)	-	12,226,251	(12,226,251)	-	-
	(16,328,733)	(390,434,008)	(406,762,742)	496,165,347	(388,546,430)	107,618,916	(299,143,825)
Ending Balance - 12/31/2001	**$12,930,621,784**	**$1,186,748,596**	**$14,117,370,380**	**$16,481,557,629**	**$1,191,276,042**	**$17,672,833,671**	**$31,790,204,051**
Internal Rate of Return	7.8%	-7.9%	6.2%	8.5%	-7.9%	7.1%	6.7%

WISCONSIN RETIREMENT SYSTEM
RESERVES FOR NON-RETIRED PARTICIPANTS
BALANCES BY VALUATION GROUP

	Reserve for Year Ended			
	December 31, 2001			December 31, 2000
	Participant	Employer	Total	(Total in $ Millions)
General	$12,738,465,954	$15,529,976,766	$28,268,442,720	$25,423.8
Executives & Elected	123,147,634	137,109,292	260,256,926	231.5
Protective with Soc. Sec.	939,175,979	1,589,327,397	2,528,503,376	2,262.2
Protective w/o Soc. Sec.	316,580,815	416,420,217	733,001,032	656.8
Total	**$14,117,370,382**	**$17,672,833,672**	**$31,790,204,054**	**$28,574.3**

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, of course, pooled for investment purposes.

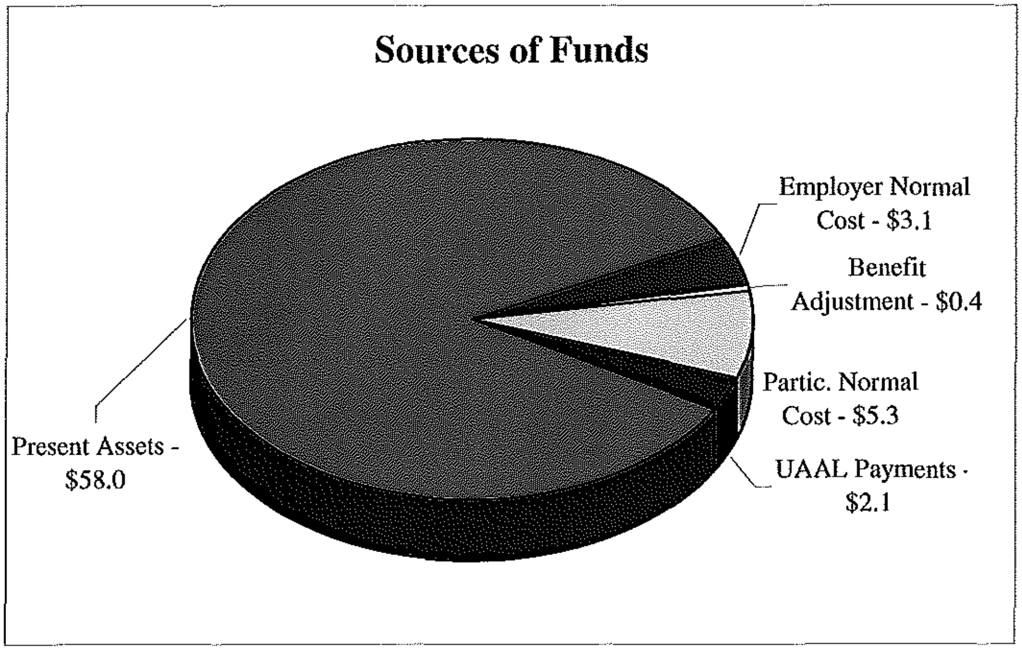
WISCONSIN RETIREMENT SYSTEM
UNFUNDED ACTUARIAL ACCRUED LIABILITY
DECEMBER 31, 2001

