

WISCONSIN RETIREMENT SYSTEM
28TH ANNUAL ACTUARIAL VALUATION OF RETIRED LIVES
DECEMBER 31, 2010

TABLE OF CONTENTS

DECEMBER 31, 2010

<u>Page</u>	
1	Introduction
2-3	Section A - Operation of the System
	Section B – Core Annuities
4	Development of Assets and Liabilities
5	Reserve Transfer Recommendation
6	Discussion of Dividend
7	Transfers to Annuity Reserve
8-9	Core Annuities Being Paid - Type and Option
10-11	Core Annuities Being Paid - Attained Ages
12	Projection of Future Core Annuity Payments
	Section C - Variable Annuities
13	Development of Assets and Liabilities
14	Reserve Transfer Recommendation
15	Discussion of Variable Annuity Change
16	Transfers to Annuity Reserve
17-18	Variable Annuities Being Paid - Type and Option
19	Variable Annuities Being Paid - Attained Ages
	Section D - Comparative Statements
20-22	Annuities by Valuation Year
23	Annuities by Type
24	Annuities by Year of Retirement
25	Actual vs. Expected Deaths
	Section E - Appendix
26	Single Life Retirement Values
27	Statutory Provisions
28-29	Narrative Regarding the Development of Dividend and Variable Annuity Changes

February 23, 2011

Employee Trust Funds Board
Madison, Wisconsin

Ladies and Gentlemen:

The results of the **28th annual actuarial valuation of core 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, 2010**. Actuarial assumptions used in the valuation are summarized in the Appendix.

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

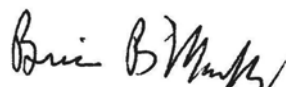
	Core	Variable
Number of Annuitants	155,985	35,866
Annual Amount	\$ 3,536.0	\$ 288.4
Fund Balance	37,798.4	3,340.6
Actuarial Reserve	38,148.5	3,005.4
Ratio	0.991	1.112

Based upon these results, core annuities were decreased by 1.2% effective April 1, 2011 and variable annuities were increased by 11%. The 1.2% decrease is slightly greater than might be expected based on the ratio shown above. This is because dividends have already been reduced to zero for many annuitants and cannot be reduced further.


To the best of our knowledge this report is complete and accurate. It was made in accordance with standards of practice prescribed by the American Standards Board. All of the undersigned are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

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

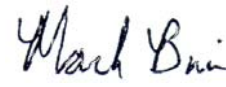
Respectfully submitted,



Brian B. Murphy, FSA, MAAA



Norman L. Jones, FSA, MAAA



Mark Buis, FSA, MAAA

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 for 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

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

Core Annuity Division: If the supplemental reserve is positive and is at least 0.5% of core annuity liabilities, core annuity increases (dividends) may be granted. If the supplemental reserve is negative and is equal to or greater than 0.5% of core annuity liabilities in absolute value, prior core 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
CORE ANNUITIES

CORE ANNUITY DIVISION
DEVELOPMENT OF ASSETS AND LIABILITIES

	\$ Millions		Ratio
	Assets	Liabilities	
Ending Balance December 31, 2009	\$36,655.8	\$37,072.7	0.989
Closing Adjustments	(4.1)	0.0	
Variable Terminations	61.8	61.8	
2010 Core Annuity Reserve Adjustment: -1.1% *	0.0	(383.7)	
Beginning Balance January 1, 2010	36,713.5	36,750.8	0.999
Increases			
Reserve Transfers	2,950.5	2,950.5	
Regular Interest	1,823.3	1,823.3	
Additional Earnings	(159.1)	0.0	
Addition to Contingency/Data Reserve	0.0	118.5	
Experience Study	0.0	0.0	
Other	0.0	35.2	
Total Increases	4,614.7	4,927.5	
Decreases			
Annuities & Lump Sums	3,525.8	3,525.8	
Credit Re-establishments	4.0	4.0	
Releases from Contingency/Data Reserve	0.0	0.0	
Experience Study	0.0	0.0	
Other	0.0	0.0	
Total Decreases	3,529.8	3,529.8	
Ending Balance December 31, 2010	\$37,798.4	\$38,148.5	0.991

The ending liability balance includes data and mortality reserves of \$303.2 million.

* Core Annuity Reserve adjustment resulted in a -1.3% dividend for most annuitants.

RESERVE TRANSFER RECOMMENDATION
DECEMBER 31, 2010

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 core annuities reported as new since the last actuarial valuation is \$2,928,202,431. Adjustments to prior transfers, related to estimated annuities for which final computations have now been made, totaled \$22,304,029. Reserve transfers are distributed as follows:

Group	Regular Transfer	Adjustment to Prior Transfer	Total Transfer
General	\$2,593,437,983	\$20,636,369	\$2,614,074,352
Protective with Social Security	241,845,884	990,970	242,836,854
Protective without Social Security	65,226,939	234,256	65,461,195
Executive & Elected	27,691,625	442,434	28,134,059
Totals	\$2,928,202,431	\$22,304,029	\$2,950,506,460

Accordingly, we recommend that \$2,950,506,460 be transferred to the Core Annuity Reserve. The results in this report assume that this transfer has been made.

DISCUSSION OF DIVIDEND DECEMBER 31, 2010

The Core Annuity Fund Balance, \$37,798.4 million, was less than the actuarial present value of core annuities and reserves, \$38,148.5 million, by \$350.1 million which resulted in a (1.2)% adjustment in annuities for most people. The primary sources of the (1.2)% are:

	% of APV
1. SWIB published investment return	12.40%
2. MRA adjustment	(7.60)%
3. Published effective earnings rate	4.80%
4. Adjustment to relate earnings to average core annuity balance	(0.23)%
5. Earnings rate based on average balance	4.57%
6. Expected dividend before adjustments: 1.0457/1.05-1	(0.41)%
7. Adjustment to relate average asset to ending liability	(0.01)%
8. Carryover from last year due to timing of dividend accounting adjustments and rounding	(0.10)%
9. Adjustments to contingency reserve and data reserve	(0.31)%
10. Experience Study	0.00%
11. Experience and other effects	(0.09)%
12. Statutory adjustment to round to nearest one-tenth percent	0.02%
13. Trial Computed dividend rate: (6)+(7)+(8)+(9)+(10)+(11)+(12)	(0.9)%
14. Adjustment for members at or near the statutory floor	(0.30)%
15. Final Computed dividend rate: (13)+(14)	(1.2)%

See pages 28 and 29 for a description of items on this page.

In accordance with the Administrative Code, ETF 20.25 and Section 40.27(2) Wisconsin Statutes (see page 27), the (1.2)% was effective April 1, 2011.

**TRANSFERS TO ANNUITY RESERVE
TO FINANCE CORE ANNUITIES APPROVED IN 2010
TABULATED BY TYPE OF ANNUITY AND OPTION**

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	1,242	\$ 24,860,991	\$ 334,905,815
SL	Straight Life (accelerated)	0	4,808,398	17,500,302
A60	Life Annuity with 60 payments guaranteed	881	18,180,795	245,842,082
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	4,222,590	13,839,267
A180	Life Annuity with 180 payments guaranteed	1,578	30,921,933	441,469,820
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	8,211,364	30,868,031
A180F	Life Annuity with 180 payments guaranteed (forced)	8	145,040	1,787,157
JOINT	Joint and 75% Survivor	861	21,884,966	328,381,599
JOINT	Joint and 75% Survivor (accelerated)	0	5,399,411	19,262,143
R25	Reduced 25% on First Death	443	12,475,268	179,645,669
R25	Reduced 25% on First Death (accelerated)	0	2,465,104	8,504,580
C100	100% Continued to Named Survivor	783	16,165,746	245,407,382
C100	100% Continued to Named Survivor (accelerated)	0	3,295,579	12,536,397
C180	100% Continued to Named Survivor with 180 payments guaranteed	2,502	57,323,352	898,193,655
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	16,988,463	63,525,720
LOL	Life with Optional Length Guaranteed	1	59,836	607,750
AC24	Annuity Certain with 24 Payments	9	203,548	534,095
AC60	Annuity Certain with 60 Payments	8	59,621	280,234
AC120	Annuity Certain with 120 Payments	7	184,156	1,493,077
AC180	Annuity Certain between 24 and 180 Payments	7	269,864	2,090,921
	Total Regular	8,330	\$ 228,126,025	\$ 2,846,675,696
	Average Age at Retirement	60.6 Years		
DISABILITY RETIREMENT				
SL	Straight Life	14	\$ 404,866	\$ 5,367,017
A60	Life Annuity with 60 payments guaranteed	11	358,670	4,908,123
A180	Life Annuity with 180 payments guaranteed	39	983,044	13,700,556
JOINT	Joint and 75% Survivor	13	358,852	5,307,795
R25	Reduced 25% on First Death	5	183,169	2,694,495
C100	100% Continued to Named Survivor	14	379,139	5,809,790
C180	100% Continued to Named Survivor with 180 payments guaranteed	63	1,746,025	27,779,124
	Total Disability	159	\$ 4,413,765	\$ 65,566,900
	Average Age at Retirement	54.6 Years		
DEATH-IN-SERVICE BENEFITS				
SL	Straight Life	12	\$ 161,282	\$ 2,271,916
SL	Straight Life (accelerated)	0	23,457	163,102
A60	Life Annuity with 60 payments guaranteed	9	181,083	2,630,926
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	16,848	20,443
A180	Life Annuity with 180 payments guaranteed	48	717,466	10,680,783
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	46,965	192,665
	Total Death-in-Service	69	\$ 1,147,101	\$ 15,959,835
	Average Age at Retirement	55.0 Years		
GRAND TOTAL		8,558	\$ 233,686,891	\$ 2,928,202,431

