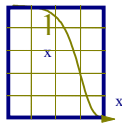

WISCONSIN RETIREMENT SYSTEM



20th Annual Actuarial Valuations
of Retired Lives
December 31, 2002

Gabriel, Roeder, Smith & Company



Actuaries and Consultants

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DECEMBER 31, 2002

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February 26, 2003

Employee Trust Funds Board
Madison, Wisconsin

Ladies and Gentlemen:

The results of the **20th annual actuarial valuation of fixed and variable annuities** being paid from the Wisconsin Retirement System are presented in this report. The valuation was based upon data, furnished by the WRS staff, concerning Fund assets and individual annuitants and beneficiaries.

The date of this valuation was **December 31, 2002**. Actuarial assumptions used in the valuation are summarized in the Appendix.

The results of the valuation may be briefly summarized as follows (\$ millions).

	Fixed	Variable
Number of Annuitants	116,289	28,662
Annual Amount	\$ 2,226.6	\$ 374.0
Fund Balance	23,142.4	2,899.3
Actuarial Reserve	23,202.9	3,993.1
Ratio	0.997	0.726

Based upon these results, there was no change in fixed annuities effective April, 2003 and variable annuities were decreased by 27%.

The cooperation of the Secretary and his staff in gathering materials for this valuation is acknowledged with appreciation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Brian B. Murphy, FSA

Norman L. Jones, FSA

BBM/lr

SECTION A

Operation of the System

OPERATION OF THE RETIREMENT SYSTEM

Each year, as of December 31, an actuarial valuation of the liability for retired persons receiving benefits from the Wisconsin Retirement System is conducted. The purpose of the valuation is to determine the actuarial present value of future benefit payments on behalf of current retired lives. This present value is the “actuarial reserve”. Theoretically, if an amount of money equal to the actuarial present value were invested at a yield equal to the valuation interest rate, the initial amount plus the continuing investment income would provide exactly the right amount of money to pay the annuities of all current retired persons and their beneficiaries for the rest of their lives. The fund would decrease each year, and would become zero many decades in the future when the last annuitant dies.

The above is a “closed group” description of the operation of the annuity reserve fund. But the fund is really an “open group”. The size of the fund does not actually decrease because each year more benefits are added to the rolls than are removed, and fresh money is transferred into the annuity reserve fund to finance the benefits of the new annuitants. (The actuary calculates the reserve transfers for new annuitants each year as a by-product of the actuarial valuation.)

According to theory, the fund will eventually reach a state when the number of people entering (retiring) each year is approximately equal to the number of people exiting (dying) each year. When this mature state is reached, the amount of money in the fund will remain approximately level in constant dollars from year to year. Each year the reserve transfers of the new annuitants plus investment earnings on the whole fund (total money in) will be approximately equal to the benefit payments (total money out). The only source of growth in assets would be the result of the effects of inflation. The dollars in the fund would increase, but the “real” value of the fund would not change.

There are at least two factors that cause the actual operation to be different from the theoretical operation described above. The first is that annuitants may have longer or shorter lifetimes than expected. In recognition of this, the actuary monitors mortality experience of the retirement system and recommends a new mortality table when appropriate. The second factor is that actual investment earnings are rarely equal to the assumed rate. When investment earnings differ from the assumed rate, the difference, positive or negative, is recorded in a supplemental reserve.

OPERATION OF THE RETIREMENT SYSTEM (CONCLUDED)

The Wisconsin Retirement System maintains separate reserves for fixed and variable annuities. Each year, the actuary determines the actuarial reserve for fixed and variable annuities separately. WRS practice with respect to the use of supplemental reserves, is described below.

Fixed Annuity Division. If the supplemental reserve is positive and is at least 2% of fixed annuity liabilities, fixed annuity increases (dividends) may be granted. If the supplemental reserve is negative and is more than 0.5% of fixed annuity liabilities in absolute value, prior fixed annuity dividends are reduced by an aggregate amount equal to the shortfall. Increases or decreases become effective in April following the December 31 valuation.

Variable Annuity Division. If the supplemental reserve is at least 2% of variable annuity liabilities, substantially all of the reserve (dropping fractions of a percent) is used to increase or decrease variable annuities for the ensuing year. Increases or decreases become effective in April following the December 31 valuation.

SECTION B

Fixed Annuities

FIXED ANNUITY DIVISION
DEVELOPMENT OF ASSETS AND LIABILITIES

	\$ Millions		Ratio
	Assets	Liabilities	
Ending Balance December 31, 2001	\$21,979.7	\$21,283.6	1.033
Closing Adjustments	(14.0)	0.0	
Variable Terminations	58.0	58.0	
2002 Dividend: 3.3%	0.0	652.9	
Beginning Balance January 1, 2002	22,023.7	21,994.5	1.001
Increases			
Reserve Transfers	2,285.4	2,285.4	
Regular Interest	1,101.4	1,101.4	
Additional Earnings	(46.1)	0.0	
Addition to Contingency/Data Reserve	0.0	22.8	
Experience Study	0.0	0.0	
Other	0.0	20.8	
Total Increases	3,340.7	3,430.4	
Decreases			
Annuities & Lump Sums	2,217.0	2,217.0	
Credit Reestablishments	5.0	5.0	
Releases from Contingency/Data Reserve	0.0	0.0	
Experience Study	0.0	0.0	
Other	0.0	0.0	
Total Decreases	2,222.0	2,222.0	
Ending Balance December 31, 2002	\$23,142.4	\$23,202.9	0.997
The ending liability balance includes data and contingency reserves of \$275.6 million.			

RESERVE TRANSFER RECOMMENDATION DECEMBER 31, 2002

Amounts to be transferred from the Employer Reserve and the Employee Reserve to the Annuity Reserve to cover liabilities for new annuities are computed as the first step in the annual actuarial valuation. The actuarial present value at time of retirement of fixed annuities reported as new since the last actuarial valuation is \$1,970,912,303. Adjustments to prior transfers, relating to estimated annuities for which final computations have now been made, totaled \$314,481,579. Reserve transfers are distributed as follows:

Group	Regular Transfer	Adjustment to Prior Transfer	Total Transfer
General	\$1,775,973,141	\$294,241,719	\$2,070,214,860
Protective with Social Security	137,715,718	10,941,923	148,657,641
Protective without Social Security	41,099,068	7,184,942	48,284,010
Executive & Elected	16,124,376	2,112,995	18,237,371
Totals	\$1,970,912,303	\$314,481,579	\$2,285,393,882

The "Adjustment to Prior Transfer" still includes a residual effect of Act 11 of 1999. The reserve transfer and liabilities for a number of estimated annuities were based on pre-Act 11 benefit calculations, but have now been finalized with post-Act 11 benefits.

Accordingly, we recommend that \$2,285,393,882 be transferred to the fixed annuity reserve. The results in this report assume that this transfer has been made.

