

**WISCONSIN RETIREMENT SYSTEM**

**TWENTY-SEVENTH ANNUAL ACTUARIAL VALUATION**

**DECEMBER 31, 2007**

# OUTLINE OF CONTENTS

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<b>Section</b>	<b>Pages</b>	<b>Items</b>
		Introduction
		<b>Section One: Actuarial Valuation Results</b>
I	1-5	Overview
	6-9	Benefit Provisions
	10-17	Non-Retired Participant Data
	18-20	Financial Data
	21-25	Valuation Results
		<b>Section Two: Financial Reporting</b>
II	1	Summary of Assumptions and Methods
	2-3	Statement of Net Assets
	4	Funding Progress & Accrued Liabilities
	5	Solvency and Contributions
		<b>Section Three: Actuarial Methods and Assumptions</b>
III	1	Actuarial Valuation Method
	2-3	Asset Valuation Method
	4-10	Summary of Assumptions
		<b>Section Four: The Valuation Process</b>
IV	1-3	Financial Principles and Operational Techniques
	4-5	The Actuarial Valuation Process
	6-7	Glossary

June 11, 2008

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, 2007 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 2009 calendar year in conformance with Chapter 40 of the Wisconsin Statutes. The change in the normal cost rates from last year are shown below:

<u>General</u>	<u>Executive</u>	<u>Protective With SS</u>	<u>Protective Without SS</u>
(0.2)%	0.0%	(0.2)%	(0.4)%

The valuations are based upon all current plan provisions related to General, Executive and Elected, and Protective Occupation employment with and without Social Security coverage. 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.

Actuarial valuations are based upon assumptions regarding future activity in specific risk areas including the rates of investment return and payroll growth, eligibility for the various classes of benefits, and longevity among retired lives. The Board adopts these assumptions after considering the advice of the actuary and other professionals. The assumptions and the methods comply with the requirements of Statement No. 25 of the Governmental Accounting Standards Board. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. The December 31, 2007 valuations were based upon assumptions that were recommended in connection with a study of experience covering the 2003-2005 period.

Employee Trust Funds Board  
Wisconsin Department of Employee  
Trust Funds  
June 11, 2008  
Page 2

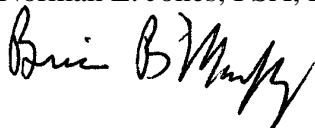
To the best of our knowledge, this report is complete and accurate and was made in accordance with generally recognized actuarial methods. The actuaries submitting this statement are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The valuations were completed by qualified actuaries in accordance with accepted actuarial procedures as prescribed by the Actuarial Standards Board. It is our opinion that the Wisconsin Retirement System is operating in accordance with actuarial principles of level percent-of-payroll financing.

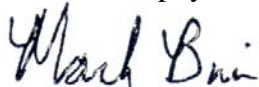
Respectfully submitted,



Norman L. Jones, FSA, MAAA



Brian B. Murphy, FSA, MAAA



Mark Buis, FSA, MAAA

NLJ/BBM/MB:lr

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**SECTION ONE**

**ACTUARIAL VALUATION RESULTS**

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# OVERVIEW

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

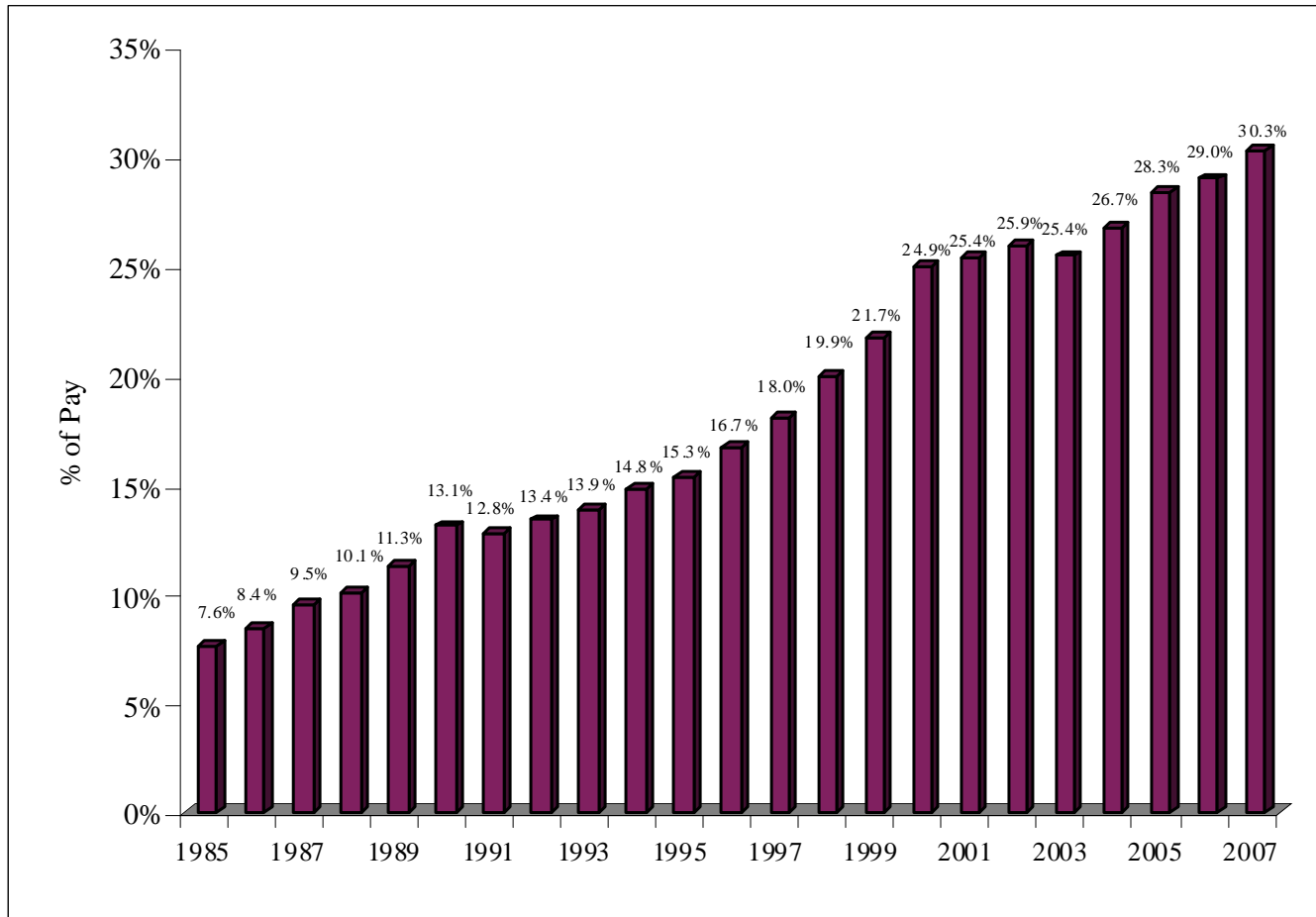
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	General Participants		Executives & Elected Officials		Protective Occupation			
					With Soc. Sec.		Without Soc. Sec.	
	2009	2008	2009	2008	2009	2008	2009	2008
Employer Normal Cost	4.5%	4.6%	8.5%	8.5%	8.1%	8.2%	10.6%	10.8%
Benefit Adjustment Contribution	0.9%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Participant Normal Cost	5.0%	5.0%	3.0%	3.0%	5.0%	5.1%	3.2%	3.4%
Total Normal Cost	10.4%	10.6%	11.5%	11.5%	13.1%	13.3%	13.8%	14.2%
Unfunded Actuarial Accrued Liability (UAAL)	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.3%	0.4%
<b>WRS Average Total</b>	<b>10.6%</b>	<b>10.8%</b>	<b>11.5%</b>	<b>11.6%</b>	<b>13.2%</b>	<b>13.4%</b>	<b>14.1%</b>	<b>14.6%</b>

Under Section 40.05 of the 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.



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## COMPARATIVE STATEMENT OF COMPUTED CONTRIBUTION RATES

Valuation 12/31	Rate Effective 1/1	General				Executive and Elected			
		Participant	Benefit Adj. Contr.	Employer*	Total	Participant	Benefit Adj. Contr.	Employer*	Total
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 %
2004	2006	5.0 %	0.9 %	4.7 %	10.6 %	2.9 %	0.0 %	8.5 %	11.4 %
2005	2007	5.0 %	1.0 %	4.8 %	10.8 %	3.0 %	0.0 %	8.6 %	11.6 %
2006	2008	5.0 %	1.0 %	4.8 %	10.8 %	3.0 %	0.0 %	8.6 %	11.6 %
2007	2009	5.0 %	0.9 %	4.7 %	10.6 %	3.0 %	0.0 %	8.5 %	11.5 %

# 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
1983	1985	6.0 %		12.1 % <sup>#</sup>	18.1 %	8.0 %		19.8 % <sup>#</sup>	27.8 %
1984 <sup>@</sup>	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 <sup>@</sup>	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 %
2004	2006	5.0 %	0.0 %	8.2 %	13.2 %	3.3 %		11.1 %	14.4 %
2005	2007	5.1 %	0.0 %	8.3 %	13.4 %	3.4 %		11.2 %	14.6 %
2006	2008	5.1 %	0.0 %	8.3 %	13.4 %	3.4 %		11.2 %	14.6 %
2007	2009	5.0 %	0.0 %	8.2 %	13.2 %	3.2 %		10.9 %	14.1 %

<sup>#</sup> 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.

<sup>@</sup> Benefit change.

& Act 11 of 1999 was implemented in 2001.

## COMMENTS ON DECEMBER 31, 2007 RESULTS

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Based upon this valuation, normal cost contribution rates decreased for all groups primarily due to favorable investment performance. Detail concerning experience gains and losses in individual risk areas will be presented at a later date in the annual Gain Loss Analysis. Accumulated gains in the Experience Amortization Reserve (EAR) currently help to reduce the normal cost rate. Normal cost rates could be higher in the future if gains in the EAR account are reduced or fully amortized.

