### REPORT ON ACTUARIAL VALUATION AS OF JANUARY 1, 2008

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#### I. INTRODUCTION

This report summarizes the results of our actuarial valuation of the State of Wyoming Retirement System (the System) as of January 1, 2008. The contribution requirements presented in Section VI of the report are based on the following:

- 1. The benefit provisions of the System as of January 1, 2008.
- 2. The characteristics of covered active employees, inactive nonretired members, and pensioners and beneficiaries as of January 1, 2008.
- 3. The assets of the System as of December 31, 2007.
- 4. Economic actuarial assumptions regarding future salary increases and investment earnings.
- 5. Other actuarial assumptions regarding employee termination, retirement disability, death, etc.

One purpose of the actuarial valuation is to determine the contribution sufficient to meet the long-term obligations to the members covered by the System in accordance with the benefit provisions of the Wyoming Retirement Act.

If each of the actuarial assumptions were to be exactly fulfilled, the true actuarial cost of the System would equal the cost projected by the actuarial calculations. However, because of the length of time for which projections are made, and because of the great number of variables which can affect the emerging costs, the actual experience of the System will not match the assumptions. The annual required contribution under the maximum COLA scenario will increase if the System experiences net actuarial losses and will decrease if the System experiences net actuarial gains during the year.



#### II. SUMMARY OF VALUATION RESULTS

This section summarizes financial results for the System based upon actuarial valuations as of January 1, 2008 and January 1, 2007.

Results of the 2008 actuarial valuation are presented in three ways. The first set of results assumes that no future COLA will be granted, the second set assumes only the currently affordable breakeven COLA will be granted in each future year, while the third set is calculated assuming the maximum COLA of 3.00% compounded annually is granted in each future year.

	January 1, 2008 No COLA	January 1, 2008 Break-even 1.03% COLA	January 1, 2008 Maximum 3.0% COLA	January 1, 2007 Maximum 3.0% COLA
Contribution Requirements (as % of pay)				
Total Normal Cost	9.08%	9.70%	11.00%	10.99%
Employee Contributions	<u>(5.57%)</u>	<u>(5.57%)</u>	<u>(5.57%)</u>	<u>(5.57%)</u>
Employer Share	3.51%	4.13%	5.43%	5.42%
Amortization of Unfunded Liability	(0.37%)	1.40%	5.19%	5.39%
Administrative Expenses	0.15%	<u>0.15%</u>	0.15%	<u>0.16%</u>
Total Employer Cost	3.29%	5.68%	10.77%	10.97%
Total Cost (Employee + Employer)	8.86%	11.25%	16.34%	16.54%
Funded Status				
Actuarial Value of Assets (AV)	\$ 5,654,023,000	\$ 5,654,023,000	\$ 5,654,023,000	\$ 5,160,602,000
Actuarial Accrued Liability (AAL)	5,561,693,000	6,015,985,000	6,991,425,000	6,379,263,000
Unfunded Actuarial Accrued Liability (UAAL)	(92,330,000)	361,962,000	1,337,402,000	1,218,661,000
AAL Funded Percentage (AV ÷ AAL)	101.7%	94.0%	80.9%	80.9%
Market Value of Assets (MV)	\$ 5,768,482,000	\$ 5,768,482,000	\$ 5,768,482,000	\$ 5,467,100,000
AAL Funded Percentage on MV Basis (MV ÷ AAL)	103.7%	95.9%	82.5%	85.7%

#### III. MEMBERSHIP CHARACTERISTICS

As of January 1, 2008, there were 34,482 employees in active service covered under the provisions of the System. The significant age, service, salary and accumulated contribution information for these employees is summarized below, along with comparative figures from the last actuarial valuation one year earlier.

	January 1, 2008	January 1, 2007
Number of active employees	34,482	34,189
Average age	46.6	46.4
Average years of service	10.4	10.4
Average entry age	36.2	36.0
Total annual valuation salary*	\$1,462,473,682	\$1,285,096,152
Average annual salary	\$ 42,413	\$ 37,588
Total accumulated contributions	\$ 991,443,640	\$ 941,572,447
Average accumulated contributions	\$ 28,752	\$ 27,540

<sup>\*</sup>Projected salary for the upcoming valuation year.

The number of active employees increased by 0.9% from the previous valuation. The average age of the active employees increased by 0.2 years, and the average service remained the same. The average entry age of the active employees increased by 0.2 years. The total covered payroll increased by 13.8%. The average salary increased by 12.8% from the previous valuation.

Distributions of active employees by age, gender, service, and salary are given in Tables 1 through 4 on pages 5 through 8.

For Table 4 on page 8, the salaries shown for active employees are the actual annualized 2007 salaries reported. For calculating active employee liabilities, the actual 2007 salaries reported were increased by 5.0% to approximate a pay rate for 2008.

A reconciliation of the population is given in Table 8 on page 12.