**DISCUSSION OF DIVIDEND
DECEMBER 31, 2002**

The Fixed Annuity Fund Balance, \$23,142.5 million, exceeded the actuarial present value of fixed annuities and reserves, \$23,202.9 million, by \$(60.5) million or (0.3)% of the actuarial present value (APV) of fixed annuity payments. The primary sources of the (0.3)% are:

	% of APV
1. Published earnings rate	5.0%
2. Adjustment to relate earnings to average fixed annuity balance	(0.2)%
3. Earnings rate based on average balance	4.8%
4. Expected dividend before adjustments: 1.048/1.05-1	(0.2)%
5. Adjustment to relate average liability to ending liability	0.0%
6. Carryover from last year due to timing of dividend and accounting adjustments	0.1%
7. Adjustments to contingency reserve and data reserve	(0.1)%
8. Experience Study	0.0%
9. Experience and other effects	(0.1)%
10. Computed dividend rate: (4) + (5) + (6) + (7) + (8) + (9)	(0.3)%

In accordance with the Administrative Code, ETF 20.25 and Section 40.27(2) Wisconsin Statutes (see page 27), no amounts were allocated to a dividend effective April, 2003.

**TRANSFERS TO ANNUITY RESERVE
TO FINANCE FIXED ANNUITIES APPROVED IN 2002
TABULATED BY TYPE OF ANNUITY AND OPTION**

Code	Type of Benefit	Number	Annual Amount	Transfer
	REGULAR RETIREMENT			
1	Straight Life	833	\$ 13,234,195	\$ 175,856,906
2	5 Year Certain & Life	830	13,675,598	186,147,848
4	15 Year Certain & Life	1,527	23,499,907	334,921,228
7	Joint and 75%	786	14,768,221	223,702,251
9	Joint and 75% on First Death	477	10,418,662	150,674,512
11	Joint and 100%	617	10,055,027	154,942,440
12	Joint and 100% & 15 Year Certain	1,811	31,806,089	504,228,814
13	Temporary to Age 62*	0	40,879,962	167,818,306
21	Certain Only*	1	412,378	2,808,936
40	Mandatory & 15 Year Certain	18	73,990	864,458
41	Mandatory & Certain for Life Expectancy	0	0	0
42	Voluntary & Certain for Life Expectancy	15	162,755	1,658,376
	Total Regular	6,915	158,986,784	1,903,624,075
	Average Age at Retirement	59.1 Years		
	DISABILITY RETIREMENT			
1	Straight Life	0	0	0
2	5 Year Certain & Life	0	0	0
4	15 Year Certain & Life	0	0	0
7	Joint and 75%	0	0	0
9	Joint and 75% on First Death	0	0	0
11	Joint and 100%	0	0	0
12	Joint and 100% & 15 Year Certain	66	1,504,670	24,269,761
17	5 Years Certain & Life or Survivor	17	358,169	4,365,145
21	Certain Only*	0	0	0
24	Straight Life	13	225,551	2,670,958
25	15 Year Certain & Life	57	1,066,635	13,815,218
26	Joint & 75 %	8	182,606	2,792,916
27	Joint & 100%	27	571,063	9,052,101
28	Joint & 75% on First Death	3	55,225	645,232
	Total Disability	191	3,963,919	57,611,331
	Average Age at Retirement	53.3 Years		
	DEATH-IN-SERVICE BENEFITS			
1	Straight Life	6	78,758	1,121,210
2	5 Year Certain & Life	6	87,355	1,223,441
4	15 Year Certain & Life	40	428,062	6,336,186
13	Temporary to Age 62*	0	131,142	679,628
21	Certain Only*	0	0	0
42	Voluntary & Certain for Life Expectancy	1	40,026	316,408
	Total Death-in-Service	53	765,343	9,676,873
	Average Age at Retirement	50.3 Years		
	GRAND TOTAL	7,159	\$163,716,046	\$1,970,912,279

* Many annuities in this category were additional annuities. The number counts are included elsewhere.

FIXED ANNUITIES BEING PAID DECEMBER 31, 2002
TABULATED BY TYPE OF ANNUITY AND OPTION

Code	Type of Benefit	Number	Amount	Value
	REGULAR RETIREMENT			
1	Straight Life	14,746	\$229,087,610	\$2,278,834,624
2	5 Year Certain & Life	17,564	261,706,783	2,428,800,884
3	10 Year Certain & Life	821	11,866,308	57,856,778
4	15 Year Certain & Life	26,375	413,686,211	3,964,286,701
5	Joint and 50%	241	3,846,977	20,937,560
6	Joint and 50% and 15 Year Certain	46	545,952	2,387,956
7	Joint and 75%	12,925	269,347,641	3,266,916,711
8	Joint and 75% Integrated	146	2,767,827	22,800,682
9	Joint and 75% on First Death	10,967	277,841,405	3,065,782,382
10	Joint and 75% & 10 Year Certain	55	687,372	2,915,833
11	Joint and 100%	8,517	153,597,913	1,868,613,045
12	Joint and 100% & 15 Year Certain	14,905	287,010,559	3,992,473,576
13	Temporary to Age 62*	3	161,377,333	442,146,569
14	5 Year Certain & Life Integrated	549	3,149,592	18,206,156
15	15 Year Certain & Life Integrated	333	6,616,831	39,427,397
20	Cash Refund Annuity	2	5,124	22,201
21	Certain Only*	8	3,020,438	14,540,619
22	Joint and \$600	0	0	0
25	15 Year Certain & Life & Survivor	2	19,015	230,083
40	Mandatory and Certain for 15 Years	48	262,072	2,850,531
41	Mandatory & Certain for Life Expectancy	18	270,569	2,369,459
42	Voluntary & Certain for Life Expectancy	131	1,866,538	15,874,772
99	Joint and 66-2/3% Original Amount	499	3,464,675	22,692,986
99	Joint and 66-2/3% Dividends	0	9,973,271	63,640,791
	Total Regular	108,901	\$2,102,018,016	\$21,594,608,296

(Concluded on next page)

* Many annuities in this category were additional annuities. The number counts are included elsewhere.