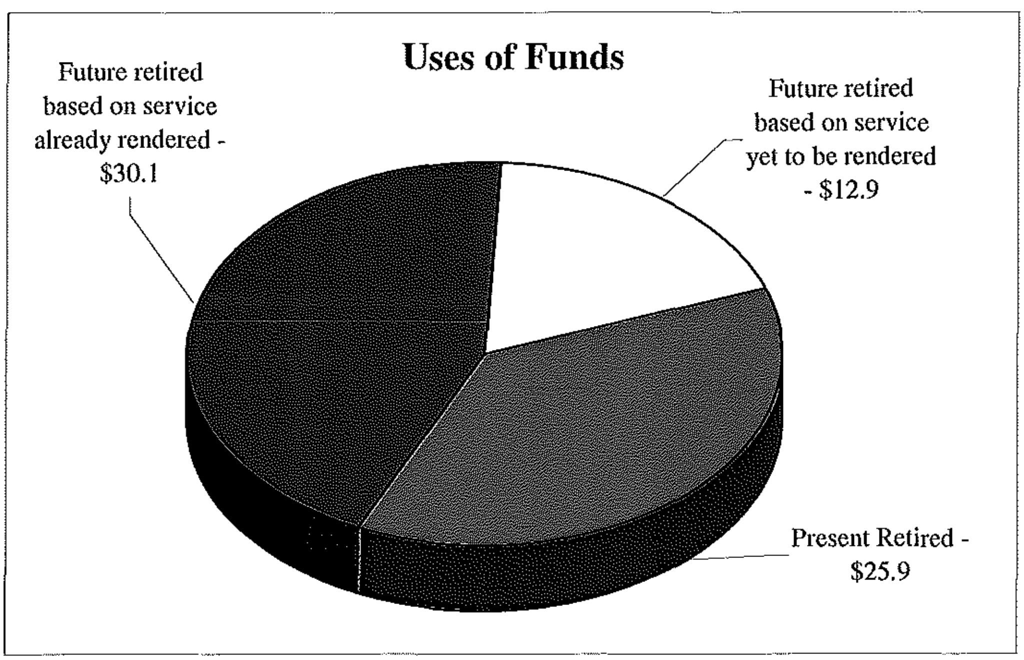
		Executives &	Protective Occupation		
		Elected	With	Without	
	General	Officials	Soc. Sec	Soc. Sec	Totals
Balance January 1, 2001	$1,992,696,043	$15,455,580	$90,372,983	$39,128,413	$2,137,653,019
Plus: New Employers	1,362,434	11,817	10,076	0	1,384,327
Less: Adjustments	(376)	381	0	0	5
Less: Payments	(194,186,932)	(1,711,857)	(14,650,498)	(3,568,109)	(214,117,396)
Plus: Interest	143,987,417	1,100,474	6,058,605	2,844,824	153,991,320
Balance December 31, 2001	**$1,943,858,586**	**$14,856,395**	**$81,791,166**	**$38,405,128**	**$2,078,911,275**

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 $68.9 BILLION* OF BENEFIT PROMISES FOR PRESENT ACTIVE AND RETIRED PARTICIPANTS DECEMBER 31, 2001





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

Wisconsin Retirement System
Development of Actuarial Present Values
December 31, 2001
($ Millions)

Present Value of Future Benefits for	General	Executives & Elected Officials	Protectives With Soc. Sec.	Protectives Without Soc. Sec.	Total
Active Participants					
Service Retirement	$30,836.2	$250.5	$3,220.9	$826.6	$35,134.2
Withdrawal	1,835.6	9.0	122.2	17.5	1,984.3
Death in Service	507.5	8.2	43.9	10.3	569.9
Disability	765.8	4.3	72.6	25.5	868.2
Variable Excess	378.2	6.3	15.6	3.7	403.8
Total Active	34,323.3	278.3	3,475.2	883.6	38,960.4
Inactive Participants	3,603.4	61.2	195.7	34.2	3,894.5
Total Active and Inactive	37,926.7	339.5	3,670.9	917.8	42,854.9
Additional Contributions					157.9
Present Retired					25,881.5
Actuarial Present Value of Future Benefits					**$68,894.3**

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 $68,894.3 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

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, 2001

		Executives	Protective Occupation		
		& Elected	With	Without	
	General	Officials	Soc. Sec	Soc. Sec.	Total
	$ Millions				
1. Present Value of Future Benefits for non-retired	$37,926.7	$339.5	$3,670.9	$917.8	$42,854.9
2. Present Value of Future Entry Age Normal Costs	10,940.7	88.1	1,540.5	324.2	12,893.5
3. Entry Age Accrued Liability: (1)-(2)	26,986.0	251.4	2,130.4	593.6	29,961.4
4. Non-Retired Assets-WRS	28,268.4	260.3	2,528.5	733.0	31,790.2
-LTDI	199.2	1.8	21.2	4.0	226.2
-Total	28,467.6	262.1	2,549.7	737.0	32,016.4
5. Entry Age Unfunded Accrued Liability:(3)-(4)	(1,481.6)	(10.7)	(419.3)	(143.4)	(2,055.0)
6. WRS Frozen Unfunded Accrued Liability	1,943.9	14.9	81.8	38.4	2,078.9
7. EAR:(6)-(5)	**$3,425.5**	**$25.6**	**$501.1**	**$181.8**	**$4,133.9**