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

CORE ANNUITIES BEING PAID DECEMBER 31, 2010 TABULATED BY TYPE OF ANNUITY AND OPTION

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	19,712	\$ 366,816,080	\$ 3,763,273,362
SL	Straight Life (accelerated)	0	20,405,433	50,165,252
A60	Life Annuity with 60 payments guaranteed	18,892	351,649,031	3,420,644,002
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	17,380,284	36,990,437
A120	Life Annuity with 120 payments guaranteed	270	4,344,646	14,702,301
A180	Life Annuity with 180 payments guaranteed	32,302	593,078,048	6,108,572,003
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	43,365,850	105,299,248
A180F	Life Annuity with 180 payments guaranteed (forced)	217	1,463,335	14,263,791
JOINT	Joint and 75% Survivor	18,074	446,148,907	5,245,857,674
JOINT	Joint and 75% Survivor (accelerated)	0	27,366,543	62,242,724
R25	Reduced 25% on First Death	12,762	369,395,832	3,768,968,005
R25	Reduced 25% on First Death (accelerated)	0	10,195,328	24,142,326
C100	100% Continued to Named Survivor	12,778	268,616,953	3,202,980,193
C100	100% Continued to Named Survivor (accelerated)	0	16,184,564	38,300,414
C180	100% Continued to Named Survivor with 180 payments guaranteed	32,024	726,294,794	9,839,472,480
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	81,449,209	199,535,975
LOL	Life with Optional Length Guaranteed	90	1,587,239	8,185,784
LOLF	Life with Optional Length Guaranteed (Forced)	9	168,794	822,320
AC24	Annuity Certain with 24 Payments	0	263,763	428,020
AC60	Annuity Certain with 60 Payments	1	206,376	707,697
AC120	Annuity Certain with 120 Payments	0	666,682	4,795,055
AC180	Annuity Certain between 24 and 180 Payments	4	3,198,791	15,533,627
C50	50% Continued to One Beneficiary	85	1,611,948	6,769,799
C50W180	50% Continued to One Beneficiary with 180 Months guaranteed	13	106,971	444,852
C75WSS	75% Continued to One Beneficiary and Social Security Integrated	90	2,101,462	12,860,395
R25W120	Reduced 25% on Death of Annuitant or Named Survivor with 120 Months guaranteed	10	177,416	530,093
A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	215	1,630,194	6,504,733
A180WSS	Life with 180 Months Guaranteed and Social Security Integrated	173	3,787,231	16,956,746
PF6213	Police and Firemen s.62.13	192	6,632,742	31,049,583
SLNSD	Straight Life - Named Survivor Deceased	467	13,710,408	134,886,831
Total Regular		148,380	\$3,380,004,854	\$36,135,885,722

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In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

CORE ANNUITIES BEING PAID DECEMBER 31, 2010
TABULATED BY TYPE OF ANNUITY AND OPTION

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
DISABILITY RETIREMENT				
SL	Straight Life	836	\$ 19,773,000	\$ 180,185,690
A60	Life Annuity with 60 payments guaranteed	473	11,354,806	110,209,249
A180	Life Annuity with 180 payments guaranteed	1,202	27,778,538	290,724,735
JOINT	Joint and 75% Survivor	500	11,177,724	124,598,928
R25	Reduced 25% on First Death	224	5,120,411	54,753,915
C100	100% Continued to Named Survivor	1,210	23,959,521	280,227,279
C180	100% Continued to Named Survivor with 180 payments guaranteed	1,681	36,360,143	490,462,122
AC180	Annuity Certain between 24 and 180 Payments	0	2,788	4,405
DWSMC	Disability with Spouse or Minor/Dependent Child	29	670,404	5,610,428
DWOSMC	Disability without Spouse or Minor/Dependent Child	4	77,557	781,396
CWD	Conservation Warden - Disability	1	794	2,679
PF6213	Police and Firemen s.62.13	28	580,830	2,808,972
SLNSD	Straight Life - Named Survivor Deceased	6	117,154	994,529
Total Disability		6,194	\$ 136,973,670	\$ 1,541,364,327
DEATH-IN-SERVICE BENEFITS				
SL	Straight Life	260	\$ 3,030,820	\$ 31,715,386
SL	Straight Life (accelerated)	0	59,803	255,301
A60	Life Annuity with 60 payments guaranteed	129	1,875,353	19,893,678
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	64,966	189,317
A180	Life Annuity with 180 payments guaranteed	732	9,126,245	110,970,821
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	890,360	3,259,617
C180	100% Continued to Named Survivor with 180 payments guaranteed	2	11,759	190,801
LOL	Life with Optional Length Guaranteed	12	139,920	431,072
AC180	Annuity Certain between 24 and 180 Payments	3	54,186	167,326
A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	59	64,216	310,252
A180WSS	Life with 180 Months Guaranteed and Social Security Integrated	1	12,291	65,124
PF6213	Police and Firemen s.62.13	3	95,687	572,193
Total Death-in-Service		1,201	\$ 15,425,606	\$ 168,020,888
GRAND TOTAL		155,775	\$3,532,404,130	\$37,845,270,937

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

CORE ANNUITIES BEING PAID DECEMBER 31, 2010
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	2	\$ 11,022	3	\$ 22,239	5	\$ 33,261
20-24	0	0	6	49,154	12	73,742	18	122,896
25-29	0	0	7	41,422	11	70,839	18	112,261
30-34	0	0	10	100,474	21	165,541	31	266,015
35-39	4	36,075	26	267,237	17	83,203	47	386,515
40-44	18	110,927	59	1,036,549	27	195,484	104	1,342,960
45-49	77	893,292	198	4,126,849	40	452,203	315	5,472,344
50-54	1,029	27,523,937	479	10,690,249	80	941,179	1,588	39,155,365
55-59	13,211	392,673,136	1,063	24,889,701	124	2,138,143	14,398	419,700,980
60-64	31,633	789,975,529	1,231	28,857,120	166	2,938,328	33,030	821,770,977
65-69	30,885	654,126,094	981	22,687,749	153	2,641,977	32,019	679,455,820
70-74	23,884	504,805,805	813	18,416,540	131	1,594,636	24,828	524,816,981
75-79	18,780	414,040,452	618	13,163,653	116	1,235,653	19,514	428,439,758
80-84	14,184	313,989,814	415	7,904,389	118	1,414,229	14,717	323,308,432
85-89	8,716	183,494,435	218	3,684,332	90	724,987	9,024	187,903,754
90-94	3,872	66,899,264	58	938,843	44	280,979	3,974	68,119,086
95& Up	1,104	13,890,484	10	105,627	17	146,191	1,131	14,142,302
Certain Only*	983	17,545,610	0	2,760	31	306,053	1,014	17,854,423
Totals	148,380	\$3,380,004,854	6,194	\$136,973,670	1,201	\$15,425,606	155,775	\$3,532,404,130

Averages in Years

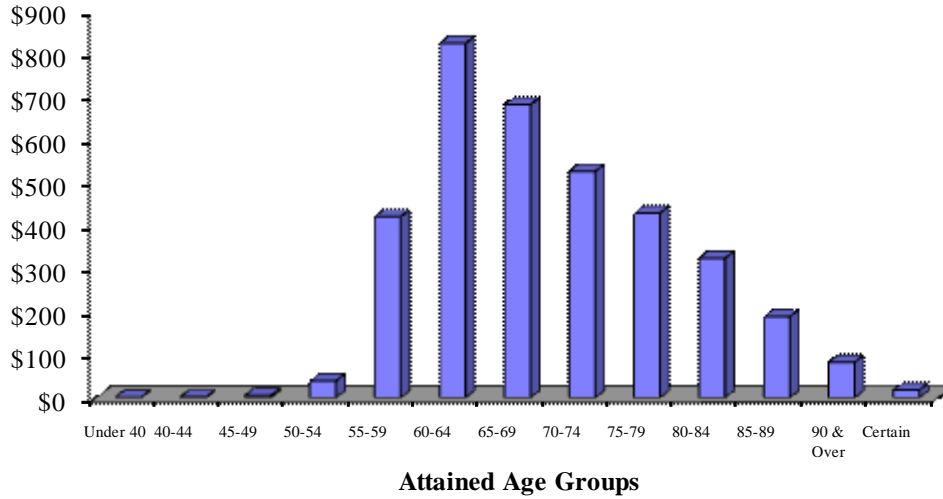
Age at retirement	59.8	51.9	50.2	59.5
Attained age	70.8	65.7	67.4	70.6

* Certain Only category consists of continuations of 5, 10 and 15-year certain and life annuities to beneficiaries of deceased annuitants.