#### III. MEMBERSHIP CHARACTERISTICS (continued)

In addition to the active members, there were 5,350 inactive vested nonretired members who did not elect to receive their accumulated contributions when they left covered employment. The significant age, service (on date of termination) and accumulated contribution information for these inactive members is summarized below with comparative figures from the last actuarial valuation one year earlier.

	January 1, 2008	January 1, 2007
Number of inactive members	5,350	4,950
Average age	51.4	51.4
Average years of service	9.6	9.1
Total accumulated contributions	\$ 140,202,264	\$ 125,128,270
Average accumulated contributions	\$ 26,206	\$ 25,278

The number of inactive vested members increased by 8.1% from the previous valuation. The average age of the inactive vested members remained the same and the average service increased by 0.5 years. The total accumulated contributions for these members increased by 12.0% from the previous valuation.

Distributions of inactive members by age, gender, and service are given in Tables 5 through 7 on page 9 through 11.

There were 18,408 inactive nonvested nonretired members who are due a refund of their accumulated contributions with interest of \$23,691,226.



# **EMPLOYEES IN ACTIVE SERVICE ON JANUARY 1, 2008**

# **MALES**

				Years of	Service	_			_
Age Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	28	0	0	0	0	0	0	0	28
20-24	309	7	0	0	0	0	0	0	316
25-29	704	91	1	0	0	0	0	0	796
30-34	668	339	54	1	0	0	0	0	1,062
35-39	561	371	257	60	1	0	0	0	1,250
40-44	503	287	245	264	78	10	0	0	1,387
45-49	556	313	247	285	279	155	3	0	1,838
50-54	511	302	207	282	284	371	124	1	2,082
55-59	456	267	196	238	262	358	226	39	2,042
60-64	264	169	131	144	122	121	100	56	1,107
Over 64	143	98	50	32	39	17	22	14	415
Total	4,703	2,244	1,388	1,306	1,065	1,032	475	110	12,323

Average Age = 47.2

# **EMPLOYEES IN ACTIVE SERVICE ON JANUARY 1, 2008**

### **FEMALES**

				Years of	Service				
Age Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	66	0	0	0	0	0	0	0	66
20-24	712	4	0	0	0	0	0	0	716
25-29	1,435	182	0	0	0	0	0	0	1,617
30-34	1,204	569	83	3	0	0	0	0	1,859
35-39	1,271	627	361	76	3	0	0	0	2,338
40-44	1,085	709	356	295	87	14	0	0	2,546
45-49	1,160	834	579	429	373	205	14	0	3,594
50-54	948	712	649	575	425	542	163	3	4,017
55-59	651	478	459	515	503	521	239	37	3,403
60-64	283	263	191	247	236	208	104	53	1,585
Over 64	121	77	47	53	47	41	24	8	418
Total	8,936	4,455	2,725	2,193	1,674	1,531	544	101	22,159

Average Age = 46.2

### **EMPLOYEES IN ACTIVE SERVICE ON JANUARY 1, 2008**

# MALES AND FEMALES COMBINED

				Years of	Service	_			
Age Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	94	0	0	0	0	0	0	0	94
20-24	1,021	11	0	0	0	0	0	0	1,032
25-29	2,139	273	1	0	0	0	0	0	2,413
30-34	1,872	908	137	4	0	0	0	0	2,921
35-39	1,832	998	618	136	4	0	0	0	3,588
40-44	1,588	996	601	559	165	24	0	0	3,933
45-49	1,716	1,147	826	714	652	360	17	0	5,432
50-54	1,459	1,014	856	857	709	913	287	4	6,099
55-59	1,107	745	655	753	765	879	465	76	5,445
60-64	547	432	322	391	358	329	204	109	2,692
Over 64	264	175	97	85	86	58	46	22	833
Total	13,639	6,699	4,113	3,499	2,739	2,563	1,019	211	34,482