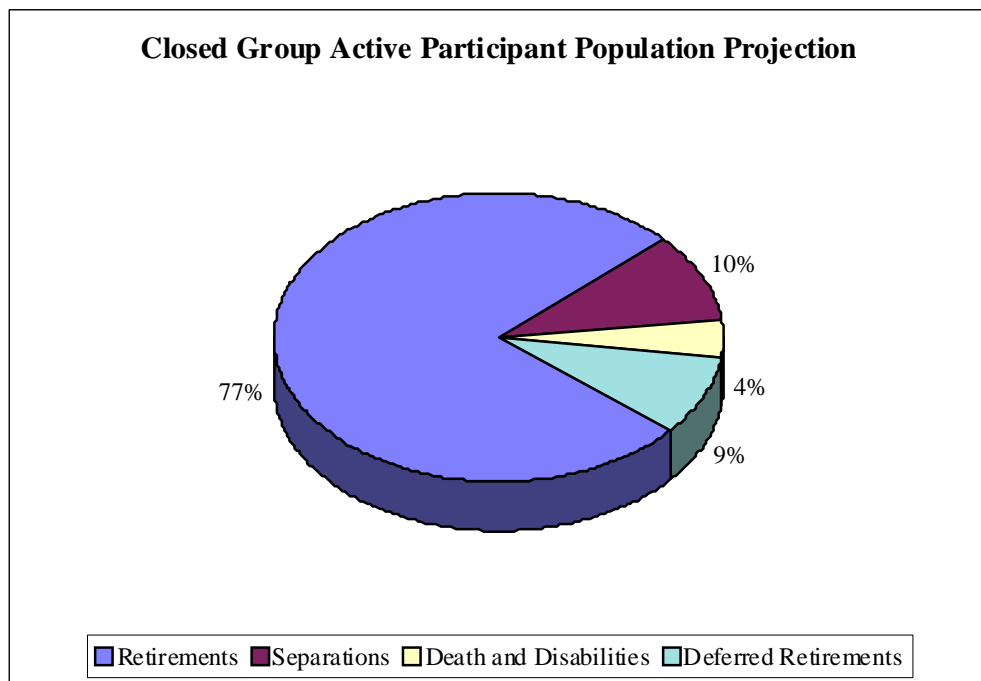
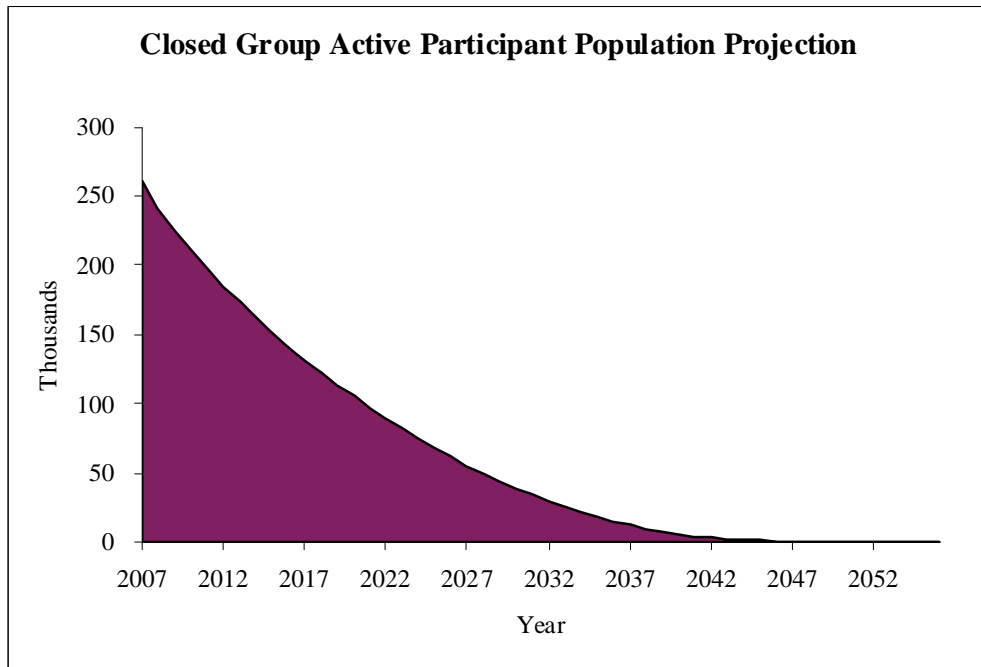
In total, during 2007, investment return was well above the assumed level of 7.8% on a market value basis (please see pages I-18 and III-3). However, under the asset valuation method, gains and losses are phased in over a five year period, resulting in a 12.5% return on an actuarial value of assets basis. The Market Value of Assets exceeds the Actuarial Value of Assets by approximately 6% as of the valuation date. This difference is within commonly accepted bounds, and is a favorable condition for the WRS.

The statutory allocation of the rate change among Participant Normal Cost, Employer Normal Cost, and Benefit Adjustment Contribution is shown on page I-24. The original intent of the statutory allocation was most likely to permit participants to share equally with employers in good and bad investment results and in other actuarial results. The Participant Normal Cost contributions and the Benefit Adjustment Contributions are, in most cases, paid by the employers rather than by the participants. This means that good and bad experience is not really shared, since the employers are paying the whole contribution anyway. Rather, in some cases, good experience tends to reduce benefits payable to future retirees, and bad experience tends to increase such benefits. That counterintuitive effect occurs because certain benefits, such as money purchase minimum benefits, separation benefits, and some death benefits, depend on the nominal Participant Normal Cost rate: the higher the nominal participant normal cost rate, the higher the benefit, and conversely. The participant normal cost rate is presently lower for the Elected group and Protective Without Social Security group than it is for the other groups, resulting in reduced separation benefits for these participants. The WRS is a complicated retirement system, and changes should not be undertaken lightly. However, we do recommend a careful review of this portion of the interaction between the statutory allocation of contribution rate changes and money purchase benefits, with a view toward correcting the unintended impact on benefits.

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, 2007 regular annual actuarial valuation, it is our opinion that *the Wisconsin Retirement System continues to operate in accordance with actuarial principles of level percent-of-payroll financing.*

# EXPECTED DEVELOPMENT OF PRESENT POPULATION DECEMBER 31, 2007



The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 261,003 active members. Eventually, 10% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Nearly 86% 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**

## SUMMARY OF BENEFIT PROVISIONS EVALUATED DECEMBER 31, 2007 ACTUARIAL VALUATION

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### 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		Group
After 1999	Before 2000	
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.

For protective occupations, eligibility also can be met if a member has 15 years of service, is between the ages of 50 and 55 and unable to safely and efficiently perform one’s duties.

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

	<b>Pre-10/16/92 WRS Plan</b>	<b>Post-10/15/92 LTDI Plan</b>
<b>Participants covered</b>	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.
<b>Benefit to age 65*</b>	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.
<b>Benefit at age 65*</b>	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 contributions 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 core accounts (including the variable at core accounts) are credited with interest at the full (core) effective rate. For others, accounts are credited with interest as follows:

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

Participant variable accounts are credited with interest based on the earnings in the variable portfolio.

**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.

**Normal Form of Benefit.** The normal form of benefit is a straight life annuity with no death benefits. Optional forms of benefit which are actuarially reduced are listed below:

- A life annuity with 60 or 180 monthly payments guaranteed.
- A joint survivorship annuity with 75% continued to beneficiary.
- A joint survivorship annuity with 100% continued to beneficiary.
- A joint survivorship annuity reduced 25% upon either your death or your beneficiary's death.
- A joint survivorship annuity with 100% continued to beneficiary combined with 180 monthly payments guaranteed.

# **NON-RETIRED PARTICIPANT DATA**

**ACTIVE PARTICIPANTS INCLUDED IN VALUATIONS**  
**DECEMBER 31, 2007**

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**Active participants** included in the valuations totaled 261,003 with an annual payroll totaling \$11,581.8 million, as follows:

Valuation Group	Number	Annual Earnings (\$Millions)	Group Averages			
			Earnings	Age	Years of Service	Contribs.
General	237,124	\$10,277.9	\$43,344	45.9	11.8	\$54,865
Executive Group & Elected Officials	1,427	94.6	66,320	54.4	13.1	89,599
Protective Occupation with Social Security	19,757	1,035.6	52,419	39.8	11.8	55,686
Protective Occupation without Social Security	2,695	173.7	64,449	41.0	14.1	87,919
<b>Total Active Participants</b>	<b>261,003</b>	<b>\$11,581.8</b>	<b>\$44,374</b>	<b>45.5</b>	<b>11.8</b>	<b>\$55,459</b>
Prior Year	260,302	\$11,170.3	\$42,913	45.4	11.8	\$52,286

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

**INACTIVE PARTICIPANTS INCLUDED IN VALUATIONS  
DECEMBER 31, 2007**

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**Inactive participants** included in the valuations totaled 137,411 as follows:

Valuation Group	Number	Group Averages		
		Age	Service	Money Purchase Balance
General	132,555	45.8	3.0	\$13,443
Executive Group & Elected Officials	614	53.1	4.8	33,584
Protective Occupation with Social Security	4,055	39.5	3.8	16,986
Protective Occupation without Social Security	187	43.0	7.7	59,852
<b>Total Inactive Participants</b>	<b>137,411</b>	<b>45.6</b>	<b>3.0</b>	<b>\$13,701</b>
Prior Year	133,985	45.4	3.0	\$13,033