WISCONSIN RETIREMENT SYSTEM
DEVELOPMENT OF CONTRIBUTION RATES
FOR CALENDAR YEAR 2003

	General	Executive & Elected Officials	Protective Occupation With Soc. Sec	Protective Occupation Without Soc. Sec.	Total
			$ Millions		
Total Reported Earnings	$ 8,746.5	$ 84.8	$ 771.6	$ 142.1	$ 9,745.0
Present Value of Future Earnings	90,990.3	695.5	9,405.0	1,556.8	102,647.6
Present Value of Future Benefits	37,926.7	339.5	3,670.9	917.8	42,854.9
Non-Retired Assets	28,467.6	262.0	2,549.7	737.0	32,016.3
Unfunded Liability	1,943.9	14.9	81.8	38.4	2,079.0
Present Value of Future Normal Costs					
Future Service Portion	10,940.7	88.1	1,540.5	324.2	12,893.5
Exp. Amort. Res. Portion	(3,425.5)	(25.5)	(501.1)	(181.8)	(4,133.9)
Total	7,515.2	62.6	1,039.4	142.4	8,759.6
Normal Cost Amortization Years					
Future Service Portion	13.1	9.8	16.0	14.0	13.3
Exp. Amort. Res. Portion	21.0	20.0	15.2	20.0	
Unfunded Liability Amortization Years	27.0	27.0	27.0	27.0	27.0
			%'s of Active Member Payroll		
Normal Cost					
Future Service Portion	12.0 %	12.7 %	16.4 %	20.8 %	12.6 %
Exp. Amort. Res. Portion	(2.6)%	(2.1)%	(5.3)%	(8.6)%	(2.9)%
Total	9.4 %	10.6 %	11.1 %	12.2 %	9.7 %
2002 Total Normal Cost Rates	9.0 %	11.7 %	11.1 %	13.4 %	9.3 %
Change from 2002 (current)	0.4 %	(1.1)%	0.0 %	(1.2)%	0.4 %
Allocation of Change					
Employer Normal Cost	0.2 %	(0.5)%	0.0 %	(0.6)%	0.2 %
Benefit Adjustment	0.2 %	0.0 %	0.0 %	0.0 %	0.2 %
Participant Normal Cost	0.0 %	(0.5)%	0.0 %	(0.6)%	0.0 %
Total Allocated Change	0.4 %	(1.0)%	0.0 %	(1.2)%	0.4 %
Unallocated Change *	0.0 %	(0.1)%	0.0 %	0.0 %	0.0 %
2003 Normal Cost Rates					
Employer Normal Cost	**4.0 %**	**8.1 %**	**7.1 %**	**9.8 %**	**4.4 %**
Benefit Adjustment	**0.4 %**	**0.0 %**	**0.0 %**	**0.0 %**	**0.4 %**
Participant Normal Cost	**5.0 %**	**2.6 %**	**4.0 %**	**2.4 %**	**4.9 %**
Total Normal Cost	**9.4 %**	**10.7 %**	**11.1 %**	**12.2 %**	**9.7 %**
Average Unfunded Liability Amortization	1.2 %	1.0 %	0.6 %	1.5 %	1.2 %
Average Total Rate	**10.6 %**	**11.7 %**	**11.7 %**	**13.7 %**	**10.9 %**

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

WISCONSIN RETIREMENT SYSTEM
SUMMARY STATEMENT OF RETIREMENT SYSTEM OBLIGATIONS
($ MILLIONS)

Retirement System Obligations	December 31 2001	December 31 2000
A. To Annuitants and Beneficiaries Receiving Benefits		
Fixed Annuities		
Reported at Year End	$21,283.6	$17,794.6
Dividend Adjustment and Reserve	696.1	912.0
Total Fixed Annuities	21,979.7	18,706.6
Variable Annuities		
Reported at Year End	4,547.4	4,749.3
Distribution and Reserve	(645.6)	(537.9)
Total Variable Annuities	3,901.8	4,211.4
Total for Benefits in Pay Status	25,881.5	22,918.0
B. To Active and Inactive Participants For Benefits Based on		
Participant Contributions Made		
In the Past	14,117.4	12,703.6
In the Future	5,276.6	5,035.4
Additional Contributions Made in the Past	157.9	166.1
Benefit Adjustment Contributions Made in the Future	364.0	174.2
Employer Contributions	23,096.9	21,052.4
Total for Benefits Not Yet in Pay Status	43,012.8	39,131.7
C. Total Actuarial Value of Expected Future Benefits	**$68,894.3**	**$62,049.7**