Average Age = 46.6

# SALARY OF EMPLOYEES IN ACTIVE SERVICE ON JANUARY 1, 2008 ALL MEMBERS

Age	Last				Years of	Service				
Birt	hday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	94	0	0	-	_	0	0		94
	Tot Salary	\$1,208,374	\$0	\$0	\$0		\$0	\$0		\$1,208,374
	Avg. Salary	\$12,855	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,855
20-24	Number	1,021	11	0	0	0	0	0		1,032
	Tot. Salary	\$25,213,117	\$306,849	\$0	\$0	\$0	\$0	\$0		\$25,519,966
	Avg. Salary	\$24,695	\$27,895	\$0	\$0	\$0	\$0	\$0	\$0	\$24,729
25-29	Number	2,139	273	1	0	0	0	0	0	2,413
	Tot. Salary	\$70,045,585	\$10,686,033	\$38,491	\$0	\$0	\$0	\$0	\$0	\$80,770,109
	Avg. Salary	\$32,747	\$39,143	\$38,491	\$0	\$0	\$0	\$0	\$0	\$33,473
30-34	Number	1,872	908	137	4	0	0	0	0	2,921
	Tot. Salary	\$62,061,738	\$40,127,334	\$6,230,028	\$170,681	\$0	\$0	\$0		\$108,589,781
	Avg. Salary	\$33,153	\$44,193	\$45,475	\$42,670	\$0	\$0	\$0	\$0	\$37,176
35-39	Number	1,832	998	618	136	4	0	0	0	3,588
	Tot. Salary	\$56,485,088	\$43,566,446	\$32,387,866	\$7,174,262	\$194,014	\$0	\$0		\$139,807,676
	Avg. Salary	\$30,832	\$43,654	\$52,408	\$52,752	\$48,504	\$0	\$0	\$0	\$38,965
40-44	Number	1,588	996	601	559	165	24	0	0	3,933
	Tot. Salary	\$50,761,577	\$37,830,495	\$29,020,558	\$31,092,178	\$8,279,347	\$1,169,849	\$0	\$0	\$158,154,004
	Avg. Salary	\$31,966	\$37,982	\$48,287	\$55,621	\$50,178	\$48,744	\$0	\$0	\$40,212
45-49	Number	1,716	1,147	826	714	652	360	17	0	5,432
	Tot. Salary	\$53,155,215	\$41,003,699	\$35,497,694	\$36,460,091	\$37,231,970	\$20,017,994	\$824,667	\$0	\$224,191,330
	Avg. Salary	\$30,976	\$35,749	\$42,975	\$51,065	\$57,104	\$55,606	\$48,510	\$0	\$41,272
50-54	Number	1,459	1,014	856	857	709	913	287	4	6,099
	Tot. Salary	\$46,595,975	\$36,581,406	\$34,918,564	\$41,008,412	\$38,179,703	\$55,456,623	\$17,028,527	\$195,595	\$269,964,805
	Avg. Salary	\$31,937	\$36,076	\$40,793	\$47,851	\$53,850	\$60,741	\$59,333	\$48,899	\$44,264
55-59	Number	1,107	745	655	753	765	879	465	76	5,445
	Tot. Salary	\$35,095,681	\$27,016,320	\$26,162,075	\$34,712,431	\$38,281,648	\$51,383,618	\$29,463,308	\$4,721,958	\$246,837,039
	Avg. Salary	\$31,703	\$36,264	\$39,942	\$46,099	\$50,041	\$58,457	\$63,362	\$62,131	\$45,333
60-64	Number	547	432	322	391	358	329	204	109	2,692
	Tot. Salary	\$16,192,551	\$15,564,701	\$12,972,852	\$17,217,452	\$17,557,066	\$17,562,394	\$11,847,786	\$7,257,453	\$116,172,255
	Avg. Salary	\$29,602	\$36,029	\$40,288	\$44,034	\$49,042	\$53,381	\$58,077	\$66,582	\$43,155
Over 64	Number	264	175	97	85	86	58	46	22	833
	Tot. Salary	\$5,431,606	\$4,983,093	\$3,106,937	\$3,431,845	\$3,728,788	\$2,455,598	\$2,373,288	\$1,359,280	\$26,870,435
	Avg. Salary	\$20,574	\$28,475	\$32,030	\$40,375	\$43,358	\$42,338	\$51,593	\$61,785	\$32,257
Total	Number	13,639	6,699	4,113	3,499	2,739	2,563	1,019	211	34,482
	Tot. Salary	\$422,246,507	\$257,666,376	\$180,335,065	\$171,267,352	\$143,452,536	\$148,046,076	\$61,537,576	\$13,534,286	\$1,398,085,774
	Avg. Salary	\$30,959	\$38,463	\$43,845	\$48,948	\$52,374	\$57,763	\$60,390	\$64,144	\$40,545

Average Age = 46.6



# **DEFERRED VESTED MEMBERS ON JANUARY 1, 2008**

# **MALES**

				Years of	Service				
Age Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	0	0	0	0	0	0	0	0	0
20-24	1	0	0	0	0	0	0	0	1
25-29	5	9	0	0	0	0	0	0	14
30-34	19	44	3	0	0	0	0	0	66
35-39	30	63	17	1	0	0	0	0	111
40-44	34	107	35	11	1	0	0	0	188
45-49	48	132	78	40	12	5	0	0	315
50-54	42	170	105	82	33	16	1	0	449
55-59	67	177	91	59	27	9	0	0	430
60-64	20	54	27	14	6	2	0	0	123
Over 64	20	37	7	4	0	0	0	0	68
Total	286	793	363	211	79	32	1	0	1,765