The valuations also included 3,710 QDRO cases whose average age was 50.2 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, 2007**  
**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	168							168	\$ 2,676,894
20-24	4,621	39						4,660	110,759,473
25-29	14,881	2,500	15					17,396	573,817,665
30-34	9,094	10,849	1,291	4				21,238	836,344,911
35-39	8,156	8,383	7,827	1,368	17			25,751	1,109,493,517
40-44	8,550	7,648	6,294	7,055	1,199	12		30,758	1,347,528,012
45-49	8,741	8,479	6,210	6,588	5,598	1,826	71	37,513	1,641,272,469
50-54	6,351	7,639	6,236	6,482	5,557	6,385	2,614	41,264	1,920,892,348
55	994	1,280	1,158	1,314	1,055	1,156	1,422	8,379	408,929,347
56	982	1,179	1,157	1,268	1,086	1,081	1,436	8,189	401,448,436
57	855	1,047	1,000	1,202	978	947	1,454	7,483	367,742,205
58	771	898	883	1,035	833	784	1,127	6,331	311,296,457
59	725	801	815	946	754	699	959	5,699	275,876,281
60	666	702	700	834	763	531	817	5,013	234,706,863
61	635	646	664	762	683	494	700	4,584	218,338,363
62	411	397	424	454	391	293	417	2,787	128,708,834
63	378	337	321	392	309	212	305	2,254	99,858,577
64	306	299	252	299	259	171	262	1,848	81,617,247
65	261	261	226	230	202	142	182	1,504	65,022,553
66	216	162	122	123	103	74	118	918	37,768,690
67	175	122	92	93	56	43	84	665	24,360,513
68	180	84	58	77	43	24	64	530	18,934,505
69	143	65	53	53	38	24	44	420	14,631,679
70	129	50	41	35	30	19	37	341	11,165,397
71	117	60	20	16	20	11	21	265	7,398,699
72	122	41	34	17	14	6	27	261	7,041,904
73	85	36	16	15	12	6	12	182	4,750,440
74	77	39	16	12	9	3	12	168	3,858,645
75 & Up	274	134	43	24	24	12	44	555	11,642,020
<b>Totals</b>	<b>69,064</b>	<b>54,177</b>	<b>35,968</b>	<b>30,698</b>	<b>20,033</b>	<b>14,955</b>	<b>12,229</b>	<b>237,124</b>	<b>\$10,277,882,944</b>

**EXECUTIVE GROUP AND ELECTED OFFICIALS  
AS OF DECEMBER 31, 2007  
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									
25-29	6	1						7	\$ 192,875
30-34	24	10	2					36	2,010,874
35-39	37	21	14	2				74	4,047,580
40-44	54	17	24	22	5			122	7,331,472
45-49	53	32	27	41	19	8		180	12,315,800
50-54	77	35	29	36	33	38	15	263	17,561,153
55	10	7	4	11	7	7	10	56	4,348,352
56	12	11	5	11	16	13	8	76	5,997,619
57	19	5	8	8	8	7	8	63	4,448,016
58	15	10	6	11	9	3	9	63	4,368,449
59	5	9	6	9	9	8	11	57	4,930,580
60	20	7	11	4	8	6	8	64	4,518,590
61	17	9	5	2	9	7	11	60	4,443,720
62	10	5	5	6	5	4	9	44	3,238,237
63	7	4	5	6	6	4	6	38	3,427,137
64	9	4	6	6	4	1	5	35	2,259,378
65	16	5	1	5	6	1	5	39	2,742,591
66	1	1	4	4	2		2	14	1,210,543
67	8	2	3	3	1	1	5	23	1,438,810
68	7	1	2	1		1	1	13	457,691
69	9	1	1	1	3	1	1	17	663,151
70	3	1	3				4	11	613,034
71	5	2	1			1		9	417,041
72	2	2	1		1			6	228,024
73	6	3		1	1		1	12	313,433
74	3	2					1	6	176,249
75 & Up	19	7	7	2	1		3	39	937,950
<b>Totals</b>	<b>454</b>	<b>214</b>	<b>180</b>	<b>192</b>	<b>153</b>	<b>111</b>	<b>123</b>	<b>1,427</b>	<b>\$94,638,349</b>

**PROTECTIVE OCCUPATION PARTICIPANTS WITH SOCIAL SECURITY  
AS OF DECEMBER 31, 2007  
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	8							8	\$ 222,793
20-24	789	6						795	25,288,267
25-29	1,709	812	7					2,528	108,084,671
30-34	719	1,805	512	4				3,040	149,821,382
35-39	439	1,090	1,716	441				3,686	194,266,245
40-44	286	536	821	1,215	304	2		3,164	177,953,672
45-49	209	364	420	674	844	326	4	2,841	165,819,274
50	31	56	46	104	142	179	14	572	34,261,169
51	40	55	37	79	101	195	24	531	31,795,581
52	41	44	53	58	96	131	38	461	27,047,493
53	30	34	48	69	88	130	65	464	27,987,625
54	19	27	34	59	56	64	48	307	18,219,149
55	21	40	35	47	50	48	37	278	15,766,087
56	15	31	27	41	55	32	37	238	13,463,014
57	16	33	20	29	37	39	32	206	11,670,112
58	11	14	14	32	29	24	34	158	9,232,937
59	13	19	21	20	21	15	22	131	6,920,970
60	10	22	13	16	16	14	11	102	5,545,698
61	9	12	12	14	17	10	11	85	4,401,848
62	3	6	12	13	6	9	7	56	3,118,426
63	4	7	6	2	2	3	4	28	1,477,082
64	5	1	4	4	2	3	4	23	1,096,386
65	4	3	2	2	2		1	14	538,359
66	3	6	2	4		2		17	713,584
67	2	1	2		2	1		8	344,431
68	1	2	1	1				5	202,667
69			2			1	2	5	278,824
70 & Up	4	1	1					6	99,327
<b>Totals</b>	<b>4,441</b>	<b>5,027</b>	<b>3,868</b>	<b>2,928</b>	<b>1,870</b>	<b>1,228</b>	<b>395</b>	<b>19,757</b>	<b>\$1,035,637,073</b>



**PROTECTIVE OCCUPATION PARTICIPANTS WITHOUT SOCIAL SECURITY  
AS OF DECEMBER 31, 2007  
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	52							52	\$ 2,089,566
25-29	180	65						245	12,352,178
30-34	81	235	65					381	22,555,551
35-39	52	182	228	73				535	33,451,134
40-44	16	71	145	185	46	1		464	30,339,223
45-49	8	23	67	146	190	68	1	503	35,248,788
50	2	2	7	24	31	33	2	101	7,177,609
51			6	20	23	32	2	83	5,999,250
52			1	14	21	31	7	74	5,535,592
53			4	14	24	30	5	77	5,656,490
54	3	1	3	10	18	17	9	61	4,506,600
55			1	8	4	15	12	40	2,827,842
56			1	4	5	8	13	31	2,271,123
57		1	1	2	4	9	5	22	1,717,607
58		1		1	2	4	3	11	875,641
59						1		1	99,176
60	1				1	2	1	5	422,161
61		1	1			2	1	5	353,560
62									
63		1					1	2	83,197
64						1		1	71,520
65					1			1	54,953
<b>Totals</b>	<b>395</b>	<b>583</b>	<b>530</b>	<b>501</b>	<b>370</b>	<b>254</b>	<b>62</b>	<b>2,695</b>	<b>\$173,688,761</b>

**ACTIVE PARTICIPANTS  
AS OF DECEMBER 31, 2007  
BY YEARS OF SERVICE AND GENDER**

Completed Years of Service	Males	Females	Totals	Valuation Payroll	
				Total	Average
0	6,709	13,830	20,539	\$ 469,747,280	\$22,871
1	5,530	10,902	16,432	475,741,583	28,952
2	4,542	8,986	13,528	433,923,078	32,076
3	4,146	8,307	12,453	429,973,699	34,528
4	3,651	7,751	11,402	403,379,192	35,378
5	3,934	8,105	12,039	455,705,691	37,852
6	4,746	8,269	13,015	525,060,761	40,343
7	4,769	8,024	12,793	537,134,419	41,987
8	4,191	7,165	11,356	495,055,825	43,594
9	4,126	6,672	10,798	483,725,923	44,798
10	3,666	5,903	9,569	437,110,693	45,680
11	3,163	5,185	8,348	394,387,365	47,243
12	3,043	4,890	7,933	384,139,275	48,423
13	3,011	4,700	7,711	382,891,696	49,655
14	2,666	4,319	6,985	351,553,900	50,330
15 & Up	37,451	48,651	86,102	4,922,316,747	57,168
<b>Totals</b>	<b>99,344</b>	<b>161,659</b>	<b>261,003</b>	<b>\$11,581,847,127</b>	<b>\$44,374</b>

Average

Age	45.5	45.4	45.5
Service	12.9	11.1	11.8

## COMPARATIVE STATEMENT OF ACTIVE PARTICIPANTS IN VALUATIONS

Valuation 12/31	General				Executive and Elected			
	No.	Earnings			No.	Earnings		
		\$ Millions	Average	% Incr.		\$ Millions	Average	% Incr.
1983	171,928	\$3,200	\$18,612		1,314	\$30	\$22,510	
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%
2004	238,943	9,501	39,764	2.8%	1,469	89	60,379	3.5%
2005	237,501	9,661	40,678	2.3%	1,452	90	61,788	2.3%
2006	236,877	9,933	41,935	3.1%	1,436	93	64,480	4.4%
2007	237,124	10,278	43,344	3.4%	1,427	95	66,320	2.9%

\* 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			
	No.	Earnings			No.	Earnings		
		\$ Millions	Average	% Incr.		\$ Millions	Average	% Incr.
1983	9,084	\$ 208	\$22,866		2,556	\$ 65	\$25,257	
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%
2004	18,964	896	47,266	3.0%	2,709	159	58,546	3.3%
2005	19,036	920	48,330	2.3%	2,689	162	60,241	2.9%
2006	19,297	977	50,622	4.7%	2,692	167	62,153	3.2%
2007	19,757	1,036	52,419	3.5%	2,695	174	64,449	3.7%

\* After change in method of calculating average pay.