FIXED ANNUITIES BEING PAID DECEMBER 31, 2002
TABULATED BY TYPE OF ANNUITY AND OPTION
(CONCLUDED)

Code	Type of Benefit	Number	Annual Amount	Present Value
DISABILITY RETIREMENT				
1	Straight Life	10	\$108,207	\$1,000,899
2	5 Year Certain & Life *	1	8,449	91,806
3	10 Year Certain & Life *	0	0	0
4	15 Year Certain & Life	2	38,106	492,913
7	Joint and 75% *	1	22,942	262,285
9	Joint and 100%	1	16,836	255,478
11	Joint and 100%	6	151,347	2,219,824
12	Joint and 100% & 15 Year Certain	1,278	23,644,409	338,069,186
17	5 Year Certain & Life or Survivor	823	15,699,628	111,356,549
18	Cash Refund Annuity	218	2,811,219	11,525,200
21	Certain Only	0	44,249	128,081
23	Joint and \$600	7	35,119	82,332
24	Straight Life	566	12,345,772	116,243,899
25	15 Year Certain & Life or Survivor	1,244	24,450,452	236,065,972
26	Straight Life & Joint & 75%	482	9,553,296	109,811,226
27	Straight Life & Joint & 100%	1,221	21,063,001	270,906,703
28	Joint & 75% on First Death	237	4,768,019	39,313,208
99	Joint & 66-2/3% Original Amount	61	229,048	1,495,179
99	Joint & 66-2/3% Dividends	0	727,788	4,730,494
Total Disability		6,158	115,717,887	1,244,051,234
DEATH-IN-SERVICE BENEFITS				
1	Straight Life	278	1,792,574	18,125,406
2	5 Year Certain & Life	115	1,288,524	13,750,064
4	15 Year Certain & Life	603	4,395,829	49,028,410
7	Joint and 75%	1	39,210	274,014
12	Joint and 100% & 15 Year Certain	4	19,643	260,843
13	Temporary to Age 62*	0	726,939	3,126,472
14	5 Year Certain & Life Integrated	197	207,754	1,173,717
15	15 Year Certain & Life Integrated	2	46,235	338,088
17	5 Year Certain & Life or Survivor	1	3,129	20,396
21	Certain Only*	3	36,024	160,414
22	Joint and \$600	0	0	0
23	Joint and \$600	0	0	0
42	Voluntary & Certain for Life Expec	23	249,612	1,623,883
99	Joint & 66-2/3% Original Amount	3	25,059	219,306
99	Joint & 66-2/3% Dividends	0	60,944	526,113
Total Death-in-Service		1,230	\$8,891,476	\$88,627,126
GRAND TOTAL		116,289	\$2,226,627,379	\$22,927,286,656

* Many annuities in this category were additional annuities. The number counts are included elsewhere.

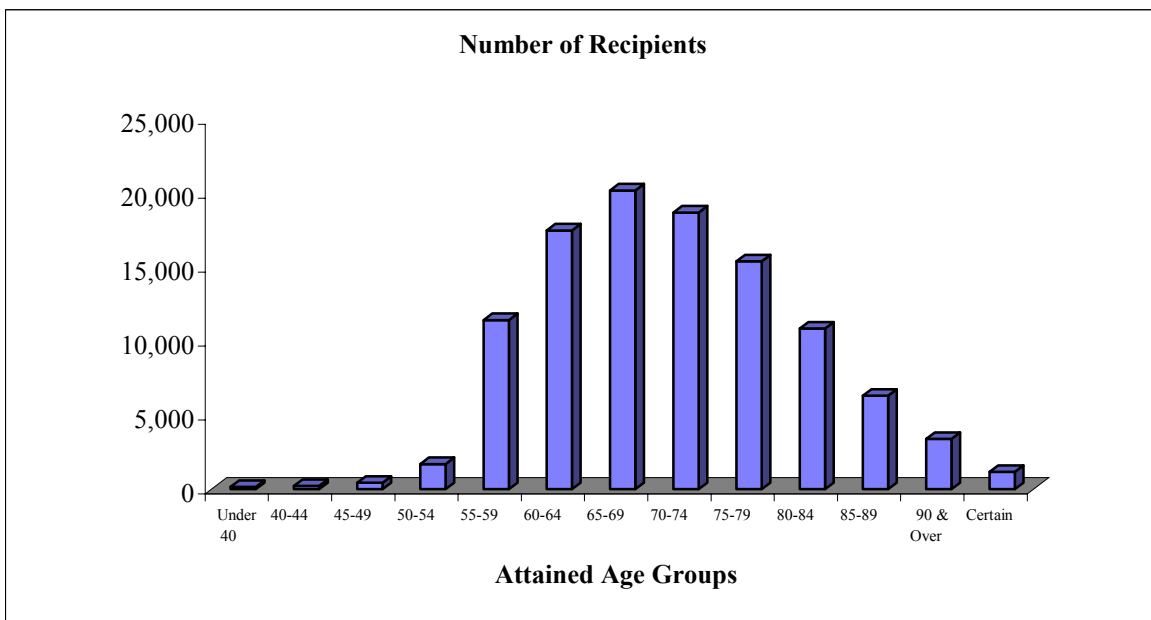
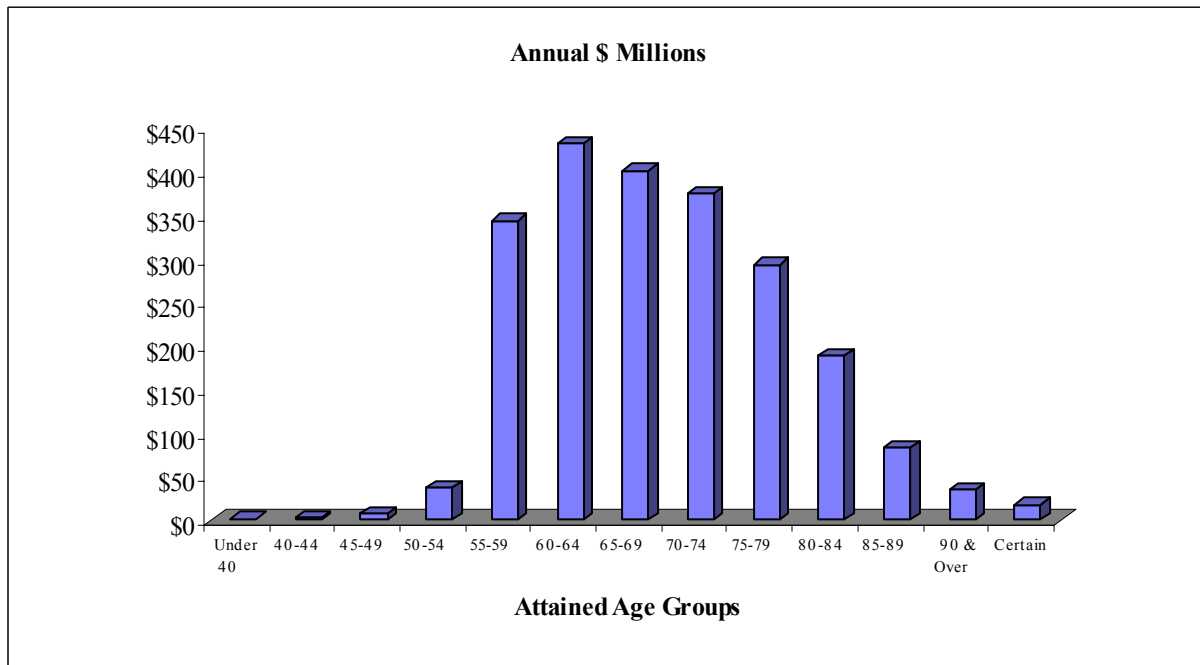
FIXED ANNUITIES BEING PAID DECEMBER 31, 2002
TABULATED BY ATTAINED AGES