Average Age = 51.2

# **DEFERRED VESTED MEMBERS ON JANUARY 1, 2008**

# **FEMALES**

				Years of	Service			-	
Age Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	0	0	0	0	0	0	0	0	0
20-24	2	1	0	0	0	0	0	0	3
25-29	24	24	0	0	0	0	0	0	48
30-34	55	74	3	0	0	0	0	0	132
35-39	64	131	21	1	1	0	0	0	218
40-44	77	187	76	18	1	0	0	0	359
45-49	117	278	148	41	20	4	0	0	608
50-54	117	395	223	91	49	15	3	0	893
55-59	104	356	199	117	65	16	2	0	859
60-64	62	134	61	24	9	3	0	0	293
Over 64	50	84	26	10	0	2	0	0	172
Total	672	1,664	757	302	145	40	5	0	3,585

Average Age = 51.6

# **DEFERRED VESTED MEMBERS ON JANUARY 1, 2008**

# **MALES AND FEMALES COMBINED**

				Years of	Service				
Age Last Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	0	0	0	0	0	0	0	0	0
20-24	3	1	0	0	0	0	0	0	4
25-29	29	33	0	0	0	0	0	0	62
30-34	74	118	6	0	0	0	0	0	198
35-39	94	194	38	2	1	0	0	0	329
40-44	111	294	111	29	2	0	0	0	547
45-49	165	410	226	81	32	9	0	0	923
50-54	159	565	328	173	82	31	4	0	1,342
55-59	171	533	290	176	92	25	2	0	1,289
60-64	82	188	88	38	15	5	0	0	416
Over 64	70	121	33	14	0	2	0	0	240
Total	958	2,457	1,120	513	224	72	6	0	5,350

Average Age = 51.4

# **POPULATION RECONCILIATION**

		Inact	ives		Pensi	oners		
	Actives	Non-vested	Vested	Retired	Rehired Retirees	Disabled	Beneficiary	Total
Total as of January 1, 2007	34,189	17,238	4,950	15,054	26	244	1,686	73,387
Retired	(736)	(4)	(234)	971	3	0	0	0
Disabled	(12)	0	0	0	0	12	0	0
Non-vested Termination	(1,642)	1,642	0	0	0	0	0	0
Vested Termination	(945)	0	945	0	0	0	0	0
Deceased, No Beneficiary	(32)	(18)	(51)	(334)	0	(4)	(81)	(520)
Deceased, with Beneficiary	(10)	0	(2)	(96)	0	(4)	0	(112)
Refunded	(921)	(484)	(124)	0	0	0	0	(1,529)
Certain Period Expired	0	0	0	0	0	0	(1)	(1)
Suspended	0	0	0	(5)	0	0	0	(5)
New Entrant	3,979	385	0	0	0	0	113	4,477
Data Adjustment	113	14	(6)	(1)	0	1	11	132
Return to Active	499	(365)	(128)	0	0	0	0	6
Total as of January 1, 2008	34,482	18,408	5,350	15,589	29	249	1,728	75,835

#### IV. BENEFIT EXPERIENCE

During the year ending December 31, 2007, the Board approved 983 pension awards. Of that total, approximately 15% commenced before becoming eligible for unreduced benefits. 42% of new retirees have unreduced benefits due solely to reaching age 60 while 15% of new retirees have attained the rule of 85 without reaching age 60. The remaining 28% of new retirees have reached both age 60 and rule of 85.

On January 1, 2008, a total of 15,867 pensioners were receiving retirement benefits from the System compared to 15,324 receiving benefits one year earlier. The average monthly benefit for the pensioners was \$1,187 compared to \$1,141 one year earlier. In addition, 1,728 beneficiaries were receiving monthly payments at January 1, 2008.

Tables 8 through 16 on pages 13 through 21 show distributions of all retirement benefits in pay status as of January 1, 2008, by monthly benefit, age, gender, and optional form. The information presented may be summarized as follows:

- ♦ Total annual benefits in force as of January 1, 2008 for the 17,595 pensioners and beneficiaries were \$245.6 million.
- Of the 17,595 pensioners and beneficiaries, approximately 28% are under age 65, 39% are 65 through 74 and 33% are 75 or older.
- ♦ Approximately 47% of the 15,867 pensioners are receiving benefits in either a 50% or 100% joint and survivor annuity, including those with a pop-up feature (options 2, 3, 6 or 7).
- ♦ Approximately 37% of the 17,595 pensioners and beneficiaries were receiving monthly benefits of less than \$600 and 44% were receiving at least \$1,000 per month.
- For members retiring from active service during 2007, the average age of early and normal retirements was 62.
- Benefit payments from System assets in 2007 totaled \$249,765,088, including refund payments of \$9,909,304. In 2006, benefit payments were \$232,944,164, including refund payments of \$10,759,984.

The actuarial accrued liability for pension benefits to the 17,595 pensioners and beneficiaries amounted to \$2,846 million as of January 1, 2008. This liability is the actuarially estimated amount necessary to pay benefits to the pensioners and beneficiaries assuming that the amounts set aside would earn 8.0% interest per year until they are distributed in benefit payments. This amount includes the 3.0% annual cost-of-living increases.