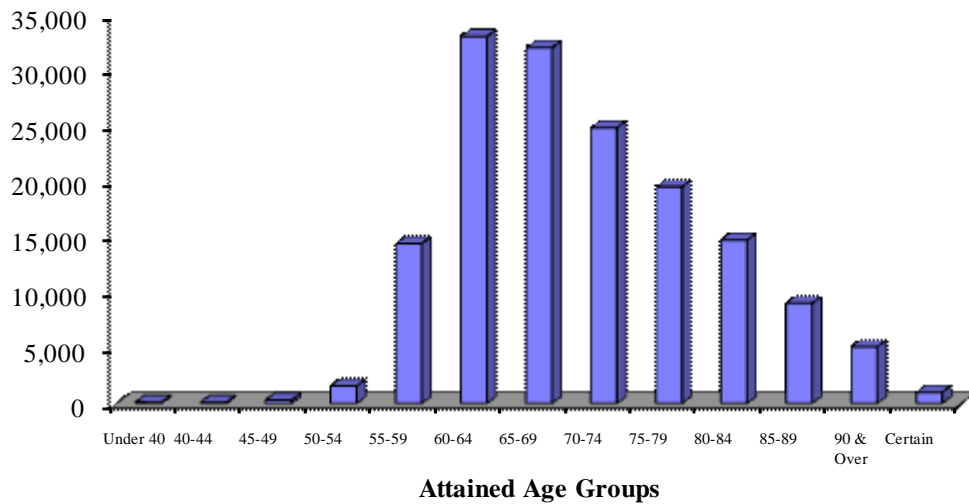
CORE ANNUITIES BEING PAID BY ATTAINED AGE*

DECEMBER 31, 2010

Annual \$ Millions

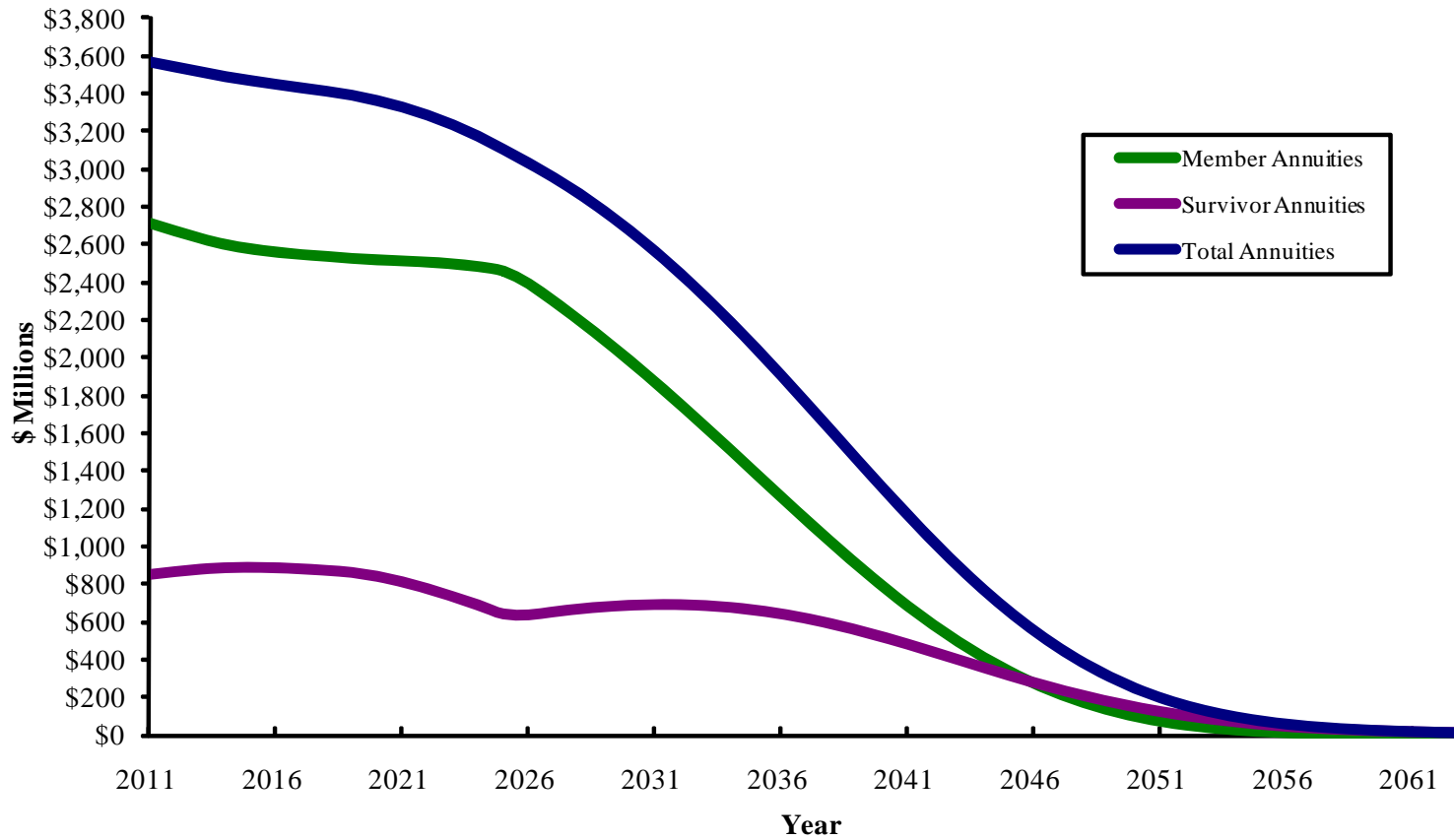


Number of Recipients



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



Total Future Payments	\$92.0 billion
From Present Assets	37.8
From Investment Return	54.2

SECTION C
VARIABLE ANNUITIES

VARIABLE ANNUITY DIVISION
DEVELOPMENT OF ASSETS AND LIABILITIES

	\$ Millions		Ratio
	Assets	Liabilities	
Ending Balance December 31, 2009	\$3,078.4	\$2,512.7	1.225
Closing Adjustments	1.5	0.0	
Variable Terminations	(61.8)	(61.8)	
2010 Adjustment: 22%	0.0	539.0	
Beginning Balance January 1, 2010	3,018.1	2,989.9	1.009
Increases			
Reserve Transfers	138.7	138.7	
Regular Interest	146.1	146.1	
Additional Earnings	314.7	0.0	
Addition to Contingency/Data Reserve	0.0	10.4	
Experience Study	0.0	0.0	
Other	0.0	0.0	
Total Increases	599.5	295.2	
Decreases			
Annuities & Lump Sums	276.5	276.5	
Credit Re-establishments	0.5	0.5	
Release from Contingency/Data Reserve	0.0	0.0	
Experience Study	0.0	0.0	
Other	0.0	2.7	
Total Decreases	277.0	279.7	
Ending Balance December 31, 2010	\$3,340.6	\$3,005.4	1.112

The ending liability balance includes mortality reserves of \$17.9 million.

RESERVE TRANSFER RECOMMENDATION
DECEMBER 31, 2010

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 \$135,814,032. Adjustments to prior transfers, relating to estimated annuities for which final computations have now been made, totaled \$2,848,797. Reserve transfers were distributed as follows:

Group	Regular Transfer	Adjustment to Prior Transfer	Total Transfer
General	\$125,072,981	\$2,311,662	\$127,384,643
Protective with Social Security	6,819,585	269,807	7,089,392
Protective without Social Security	896,845	30,508	927,353
Executive & Elected	3,024,621	236,820	3,261,441
Totals	\$135,814,032	\$2,848,797	\$138,662,829

Accordingly, we recommend that \$138,662,829 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, 2010

Variable Annuity Reserves, \$3,340.4 million, exceeded the actuarial present value of variable annuities, \$3,005.4 million, by \$335.2 million as of December 31, 2010 or 11% of the actuarial present value (APV) of variable annuity payments. In accordance with Section 40.28(2) of the Wisconsin statutes (see page 27), variable annuities will be increased by 11% effective April 1, 2011. The primary sources of the 11% are as follows:

	% of APV
1. SWIB published investment return	15.6%
2. Adjustment to published effective rate	0.4%
3. Published effective earnings rate	16.0%
4. Adjustment to relate earnings to average variable annuity fund balance	(0.4)%
5. Earnings rate based on average balance	15.6%
6. Expected change before adjustments: $1.156/1.05-1$	10.1%
7. Adjustment to relate average asset to ending liability	0.4%
8. Carryover from last year due to timing of distribution, accounting adjustments and truncation	0.9%
9. Adjustments to contingency reserve	(0.3)%
10. Experience Study	0.0%
11. Experience and other effects	0.1%
12. Statutory adjustment: (truncate to whole percent)	(0.2)%
13. Variable annuity change: (6)+(7)+(8)+(9)+(10)+(11)+(12)	11.0%

Please see pages 28 and 29 for a description of the items on this page.

**TRANSFERS TO ANNUITY RESERVE
TO FINANCE VARIABLE ANNUITIES APPROVED IN 2010
TABULATED BY TYPE OF ANNUITY AND OPTION**

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	272	\$ 1,003,540	\$ 13,218,880
SL	Straight Life (accelerated)	0	200,755	667,277
A60	Life Annuity with 60 payments guaranteed	217	826,406	10,876,574
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	191,895	603,285
A180	Life Annuity with 180 payments guaranteed	390	1,442,780	20,056,238
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	287,940	1,022,470
JOINT	Joint and 75% Survivor	235	1,046,115	15,176,763
JOINT	Joint and 75% Survivor (accelerated)	0	238,161	793,515
R25	Reduced 25% on First Death	121	596,481	8,332,418
R25	Reduced 25% on First Death (accelerated)	0	139,832	515,038
C100	100% Continued to Named Survivor	207	887,686	13,297,275
C100	100% Continued to Named Survivor (accelerated)	0	174,430	603,130
C180	100% Continued to Named Survivor with 180 payments guaranteed	676	2,941,145	45,300,796
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	728,407	2,435,491
AC24	Annuity Certain with 24 Payments	0	3,939	10,679
AC60	Annuity Certain with 60 Payments	0	12,806	58,331
AC120	Annuity Certain with 120 Payments	0	16,901	141,644
AC180	Annuity Certain between 24 and 180 Payments	0	60,690	592,522
	Total Regular	2,118	\$ 10,799,909	\$ 133,702,326
	Average Age at Retirement	59.8 Years		
DISABILITY RETIREMENT				
SL	Straight Life	5	\$ 5,626	\$ 80,508
A60	Life Annuity with 60 payments guaranteed	3	5,052	68,214
A180	Life Annuity with 180 payments guaranteed	10	30,038	397,023
JOINT	Joint and 75% Survivor	4	7,714	111,951
R25	Reduced 25% on First Death	2	2,635	41,230
C100	100% Continued to Named Survivor	6	9,012	138,612
C180	100% Continued to Named Survivor with 180 payments guaranteed	21	34,366	558,084
	Total Disability	51	\$ 94,443	\$ 1,395,622
	Average Age at Retirement	54.1 Years		
DEATH-IN-SERVICE BENEFITS				
SL	Straight Life	3	\$ 2,239	\$ 37,055
SL	Straight Life (accelerated)	0	495	5,068
A60	Life Annuity with 60 payments guaranteed	4	6,141	83,994
A180	Life Annuity with 180 payments guaranteed	19	38,820	562,672
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	6,387	27,295
	Total Death-in-Service	26	\$ 54,082	\$ 716,084
	Average Age at Retirement	52.6 Years		
GRAND TOTAL		2,195	\$ 10,948,434	\$ 135,814,032