SECTION TWO

Financial Reporting

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Valaution Date	December 31, 2001
Actuarial Cost Method	Frozen Entry Age
Amortization Method	Level Percent -- Closed Period
Remaining Period	27 years (completion in 2029)
Asset Valuation Method	5 Year Smoothed Market (Closed)
Actuarial Assumptions	
Investment Rate of Return	8.0%
Projected Salary Increases*	4.5% to 10.5%
Payroll Growth Rate	4.5%
Population Growth Rate	0.0%
Cost of Living Adjustments#	2.86%

* *Includes merit and seniority increases that vary by age plus wage inflation of 4.5%/year.*

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

WISCONSIN RETIREMENT SYSTEM
STATEMENT OF NET PLAN ASSETS

	2000	1999
Assets		
Equity in Pooled Cash & Cash Equivalents	$ 1,224,715	$ 948,491
Securities Lending Collateral	3,154,575	2,847,852
Prepaid Expenses	271	0
Total Short Term Assets	4,379,561	3,796,343
Receivables		
Contributions	(14,973)	122,564
Prior Service Contributions	2,066,430	2,112,431
Benefits Overpayment	1,541	1,252
Due from other Trust Funds	1,763	1,016
Due from other State Agencies	0	0
Due from the Federal Government	4	2
Miscellaneous	42,402	11
Interest and dividends	252,302	244,783
Investment Sales	149,563	39,056
Total receivables	2,499,032	2,521,115
Investments at Fair Value		
Bonds	15,406,907	13,999,422
Private Placements	3,562,695	3,126,427
Stocks	37,742,751	42,534,947
Options	0	48,358
Limited Partnerships	2,817,726	2,520,061
Mortgages	580,193	386,511
Real Estate	460,259	448,268
Other	0	418
Total investments	60,570,531	63,064,412
Total Assets	**67,449,124**	**69,381,870**
Liabilities:		
Fixed Investment due Other Programs	1,159,296	1,168,703
VariableInvestment Due other Programs	10,677	0
Securities lending collateral	3,154,575	2,847,852
Annuities payable	267,596	132,965
Advance Contributions	371	391
Due to Other State Agencies	1,987	1,129
Miscellaneous Payables	49,362	58,315
Investment Payables	119,063	36,896
Total Liabilities	**4,762,927**	**4,246,251**
Net Assets in Trust for Pension Benefits	**$62,686,197**	**$65,135,619**

Data for 2001 was not available at the time this report was produced.

STATEMENT OF CHANGES IN ASSETS ($ THOUSANDS)

	Activity During Year	
	2000	1999
Additions:		
Contributions:		
Employer Contributions	$ 414,438	$ 435,212
Employe Contributions	511,661	512,270
Total Contributions	926,099	947,482
Investment Income:		
Net Appreciation (Depreciation) in Fair Value of Investments	(3,020,450)	7,635,580
Interest	1,296,377	1,207,247
Dividends	613,606	495,780
Securities Lending Income	219,956	196,888
Other	135,890	117,692
Less		
Investment Expense	98,282	80,098
Securities Lending Rebates and Fees	198,967	177,106
Investment Income Distributed to Other Funds	(18,117)	160,611
Net Investment Income	(1,033,753)	9,235,372
Interest on Prior Service Receivable	158,299	145,471
Miscellaneous Income	184	205
Total Additions	50,829	10,328,530
Deductions:		
Benefits and Refunds:		
Retirement, Disability, and Beneficiary	2,257,696	1,858,337
Separation Benefits	44,673	35,609
Total Benefits and Refunds	2,302,369	1,893,946
Unusual Writeoff of receiveable	183,350	0
Administrative Expense	14,529	12,328
Total Deductions	2,500,248	1,906,274
Net Increase (Decrease)	(2,449,419)	8,422,256
Net Assets Held in Trust:		
Beginning of Year	$65,135,618	$56,713,362
End of Year	**$62,686,199**	**$65,135,618**

Data for 2001 was not available at the time this report was produced.

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 %

SOLVENCY TEST

Valuation Date 31-Dec	Valuation Assets	Accrued Liability For: Annuitants and Beneficiaries	Member Contribs.	Active & Inactive Members	Total	Percent Funded For: 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%

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%

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.