### **RETIREES AS OF JANUARY 1, 2008**

		NUMBER		MOI	NTHLY AMOUNT	-
	Male	Female	Total	Male	Female	Total
<u>Pensioners</u>						
Option 1	1,636	4,672	6,308	\$2,142,416	\$4,451,243	\$6,593,659
Option 2	3,137	1,626	4,763	4,681,427	1,562,969	6,244,396
Option 3	501	311	812	966,924	369,933	1,336,857
Option 4	292	451	743	355,389	384,331	739,720
Option 5	329	1,083	1,412	418,232	939,028	1,357,260
Option 6	684	720	1,404	977,592	854,699	1,832,291
Option 7	179	246	425	354,522	372,795	727,317
Total	6,758	9,109	15,867	\$9,896,502	\$8,934,998	\$18,831,500
Beneficiaries	290	1,438	1,728	236,889	1,395,512	1,632,401
Grand Total	7,048	10,547	17,595	\$10,133,391	\$10,330,510	\$20,463,901

# RETIREE BENEFITS IN FORCE BY AMOUNT AND OPTION TYPE

		ı	PENSION O	PTION				
	1	2	3	4	5	6	7	Total
Males								
Under \$200	119	167	4	34	75	45	2	446
\$200-\$399	205	331	17	30	104	80	14	781
\$400-\$599	201	310	35	41	90	79	9	765
\$600-\$799	165	265	35	34	63	62	14	638
\$800-\$999	145	242	32	24	44	56	10	553
\$1,000-\$1,499	250	453	96	55	76	91	20	1,041
\$1,500-\$1,999	179	409	67	31	44	60	21	811
\$2,000-\$2,499	135	368	69	22	48	97	29	768
\$2,500 & Over	241	592	146	34	58	114	60	1,245
Total	1,640	3,137	501	305	602	684	179	7,048
Females								
Under \$200	493	186	10	58	282	58	5	1,092
\$200-\$399	824	293	39	99	424	106	12	1,797
\$400-\$599	740	238	39	81	375	88	28	1,589
\$600-\$799	603	161	40	59	324	79	21	1,287
\$800-\$999	396	140	24	44	207	63	25	899
\$1,000-\$1,499	700	275	67	57	362	107	46	1,614
\$1,500-\$1,999	394	138	42	19	202	69	40	904
\$2,000-\$2,499	253	100	32	32	136	75	29	657
\$2,500 & Over	300	104	21	24	139	79	41	708
Total	4,703	1,635	314	473	2,451	724	247	10,547
Males & Females								
Under \$200	612	353	14	92	357	103	7	1,538
\$200-\$399	1,029	624	56	129	528	186	26	2,578
\$400-\$599	941	548	74	122	465	167	37	2,354
\$600-\$799	768	426	75	93	387	141	35	1,925
\$800-\$999	541	382	56	68	251	119	35	1,452
\$1,000-\$1,499	950	728	163	112	438	198	66	2,655
\$1,500-\$1,999	573	547	109	50	246	129	61	1,715
\$2,000-\$2,499	388	468	101	54	184	172	58	1,425
\$2,500 & Over	541	696	167	58	197	193	101	1,953
Total	6,343	4,772	815	778	3,053	1,408	426	17,595

# PENSIONS IN FORCE ON JANUARY 1, 2008 BY OPTION AND NEAREST AGE

#### **MALES**

Age Last	Pension Option									
Birthday	1	2	3	4	5	6	7	Total		
0-49	2	6	0	4	8	0	0	20		
50-54	35	41	4	7	10	14	2	113		
55-59	107	208	23	30	39	71	18	496		
60-64	288	591	64	56	95	221	46	1,361		
65-69	358	741	98	65	132	206	64	1,664		
70-74	282	625	110	55	97	113	30	1,312		
75-79	259	466	84	36	105	46	15	1,011		
80-84	176	290	82	33	71	12	4	668		
Over 84	133	169	36	19	45	1	0	403		
Total	1,640	3,137	501	305	602	684	179	7,048		

# PENSIONS IN FORCE ON JANUARY 1, 2008 BY OPTION AND NEAREST AGE

#### **FEMALES**

Age Last	Pension Option									
Birthday	1	2	3	4	5	6	7	Total		
0-49	5	5	0	7	21	1	0	39		
50-54	60	52	2	9	42	20	2	187		
55-59	304	170	21	46	106	125	32	804		
60-64	707	373	65	107	288	296	88	1,924		
65-69	956	375	75	108	390	182	74	2,160		
70-74	854	274	47	76	430	76	38	1,795		
75-79	714	185	52	65	439	22	11	1,488		
80-84	542	120	29	37	396	1	1	1,126		
Over 84	561	81	23	18	339	1	1	1,024		
Total	4,703	1,635	314	473	2,451	724	247	10,547		