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2010 TABULATED BY TYPE OF ANNUITY AND OPTION

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	4,039	\$ 29,500,490	\$ 278,286,058
SL	Straight Life (accelerated)	0	850,000	1,923,796
A60	Life Annuity with 60 payments guaranteed	3,786	26,251,018	240,546,851
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	907,546	1,776,003
A120	Life Annuity with 120 payments guaranteed	62	334,560	1,218,093
A120	Life Annuity with 120 payments guaranteed (accelerated)	0	0	0
A180	Life Annuity with 180 payments guaranteed	6,790	46,076,071	457,243,610
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	1,783,966	4,087,418
A180F	Life Annuity with 180 payments guaranteed (forced)	24	155,771	1,414,719
JOINT	Joint and 75% Survivor	4,496	39,011,220	439,319,437
JOINT	Joint and 75% Survivor (accelerated)	0	1,281,853	2,580,981
R25	Reduced 25% on First Death	3,822	42,992,515	416,243,263
R25	Reduced 25% on First Death (accelerated)	0	487,565	1,057,888
C100	100% Continued to Named Survivor	3,025	24,066,032	264,402,663
C100	100% Continued to Named Survivor (accelerated)	0	666,335	1,532,278
C180	100% Continued to Named Survivor with 180 payments guaranteed	7,876	60,628,597	779,672,502
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	3,523,130	7,340,541
LOL	Life with Optional Length Guaranteed	12	144,792	671,767
LOLF	Life with Optional Length Guaranteed (Forced)	0	0	0
AC24	Annuity Certain with 24 Payments	0	15,428	10,601
AC60	Annuity Certain with 60 Payments	0	14,493	58,015
AC120	Annuity Certain with 120 Payments	0	30,731	228,851
AC180	Annuity Certain between 24 and 180 Payments	0	731,607	3,580,686
C50	50% Continued to One Beneficiary	59	363,183	1,471,333
C50W180	50% Continued to One Beneficiary with 180 Months guaranteed	14	66,409	272,883
C75WSS	75% Continued to One Beneficiary and Social Security Integrated	32	151,738	960,621
R25W120	Reduced 25% on Death of Annuitant or Named Survivor with 120 Months guaranteed	8	61,295	184,717
A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	65	167,781	674,610
A180WSS	Life with 180 Months Guaranteed and Social Security Integrated	36	163,062	719,345
DWSMC	Disability with Spouse or Minor/Dependent Child	0	0	0
DWOSMC	Disability without Spouse or Minor/Dependent Child	0	0	0
CWJS	Conservation Warden with Joint Survivor	0	0	0
CWD	Conservation Warden - Disability	0	0	0
PF6213	Police and Firemen s.62.13	0	0	0
SLNSD	Straight Life - Named Survivor Deceased	98	1,079,110	9,898,493
Total Regular		34,244	\$281,506,298	\$2,917,378,023

(concluded on next page)

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2010
TABULATED BY TYPE OF ANNUITY AND OPTION

Numeric Code	Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
DISABILITY RETIREMENT					
1	SL	Straight Life	159	\$ 565,340	\$ 4,037,638
3	A60	Life Annuity with 60 payments guaranteed	84	426,054	3,908,363
7	A180	Life Annuity with 180 payments guaranteed	232	945,605	9,099,933
10	JOINT	Joint and 75% Survivor	115	594,285	6,292,948
12	R25	Reduced 25% on First Death	61	285,331	2,823,234
14	C100	100% Continued to Named Survivor	254	1,073,768	11,322,521
16	C180	100% Continued to Named Survivor with 180 payments guaranteed	355	1,473,174	18,151,976
30	DWSMC	Disability with Spouse or Minor/Dependent Child	4	13,302	46,161
35	SLNSD	Straight Life - Named Survivor Deceased	1	9,373	64,651
Total Disability			1,265	\$ 5,386,232	\$ 55,747,425
DEATH-IN-SERVICE BENEFITS					
1	SL	Straight Life	61	\$ 338,171	\$ 3,207,152
2	SL	Straight Life (accelerated)	0	495	4,862
3	A60	Life Annuity with 60 payments guaranteed	35	188,864	1,763,140
4	A60	Life Annuity with 60 payments guaranteed (accelerated)	0	6,065	13,475
7	A180	Life Annuity with 180 payments guaranteed	233	895,758	9,036,041
8	A180	Life Annuity with 180 payments guaranteed (accelerated)	0	51,706	170,706
18	LOL	Life with Optional Length Guaranteed	4	18,464	57,887
23	AC180	Annuity Certain between 24 and 180 Payments	0	8,772	28,837
28	A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	24	12,812	58,221
Total Death-in-Service			357	\$ 1,521,107	\$ 14,340,321
GRAND TOTAL			35,866	\$ 288,413,637	\$ 2,987,465,769

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2010
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	0	\$ 0	3	\$ 1,384	3	\$ 1,187	6	\$ 2,571
30-34	0	0	2	741	4	3,932	6	4,673
35-39	0	0	5	26,371	8	8,540	13	34,911
40-44	4	16,089	14	23,886	3	2,975	21	42,950
45-49	19	58,115	45	30,903	12	23,453	76	112,471
50-54	291	741,794	96	154,328	23	38,315	410	934,437
55-59	3,402	16,329,490	231	592,175	40	159,305	3,673	17,080,970
60-64	7,978	53,618,947	224	965,142	52	169,389	8,254	54,753,478
65-69	6,783	58,109,258	189	1,257,888	43	271,789	7,015	59,638,935
70-74	4,623	47,389,335	152	930,326	35	199,271	4,810	48,518,932
75-79	3,977	41,121,388	147	715,868	26	166,962	4,150	42,004,218
80-84	3,412	33,138,814	89	416,724	38	143,222	3,539	33,698,760
85-89	2,301	20,192,935	46	191,299	35	158,737	2,382	20,542,971
90-94	987	7,229,497	20	78,031	18	99,455	1,025	7,406,983
95& Up	267	1,688,348	1	954	6	20,811	274	1,710,113
Certain Only*	200	1,872,288	1	212	11	53,764	212	1,926,264
Totals	34,244	\$281,506,298	1,265	\$5,386,232	357	\$1,521,107	35,866	\$288,413,637

Averages in Years

Age at retirement	59.4	52.5	51.4	59.1
Attained age	70.3	65.7	68.3	70.2

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

SECTION D
COMPARATIVE STATEMENTS

**CORE ANNUITIES
COMPARATIVE STATEMENT
1983 THROUGH 2010**

Valuation Date	Number	\$ Millions				Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities	CPI*
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 %
2003	121,582	2,364.7	25,071.9	24,724.0	1.014	1.4 %	1.9 %
2004	126,211	2,500.3	26,920.0	26,232.2	1.026	2.6 %	3.3 %
2005	131,674	2,691.4	28,575.3	28,359.7	1.008	0.8 %	3.4 %
2006	137,117	2,843.6	31,180.5	30,273.9	1.030	3.0 %	2.6 %
2007	142,906	3,075.3	35,050.1	32,877.5	1.066	6.6 %	4.1 %
2008	144,033	3,399.3	35,798.1	36,551.5	0.979	(2.1)%	0.1 %
2009	150,671	3,449.3	36,655.8	37,072.7	0.989	(1.3)%	2.7 %
2010	155,775	3,532.4	37,798.4	38,148.5	0.991	(1.2)%	1.5 %
28-Year Average						4.7 %	2.9 %
10-Year Average						1.3 %	2.4 %

* CPI percentage increase determined by ratio of current year CPI-U67 December index over prior year December index.