Attained Ages	Regular		Disability		Death-in-Service		Totals	
	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount
Under 20	0	\$0	10	\$52,290	7	\$56,345	17	\$108,635
20-24	0	0	8	38,167	8	41,540	16	79,707
25-29	2	7,828	12	102,356	2	6,074	16	116,258
30-34	2	5,959	18	172,990	6	26,023	26	204,972
35-39	10	122,291	67	980,377	12	44,202	89	1,146,870
40-44	20	151,111	146	2,378,677	25	92,582	191	2,622,370
45-49	50	506,386	355	6,950,373	32	212,599	437	7,669,358
50-54	925	22,411,620	716	14,814,761	48	380,527	1,689	37,606,908
55-59	12,785	322,178,224	1,006	21,501,096	113	1,339,759	13,904	345,019,079
60-64	18,600	412,253,283	1,018	20,387,530	119	1,251,174	19,737	433,891,987
65-69	20,217	382,148,518	951	19,139,097	131	1,045,354	21,299	402,332,969
70-74	18,666	360,649,037	808	14,087,087	161	1,450,968	19,635	376,187,092
75-79	15,306	284,026,792	557	8,932,630	166	1,035,417	16,029	293,994,839
80-84	11,354	184,142,862	314	4,415,540	153	833,679	11,821	189,392,081
85-89	6,375	82,117,039	129	1,421,888	128	495,064	6,632	84,033,991
90-94	2,714	27,428,864	36	246,095	81	336,817	2,831	28,011,776
95& Up	821	6,383,275	7	52,679	19	94,068	847	6,530,022
Certain Only*	1,054	17,484,927	0	44,254	19	149,284	1,073	17,678,465
Totals	108,901	\$2,102,018,016	6,158	\$115,717,887	1,230	\$8,891,476	116,289	\$2,226,627,379
Average								
Age at retirement		60.6		52.4		50.2		60.1
Attained age		71.0		64.1		71.5		70.7

* Certain only category consists of continuations of 5, 10 and 15 year certain and life annuities to beneficiaries of deceased annuitants, and all option 21 annuities.

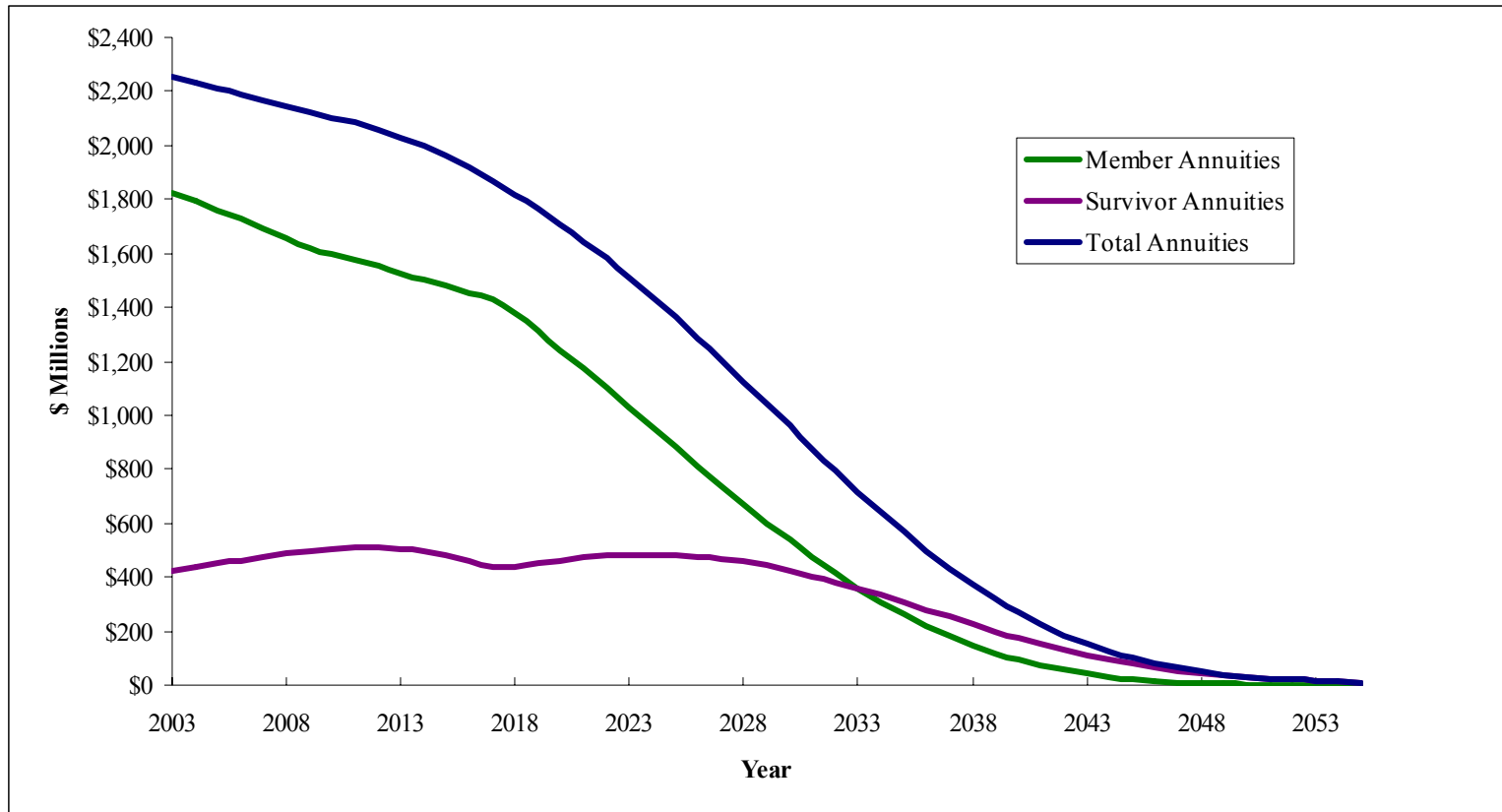
FIXED ANNUITIES BEING PAID BY ATTAINED AGE*

DECEMBER 31, 2002



* Includes regular and disability retirees and survivor beneficiaries. The "certain" category includes annuities paid for a fixed period which is not dependent upon the age of the recipient.