# PENSIONS IN FORCE ON JANUARY 1, 2008 BY OPTION AND NEAREST AGE

#### **MALES & FEMALES COMBINED**

Age Last	Pension Option							
Birthday	1	2	3	4	5	6	7	Total
0-49	7	11	0	11	29	1	0	59
50-54	95	93	6	16	52	34	4	300
55-59	411	378	44	76	145	196	50	1,300
60-64	995	964	129	163	383	517	134	3,285
65-69	1,314	1,116	173	173	522	388	138	3,824
70-74	1,136	899	157	131	527	189	68	3,107
75-79	973	651	136	101	544	68	26	2,499
80-84	718	410	111	70	467	13	5	1,794
Over 84	694	250	59	37	384	2	1	1,427
Total	6,343	4,772	815	778	3,053	1,408	426	17,595

# PENSIONS AWARDED IN 2007 BY OPTION AND MONTHLY AMOUNT MALES & FEMALES COMBINED

Monthly	Pension Option							
Amount	1	2	3	4	5	6	7	Total
Under \$200	18	11	0	1	8	11	1	50
\$200-\$399	32	23	4	5	12	24	5	105
\$400-\$599	32	27	3	3	14	18	4	101
\$600-\$799	28	24	0	3	8	16	3	82
\$800-\$999	20	23	3	1	7	6	1	61
\$1,000-\$1,499	47	42	5	4	13	29	3	143
\$1,500-\$1,999	40	43	2	2	10	10	7	114
\$2,000-\$2,499	27	23	3	2	6	16	6	83
Over \$2,499	74	81	10	7	16	46	10	244
Total	318	297	30	28	94	176	40	983

### PENSIONS AWARDED IN 2007 BY OPTION AND NEAREST AGE

# **MALES & FEMALES COMBINED**

Age Last	Pension Option									
Birthday	1	2	3	4	5	6	7	Total		
0-49	1	2	0	0	0	0	0	3		
50-54	22	20	2	3	0	14	2	63		
55-59	74	65	7	7	21	36	10	220		
60-64	161	145	14	15	44	89	15	483		
65-69	45	53	5	2	23	30	12	170		
70-74	11	10	1	1	4	7	1	35		
75-79	3	2	1	0	2	0	0	8		
80-84	0	0	0	0	0	0	0	0		
Over 84	1	0	0	0	0	0	0	1		
Total	318	297	30	28	94	176	40	983		

#### AVERAGE MONTHLY BENEFIT OF RETIREES AS OF JANUARY 1, 2008, BY YEARS ELAPSED SINCE RETIREMENT AND BY YEARS OF SERVICE AT RETIREMENT

			Years Elapsed Since Retirement							
Service at Retirement		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
0-4	Number	190	167	165	182	135	79	19	2	939
	Avg. Benefit	\$211.75	\$208.77	\$185.17	\$163.56	\$182.81	\$192.25	\$187.37	\$139.00	\$190.76
5-9	Number	653	547	530	556	408	224	119	36	3,073
	Avg. Benefit	\$390.16	\$353.71	\$319.57	\$331.96	\$318.15	\$285.25	\$275.63	\$266.44	\$337.87
10-14	Number	628	637	682	605	332	193	93	16	3,186
	Avg. Benefit	\$680.43	\$606.50	\$618.77	\$568.27	\$548.64	\$442.60	\$444.11	\$370.95	\$594.56
15-19	Number	673	693	700	430	336	144	60	14	3,050
	Avg. Benefit	\$1,046.85	\$953.00	\$916.74	\$907.60	\$815.72	\$668.42	\$612.03	\$557.89	\$921.91
20-24	Number	695	578	534	313	266	102	62	4	2,554
	Avg. Benefit	\$1,485.17	\$1,348.58	\$1,296.35	\$1,261.26	\$1,200.41	\$864.80	\$812.89	\$776.15	\$1,315.47
25-29	Number	816	574	438	246	233	82	17	2	2,408
	Avg. Benefit	\$2,201.98	\$1,982.16	\$1,880.94	\$1,722.67	\$1,575.93	\$1,047.43	\$962.74	\$922.12	\$1,932.51
30-34	Number	620	426	402	203	206	16	3	0	1,876
	Avg. Benefit	\$2,902.11	\$2,573.00	\$2,614.70	\$2,463.27	\$2,086.05	\$1,377.25	\$994.15	\$0.00	\$2,612.64
35-39	Number	148	80	103	84	24	3	3	2	447
	Avg. Benefit	\$3,477.51	\$3,173.54	\$3,152.36	\$2,949.71	\$2,414.24	\$1,539.87	\$1,136.30	\$1,359.20	\$3,153.72
40 and over	Number	28	6	16	2	4	3	3	0	62
	Avg. Benefit	\$4,271.37	\$2,684.01	\$3,524.61	\$2,985.92	\$2,228.23	\$1,726.95	\$1,335.31	\$0.00	\$3,486.58
Total	Number	4,451	3,708	3,570	2,621	1,944	846	379	76	17,595
	Avg. Benefit	\$1,502.91	\$1,229.35	\$1,179.82	\$961.75	\$922.73	\$551.65	\$505.40	\$411.62	\$1,163.05