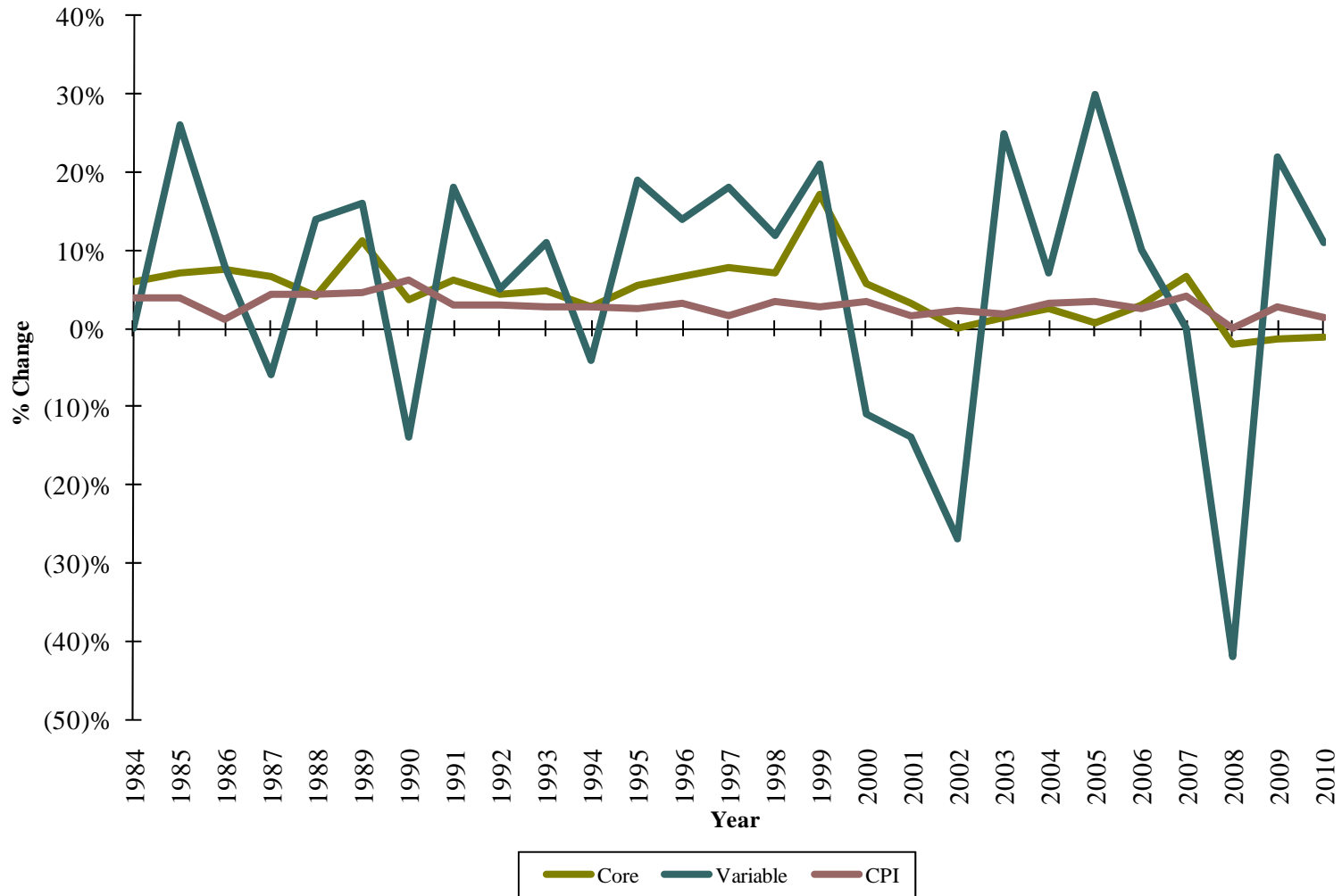
** Including 10.6% Act 11 transfer.

**VARIABLE ANNUITIES
COMPARATIVE STATEMENT
1983 THROUGH 2010**

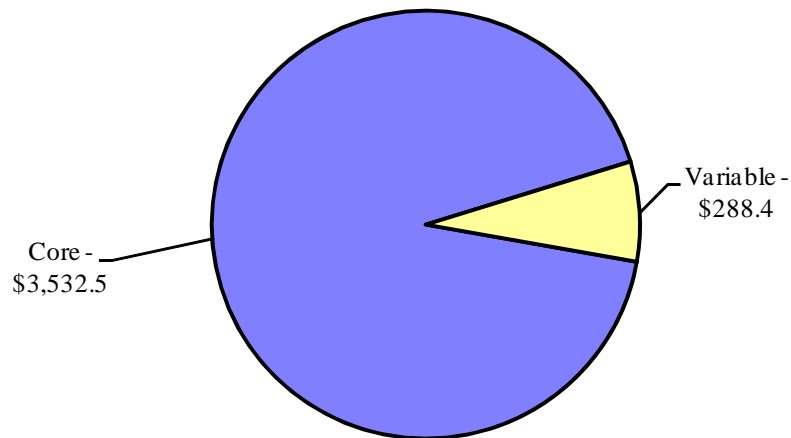
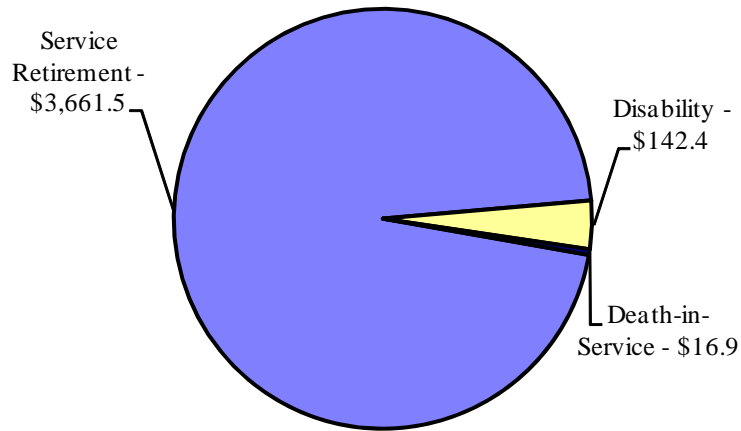
Valuation Date	Number	\$ Millions				Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities	CPI*
1983	13,598	\$ 25.9	\$ 289.4	\$ 245.0	1.181	18.0 %	3.8 %
1984	14,520	34.2	329.2	327.5	1.005	0.0 %	4.0 %
1985	15,529	38.0	463.1	366.6	1.263	26.0 %	3.8 %
1986	16,276	51.8	538.7	498.6	1.080	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	3,999.1	0.726	(27.0)%	2.4 %
2003	29,496	273.3	3,635.9	2,892.2	1.257	25.0 %	1.9 %
2004	30,270	346.0	3,909.9	3,654.5	1.070	7.0 %	3.3 %
2005	31,499	376.5	4,092.7	3,970.7	1.031	3.0 %	3.4 %
2006	32,683	391.8	4,594.2	4,145.2	1.108	10.0 %	2.6 %
2007	33,880	432.6	4,625.0	4,563.7	1.013	0.0 %	4.1 %
2008	34,927	427.0	2,574.5	4,491.0	0.573	(42.0)%	0.1 %
2009	34,836	240.3	3,078.4	2,512.7	1.225	22.0 %	2.7 %
2010	35,866	288.4	3,340.6	3,005.4	1.111	11.0 %	1.5 %
28-Year Average						4.3 %	2.9 %
10-Year Average						(2.9)%	2.4 %

* CPI percentage increase determined by ratio of current year CPI-U67 December index over prior year December index.

HISTORY OF % CHANGES IN ANNUITIES AND CPI



ANNUITIES BEING PAID BY TYPE
DECEMBER 31, 2010
\$ MILLIONS



ANNUITIES BEING PAID DECEMBER 31, 2010
TABULATED BY YEAR OF RETIREMENT
(\$1,000S ANNUALLY)

Year Ret'd	Core Annuities				Variable Annuities				Avg. Total Annuity
	No.	Initial	Increases	Total	No.	Initial	Increases	Total	
2010	7,617	\$ 204,560	\$ 0	\$ 204,560	1,999	\$ 9,859	\$ 0	\$ 9,859	\$28,150
2009	7,816	220,321	0	220,321	1,703	6,563	1,444	8,007	29,213
2008	8,650	234,353	0	234,353	2,017	16,203	(4,732)	11,471	28,419
2007	8,586	215,552	1,206	216,758	2,125	17,061	(4,989)	12,072	26,652
2006	8,298	192,273	8,976	201,249	1,939	16,234	(3,598)	12,636	25,775
2005	8,304	181,310	11,800	193,110	1,973	16,838	(3,338)	13,500	24,881
2004	7,484	150,601	12,611	163,212	1,808	14,857	(2,112)	12,745	23,511
2003	7,587	144,180	15,131	159,311	1,668	11,404	824	12,228	22,610
2002	7,178	130,206	14,459	144,665	1,496	15,772	(3,421)	12,351	21,875
2001	7,280	130,234	16,976	147,210	1,599	24,608	(8,038)	16,570	22,497
2000	7,355	127,336	23,198	150,534	1,438	28,357	(11,367)	16,990	22,777
1999	6,242	93,489	34,595	128,084	1,216	19,695	(5,418)	14,277	22,807
1998	6,154	86,856	40,197	127,053	1,238	17,623	(3,314)	14,309	22,971
1997	5,246	71,684	40,986	112,670	1,067	12,772	(538)	12,234	23,810
1996	5,242	69,697	47,456	117,153	1,085	11,286	1,026	12,312	24,698
1995	4,634	60,180	46,608	106,788	962	8,246	2,459	10,705	25,354
1994	4,198	51,590	43,573	95,163	962	8,130	2,017	10,147	25,086
1993	3,882	44,784	41,228	86,012	903	6,336	2,433	8,769	24,415
1992	3,346	36,810	36,991	73,801	766	5,193	2,359	7,552	24,314
1991	3,066	31,958	35,506	67,464	742	4,036	2,864	6,900	24,254
1990	4,948	54,468	65,642	120,110	1,245	7,814	3,719	11,533	26,605
1989	3,812	41,197	56,366	97,563	874	4,700	3,344	8,044	27,704
1988	2,926	24,882	38,642	63,524	743	3,149	2,995	6,144	23,810
1987	2,553	20,405	35,068	55,473	678	2,751	2,298	5,049	23,707
1986	2,324	17,797	34,740	52,537	637	2,451	2,404	4,855	24,695
1985	2,120	16,592	36,054	52,646	570	1,577	2,356	3,933	26,688
1984	1,656	11,827	27,984	39,811	511	1,400	2,094	3,494	26,151
1983	1,441	7,872	19,831	27,703	427	965	1,871	2,836	21,194
1982	1,123	4,993	14,017	19,010	300	533	1,270	1,803	18,534
1981	995	3,774	11,417	15,191	275	446	1,051	1,497	16,772
1980	722	2,398	7,521	9,919	199	259	801	1,060	15,206
1979	524	1,743	5,795	7,538	133	123	434	557	15,449
1978	445	1,208	4,219	5,427	124	96	369	465	13,240
1977	375	1,048	3,695	4,743	128	118	424	542	14,096
1976	318	734	2,715	3,449	86	51	196	247	11,623
1975	253	576	2,111	2,687	76	50	221	271	11,689
1974	192	411	1,529	1,940	48	33	131	164	10,958
1973	130	259	913	1,172	35	22	76	98	9,760
1972	89	137	521	658	16	10	30	40	7,847
1971	56	81	299	380	13	8	29	37	7,468
Prior	299	291	1,161	1,452	42	24	87	111	3,973
Total	155,466	\$2,690,667	\$841,737	\$3,532,404	35,866	\$297,653	\$ (9,239)	\$288,414	\$24,577