**PROJECTED FUTURE FIXED ANNUITY PAYMENTS
ON BEHALF OF PRESENT RETIRED LIVES
INCLUDING FUTURE DIVIDENDS**



Total Future Payments	\$ 56,461	million
From Present Assets	23,142	
From Investment Return	33,319	

SECTION C

Variable Annuities

VARIABLE ANNUITY DIVISION
DEVELOPMENT OF ASSETS AND LIABILITIES

	\$ Millions		Ratio
	Assets	Liabilities	
Ending Balance December 31, 2001	\$3,901.8	\$4,547.4	0.858
Closing Adjustments	(4.7)	0.0	
Variable Terminations	(58.0)	(58.0)	
2002 Adjustment:- 14%	0.0	(633.8)	
Beginning Balance January 1, 2002	3,839.1	3,855.6	0.996
Increases			
Reserve Transfers	314.6	314.6	
Regular Interest	191.0	191.0	
Additional earnings	(1,057.2)	0.0	
Addition to Contingency/Data Reserve	0.0	0.0	
Experience Study	0.0	0.0	
Other	0.0	25.5	
Total Increases	(551.6)	531.1	
Decreases			
Annuities & Lump Sums	387.7	387.7	
Credit Reestablishments	0.4	0.4	
Release from Contingency/Data Reserve	0.0	5.5	
Experience Study	0.0	0.0	
Other	0.1	0.0	
Total Decreases	388.2	393.6	
Ending Balance December 31, 2002	\$2,899.3	\$3,993.1	0.726
The ending liability balance includes contingency reserves of \$39.5 million.			

RESERVE TRANSFER RECOMMENDATION
DECEMBER 31, 2002

Amounts to be transferred from the Employer Reserve and the Employee Reserve to the Annuity Reserve to cover liabilities for new annuities are computed as the first step in the annual actuarial valuation. The actuarial present value at time of retirement of variable annuities reported as new since the last actuarial valuation is \$321,855,644. Adjustments to prior transfers, relating to estimated annuities for which final computations have now been made, totaled \$(7,276,195). Reserve transfers were distributed as follows:

Group	Regular Transfer	Adjustment to Prior Transfer	Total Transfer
General	\$295,266,980	\$(6,715,140)	\$288,551,840
Protective with Social Security	19,992,271	138,644	20,130,915
Protective Without Social Security	4,319,669	(497,910)	3,821,759
Executive & Elected	2,276,724	(201,788)	2,074,936
Totals	\$321,855,644	\$(7,276,195)	\$314,579,449

Accordingly, we recommend that \$314,579,449 be transferred to the variable annuity reserve. The results in this report assume that this transfer has been made.

DISCUSSION OF VARIABLE ANNUITY CHANGE DECEMBER 31, 2002

Variable Annuity Reserves, \$2,899.3 million, exceeded the actuarial present value of variable annuities, \$3,993.1 million, by \$(1,093.8) million as of December 31, 2002 or (27)% of the actuarial present value (APV) of variable annuity payments. In accordance with Section 40.28(2) of the Wisconsin statutes (see page 26), variable annuities will be decreased by 27% effective April, 2003. The primary sources of the (27)% are as follows:

	% of APV
1. Published earnings rate based on beginning of year balances	(23.0)%
2. Adjustment to relate earnings to average variable annuity fund balance	0.3%
3. Earnings rate based on average balance	(22.7)%
4. Expected change before adjustments: 0.773/1.05-1	(26.4)%
5. Adjustment to relate average liability to ending liability	(0.1)%
6. Carryover from last year due to timing of distribution, accounting adjustments, and truncation	(0.4)%
7. Adjustments to contingency reserve	0.1%
8. Experience Study	0.0%
9. Experience and Miscellaneous	(0.6)%
10. Statutory adjustment to truncate to whole percent	0.4%
11. Variable annuity change: (4)+(5)+(6)+(7)+(8)+(9)+(10)	(27.0)%

**TRANSFERS TO ANNUITY RESERVE
TO FINANCE VARIABLE ANNUITIES APPROVED IN 2002
TABULATED BY TYPE OF ANNUITY AND OPTION**

Code	Type of Benefit	Number	Annual Amount	Transfer
REGULAR RETIREMENT				
1	Straight Life	118	\$1,651,530	\$22,052,136
2	5 Year Certain & Life	113	1,560,790	20,603,669
4	15 Year Certain & Life	298	3,972,180	56,809,716
7	Joint and 75%	156	2,387,879	36,243,530
9	Joint and 75% on First Death	131	2,528,257	36,441,767
11	Joint and 100%	90	1,332,224	20,467,122
12	Joint and 100% & 15 Year Certain	409	6,304,203	100,764,935
13	Temporary to Age 62*	0	5,572,336	24,858,199
21	Certain Only*	0	84,060	617,226
40	Mandatory & Certain for Life Expec	1	2,925	32,563
41	Mandatory & Certain for Life Expec	0	0	0
42	Voluntary & Certain for Life Expec	2	21,720	208,355
Total Regular		1,318	25,418,104	319,099,218
Average Age at Retirement		58.0 Years		
DISABILITY RETIREMENT				
11	Joint and 100%	0	0	0
12	Joint and 100% & 15 Year Certain	14	24,314	383,437
17	5 Years Certain & Life or Survivor	4	22,735	263,102
21	Certain Only*	0	0	0
24	Straight Life	2	6,699	77,984
25	15 Year Certain & Life	6	31,008	375,544
26	Joint & 75 %	3	603	9,235
27	Joint & 100%	6	19,144	322,966
28	Joint & 75% on First Death	2	334	4,083
Total Disability		37	104,837	1,436,351
Average Age at Retirement		52.2 Years		
DEATH-IN-SERVICE BENEFITS				
1	Straight Life	0	0	0
2	5 Year Certain & Life	2	33,798	503,307
4	15 Year Certain & Life	10	50,541	760,763
13	Temporary to Age 62*	0	14,286	56,005
21	Certain Only*	0	0	0
42	Voluntary & Certain for Life Expec	0	0	0
Total Death-in-Service		12	98,625	1,320,075
Average Age at Retirement		41.8 Years		
GRAND TOTAL		1,367	\$25,621,566	\$321,855,644

* Many annuities in this category were additional annuities. The number counts are included elsewhere.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2002
TABULATED BY TYPE OF ANNUITY AND OPTION

Code	Type of Benefit	Number	Annual Amount	Present Value
	REGULAR RETIREMENT			
1	Straight Life	3,219	\$36,366,375	\$352,549,328
2	5 Year Certain & Life	3,756	36,316,388	333,107,249
3	10 Year Certain & Life	216	1,799,021	8,379,066
4	15 Year Certain & Life	5,782	61,248,492	604,020,652
5	Joint and 50%	141	1,238,167	6,664,648
6	Joint and 50% and 15 Year Certain	38	331,212	1,536,792
7	Joint and 75%	3,627	49,366,228	604,458,230
8	Joint and 75% Integrated	48	293,203	2,482,355
9	Joint and 75% on First Death	3,820	62,914,028	693,340,295
10	Joint and 75% & 10 Year Certain	30	289,797	1,269,588
11	Joint and 100%	2,240	28,176,600	335,347,131
12	Joint and 100% & 15 Year Certain	4,025	59,254,607	823,003,510
13	Temporary to Age 62*	2	23,472,889	67,775,679
14	5 Year Certain & Life Integrated	156	432,786	2,432,850
15	15 Year Certain & Life Integrated	88	507,911	2,955,713
21	Certain Only*	1	1,370,271	6,423,316
25	15 Year Certain & Life or Survivor	1	2,043	9,829
40	Mandatory & Certain for 15 years	6	55,938	613,953
41	Mandatory & Certain for Life Expec	3	21,952	207,250
42	Voluntary & Certain for Life Expec	18	382,927	3,099,281
	Total Regular	27,217	\$363,840,835	\$3,849,676,715