# FINANCIAL DATA

## DEVELOPMENT OF PARTICIPANT AND EMPLOYER RESERVES DURING THE YEAR

	Participant Accumulation			Employer Accumulation			Grand Total
	Core	Variable	Total	Core	Variable	Total	
Ending Balance December 31, 2006	\$14,533,402,942	\$1,211,709,291	\$15,745,112,233	\$20,320,094,137	\$1,216,637,361	\$21,536,731,498	\$37,281,843,731
Closing Adjustments	3,887,828	245,391	4,133,219	20,985,166	(4,682,679)	16,302,487	20,435,706
Beginning Balance January 1, 2007	14,537,290,770	1,211,954,682	15,749,245,452	20,341,079,303	1,211,954,682	21,553,033,985	37,302,279,437
Revenues:							
Employer Contributions	-	-	-	668,471,443	85,041,882	753,513,325	753,513,325
Participant Contributions	505,324,389	86,559,283	591,883,672	-	-	-	591,883,672
Total Revenues	505,324,389	86,559,283	591,883,672	668,471,443	85,041,882	753,513,325	1,345,396,998
Expenses:							
Separations	23,205,305	1,039,732	24,245,037	-	-	-	24,245,037
Retirement Single Sums	13,730,864	426,868	14,157,732	14,391,091	353,814	14,744,905	28,902,637
Death Benefits	17,716,060	2,576,771	20,292,831	13,550,723	2,023,132	15,573,855	35,866,686
Disability Insurance	-	-	-	-	-	-	-
	54,652,230	4,043,371	58,695,601	27,941,814	2,376,946	30,318,760	89,014,360
Transfers:							
Earnings Allocation	1,738,301,725	66,188,499	1,804,490,224	2,508,190,313	66,188,499	2,574,378,812	4,378,869,036
Annuities Awarded	(1,325,312,858)	(133,344,059)	(1,458,656,917)	(1,581,103,049)	(138,286,811)	(1,719,389,860)	(3,178,046,777)
Intra-Fund Transfers	(393,493)	-	(393,493)	393,493	105,993	499,486	105,993
Inter-Fund Transfers	30,358,500	(30,358,500)	-	30,358,500	(30,358,500)	-	-
	442,953,874	(97,514,059)	345,439,815	957,839,256	(102,350,819)	855,488,437	1,200,928,252
<b>Ending December 31, 2007</b>	<b>\$15,430,916,804</b>	<b>\$1,196,956,535</b>	<b>\$16,627,873,338</b>	<b>\$21,939,448,188</b>	<b>\$1,192,268,799</b>	<b>\$23,131,716,988</b>	<b>\$39,759,590,326</b>
Internal Rate of Return	12.3%	5.7%	11.8%	12.6%	5.7%	12.2%	12.0%

**RESERVES FOR NON-RETIRED PARTICIPANTS  
BALANCES BY VALUATION GROUP**

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	Reserve for Year Ended			
	December 31, 2007			December 31, 2006
	Participant	Employer	Total *	(Total in \$ Millions)
General	\$14,946,808,206	\$20,040,669,197	\$34,987,477,403	\$32,897.7
Executives & Elected	109,353,173	188,601,079	297,954,252	293.8
Protective with Soc. Sec.	1,234,096,821	2,297,862,800	3,531,959,621	3,217.0
Protective w/o Soc. Sec.	337,615,138	604,583,911	942,199,049	873.4
<b>Total</b>	<b>\$16,627,873,338</b>	<b>\$23,131,716,987</b>	<b>\$39,759,590,325</b>	<b>\$37,281.8</b>

*\* Totals differ slightly from page I-18 due to rounding*

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 (UAAL)**  
**DECEMBER 31, 2007**

	General	Executives & Elected Officials	Protective Occupation		Totals
			With Soc. Sec	Without Soc. Sec	
Balance January 1, 2007	\$298,883,384	\$ 783,902	\$11,123,907	\$ 9,746,353	\$320,537,546
Plus: New Employers	84,087	0	0	0	84,087
Less: Adjustments	(2,924)	9,375	(9,375)	0	(2,924)
Less: Payments	(47,244,670)	(162,194)	(3,667,716)	(2,601,930)	(53,676,510)
Plus: Interest	19,634,150	49,224	580,852	557,265	20,821,491
<b>Balance December 31, 2007</b>	<b>\$271,354,027</b>	<b>\$ 680,307</b>	<b>\$ 8,027,668</b>	<b>\$ 7,701,688</b>	<b>\$287,763,690</b>

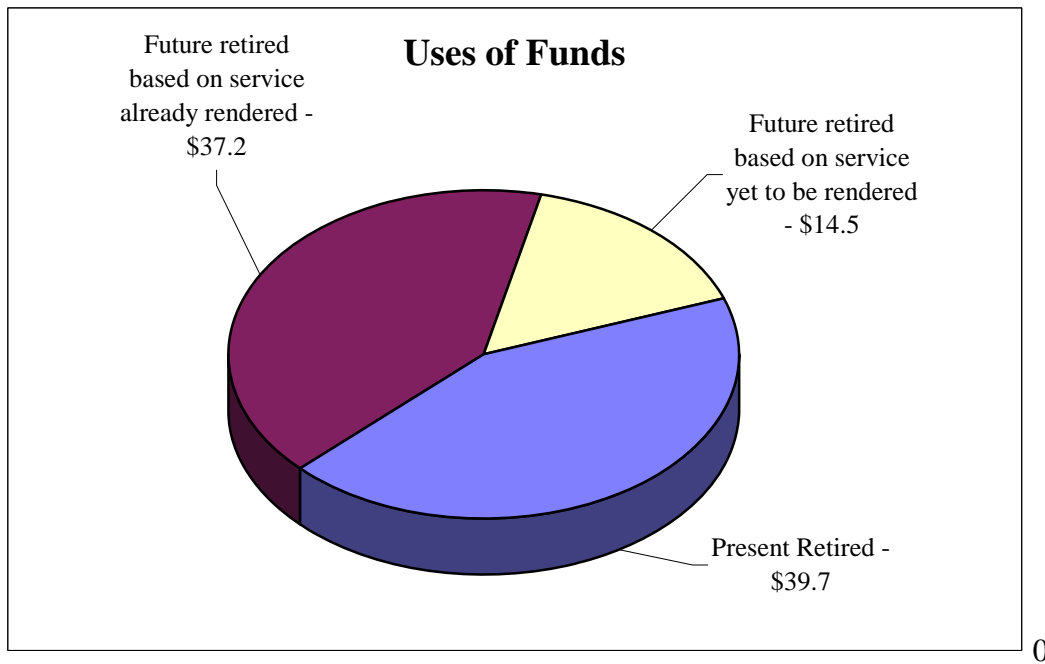
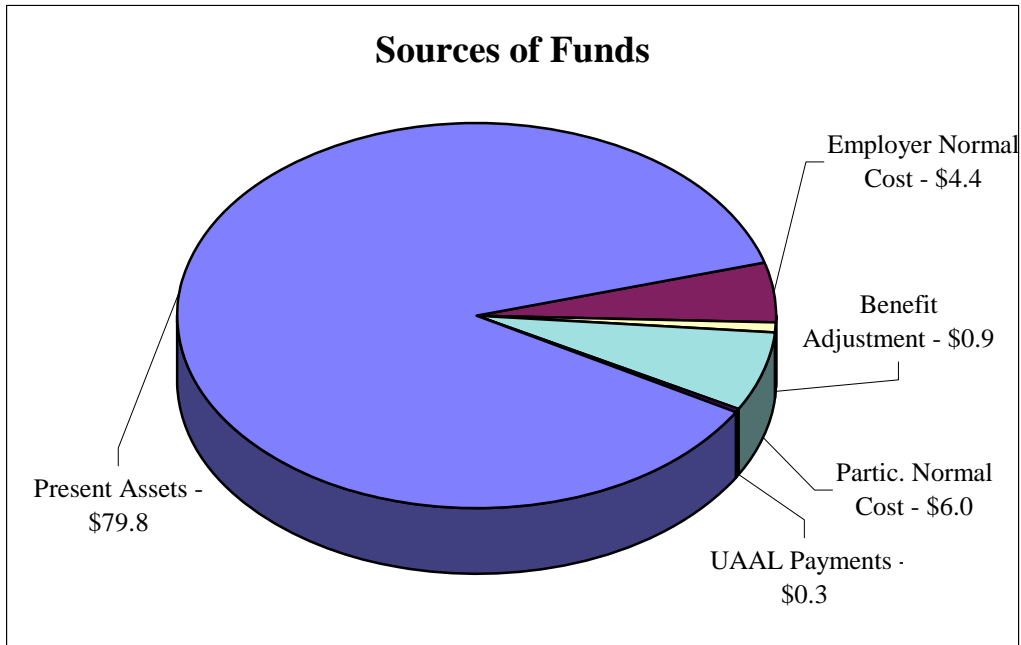
The UAAL is affected year to year by new employers entering the Wisconsin Retirement System, amortization payments, interest assessments, and statutory changes in benefits provided by the Retirement System. The UAAL is being amortized as a level percent of payroll. Since the payroll is assumed to increase 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 \$91.4 BILLION\* OF BENEFIT PROMISES  
FOR PRESENT ACTIVE AND RETIRED PARTICIPANTS  
DECEMBER 31, 2007**