**COMPARISON OF ACTUAL TO EXPECTED DEATHS AMONG RETIRED LIVES
(NORMAL RETIREMENT ONLY)
DURING 2010**

Age	Male Deaths			Female Deaths			Total Deaths		
	Actual	Expected	Exposure	Actual	Expected	Exposure	Actual	Expected	Exposure
30-34									
35-39			1			5			6
40-44			1			18			19
45-49			13			74			87
50-54	6	2	701	3		489	9	2	1,190
55-59	29	30	6,058	23	27	7,557	52	57	13,615
60-64	82	96	13,704	76	88	16,981	158	184	30,685
65-69	132	164	13,815	115	128	16,371	247	292	30,186
70-74	207	220	10,707	163	177	12,868	370	397	23,575
75-79	290	325	8,457	239	247	10,181	529	572	18,638
80-84	400	409	6,138	376	365	8,274	776	774	14,412
85-89	366	371	3,321	542	473	5,686	908	844	9,007
90-94	221	210	1,166	401	421	2,925	622	631	4,091
95-99	90	64	256	239	195	870	329	259	1,126
100 & Up	10	7	22	46	52	142	56	59	164
Totals	1,833	1,898	64,360	2,223	2,173	82,441	4,056	4,071	146,801
Average Ages	80.6	79.9	70.0	84.0	83.4	71.1	82.5	81.8	70.6

SECTION E
APPENDIX

ACTUARIAL ASSUMPTIONS USED IN THE 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. Please note that we have assumed all current dividends to be payable in the future. To the extent that unfavorable investment performance reduces current dividends, liabilities would be lower than reported in this valuation. The mortality table used in the valuation was the Wisconsin Projected Experience Mortality Table-2005, as adopted by the Board in connection with the 2006-2008 Experience Study (the male table was multiplied by 90%). In addition, retired life liabilities in the valuations contain a reserve for mortality improvement. The reserve level used in this valuation was 0.6%.

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)		Probability of Death Next Year	
	Males	Females	Males	Females	Males	Females
40	\$207.44	\$213.54	41.9	45.3	0.098%	0.057%
45	198.25	205.53	37.1	40.5	0.145%	0.089%
50	187.11	195.62	32.4	35.7	0.237%	0.123%
55	174.05	183.60	27.9	30.9	0.417%	0.256%
60	158.95	169.88	23.5	26.4	0.608%	0.435%
65	140.97	153.66	19.3	22.0	0.932%	0.665%
70	120.85	134.71	15.3	17.8	1.634%	1.065%
75	99.35	113.77	11.7	13.9	3.006%	1.950%
80	78.71	91.62	8.6	10.4	5.428%	3.387%
85	59.77	69.69	6.2	7.4	9.241%	6.512%

The values shown above are for non-disabled participants. Sample values for disabled participants are as follows:

Sample Attained Ages	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)		Probability of Death Next Year	
	Males	Females	Males	Females	Males	Females
40	\$188.17	\$202.09	33.0	38.9	0.262%	0.119%
45	175.49	191.71	28.5	34.1	0.386%	0.187%
50	160.60	179.05	24.1	29.5	0.631%	0.258%
55	144.08	164.05	20.0	24.9	1.112%	0.538%
60	126.15	147.80	16.2	20.7	1.620%	0.913%
65	105.47	129.25	12.5	16.8	2.485%	1.396%
70	83.80	108.29	9.3	13.0	4.358%	2.237%
75	62.40	86.39	6.5	9.6	8.016%	4.095%
80	44.25	64.71	4.3	6.7	14.473%	7.112%
85	29.47	44.71	2.8	4.4	24.643%	13.675%

POST-RETIREMENT ADJUSTMENTS

CORE ANNUITIES - 40.27(2)

“CORE ANNUITY RESERVE SURPLUS DISTRIBUTIONS. Surpluses in the core 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 0.5% 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 core 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 core 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 core 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.”

NARRATIVE REGARDING THE DEVELOPMENT OF DIVIDEND AND VARIABLE ANNUITY CHANGES SHOWN ON PAGES 6 AND 15

1. SWIB Published Investment Return

The earnings rate published by State of Wisconsin Investment Board on the Core/Variable Fund.

2. Adjustment to Relate Earnings to Averaged Core/Variable Annuity Balance

Item 3 below minus Item 1 above. For core annuities, this is the MRA adjustment which takes into account five-year smoothing of gains and losses. For variable annuities, it converts a figure based on an average balance to a figure based on a beginning year balance.

3. Published Earnings Rate

The earnings rate published by DETF is funds' earnings credits expressed as a percentage of the beginning year balance adjusted for benefit payments and reserve transfers.

4. Adjustment to Relate Earnings to Averaged Core Annuity Balance

Item 5 below minus Item 3 above.

5. Earnings Rate Based on Average Balance

This is similar to the published earnings rate except that the rate is determined as a percentage of the average balance during the year instead of the adjusted beginning of year balance.

6. Expected Dividend (Variable Change) before Adjustments

The relative difference in fund growth based on actual versus the 5% assumed earnings rates.

7. Adjustment to Relate Average Asset to Ending Liability

The final dividend/variable change is calculated based on the end of year assets divided by the end of year liabilities. Since the calculations in Items 5 and 6 are based on average (approximately mid-year) balances, this adjustment is needed so that the final rate will be based on the end of year liabilities.

8. Carryover from Last Year Due to Timing of Distribution and Accounting Adjustments (and Truncation for Variable Annuity)

The dividend or variable rate changes are made effective April 1 of each year. This adjustment takes into account the fact that the prior year dividend/variable increase was in effect for less than a full year as well as any accounting adjustments made to the asset value at the beginning of the year. This adjustment also carries over any truncated or rounded amounts from the prior year.

NARRATIVE REGARDING THE DEVELOPMENT OF DIVIDEND AND VARIABLE ANNUITY CHANGES SHOWN ON PAGES 6 AND 15

9. Adjustments to Contingency Reserve and Data Reserve

Currently there is a reserve for incomplete data for the dividend calculation of 0.2% and a mortality improvement reserve for both the dividend and variable calculations that starts at 0.3% and grades to 1.0% over a 3-year experience period. The adjustment is equal to the amount held in reserve for the current year less the amount held in reserve for the prior year expressed as a percent of the end of year liability. This reserve is accumulated to reflect the fact that over time, mortality rates tend to improve. By increasing reserves gradually each year, instead of all at once every three years, the effect on dividends and variable increases will also be more gradual.

10. Experience Study

A study is conducted for WRS every three years to analyze the assumptions that are made in the valuation versus the experience that actually occurred. If the results of the study show material changes in experience, WRS generally adopts a new set of assumptions. When assumptions are changed, this item displays the effect of the change on the dividend/variable rate calculation.

11. Experience and Other Effects

After making all other known adjustments, this is the remainder of all other experience. Changes here are primarily attributable to mortality experience and, generally to a lesser extent, on any data adjustments.

12. Statutory Adjustment to Round/Truncate

By statute, the dividend rate is calculated to the nearest one-tenth of a percent. For the variable annuity change, the rate is truncated to a whole percent. This is the adjustment made from the calculated dividend/variable annuity rate change without rounding/truncation to the statutory rate.

13. Computed Dividend Rate/Variable Annuity Change.

This is the end of year asset value divided by the end of year liability. It is reconciled to the published earnings rate (Item 3) by making the adjustments in Items 6 through 12.

14. Adjustment for Members Not Eligible for Negative Dividend.

This is an adjustment that is sometimes made for Core Fund recipients to reflect that some members are not eligible for a negative dividend (once the dividend has been depleted).

15. Computed Dividend Rate.

Item 13 + Item 14

February 23, 2011

Mr. David Stella
Wisconsin Department of Employee Trust Funds
801 W. Badger Road
Madison, Wisconsin 53713-2526

Re: Retired Life Actuarial Valuation

Dear Dave:

Enclosed are 75 copies of the report of the December 31, 2010 Retired Lives Actuarial Valuation.

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



Wisconsin Retirement System

28th Annual Actuarial
Valuation of Retired Lives
December 31, 2010

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com



Operation of the System – Core

- ◆ If reserve/assets greater than 0.5% of liabilities, annuity increases (dividends) may be granted
- ◆ If reserve/assets less than -0.5% of liabilities, prior annuity dividends are reduced
- ◆ Increases/decreases rounded to nearest 0.1%
- ◆ Increases or decreases are effective in April following the December 31 Valuation



Operation of the System - Variable

- ◆ If reserve/assets greater than 2% of liabilities, variable annuity is increased
- ◆ If reserve/assets less than -2% of liabilities, variable annuity is decreased
- ◆ Fractions of percents are truncated and carried to following year
- ◆ Increases or decreases are effective in April following the December 31 valuation



Smoothing Mechanisms - Core

- ◆ Undesirable for retirees to experience wide swings in monthly benefits from year to year (especially downward swings)
- ◆ Mitigated in Core division by asset smoothing process and portfolio mix
- ◆ Asset smoothing has worked well historically, but a third negative dividend could not be avoided this year



Smoothing Mechanisms - Variable

- ◆ Variable fund is marked to market each year and subject to wide swings
- ◆ Dropping fractions from the percent is a form of smoothing
- ◆ Usually has very little effect due to the magnitude of the gains and losses



Summary of Results – December 31, 2010

\$ Millions

	Core	Variable
Number of Annuitants	155,985	35,886
Annual Annuities	\$ 3,536.0	\$ 288.4
Fund Balance	37,798.4	3,340.6
Actuarial Reserve	38,148.5	3,005.4
Ratio	0.991	1.112