(concluded on next page)

* Many annuities in this category were additional annuities. The number counts are included elsewhere.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2002
TABULATED BY TYPE OF ANNUITY AND OPTION
(CONCLUDED)

Code	Type of Benefit	Number	Annual Amount	Present Value
DISABILITY RETIREMENT				
1	Straight Life	3	\$ 15,085	\$ 116,432
2	5 Year Certain & Life*	0	0	0
4	15 Year Certain & Life	0	0	0
7	Joint and 75%*	0	83	902
11	Joint and 100%	1	24,253	269,733
12	Joint and 100% & 15 Year Certain	216	1,923,408	26,477,384
17	5 Year Certain & Life or Survivor	165	965,162	6,387,219
18	Cash Refund Annuity	48	138,040	427,104
21	Certain Only*	0	21,107	40,022
24	Straight Life	89	591,655	4,678,309
25	15 Year Certain & Life or Survivor	175	1,316,056	11,576,189
26	Straight Life & Joint & 75%	107	932,452	10,192,764
27	Straight Life & Joint & 100%	244	1,684,515	20,711,833
28	Joint & 75% on First Death	61	466,964	3,692,077
	Total Disability	1,109	\$ 8,078,780	\$ 84,569,968
DEATH-IN-SERVICE BENEFITS				
1	Straight Life	53	\$ 362,014	\$ 3,311,068
2	5 Year Certain & Life	37	328,215	3,558,764
4	15 Year Certain & Life	195	1,176,447	11,388,276
13	Temporary to Age 62*	0	135,131	464,410
14	5 Year Certain & Life Integrated	47	50,079	274,817
21	Certain Only*	2	56,199	294,965
42	Voluntary & Certain for Life Expec	2	9,188	59,155
	Total Death-in-Service	336	\$ 2,117,273	\$ 19,351,455
	GRAND TOTAL	28,662	\$374,036,888	\$3,953,598,138

* Many annuities in this category were additional annuities. The number counts are included elsewhere.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2002
TABULATED BY ATTAINED AGES

Attained Ages	Regular		Disability		Death-in-Service		Totals	
	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount
25-29	1	\$7,726	1	\$46	1	\$1,909	3	\$9,681
30-34	0	0	4	36,404	1	1,942	5	38,346
35-39	6	86,696	9	9,701	2	1,881	17	98,278
40-44	3	9,630	17	50,381	4	2,990	24	63,001
45-49	17	116,069	32	89,658	8	18,860	57	224,587
50-54	219	3,657,748	77	490,421	8	36,742	304	4,184,911
55-59	3,403	62,690,452	190	1,765,528	36	344,237	3,629	64,800,217
60-64	4,262	69,808,226	192	1,701,377	31	320,042	4,485	71,829,645
65-69	4,770	65,861,829	187	1,444,806	27	193,338	4,984	67,499,973
70-74	4,704	60,732,947	167	1,195,038	36	243,063	4,907	62,171,048
75-79	4,071	47,415,520	127	711,618	54	259,653	4,252	48,386,791
80-84	2,961	28,939,978	76	442,916	48	270,692	3,085	29,653,586
85-89	1,668	14,443,208	22	98,338	42	176,118	1,732	14,717,664
90-94	701	5,337,159	4	6,379	20	90,815	725	5,434,353
95& Up	197	1,344,522	1	7,324	7	65,784	205	1,417,630
Certain Only*	234	3,389,125	3	28,845	11	89,207	248	3,507,177
Totals	27,217	\$363,840,835	1,109	\$8,078,780	336	\$2,117,273	28,662	\$374,036,888
Average								
Age at retirement		60.3		53.3		52.2		59.9
Attained age		71.1		66.6		73.0		71.0

* Certain only category consists of continuations of 5, 10 and 15 year certain and life annuities to beneficiaries of deceased annuitants, and all option 21 annuities.

SECTION D

Comparative Statements

COMPARATIVE STATEMENT

Year	Number	\$ Millions			Ratio	Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve		Annuities	CPI
FIXED ANNUITIES							
1983	57,770	\$ 177.7	\$ 1,830.3	\$ 1,738.3	1.053	5.0 %	3.8 %
1984	60,302	214.3	2,255.5	2,120.3	1.064	6.0 %	4.0 %
1985	62,953	257.6	2,758.2	2,561.0	1.077	7.2 %	3.8 %
1986	65,425	303.5	3,256.9	3,021.2	1.078	7.6 %	1.1 %
1987	67,688	366.9	3,833.7	3,594.6	1.067	6.7 %	4.4 %
1988	70,017	420.6	4,319.6	4,150.9	1.041	4.1 %	4.4 %
1989	73,232	488.7	5,487.4	4,928.1	1.113	11.3 %	4.6 %
1990	77,666	611.3	6,443.8	6,219.1	1.036	3.6 %	6.2 %
1991	79,465	660.4	7,137.8	6,711.3	1.063	6.3 %	3.0 %
1992	81,508	732.3	7,782.4	7,456.6	1.044	4.4 %	3.0 %
1993	83,836	801.7	8,608.2	8,205.3	1.049	4.9 %	2.7 %
1994	86,214	882.2	9,286.2	9,029.6	1.028	2.8 %	2.7 %
1995	88,998	955.8	10,351.7	9,804.1	1.056	5.6 %	2.6 %
1996	92,198	1,065.8	11,699.8	10,977.1	1.066	6.6 %	3.3 %
1997	95,128	1,188.4	13,185.1	12,240.4	1.077	7.7 %	1.7 %
1998	99,112	1,349.5	14,951.8	13,943.0	1.072	7.2 %	1.6 %
1999	102,817	1,513.8	16,857.8	15,687.2	1.075	17.1 %*	2.7 %
2000	107,425	1,867.0	20,517.8	19,405.3	1.057	5.7 %	3.4 %
2001	112,142	2,048.6	21,979.7	21,283.6	1.033	3.3 %	1.6 %
2002	116,289	2,226.6	23,142.4	23,202.9	0.997	0.0 %	2.4 %
20 Year Average						6.1 %	3.1 %
10 Year Average						6.0 %	2.5 %

* Including 10.6% Act 11 transfer.