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

**DEVELOPMENT OF ACTUARIAL PRESENT VALUES**  
**DECEMBER 31, 2007**  
**(\$ MILLIONS)**

Present Value of Future Benefits for	General	Executives & Elected Officials	Protectives		Total
			With Soc. Sec.	Without Soc. Sec.	
Active Participants					
Service Retirement	\$36,823.2	\$284.0	\$4,314.5	\$ 1,022.4	\$42,444.1
Withdrawal	1,899.9	11.6	179.0	20.3	2,110.8
Death-in-Service	676.6	9.3	63.9	13.2	763.0
Disability	912.7	2.2	74.5	36.9	1,026.3
Variable Excess	206.6	3.2	8.7	1.6	220.1
Total Active	40,519.0	310.3	4,640.6	1,094.4	46,564.3
Inactive Participants	4,584.4	67.1	274.0	39.5	4,965.0
Active and Inactive	45,103.4	377.4	4,914.6	1,133.9	51,529.3
Additional Contributions Present Retired					167.5 39,675.1
<b>Actuarial Present Value of Future Benefits</b>					<b>\$91,371.9</b>

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, retirees and beneficiaries. *There is no need for the Retirement System to have \$91,371.9 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, 2007

	General	Executives & Elected Officials	Protective Occupation		Total
			With Soc. Sec	Without Soc. Sec.	
<b>\$ Millions</b>					
1. Present Value of Future Benefits for Non-Retired	\$45,103.4	\$377.4	\$4,914.6	\$1,133.9	\$51,529.3
2. Present Value of Future Entry Age Normal Costs	12,288.6	84.7	1,775.2	367.1	14,515.6
3. Entry Age Accrued Liability: (1)-(2)	32,814.8	292.7	3,139.4	766.8	37,013.7
4. Non-Retired Assets-WRS	34,987.5	298.0	3,532.0	942.2	39,759.7
-LTDI	154.5	1.3	26.8	7.0	189.6
-Total	35,142.0	299.3	3,558.8	949.2	39,949.3
5. Entry Age Unfunded Accrued Liability: (3)-(4)	(2,327.2)	(6.6)	(419.4)	(182.4)	(2,935.6)
6. WRS Frozen Unfunded Accrued Liability	271.4	0.7	8.0	7.7	287.8
<b>7. EAR: (6)-(5)</b>	<b>\$ 2,598.6</b>	<b>\$ 7.3</b>	<b>\$ 427.4</b>	<b>\$ 190.1</b>	<b>\$ 3,223.4</b>

## DEVELOPMENT OF CONTRIBUTION RATES FOR CALENDAR YEAR 2009

	General	Executive & Elected Officials	Protective Occupation		Total
			With Soc. Sec	Without Soc. Sec.	
<b>\$ Millions</b>					
Total Reported Earnings	\$ 10,277.9	\$ 94.6	\$ 1,035.6	\$ 173.7	\$ 11,581.8
Present Value of Future Earnings	101,574.7	704.0	11,177.2	1,765.8	115,221.7
Present Value of Future Benefits	45,103.4	377.3	4,914.6	1,133.9	51,529.2
Non-Retired Assets	35,142.0	299.3	3,558.8	949.2	39,949.3
Unfunded Liability	271.4	0.7	8.0	7.7	287.8
Present Value of Future Normal Costs					
Future Service Portion	12,288.6	84.6	1,775.2	367.1	14,515.5
Exp. Amort. Res. Portion	(2,598.6)	(7.3)	(427.4)	(190.1)	(3,223.4)
<b>Total</b>	<b>9,690.0</b>	<b>77.3</b>	<b>1,347.8</b>	<b>177.0</b>	<b>11,292.1</b>
Normal Cost Amortization Years					
Future Service Portion	12.4	8.8	13.9	12.9	12.5
Exp. Amort. Res. Portion	20.0	20.0	20.0	22.0	
Unfunded Liability Amortization Years	21.0	21.0	21.0	21.0	21.0
<b>%'s of Active Member Payroll</b>					
Normal Cost					
Future Service Portion	12.1 %	12.0 %	15.9 %	20.8 %	12.6 %
Exp. Amort. Res. Portion	(1.8)%	(0.5)%	(2.8)%	(7.1)%	(2.0)%
<b>Total</b>	<b>10.3 %</b>	<b>11.5 %</b>	<b>13.1 %</b>	<b>13.7 %</b>	<b>10.6 %</b>
2008 Total Normal Cost Rates	10.6 %	11.5 %	13.3 %	14.2 %	10.9 %
Change from 2008 (current)	(0.3)%	0.0 %	(0.2)%	(0.5)%	(0.3)%
Allocation of Change					
Employer Normal Cost	(0.1)%	0.0 %	(0.1)%	(0.2)%	(0.1)%
Benefit Adjustment	(0.1)%	0.0 %	0.0 %	0.0 %	(0.1)%
Participant Normal Cost	0.0 %	0.0 %	(0.1)%	(0.2)%	0.0 %
<b>Total Allocated Change</b>	<b>(0.2)%</b>	<b>0.0 %</b>	<b>(0.2)%</b>	<b>(0.4)%</b>	<b>(0.2)%</b>
Unallocated Change *	(0.1)%	0.0 %	0.0 %	(0.1)%	(0.1)%
<b>2009 Normal Cost Rates</b>					
<b>Employer Normal Cost</b>	<b>4.5 %</b>	<b>8.5 %</b>	<b>8.1 %</b>	<b>10.6 %</b>	<b>5.0 %</b>
<b>Benefit Adjustment</b>	<b>0.9 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.8 %</b>
<b>Participant Normal Cost</b>	<b>5.0 %</b>	<b>3.0 %</b>	<b>5.0 %</b>	<b>3.2 %</b>	<b>5.0 %</b>
<b>Total Normal Cost</b>	<b>10.4 %</b>	<b>11.5 %</b>	<b>13.1 %</b>	<b>13.8 %</b>	<b>10.8 %</b>
Average Unfunded Liability Amortization	0.2 %	0.0 %	0.1 %	0.3 %	0.2 %
<b>Average Total Rate</b>	<b>10.6 %</b>	<b>11.5 %</b>	<b>13.2 %</b>	<b>14.1 %</b>	<b>11.0 %</b>

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

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**SUMMARY STATEMENT OF PRESENT AND FUTURE RESOURCES**  
**(\$ MILLIONS)**

<b>Present Resources and Expected Future Resources</b>	<b>December 31</b>	
	<b>2007</b>	<b>2006</b>
A. Book Value of Present System Assets		
Annuity Reserves		
Core	\$35,050.1	\$31,180.5
Variable	4,625.0	4,594.2
Total Annuity Reserves	39,675.1	35,774.7
Non-Retired Participant Reserves		
Participant Contribution Balance	16,627.9	15,745.1
Additional Contributions	167.5	157.3
Employer Accumulation Balance	23,131.8	21,536.8
Adjustment for 62.13 Contributions	0.0	0.0
LTDI Reserve for Future Claims	189.6	201.4
Total Non-Retired Reserves	40,116.8	37,640.6
Total System Assets Used in Valuation	79,791.9	73,415.3
B. Actuarial Present Value of Future Participant Contributions	5,929.4	5,735.6
C. Actuarial Present Value of Future Benefit Adjustment Contributions	914.2	984.2
D. Actuarial Present Value of Future Employer Contributions for		
Unfunded Accrued Liabilities	287.8	320.5
Section 62.13	0.0	0.0
Normal Costs	4,448.5	4,881.5
Total	4,736.3	5,202.0
<b>E. Total Present and Expected Future Resources</b>	<b>\$91,371.8</b>	<b>\$85,337.1</b>

**SUMMARY STATEMENT OF RETIREMENT SYSTEM OBLIGATIONS**  
**(\$ MILLIONS)**

Retirement System Obligations	December 31	
	2007	2006
A. To Annuitants and Beneficiaries Receiving Benefits		
Core Annuities		
Reported at Year End	\$32,877.5	\$30,273.9
Dividend Adjustment and Reserve	2,172.6	906.6
Total Fixed Annuities	35,050.1	31,180.5
Variable Annuities		
Reported at Year End	4,563.7	4,145.2
Distribution and Reserve	61.3	449.0
Total Variable Annuities	4,625.0	4,594.2
 Total for Benefits in Pay Status	 39,675.1	 35,774.7
B. To Active and Inactive Participants For Benefits Based on		
Participant Contributions Made		
In the Past	16,627.9	15,745.1
In the Future	5,929.4	5,735.6
Additional Contributions Made in the Past	167.5	157.3
Benefit Adjustment Contributions Made in the Future	914.2	984.2
Employer Contributions	28,057.7	26,940.2
 Total for Benefits Not Yet in Pay Status	 51,696.7	 49,562.4
<b>C. Total Actuarial Value of Expected Future Benefits</b>	<b>\$91,371.8</b>	<b>\$85,337.1</b>



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**SECTION TWO**  
**FINANCIAL REPORTING**

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## SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

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Valuation Date	December 31, 2007
Actuarial Cost Method	Frozen Entry Age
Amortization Method	Level Percent -- Closed Period
Remaining Period	21 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 9.6%
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 (\$ THOUSANDS)

	2006*	2005
<b>Assets</b>		
Cash and Cash Equivalents	\$ 1,482,316	\$ 1,018,141
Securities Lending Collateral	6,843,721	5,976,637
Prepaid Expenses	3,171	2,427
<b>Total Short Term Assets</b>	<b>8,329,208</b>	<b>6,997,205</b>
<b>Receivables</b>		
Contributions	107,392	105,174
Prior Service Contributions	345,298	382,006
Benefits Overpayment	2,008	1,689
Due from other Trust Funds	2,094	3,420
Miscellaneous	2,205	2,145
Interest and dividends	260,427	201,959
Investment Sales	144,140	146,518
<b>Total Receivables</b>	<b>863,564</b>	<b>842,911</b>
<b>Investments at Fair Value</b>		
Fixed Income	21,040,235	17,614,513
Preferred Securities	368,981	297,458
Convertible Securities	39,670	37,027
Stocks	54,797,815	50,402,131
Limited Partnerships	3,815,157	2,836,669
Mortgages	300,093	355,825
Real Estate	394,352	350,483
Multi Asset Investments	844,778	735,937
<b>Total investments</b>	<b>81,601,081</b>	<b>72,630,043</b>
Capital Assets	58	23
<b>Total Assets</b>	<b>90,793,911</b>	<b>80,470,182</b>
<b>Liabilities:</b>		
Fixed Investment Due Other Programs	2,920,010	2,576,769
Variable Investment Due Other Programs	22,702	22,907
Securities Lending Collateral	6,843,721	5,976,637
Benefits Payable	227,541	216,456
Deferred Revenue	252	270
Due to Other Trust Funds	2,969	36,577
Miscellaneous Payables	100,520	80,781
Investment Payables	285,441	89,261
<b>Total Liabilities</b>	<b>10,403,156</b>	<b>8,999,658</b>
<b>Net Assets in Trust for Pension Benefits</b>	<b>\$80,390,755</b>	<b>\$71,470,524</b>

\* 2007 Summary not yet available.