Primary Sources of Core Dividend

	<u>% of APV</u>
1. SWIB published investment return	12.40%
2. MRA adjustment	<u>(7.60)%</u>
3. Published effective earnings rate	4.80%
4. Adjustment to relate earnings to average core annuity balance	<u>(0.23)%</u>
5. Earnings rate based on average balance	4.57%
6. Expected dividend before adjustments: 1.0457/1.05-1	(0.41)%
7. Adjustment to relate average asset to ending liability	(0.01)%
8. Carryover from last year due to timing of dividend accounting adjustments and rounding	(0.10)%
9. Adjustments to contingency reserve and data reserve	(0.31)%
10. Experience Study	0.00%
11. Experience and other effects	(0.09)%
12. Statutory adjustment to round to nearest one-tenth percent	<u>0.02%</u>
13. Trial Computed dividend rate: (6)+(7)+(8)+(9)+(10)+(11)+(12)	(0.9)%
14. Adjustment for members at or near the statutory floor	(0.30)%
15. Final Computed dividend rate: (13)+(14)	(1.2)%



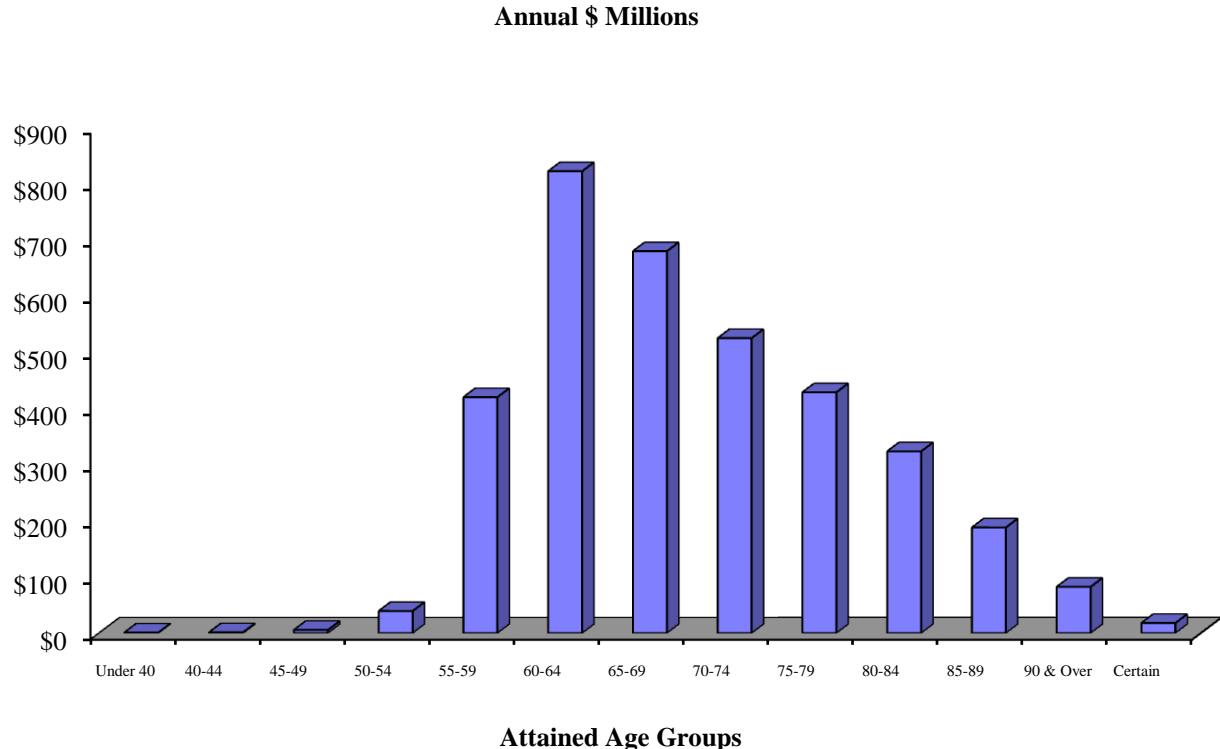
Illustration of Item 14 Adjustment

	<u>Liabilities</u>	<u>2010 Dividend</u>	<u>Dividend as % of Liabilities</u>
1) All members	\$38,000 M	\$(350) M	(0.9)%
2) Members with no current dividend	\$ 9,000 M	0	0
3) All others	\$29,000 M	\$(350) M	(1.2)%

- ◆ Difference between row 1 and row 3 dividend is (0.3)%
- ◆ The dividend reduction must be larger than (0.9)% for the group that is affected by it
- ◆ To keep actuarial balance, an additional (0.3)% must be reallocated among annuitants not at the statutory floor



Core Annuities Being Paid



Average age

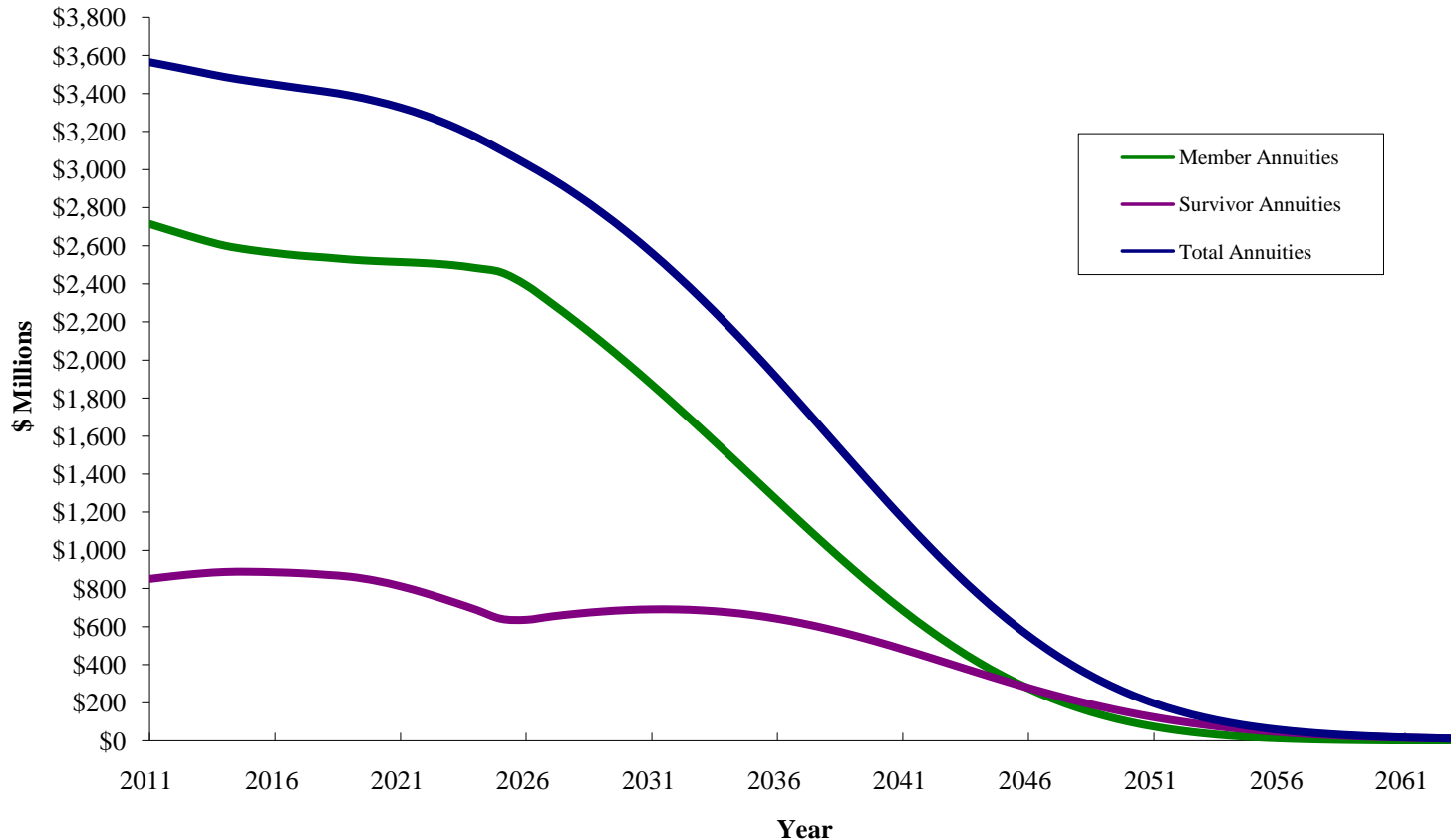
- at retirement

59.5 years

- now (12/31/2010)

70.6 years

Projected Future Core Annuities



Total Future Payments	\$92.0 billion
From Present Assets	37.8
From Investment Return	54.2