Average Service at Retirement = 18.3 Average Years Since Retirement = 11.9



# DISTRIBUTION OF RETIRED MEMBERS BY DATE OF RETIREMENT BASED ON CALENDAR YEARS

Year of Retirement	<u>Counts</u>	Year of Retirement	<u>Counts</u>
1956	0	1982	198
1957	0	1983	214
1958	0	1984	307
1959	0	1985	363
1960	0	1986	412
1961	0	1987	648
1962	0	1988	518
1963	1	1989	480
1964	1	1990	474
1965	0	1991	507
1966	0	1992	631
1967	1	1993	584
1968	0	1994	630
1969	0	1995	1,022
1970	3	1996	662
1971	41	1997	678
1972	26	1998	692
1973	47	1999	721
1974	65	2000	704
1975	63	2001	783
1976	89	2002	774
1977	114	2003	868
1978	129	2004	930
1979	142	2005	871
1980	158	2006	897
1981	203	2007	944

Total: 17,595

#### V. ASSETS

As shown in the auditor's report as of December 31, 2007, net assets totaled \$5,768,482,476 at market value, compared to a value of \$5,467,099,987 as of December 31, 2006. However, a different asset value is used for the actuarial valuation. Effective January 1, 2001, we use a method that adjusts to market value gradually as follows:

Appreciation and depreciation in excess of the expected appreciation, whether realized or unrealized, is spread over five years beginning with the year of occurrence. Interest, dividends, and other income are recognized immediately. The procedure results in recognition of all changes in market value after five years.

The procedure is applied to all investments. The determination of the actuarial value of investments is shown in Table 18 on page 25. Table 19 on page 26 develops the actuarial value of all System assets, including receivables and payables. The asset value on this basis is \$5,654,022,877, which represents a 11.4% return on the value of \$5,160,601,533 as of December 31, 2006. There is \$114 million of deferred appreciation that will be recognized in future years.

The amount of write-up or write-down (which reflects changing market values) is considered part of the investment income for the year. This procedure treats realized and unrealized capital gains or losses equally. In other words, the sale of a security – either at a gain or loss – has no effect on the value of assets for actuarial purposes. If the market value has gone up, the increase is gradually reflected in the value of the fund's assets; it does not have to be sold for the appreciation to be realized. This automatic reflection of market value appreciation or depreciation should eliminate any need for making investment decisions for the explicit purpose of meeting the investment return assumption.

Chart 1 on page 27 is a graph showing the historical asset values on both actuarial and market value bases. This graph illustrates that the growth of the market value of assets has also been reflected in the actuarial value of assets with less volatility.

The investment portfolio is summarized in Table 20 on page 28. On December 31, 2007, about 60.0% of the assets at market value consisted of equities.

Income and disbursements for 2007 and 2006 on the actuarial value basis are given in Table 21 on page 29. The progress of the fund for the last twenty-two years is provided in Table 22 on page 30. It shows that assets have increased consistently from year to year, although the amount of the increase has varied with fluctuations in investment income. Benefit payments have consistently increased, confirming the growth in assets needed to finance lifetime benefits for current pensioners and those members who will retire in the future.

Table 23 on page 31 shows the components of investment earnings over the last twenty-two years. Over the full period, the earnings of \$5,577,123,000 on an actuarial value basis represent an average annual return of 9.9% or \$758,402,000 more than anticipated by the assumptions.

These investment results are used to determine whether investment experience is meeting the System's actuarially assumed return.



#### **Market Value Results**

The estimated investment returns for the last eighteen years on a *market value basis* as reported by your investment advisors are as follows:

<u>Year</u>	Rate of Return	<u>Year</u>	Rate of Return
1990	5.30%	1999	13.88%
1991	20.30%	2000	(0.99%)
1992	8.57%	2001	(4.47%)
1993	10.24%	2002	(9.29%)
1994	(2.78%)	2003	21.00%
1995	25.90%	2004	11.54%
1996	11.73%	2005	8.22%
1997	20.92%	2006	12.63%
1998	19.02%	2007	7.44%

Chart 2 on page 32 provides an illustration of investment returns for the last twenty years based on actuarial value and market value versus the expected return. This chart illustrates the smoothing effect that results from using an actuarial value of assets. By using an actuarial value that reduces the year-to-year variations in return, the year-to-year fluctuations in cost are reduced.

The difference between the investment return rates at market value, when compared to similar return rates on the actuarial valuation basis, stems from the inclusion in the market value figures of all capital appreciation or depreciation whereas the results based on the actuarial valuation basis reflect only the write-up/down in accordance with the adopted valuation procedure.