Wisconsin Retirement System

Market Recognition Account (Fixed Trust Fund)

	For the Year Ended December 31					
	2000	2001	2002	2003	2004	2005
Beginning of year						
a. Funding Value	$46,012,549,104	$49,863,691,953	$52,673,302,096	$52,765,499,576	$52,857,697,056	$52,949,894,536
b. Market value	55,922,704,048	54,493,196,754	51,884,715,816	51,884,715,816	51,884,715,816	51,884,715,816
End of year						
c. Market value	54,493,196,754	51,884,715,816	51,884,715,816	51,884,715,816	51,884,715,816	51,884,715,816
d. Non-investment cash flow (contributions minus benefits)	(949,266,615)	(1,222,771,820)				
e. Investment income						
e1. Total Investment Income	(480,240,679)	(1,385,709,118)				
e2. Assumed rate	8.0%	8.0%				
e3. Amount for immediate recognition	3,643,033,264	3,940,184,483	-	-	-	-
e4. Amount for phased-in recognition: e1-e3	(4,123,273,943)	(5,325,893,602)	-	-	-	-
f. Phased-in recognition of investment income						
f1. Current year: .2 x e4	(824,654,789)	(1,065,178,720)	-	-	-	-
f2. First prior year	-	(824,654,789)	(1,065,178,720)	-	-	-
f3. Second prior year	-	-	(824,654,789)	(1,065,178,720)	-	-
f4. Third prior year	-	-	-	(824,654,789)	(1,065,178,720)	-
f5. Fourth prior year	-	-	-	-	(824,654,789)	(1,065,178,720)
f6. Total MRA recognition	(824,654,789)	(1,889,833,509)	(1,889,833,509)	(1,889,833,509)	(1,889,833,509)	(1,065,178,720)
f7. Amount for TAA recognition	1,982,030,989	1,982,030,989	1,982,030,989	1,982,030,989	1,982,030,989	-
f8. Total recognized gain (loss)	1,157,376,200	92,197,480	92,197,480	92,197,480	92,197,480	(1,065,178,720)
g. Total Recognized Investment Income: e3 + f8	4,800,409,464	4,032,381,963	92,197,480	92,197,480	92,197,480	(1,065,178,720)
h. Funding value end of year: a + d + e3 + f8	49,863,691,953	52,673,302,096	52,765,499,576	52,857,697,056	52,949,894,536	51,884,715,816
i. Difference between market and funding values	4,629,504,801	(788,586,281)	(880,783,761)	(972,981,240)	(1,065,178,720)	-
j. Recognized Rate of Return	10.5%	8.2%				
k. Market Rate of Return	-0.9%	-2.6%				

ECONOMIC ASSUMPTIONS

The long-term rates of investment return used in making the valuation was 8.0% a year, compounded yearly.

Dividends for present and future retirees are assumed to be 2.86% 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 ages. 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					
			Protective		Exec. &
Age	Gen.	Teachers	With S.S.	w/o S.S.	Elec.
20	5.6 %	6.0 %	4.2 %	5.0 %	5.0 %
25	5.6 %	5.8 %	4.2 %	4.2 %	4.2 %
30	4.3 %	4.2 %	3.8 %	2.8 %	2.8 %
35	3.1 %	3.1 %	2.6 %	1.4 %	1.4 %
40	2.2 %	2.2 %	1.2 %	0.8 %	0.8 %
45	1.5 %	1.5 %	0.5 %	0.5 %	0.5 %
50	1.0 %	1.0 %	0.3 %	0.3 %	0.3 %
55	0.4 %	0.4 %	0.1 %	0.1 %	0.1 %
60	0.3 %	0.3 %	0.1 %	0.1 %	0.1 %
65	0.3 %	0.3 %	0.1 %	0.1 %	0.1 %

In addition to the merit and longevity increase, each person is assumed to get an economic increase of 4.5% 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 4.5% 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 - 96 for men and women. 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 - 96 WITH 5% INTEREST

Sample Attained Ages	Present Value of $1 Monthly for Life		Future Life Expectancy (years)	
	Males	Females	Males	Females
40	$203.49	$213.51	39.7	45.1
45	193.18	205.50	34.9	40.3
50	180.98	195.63	30.2	35.4
55	166.76	183.57	25.7	30.7
60	150.13	168.96	21.4	26.1
65	131.03	151.77	17.3	21.6
70	110.56	131.92	13.5	17.3
75	90.31	110.50	10.3	13.4
80	70.75	89.29	7.6	10.1
85	54.29	69.03	5.5	7.3

For disability retirements basing mortality on an age 12 years older than the actual age recognizes impaired longevity.

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. All participants who die in service are assumed married.