## STATEMENT OF CHANGES IN ASSETS (\$ THOUSANDS)

	Activity During Year	
	2006*	2005
Additions:		
Contributions:		
Employer Contributions	\$ 568,970	\$ 538,097
Employee Contributions	670,254	640,229
Total Contributions	1,239,224	1,178,326
Investment Income:		
Net Appreciation (Depreciation) in Fair Value of Investments	10,448,085	4,656,309
Interest	580,778	577,442
Dividends	460,459	535,510
Securities Lending Income	317,129	203,335
Other	74,421	76,224
Less		
Current Income Distributed	403,074	201,645
SWIB Investment Expense	210,660	165,940
Investment Income Distributed to Securities Lending Rebates and Fees	304,857	188,686
Net Investment Income	10,962,281	5,492,549
Interest on Prior Service Receivable	23,193	25,006
Miscellaneous Income	1,905	2,338
Total Additions	12,226,603	6,698,219
Deductions:		
Benefits and Refunds:		
Retirement, Disability, and Beneficiary	3,264,163	3,067,662
Separation Benefits	25,072	25,221
Total Benefits and Refunds	3,289,235	3,092,883
Unusual Write-off of receivable	0	(7)
Administrative Expense	17,134	17,859
Total Deductions	3,306,369	3,110,735
Net Increase (Decrease)	8,920,234	3,587,484
Net Assets Held in Trust:		
Beginning of Year	\$71,470,524	\$67,883,042
<b>End of Year</b>	<b>\$80,390,755</b>	<b>\$71,470,524</b>

\* 2007 Summary not yet available.

**SCHEDULE OF FUNDING PROGRESS**  
**\$ MILLIONS**

<b>Valuation Date Dec 31</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) Frozen Entry Age (b)</b>	<b>Unfunded AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a)/(b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percent of Covered Payroll [(b) - (a)] / (c)</b>
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 %
2004	66,209.4	66,622.3	412.9	99.4 %	10,897.6	3.8 %
2005	68,615.1	68,987.5	372.5	99.5 %	10,973.4	3.4 %
2006	73,415.3	73,735.8	320.5	99.6 %	11,308.2	2.8 %
2007	79,791.9	80,079.7	287.8	99.6 %	11,720.2	2.5 %

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

## SOLVENCY TEST (\$ MILLIONS)

Valuation Date Dec 31	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
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%
2004	66,209.4	30,829.9	15,050.3	20,742.1	66,622.3	100.0%	100.0%	98.0%	99.4%
2005	68,615.1	32,668.0	15,155.3	21,164.2	68,987.5	100.0%	100.0%	98.2%	99.5%
2006	73,415.3	35,774.7	15,902.4	22,058.7	73,735.8	100.0%	100.0%	98.5%	99.6%
2007	79,791.9	39,675.1	16,795.4	23,609.2	80,079.7	100.0%	100.0%	98.8%	99.6%

## CONTRIBUTIONS REQUIRED AND CONTRIBUTIONS MADE

Year Ended December 31	Annual Required Contribution	Percent Contributed
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%
2004	497.6	100.0%
2005	535.6	100.0%
2006	569.0	100.0%
2007	614.0	105.3%

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

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## **SECTION THREE**

### **ACTUARIAL METHODS AND ASSUMPTIONS**

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## ACTUARIAL VALUATION METHOD

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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. The policy regarding the EAR amortization period is described below:

- The standard period is set 20 years.
- The standard period is reconsidered as part of each triennial experience study (no changes were made with the most recent experience study).
- Temporary interim changes in the period are made only when there are large, but mostly offsetting market gains and losses known to be flowing through the MRA that would otherwise result in contribution rate volatility. Large changes would be defined as those which, over a 2-year period, were expected to result in contribution rate changes of at least 0.4% of payroll.
- The minimum and maximum EAR amortization periods are 10 years and 30 years respectively.
- The amortization policy will be applied in the same manner to market gains and losses flowing through the MRA.



## ASSET VALUATION METHOD

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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 Core 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 Core 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 returns fully each year. Differences between actual and assumed returns are phased in over a closed 5-year period. 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 Core 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.

## CORE INVESTMENT TRUST: MARKET RECOGNITION ACCOUNT

	For the Year Ended December 31						
	2005	2006	2007	2008	2009	2010	2011
Beginning of year							
a. Funding value	\$62,064,552,008	\$64,459,957,721	\$68,996,478,572	\$75,617,958,774	\$77,499,271,040	\$78,862,413,577	\$80,139,272,053
b. Market value	63,565,374,407	67,277,918,278	75,891,313,801	80,351,562,358	80,351,562,358	80,351,562,358	80,351,562,358
End of year							
c. Market value	67,277,918,278	75,891,313,801	80,351,562,358	80,351,562,358	80,351,562,358	80,351,562,358	80,351,562,358
d. Non-investment cash flow (contributions minus benefits)	(1,501,358,511)	(1,672,109,754)	(1,908,496,915)				
e. Investment income							
e1. Total Investment Income	5,213,902,382	10,285,505,277	6,368,745,472				
e2. Assumed rate	7.8%	7.8%	7.8%				
e3. Amount for immediate recognition	4,782,482,075	4,962,664,422	5,307,293,949	-	-	-	-
e4. Amount for phased-in recognition: e1-e3	431,420,308	5,322,840,855	1,061,451,523	-	-	-	-
f. Phased-in recognition of investment income							
f1. Current year: .2 x e4	86,284,062	1,064,568,171	212,290,305	-	-	-	-
f2. First prior year	518,169,729	86,284,062	1,064,568,171	212,290,305	-	-	-
f3. Second prior year	1,341,370,902	518,169,729	86,284,062	1,064,568,171	212,290,305	-	-
f4. Third prior year	(1,764,426,680)	1,341,370,902	518,169,729	86,284,062	1,064,568,171	212,290,305	-
f5. Fourth prior year	(1,067,115,864)	(1,764,426,680)	1,341,370,902	518,169,729	86,284,062	1,064,568,171	212,290,305
f6. Total MRA recognition	(885,717,851)	1,245,966,184	3,222,683,168	1,881,312,266	1,363,142,537	1,276,858,476	212,290,305
f7. Amount for TAA recognition	-	-	-	-	-	-	-
f8. Total recognized gain (loss)	(885,717,851)	1,245,966,184	3,222,683,168	1,881,312,266	1,363,142,537	1,276,858,476	212,290,306
g. Total Recognized Investment Income: e3 + f8	3,896,764,224	6,208,630,606	8,529,977,117	1,881,312,266	1,363,142,537	1,276,858,476	212,290,306
h. Funding value end of year: a + d + e3 + f8	64,459,957,721	68,996,478,572	75,617,958,774	77,499,271,040	78,862,413,577	80,139,272,053	80,351,562,359
i. Difference between market and funding values	2,817,960,557	6,894,835,229	4,733,603,584	2,852,291,318	1,489,148,780	212,290,305	-
j. Recognized Rate of Return	6.4%	9.8%	12.5%				
k. Market Rate of Return	7.9%	14.2%	8.1%				

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

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**ECONOMIC ASSUMPTIONS**

*The investment return rate* assumed in the valuations was 7.80% per year, compounded annually (net after administrative expenses).

The **Wage Inflation Rate** assumed in this valuation was 4.10% per year. The Wage Inflation Rate is defined to be the portion of total pay increases for an individual that are due to macro economic forces including productivity, price inflation, and labor market conditions. The wage inflation rate does not include pay changes rated to individual merit and seniority effects;

No specific **Price Inflation** assumption is required to perform this valuation, since there are no benefits that are linked to price increases. However, a price inflation assumption on the order of 3.0% to 3.5% would be consistent with the other economic assumptions.

The assumed **real rate of return** over wage inflation is defined to be the portion of total investment return that is more than the assumed total wage growth rate. Considering other economic assumptions, the 7.8% investment return rate translates to an assumed real rate of return over wage inflation of 3.7%. The assumed real rate of return over price inflation would be higher – on the order of 4.3% to 4.8%, considering both an inflation assumption and an average expense provision. Dividends for present and future retirees are assumed to be 2.67% each year.

The Active Member Population is assumed to remain constant. For purposes of financing the unfunded liabilities, total payroll is assumed to grow at the wage inflation rate – 4.10% per year.

*Pay increase assumptions* for individual active members are shown for sample services below. Part of the assumption for each age is for merit and/or seniority increase, and the other 4.10% recognizes wage inflation, including price inflation, productivity increases, and other macro economic forces.