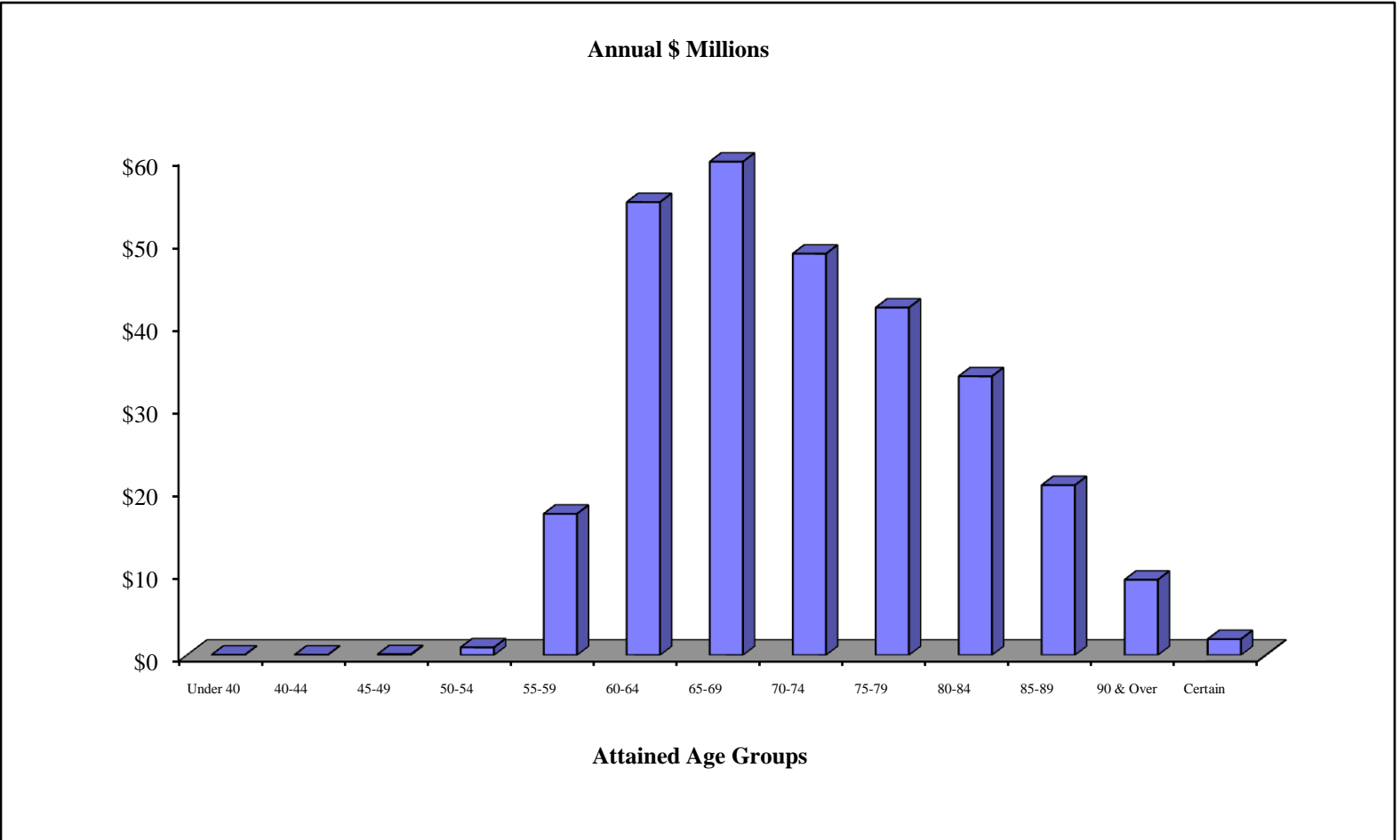


Primary Sources of Variable Adjustment

	<u>% of APV</u>
1. SWIB published investment return	15.6%
2. Adjustment to published effective rate	<u>0.4%</u>
3. Published effective earnings rate	16.0%
4. Adjustment to relate earnings to average variable annuity fund balance	<u>(0.4)%</u>
5. Earnings rate based on average balance	15.6%
6. Expected change before adjustments: $1.156/1.05-1$	10.1%
7. Adjustment to relate average asset to ending liability	0.4%
8. Carryover from last year due to timing of distribution, accounting adjustments and truncation	0.9%
9. Adjustments to contingency reserve	(0.3)%
10. Experience Study	0.0%
11. Experience and other effects	0.1%
12. Statutory adjustment: (truncate to whole percent)	<u>(0.2)%</u>
13. Variable annuity change: (6)+(7)+(8)+(9)+(10)+(11)+(12)	11.0%



Variable Annuities Being Paid



Average age

- at retirement
- now (12/31/2010)

59.1 years
70.2 years



Comparative Statement - Core

Valuation Date	Number	\$ Millions				Ratio	Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve	Annunities		CPI	
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 %	
2003	121,582	2,364.7	25,071.9	24,724.0	1.014	1.4 %	1.9 %	
2004	126,211	2,500.3	26,920.0	26,232.2	1.026	2.6 %	3.3 %	
2005	131,674	2,691.4	28,575.3	28,359.7	1.008	0.8 %	3.4 %	
2006	137,117	2,843.6	31,180.5	30,273.9	1.030	3.0 %	2.6 %	
2007	142,906	3,075.3	35,050.1	32,877.5	1.066	6.6 %	4.1 %	
2008	144,033	3,399.3	35,798.1	36,551.5	0.979	(2.1)%	0.1 %	
2009	150,671	3,449.3	36,655.8	37,072.7	0.989	(1.3)%	2.7 %	
2010	155,775	3,532.4	37,798.4	38,148.5	0.991	(1.2)%	1.5 %	
28-Year Average						4.7 %	2.9 %	
10-Year Average						1.3 %	2.4 %	

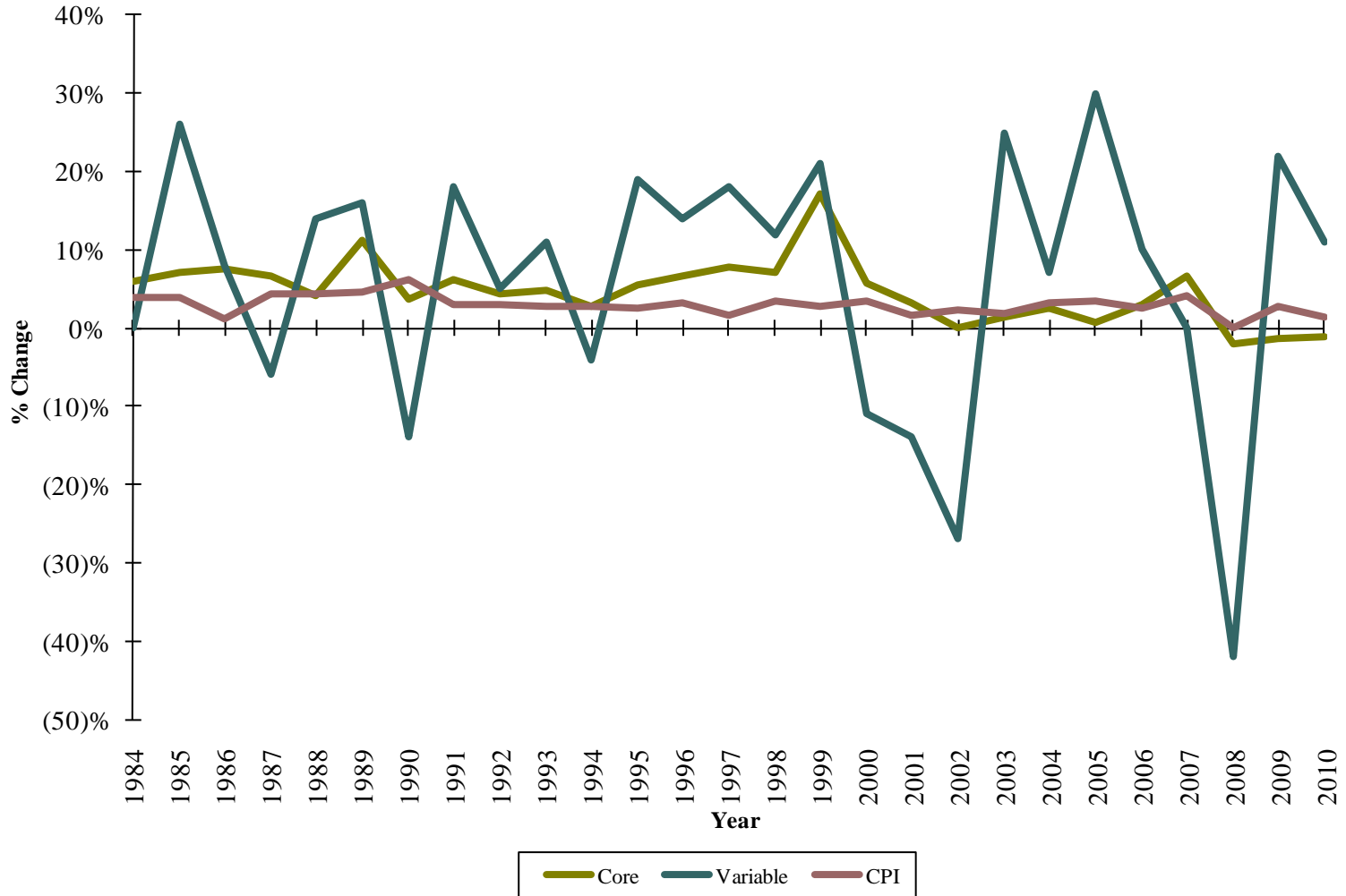


Comparative Statement - Variable

Valuation Date	Number	\$ Millions				Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities	CPI
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	3,999.1	0.726	(27.0)%	2.4 %
2003	29,496	273.3	3,635.9	2,892.2	1.257	25.0 %	1.9 %
2004	30,270	346.0	3,909.9	3,654.5	1.070	7.0 %	3.3 %
2005	31,499	376.5	4,092.7	3,970.7	1.031	3.0 %	3.4 %
2006	32,683	391.8	4,594.2	4,145.2	1.108	10.0 %	2.6 %
2007	33,880	432.6	4,625.0	4,563.7	1.013	0.0 %	4.1 %
2008	34,927	427.0	2,574.5	4,491.0	0.573	(42.0)%	0.1 %
2009	34,836	240.3	3,078.4	2,512.7	1.225	22.0 %	2.7 %
2010	35,866	288.4	3,340.6	3,005.4	1.111	11.0 %	1.5 %
28-Year Average						4.3 %	2.9 %
10-Year Average						(2.9)%	2.4 %



History of % Changes





Looking Ahead

- ◆ Negative dividends are likely to continue in the near term due to continued recognition of prior investment losses
- ◆ Important to keep long-term perspective – even with full recognition of 2008 market losses, core fund has achieved long-term investment objective and dividends have averaged over 4.0% the last 28 years



- ◆ Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- ◆ This presentation shall not be construed to provide tax advice, legal advice or investment advice.