RATES OF RETIREMENT FOR THOSE ELIGIBLE TO RETIRE

Normal Retirement Pattern

	% Retiring Next Year								
	General		Public School		University		Protective*		Exec. &
Age	Male	Female	Male	Female	Male	Female	With S.S.	W/O S.S.	Elected
50							5%	2%	
51							5%	2%	
52							5%	4%	
53							31%	34%	
54							27%	36%	
55							27%	39%	
56							27%	42%	
57	25%	27%	30%	25%	20%	25%	27%	38%	8%
58	25%	27%	30%	22%	16%	15%	27%	37%	8%
59	25%	27%	30%	22%	15%	25%	27%	33%	12%
60	25%	28%	30%	25%	16%	17%	31%	31%	14%
61	28%	34%	30%	23%	18%	19%	26%	40%	20%
62	47%	50%	45%	36%	25%	32%	47%	40%	15%
63	45%	50%	45%	25%	22%	26%	38%	40%	15%
64	45%	50%	45%	40%	23%	37%	31%	40%	15%
65	45%	50%	55%	40%	25%	33%	34%	40%	20%
66	32%	39%	50%	31%	25%	32%	50%	40%	20%
67	29%	30%	40%	20%	25%	24%	50%	40%	20%
68	24%	25%	40%	20%	25%	26%	50%	40%	20%
69	22%	20%	40%	20%	25%	20%	50%	40%	20%
70	12%	20%	40%	20%	25%	20%	100%	100%	20%
71	12%	20%	40%	20%	25%	20%	100%	100%	20%
72	12%	20%	40%	20%	25%	20%	100%	100%	20%
73	12%	20%	40%	20%	25%	20%	100%	100%	20%
74	12%	20%	40%	20%	25%	20%	100%	100%	20%
75	100%	100%	100%	100%	100%	100%	100%	100%	100%

* *Includes early retirements.*

Early Retirement Pattern

	% Retiring Next Year						
	General		Public School		University		Exec. &
Age	Male	Female	Male	Female	Male	Female	Elected
55	7%	6%	13%	11%	5%	7.5%	6%
56	5%	6%	10%	7%	5%	7.5%	6%
57	4%	6%	6%	8%	5%	7.5%	6%
58	4%	6%	8%	9%	5%	7.5%	6%
59	4%	7%	9%	10%	5%	7.5%	6%
60	6%	9%	10%	13%	5%	7.5%	6%
61	9%	11%	15%	14%	5%	7.5%	6%
62	20%	20%	15%	20%	5%	7.5%	
63	20%	20%	15%	20%	5%	7.5%	
64	20%	20%	15%	20%	5%	7.5%	

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. &	Other	
Age &	Service			Males	Females	Males	Females	Elected	Males	Females
	0	11.7%	4.9%	10.1%	10.0%	18.0%	18.9%	7.5%	17.6%	16.9%
	1	6.4%	2.5%	7.0%	7.0%	15.0%	16.2%	7.0%	10.6%	11.1%
	2	5.1%	2.4%	5.3%	6.0%	13.0%	14.9%	6.5%	7.9%	8.7%
	3	3.6%	2.3%	3.8%	5.4%	11.0%	12.8%	6.0%	6.8%	7.1%
	4	3.0%	2.2%	3.5%	4.0%	10.0%	10.5%	5.5%	6.0%	6.0%
25	5 & Over	2.1%	1.0%	3.5%	4.0%	10.0%	10.5%	5.0%	6.0%	6.0%
30		1.7%	1.0%	2.7%	3.5%	10.0%	10.5%	4.8%	4.6%	5.8%
35		1.2%	0.7%	1.5%	2.3%	9.0%	8.3%	4.6%	3.1%	4.5%
40		1.1%	0.7%	1.2%	1.5%	5.0%	5.3%	4.0%	2.1%	3.2%
45		1.1%	0.7%	1.0%	1.2%	3.3%	3.8%	3.2%	1.8%	2.9%
50		1.0%	0.7%	0.9%	1.2%	2.0%	2.9%	2.4%	1.5%	2.5%
55		1.0%	0.7%	0.9%	1.2%	1.0%	2.0%	2.0%	1.5%	1.8%
60		1.0%	0.7%	0.9%	1.2%	0.7%	2.0%	2.0%	1.5%	0.6%

DISABILITY RATES

	% of Active Participants Becoming Disabled									
	Protective		Public Schools		University		Exec. & Elected		Other	
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	0.04%	0.06%	0.01%	0.01%	0.01%	0.05%	0.02%	0.02%	0.02%	0.05%
40	0.06%	0.11%	0.02%	0.02%	0.02%	0.08%	0.02%	0.02%	0.06%	0.07%
45	0.11%	0.19%	0.05%	0.07%	0.04%	0.07%	0.04%	0.04%	0.11%	0.10%
50	0.38%	0.59%	0.14%	0.13%	0.07%	0.13%	0.08%	0.08%	0.25%	0.16%
55	1.25%	0.65%	0.26%	0.19%	0.21%	0.20%	0.30%	0.30%	0.48%	0.29%
60	0.85%	0.50%	0.43%	0.28%	0.28%	0.30%	0.37%	0.37%	0.85%	0.41%

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. 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:

$$\mathbf{B = C + I - E}$$

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.