<b>% Merit and Longevity Increase Next Year</b>						
<b>Service</b>	<b>Gen.</b>	<b>University Teachers</b>	<b>Public School Teachers</b>	<b>Protective</b>		<b>Exec. &amp; Elec.</b>
				<b>With S.S.</b>	<b>w/o S.S.</b>	
1	3.5 %	3.5 %	5.5 %	5.0 %	4.8 %	1.2 %
2	3.5 %	3.5 %	5.5 %	5.0 %	4.8 %	1.2 %
3	3.2 %	3.4 %	5.1 %	4.4 %	4.1 %	1.2 %
4	2.9 %	3.3 %	4.7 %	3.7 %	3.5 %	1.2 %
5	2.6 %	3.2 %	4.4 %	3.1 %	2.8 %	1.1 %
10	1.6 %	2.9 %	2.8 %	1.6 %	1.4 %	1.0 %
15	1.3 %	2.4 %	1.6 %	1.0 %	0.7 %	0.9 %
20	1.1 %	1.9 %	0.9 %	0.9 %	0.6 %	0.8 %
25	0.9 %	1.3 %	0.5 %	0.7 %	0.5 %	0.6 %
30	0.7 %	1.2 %	0.3 %	0.7 %	0.4 %	0.4 %

## DECREMENT PROBABILITIES

The **mortality table** used to measure mortality for retired participants was the Wisconsin Projected Experience Table - 2005 for men and women, as adopted by the Board in connection with the 2003-2005 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 - 2005 with 5% Interest

Sample Attained Ages	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)	
	Males	Females	Males	Females
40	\$205.69	\$213.54	40.9	45.3
45	196.14	205.53	36.2	40.5
50	184.61	195.62	31.5	35.7
55	171.16	183.60	27.0	30.9
60	155.69	169.88	22.7	26.4
65	137.31	153.66	18.5	22.0
70	116.87	134.71	14.5	17.8
75	95.20	113.77	11.0	13.9
80	74.62	91.62	8.1	10.4
85	55.95	69.69	5.7	7.4

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	\$188.17	\$200.45	33.0	38.1
45	175.49	189.75	28.5	33.4
50	160.60	176.73	24.1	28.7
55	144.08	161.35	20.0	24.2
60	126.15	144.83	16.2	20.1
65	105.47	126.05	12.5	16.1
70	83.80	104.95	9.3	12.4
75	62.40	83.07	6.5	9.1
80	44.25	61.62	4.3	6.3
85	29.47	42.01	2.8	4.1

## ACTIVE PARTICIPANT MORTALITY RATES

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Sample Attained Ages	Mortality Rates	
	Males	Females
20	0.000259	0.000077
25	0.000337	0.000085
30	0.000409	0.000115
35	0.000434	0.000203
40	0.000547	0.000285
45	0.000805	0.000446
50	0.001316	0.000614
55	0.002317	0.001281
60	0.003375	0.002174
65	0.005178	0.003325
70	0.009079	0.005327
75	0.016700	0.009751
80	0.030153	0.016934

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							8%	3%	
51							8%	3%	
52							8%	7%	
53							30%	25%	
54							20%	30%	
55							20%	30%	
56							18%	30%	
57	25%	20%	40%	30%	20%	15%	18%	35%	15%
58	25%	20%	35%	30%	15%	15%	18%	30%	15%
59	25%	20%	30%	30%	15%	15%	18%	20%	15%
60	25%	20%	30%	30%	15%	15%	18%	20%	15%
61	20%	20%	30%	35%	17%	25%	18%	20%	15%
62	35%	30%	40%	40%	17%	25%	20%	20%	10%
63	35%	30%	40%	35%	17%	20%	30%	20%	10%
64	25%	25%	25%	25%	17%	20%	20%	20%	10%
65	25%	25%	25%	30%	20%	20%	30%	40%	10%
66	25%	25%	25%	25%	20%	20%	25%	40%	20%
67	10%	15%	15%	25%	20%	20%	25%	40%	20%
68	10%	10%	15%	20%	20%	20%	25%	40%	20%
69	10%	10%	20%	20%	20%	20%	25%	40%	20%
70	10%	10%	20%	20%	20%	20%	100%	100%	10%
71	10%	10%	20%	20%	20%	20%	100%	100%	10%
72	10%	10%	20%	20%	20%	20%	100%	100%	10%
73	10%	10%	20%	20%	20%	20%	100%	100%	10%
74	10%	10%	20%	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	7.50%	5.25%	15.00%	11.00%	5.00%	6.00%	6.00%
56	7.50%	5.25%	15.00%	11.00%	5.00%	6.00%	6.00%
57	4.00%	4.00%	15.00%	11.00%	3.00%	5.00%	4.00%
58	5.00%	5.00%	15.00%	12.00%	3.50%	6.00%	4.00%
59	5.00%	5.00%	10.00%	12.00%	3.50%	8.00%	4.00%
60	7.50%	7.50%	15.00%	15.00%	5.50%	10.00%	6.00%
61	7.00%	7.50%	15.00%	15.00%	7.50%	7.50%	6.00%
62	18.00%	15.00%	25.00%	25.00%	10.00%	15.00%	
63	18.00%	15.00%	25.00%	20.00%	9.00%	15.00%	
64	15.00%	15.00%	15.00%	15.00%	8.00%	15.00%	

**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 50% 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**

Age	Service	% of Active Participants Terminating								
		Protective		Public Schools		University		Exec. & Elected	General	
		With Soc. Sec.	Without Soc. Sec.							
		Males	Females	Males	Females	Males	Females			
	0	12.0%	5.0%	14.0%	11.0%	20.0%	20.0%	16.0%	21.0%	20.0%
	1	6.5%	3.0%	11.0%	9.0%	16.0%	17.0%	14.0%	13.0%	14.0%
	2	4.5%	2.0%	7.0%	7.0%	13.0%	14.0%	12.0%	9.5%	10.0%
	3	4.1%	1.5%	5.2%	6.0%	11.0%	12.0%	10.0%	7.5%	8.0%
	4	3.2%	1.4%	4.0%	5.0%	9.0%	10.0%	9.5%	5.5%	7.0%
	5	3.0%	1.3%	3.2%	4.3%	7.5%	9.0%	9.0%	4.5%	6.0%
	6	2.7%	1.2%	2.7%	3.8%	6.0%	8.0%	8.5%	4.0%	5.0%
	7	2.5%	1.1%	2.5%	3.2%	5.0%	7.0%	8.0%	3.8%	4.5%
	8	2.3%	1.0%	2.3%	2.7%	4.0%	6.3%	7.5%	3.5%	4.3%
	9	2.0%	0.9%	2.0%	2.5%	3.5%	5.5%	7.0%	3.2%	4.0%
25	10 & Over	2.0%	0.9%	2.0%	2.5%	3.5%	5.5%	7.0%	3.0%	4.0%
30		2.0%	0.8%	1.8%	2.2%	3.5%	5.5%	7.0%	3.0%	3.7%
35		1.8%	0.8%	1.4%	1.8%	3.5%	5.5%	7.0%	2.6%	3.2%
40		1.4%	0.8%	1.2%	1.4%	3.4%	4.7%	5.8%	2.0%	2.7%
45		1.2%	0.7%	1.1%	1.2%	2.8%	3.4%	4.7%	1.6%	2.2%
50		1.0%	0.7%	0.9%	1.0%	1.9%	2.1%	4.2%	1.3%	1.9%
55		1.0%	0.7%	0.9%	1.0%	1.5%	1.6%	4.0%	1.3%	1.8%
60		1.0%	0.7%	0.9%	1.0%	1.5%	1.6%	4.0%	1.3%	1.8%

**Disability Rates**

Age	% of Active Participants Becoming Disabled									
	Protective		Public Schools		University		Exec. & Elected		General	
	With SS	W/O SS	Males	Females	Males	Females	Males	Females	Males	Females
20	0.02%	0.05%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
25	0.02%	0.05%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
30	0.02%	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%	0.08%	0.02%	0.02%	0.01%	0.06%	0.01%	0.01%	0.05%	0.07%
45	0.07%	0.16%	0.05%	0.08%	0.03%	0.05%	0.02%	0.02%	0.10%	0.10%
50	0.11%	0.32%	0.14%	0.16%	0.05%	0.10%	0.04%	0.04%	0.23%	0.15%
55	1.73%	0.68%	0.26%	0.23%	0.15%	0.15%	0.15%	0.15%	0.43%	0.28%
60	2.92%	0.20%	0.43%	0.34%	0.20%	0.23%	0.19%	0.19%	0.77%	0.39%

## MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

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<b>Expenses:</b>	Assumed investment return is net of administrative and investment expenses.
<b>Marriage Assumption:</b>	Everyone is assumed married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
<b>Pay Increase Timing:</b>	Beginning of (calendar) year for most people. Middle of calendar year for teachers.
<b>Pay Annualization:</b>	Reported pay for members with less than twelve contributing months was annualized by the ratio of 12 to the number of contributing months in the year.
<b>Final Average Salary:</b>	For present value of future benefit purposes, final average salary was calculated in accordance with pay increase assumptions, but was not permitted to fall below the final average salary reported in the data.
<b>Decrement Timing:</b>	Decrements of all types are assumed to occur mid-year.
<b>Decrement Operation:</b>	All decrements operate during the first 5 years of service.
<b>Decrement Relativity:</b>	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
<b>Eligibility Testing:</b>	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.
<b>Benefit Service:</b>	Exact fractional service on the decrement date is used to determine the amount of benefit payable.
<b>Non-Benefit Service:</b>	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.
<b>Service Credit Accruals:</b>	It is assumed that members accrue one year of service credit per year.