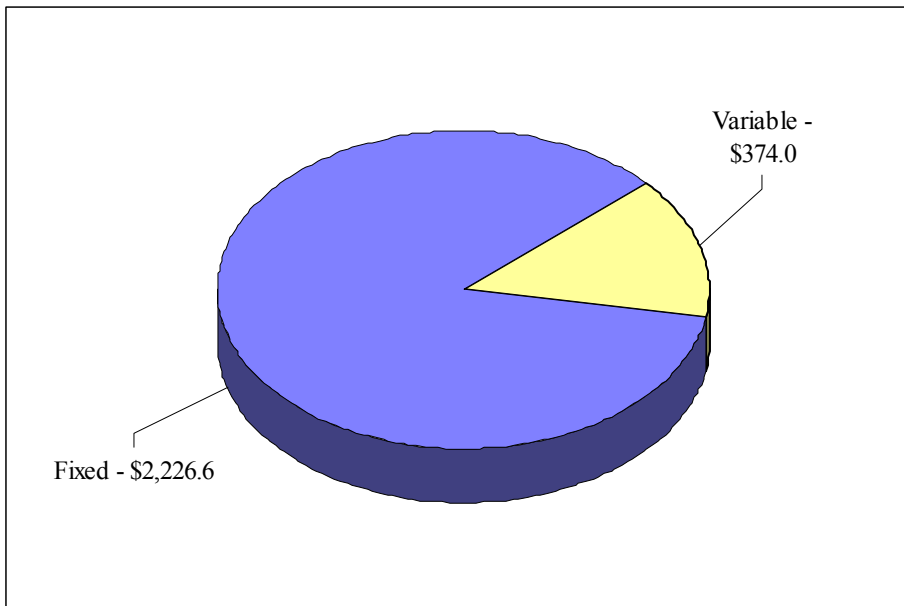
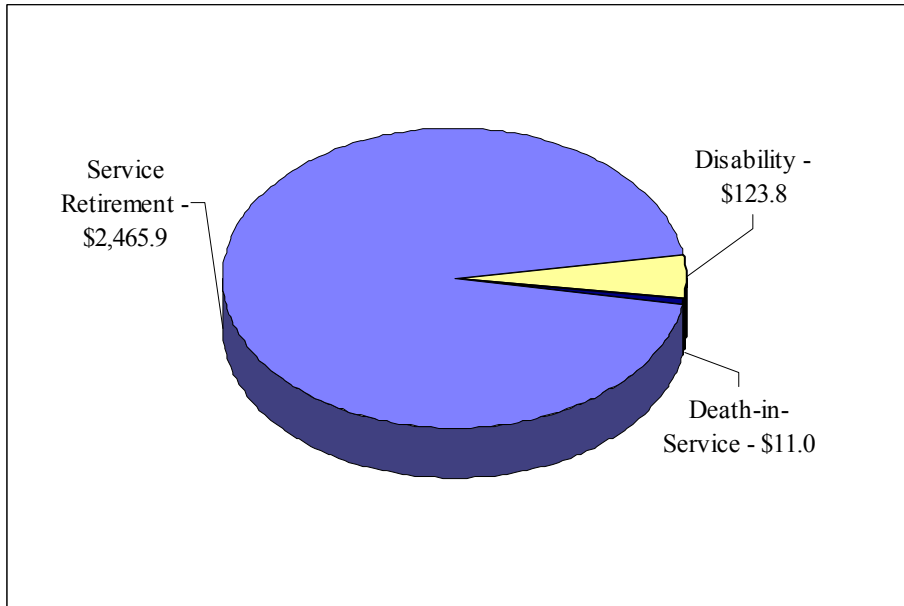
COMPARATIVE STATEMENT (CONTINUED)

Year	Number	\$ Millions			Ratio	Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve		Annuities	CPI
VARIABLE ANNUITIES							
1983	13,598	\$ 25.9	\$ 289.4	\$ 245.0	1.181	18.0 %	3.8 %
1984	14,520	34.2	329.2	327.5	1.005	0.0 %	4.0 %
1985	15,529	38.0	463.1	366.6	1.263	26.0 %	3.8 %
1986	16,276	51.8	538.7	498.6	1.080	8.0 %	1.1 %
1987	17,084	60.4	548.8	584.2	0.939	(6.0)%	4.4 %
1988	17,779	61.4	682.6	594.0	1.149	14.0 %	4.4 %
1989	18,502	75.9	878.1	756.5	1.161	16.0 %	4.6 %
1990	19,922	101.0	868.6	1,013.4	0.857	(14.0)%	6.2 %
1991	20,538	91.5	1,101.3	929.7	1.184	18.0 %	3.0 %
1992	20,968	112.6	1,208.6	1,147.4	1.053	5.0 %	3.0 %
1993	21,623	123.7	1,407.9	1,268.6	1.110	11.0 %	2.7 %
1994	22,248	144.6	1,418.0	1,487.0	0.954	(4.0)%	2.7 %
1995	22,978	150.2	1,854.2	1,556.0	1.192	19.0 %	2.6 %
1996	23,725	189.8	2,264.9	1,976.7	1.146	14.0 %	3.3 %
1997	24,462	228.2	2,800.0	2,371.5	1.181	18.0 %	1.7 %
1998	25,424	289.5	3,400.5	3,035.5	1.120	12.0 %	1.6 %
1999	26,257	345.8	4,432.9	3,659.1	1.212	21.0 %	2.7 %
2000	27,321	445.3	4,211.4	4,749.3	0.887	(11.0)%	3.4 %
2001	28,314	424.4	3,901.8	4,547.4	0.858	(14.0)%	1.6 %
2002	28,662	374.0	2,899.3	3,993.1	0.726	(27.0)%	2.4 %
20 Year Average						5.2 %	3.1 %
10 Year Average						2.6 %	2.5 %

HISTORY OF % CHANGES IN ANNUITIES AND CPI



ANNUITIES BEING PAID BY TYPE
DECEMBER 31, 2002
\$ MILLIONS



ANNUITIES BEING PAID DECEMBER 31, 2002
TABULATED BY YEAR OF RETIREMENT
(\$1,000'S ANNUALLY)