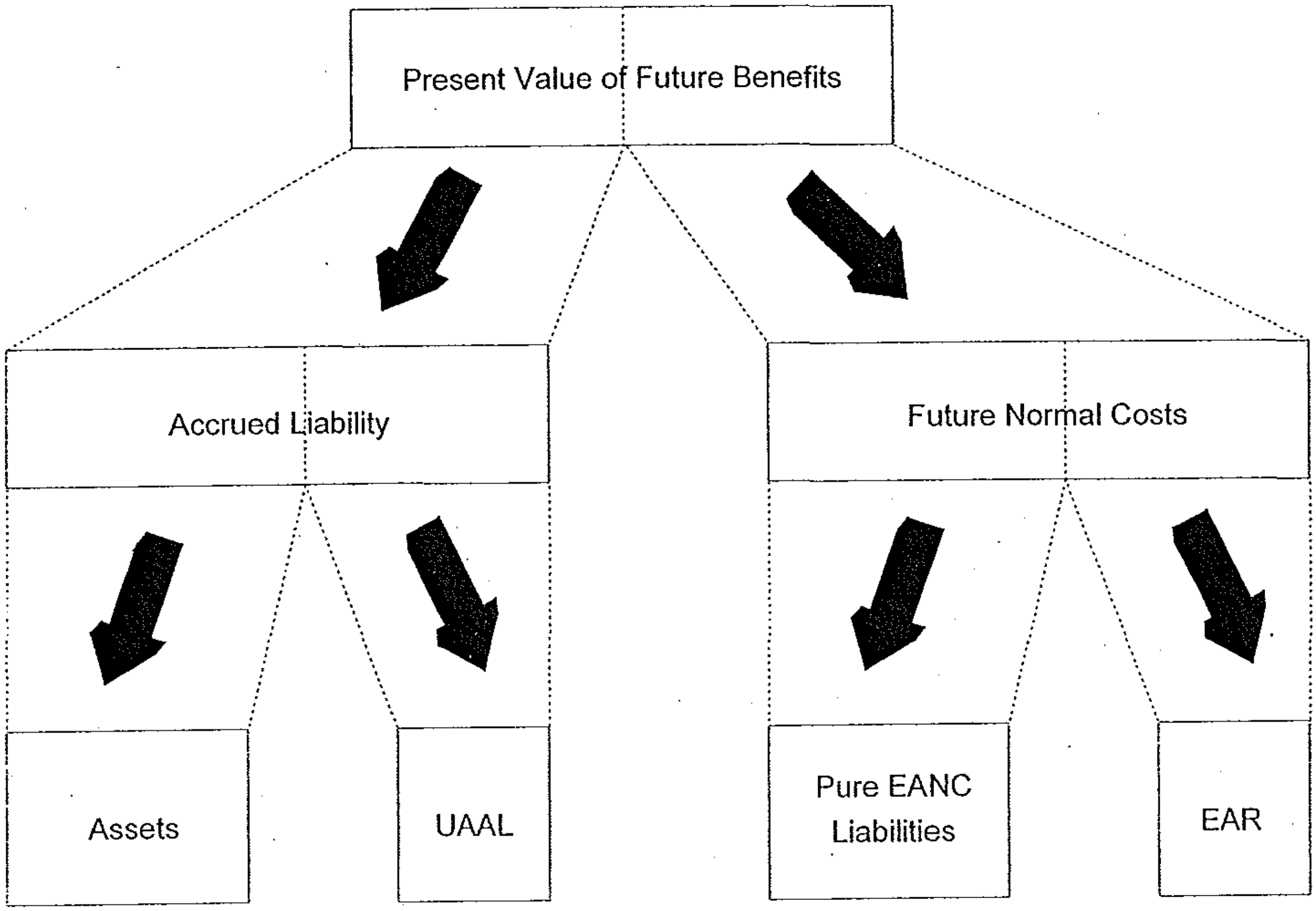
The principal areas of risk assumption are:

- 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.***

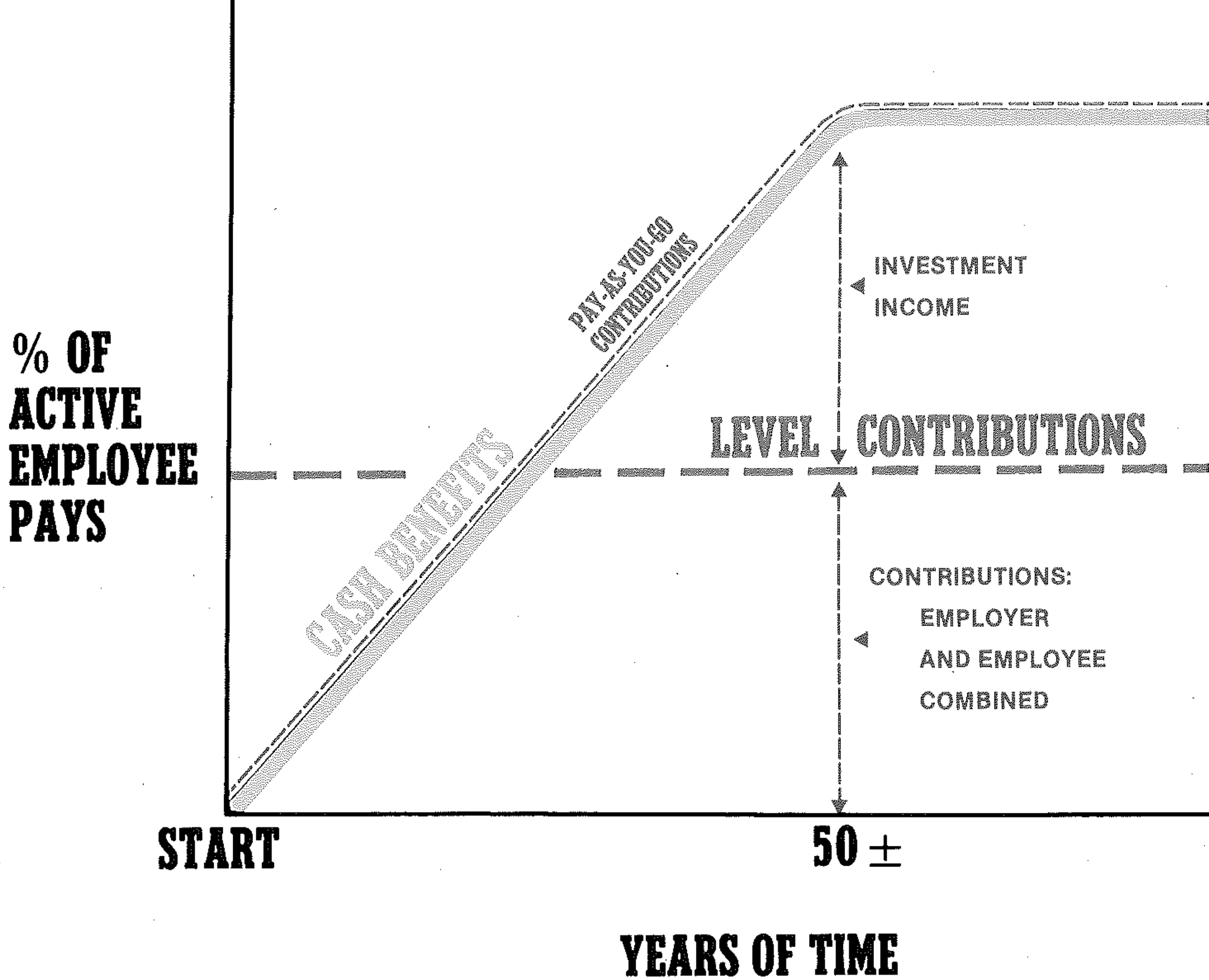
In an actuarial valuation, the actuary projects the monetary effect of each risk assumption for each distinct experience group, for the next year and for each year over the next half-century or longer.

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.

The Actuarial Valuation Process



- UAAL: Unfunded actuarial accrued liabilities are amortized over a fixed period of years.
- Pure EANC: Entry age normal cost liabilities are financed over the working lifetimes of WRS participants.
- EAR: The Experience Amortization Reserve portion of future normal costs is financed over varying periods which are selected to optimize contribution rate stability.



CASH BENEFITS LINE. **This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).**

LEVEL CONTRIBUTION LINE. **Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:**

- **Economic Risk Areas**
  - **Rates of investment return**
  - **Rates of pay increase**
  - **Changes in active member group size**
- **Non-Economic Risk Areas**
  - **Ages at actual retirement**
  - **Rates of mortality**
  - **Rates of withdrawal of active members (turnover)**
  - **Rates of disability**

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.