## MISCELLANEOUS AND TECHNICAL ASSUMPTIONS (CONCLUDED)

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<b>Incidence of Contributions:</b>	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
<b>Normal Form of Benefit:</b>	The assumed normal form of benefit is a straight life benefit, except where otherwise noted.
<b>Disability Valuation:</b>	<p>The Post-10/15/92 Disability benefit consists of one benefit payable to age 65 (10% of FAE) plus another benefit payable on and after age 65 (WRS benefit accrued to date of disability plus 7% of FAE during disability). For valuation purposes, the 7% of FAE portion of the post 65 benefit was added to the 40% of FAE benefit prior to age 65.</p> <p>Additionally, there are certain cases in which the disability benefit at the member's normal retirement age is larger than the member's benefit under the normal retirement benefit formula. To account for this, an adjustment is made to the member's normal retirement benefit present value calculation which is equal to 15% of the difference between the present values of the LTDI benefit and the normal retirement benefit.</p>
<b>Variable Excess Benefits:</b>	These benefits are valued by increasing the otherwise calculated liabilities by an amount equal to twice the value of the variable excess. (The variable excess is the difference between the variable account and the variable at core account, summed over all participants.)
<b>Loads:</b>	Final Average Salary was loaded 1% to account for additional contingencies in actual benefit amount calculated at the time of retirement.
<b>Amortization Payoff Reserve:</b>	Additional reserves in the amount of \$229,821,108 (discounted from the year 2029 to the current valuation date) were added to general group liabilities to account for the possibility that some non-state employers may never be able to pay off their unfunded actuarial accrued liability.

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## SECTION FOUR

### THE VALUATION PROCESS

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## FINANCIAL PRINCIPLES & OPERATIONAL TECHNIQUES OF THE WISCONSIN RETIREMENT SYSTEM

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**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 ...  
Interest 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 third 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.

## ACTUARIAL METHOD AND ASSUMPTIONS USED IN VALUATIONS

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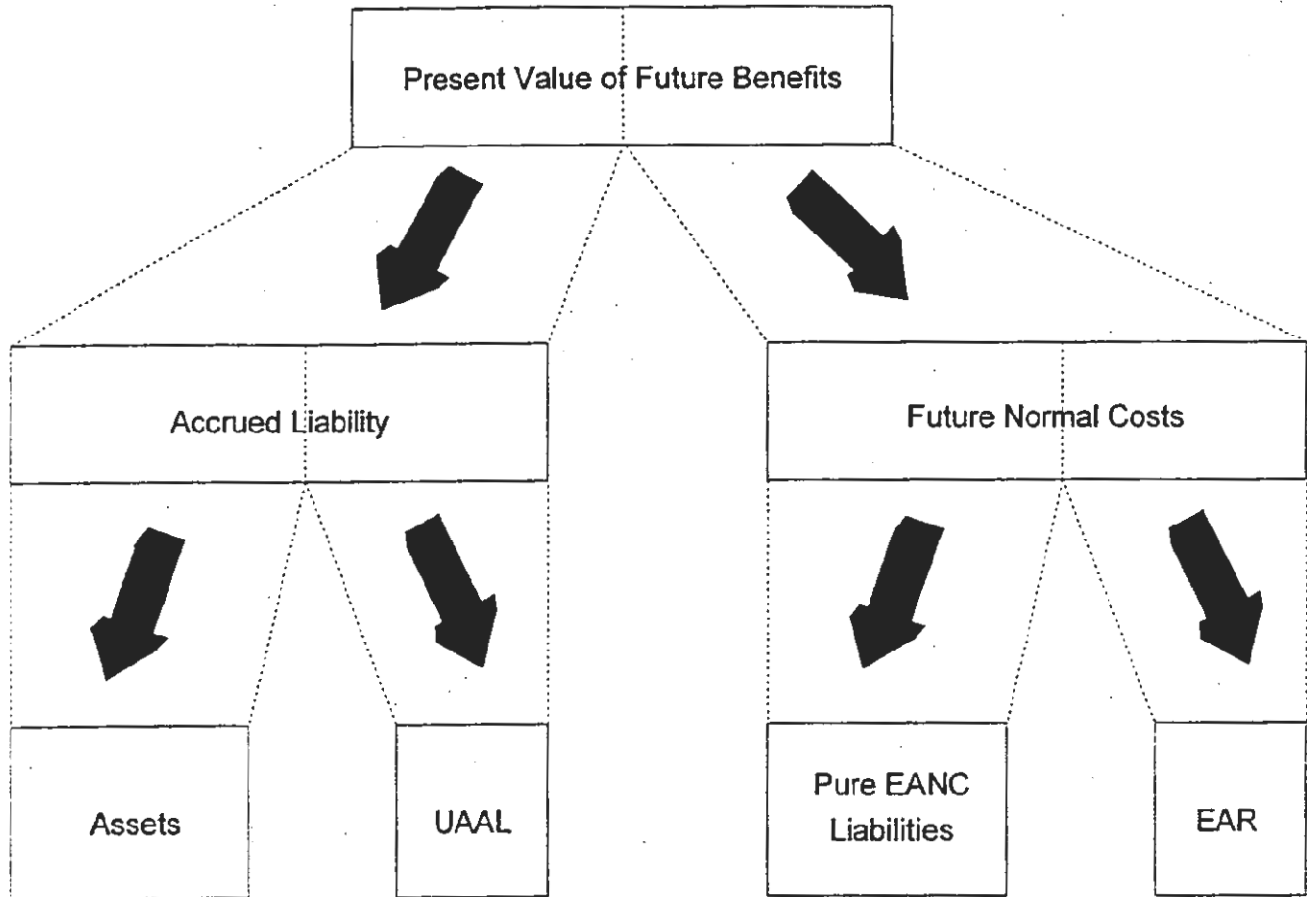
### The principal areas of risk assumption are:

- 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*

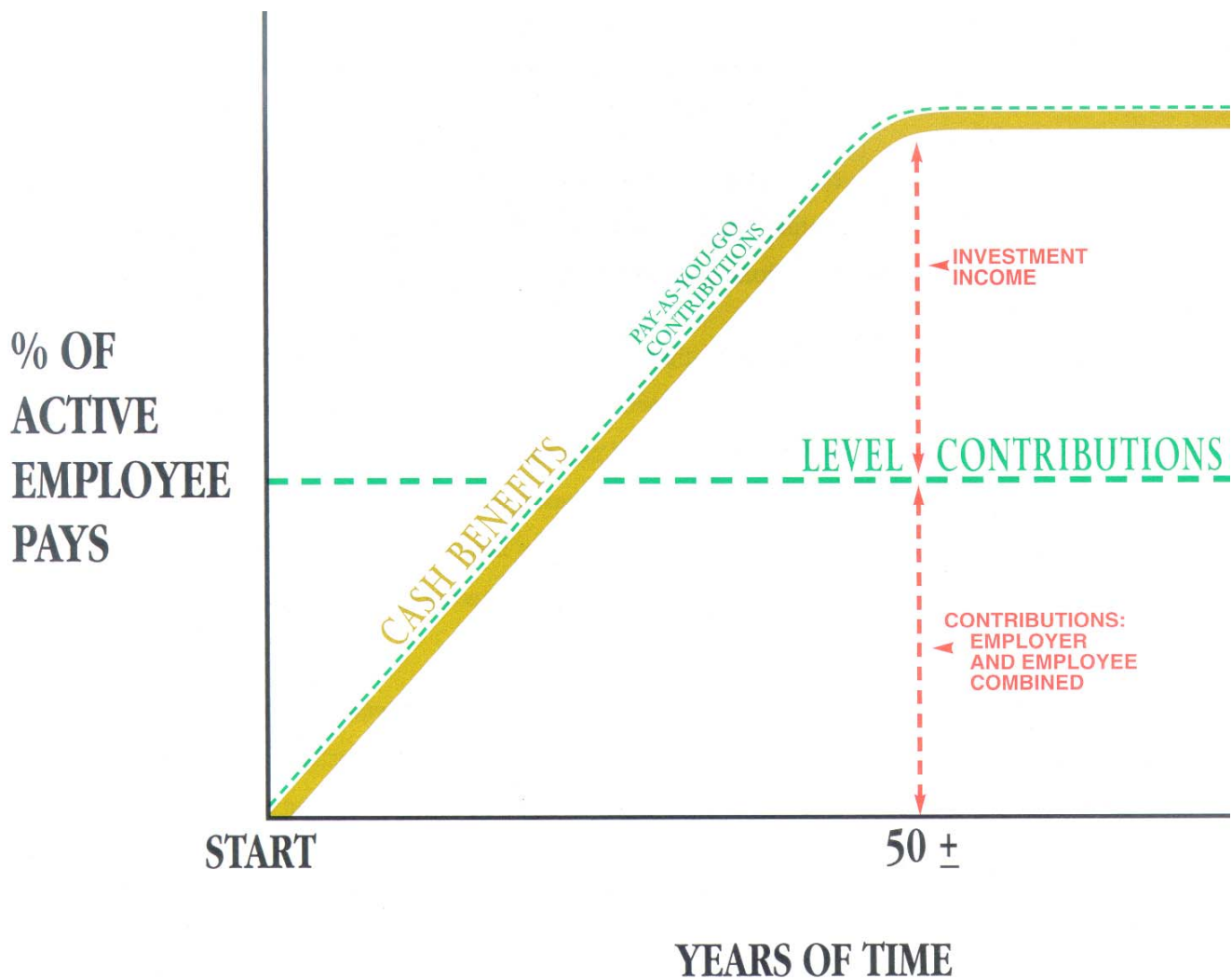
In an actuarial valuation, the actuary projects the monetary effect of each risk assumption for each distinct experience group, for the next year and for each year over the next half-century or longer.

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

## GLOSSARY

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**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.



## **GLOSSARY (CONCLUDED)**

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**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 11, 2008

Mr. David Stella  
Wisconsin Department of Employee  
Trust Funds  
801 West Badger Road  
Madison, Wisconsin 53713

**Re: Report of Twenty-Seventh Annual Actuarial Valuation**

Dear Dave:

Enclosed are 75 copies of the December 31, 2007 regular annual actuarial valuations.

Sincerely,

A handwritten signature in black ink that reads "Mark Buis". The signature is written in a cursive, slightly slanted style.

Mark Buis

MB:lr  
Enclosures