Year Ret'd	Fixed Annuities			Variable Annuities				Avg. Total Annuity	
	No.	Initial	Increases	Total	No.	Initial	Increases		Total
2002	7,001	\$156,899	\$0	\$156,899	1,344	\$24,821	\$0	\$24,821	\$25,956
2001	7,589	162,228	2,956	165,184	1,729	36,683	-4,925	31,758	25,951
2000	7,443	150,405	10,145	160,550	1,691	40,053	-9,363	30,690	25,694
1999	6,594	112,279	27,244	139,523	1,484	28,797	-2,129	26,668	25,203
1998	6,577	101,500	33,395	134,895	1,509	24,422	909	25,331	24,362
1997	5,633	80,323	34,645	114,968	1,299	17,403	3,912	21,315	24,194
1996	5,713	76,352	40,458	116,810	1,313	14,657	5,772	20,429	24,022
1995	5,275	65,294	40,505	105,799	1,238	10,867	7,158	18,025	23,474
1994	4,780	56,360	38,478	94,838	1,186	10,448	6,213	16,661	23,327
1993	4,602	49,504	37,340	86,844	1,153	8,314	6,391	14,705	22,066
1992	4,046	41,595	34,486	76,081	1,007	6,872	5,894	12,766	21,959
1991	3,844	36,471	34,123	70,594	984	5,551	6,611	12,162	21,528
1990	6,188	63,166	64,506	127,672	1,697	10,927	9,685	20,612	23,963
1989	4,977	49,616	58,288	107,904	1,274	7,052	8,369	15,421	24,779
1988	4,096	32,862	43,776	76,638	1,068	4,768	7,114	11,882	21,611
1987	3,647	27,039	40,680	67,719	1,006	4,280	5,755	10,035	21,320
1986	3,489	24,993	42,680	67,673	947	3,798	5,813	9,611	22,151
1985	3,372	24,463	46,708	71,171	896	2,681	5,866	8,547	23,641
1984	2,844	19,583	40,572	60,155	822	2,427	5,314	7,741	23,874
1983	2,685	13,758	31,013	44,771	765	1,923	5,312	7,235	19,369
1982	2,219	9,562	23,971	33,533	612	1,196	3,955	5,151	17,433
1981	2,108	7,635	20,552	28,187	551	921	3,034	3,955	15,247
1980	1,717	5,576	16,019	21,595	499	740	3,128	3,868	14,830
1979	1,411	4,459	13,436	17,895	386	464	2,211	2,675	14,578
1978	1,337	3,838	11,809	15,647	408	423	2,156	2,579	13,632
1977	1,333	3,521	11,100	14,621	412	433	2,112	2,545	12,877
1976	1,122	2,917	9,253	12,170	318	282	1,432	1,714	12,375
1975	912	2,185	7,067	9,252	247	186	1,135	1,321	11,592
1974	805	1,930	6,336	8,266	208	173	954	1,127	11,668
1973	632	1,382	4,537	5,919	186	166	804	970	10,900
1972	488	812	2,754	3,566	109	98	428	526	8,384
1971	333	467	1,605	2,072	78	64	291	355	7,289
1970	275	444	1,488	1,932	60	42	242	284	8,058
1969	212	287	972	1,259	57	37	166	203	6,895
1968	171	189	659	848	38	27	116	143	5,790
1967	142	142	497	639	23	11	59	70	4,993
1966	116	101	365	466	23	10	50	60	4,539
1965	97	98	357	455	5	2	11	13	4,821
1964	90	53	202	255	12	4	23	27	3,128
1963	70	63	228	291	7	2	11	13	4,344
Prior	304	240	836	1,076	11	3	20	23	3,538
Total	116,289	\$1,390,591	\$836,041	\$2,226,632	28,662	\$272,028	\$102,009	\$374,037	\$22,364

**COMPARISON OF ACTUAL TO EXPECTED DEATHS AMONG RETIRED LIVES
(NORMAL RETIREMENT ONLY)
DURING 2002**

Age	Male Deaths			Female Deaths			Total Deaths		
	Actual	Expected	Exposure	Actual	Expected	Exposure	Actual	Expected	Exposure
25-29			1			1			2
30-34						2			2
35-39			2	1		11	1		13
40-44			3			16			19
45-49			16			42			58
50-54	2	3	835			319	2	3	1,154
55-59	33	40	6,793	10	15	5,541	43	55	12,334
60-64	61	86	9,290	40	38	8,714	101	124	18,004
65-69	136	161	9,815	81	76	10,115	217	237	19,930
70-74	222	265	8,918	145	141	9,736	367	406	18,654
75-79	271	347	6,975	218	237	8,427	489	584	15,402
80-84	364	379	4,447	333	346	6,983	697	725	11,430
85-89	279	292	2,177	427	382	4,519	706	674	6,696
90-94	159	141	719	385	316	2,227	544	457	2,946
95-99	40	37	135	153	162	682	193	199	817
100&Up	5	3	9	38	42	114	43	45	123
Totals	1,572	1,754	50,135	1,831	1,755	57,449	3,403	3,509	107,584
Average									
Ages	79.5	78.5	69.4	84.2	83.9	72.3	84.1	81.2	70.8

SECTION E

Appendix

ACTUARIAL ASSUMPTIONS USED IN RETIRED LIFE ACTUARIAL VALUATION

The interest rate used in the valuation was 5.0% a year, compounded yearly, as provided in Section 40.02 of the Wisconsin Statutes. The mortality table used in the valuation was the Wisconsin Projected Experience Mortality Table-96, as originally adopted by the Board in connection with the 1994-1996 Experience Study, and continued following the 1997-1999 Experience Study. In addition, retired life liabilities in the valuations contain a small allowance for future mortality improvement that is gradually increased to 1% prior to the triennial experience study. The reserve level used in this valuation was 1%.

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

The values shown above are for non-disabled participants. For disabled participants, twelve years is added to the age before computing the value.

POST-RETIREMENT ADJUSTMENTS

FIXED ANNUITIES - 40.27(2)

“FIXED ANNUITY RESERVE SURPLUS DISTRIBUTIONS. Surpluses in the fixed annuity reserve established under s. 40.04(6) and (7) shall be distributed by the board if the distribution will result in at least a 2% increase in the amount of annuities in force, on recommendation of the actuary, as follows:

(a) The distributions shall be expressed as percentage increases in the amount of the monthly annuity in force, including prior distributions of surpluses but not including any amount paid from funds other than the fixed annuity reserve fund, preceding the effective date of the distribution. For purposes of this subsection, annuities in force include any disability annuity suspended because the earnings limitation had been exceeded by that annuitant in that year.

(b) Prorated percentages based on the annuity effective date may be applied to annuities with effective dates during the calendar year preceding the effective date of the distribution, as provided by rule, but no other distinction may be made among the various types of annuities payable from the fixed annuity reserve.

(c) The distributions shall not be offset against any other benefit being received but shall be paid in full, nor shall any other benefit being received be reduced by the distributions. The annuity reserve surplus distributions authorized under this subsection may be revoked by the board in part or in total as to future payments upon recommendation of the actuary if a deficit occurs in the fixed annuity reserves.”

VARIABLE ANNUITIES - 40.28(2)

“Whenever the balance in the variable annuity reserve, as of December 31 of any year, exceeds or is less than the then present value of all variable annuities in force, determined in accordance with the rate of interest and approved actuarial tables then in effect, by at least 2% of the present value of all variable annuities in force, the amount of each variable annuity payment shall be proportionately increased or decreased, disregarding fractional percentages, and effective on a date determined by rule, so as to reduce the variance between the balance of the variable annuity reserve and the present value of variable annuities to less than one percent.”

February 26, 2003

Ms. Julie Reneau
Wisconsin Department of Employee Trust Funds
P.O. Box 7931
Madison, Wisconsin 53707

Re: Retired Life Actuarial Valuation

Dear Julie:

Enclosed are 40 copies of the report of the December 31, 2002 Retired Life Actuarial Valuation, with the remaining 35 following under separate cover.

Sincerely,

Norman L. Jones

NLJ/lr

Enclosure

cc: Eric Stanchfield