# DETERMINATION OF WRITE-UP (DOWN) AMOUNT AND ACTUARIAL VALUE OF INVESTMENTS AS OF DECEMBER 31, 2007 AND 2006

#### PORTION OF TOTAL APPRECIATION/(DEPRECIATION)

			_	Dece	mber 31, 2007	Decem	ber 31, 2006
Year Ending	Total Appreciation (Depreciation)	Expected Appreciation	Difference From Expected	% Deferred	\$ Deferred	% Deferred	\$ Deferred
12/31/2003	\$ 634,778,699	\$178,991,767	\$ 455,786,932	0%	\$ -	20%	\$ 91,157,386
12/31/2004	377,711,695	243,214,738	134,496,957	20%	26,899,391	40%	53,798,783
12/31/2005	261,304,998	266,550,447	(5,245,449)	40%	(2,098,180)	60%	(3,147,269)
12/31/2006	474,959,242	269,097,299	205,861,943	60%	123,517,166	80%	164,689,554
12/31/2007	242,674,199	284,997,672	(42,323,473)	80%	(33,858,778)	0%	<u>-</u>
(b) Sum of D		xpected for Last F	ive Plan Years als 20% of (b) Plus	Rounding	\$ 114,459,599 748,576,910 149,715,382		\$ 306,498,454 83,545,088 16,709,018
					<u>January 1, 2008</u>	:	January 1, 2007
Market Value	of Investments				\$ 5,871,916,032	9	5,690,374,364
Less: Deferre	ed Appreciation/(D	Depreciation)	114,459,599	_	306,498,454		
Preliminary A	ctuarial Value of I	nvestments	\$ 5,757,456,433		\$5,383,875,910		
Adjustment fo	or 20% Corridor				0		0
Actuarial Valu	ue of Investments*	•			\$ 5,757,456,433		\$5,383,875,910

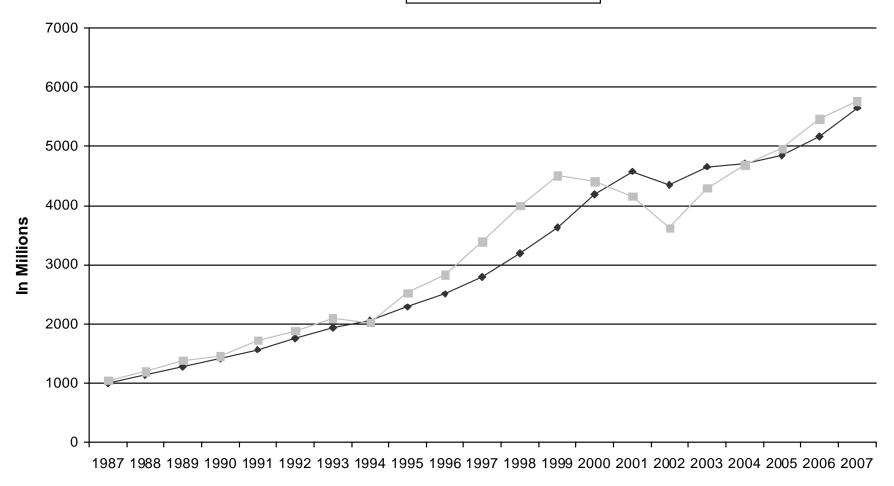
<sup>\*</sup>See Table 19 for actuarial value of assets.

# ASSETS OF THE FUND AS OF DECEMBER 31, 2007 AND 2006 (ACTUARIAL VALUE BASIS)

	2007	2006
Net Accounts Receivable/(Payable)	\$ (103,433,556	s) \$ (223,274,377)
Preliminary Actuarial Value of Investments	5,757,456,433	5,383,875,910
Net Assets	\$ 5,654,022,877	\$ 5,160,601,533
Market Value of Assets	5,768,482,476	5,467,099,987
80% Minimum Actuarial Value	4,614,785,981	4,373,679,990
120% Maximum Actuarial Value	6,922,178,971	6,560,519,984
Adjustment for 20% Corridor	C	0
Actuarial Value of Assets	\$ 5,654,022,877	\$ 5,160,601,533

# **Value of Assets**





### **Year Ended December 31**

#### **INVESTMENT PORTFOLIO**

**December 31, 2007 December 31, 2006 Market Value Market Value** Percentage Percentage Type of Investment Distribution Distribution **Amount** Amount Cash Investments \$ 160,779,570 2.7% 239,504,720 4.2% Fixed Income Investments 31.4% 29.9% 1,843,123,984 1,700,901,207 Real Estate Investments 5.9% 5.3% 345,664,399 304,012,543 60.0% 60.6% **Equity Investments** 3,522,348,079 3,445,955,894 Total Investments\* 5,871,916,032 5,690,374,364 100.0% 100.0%

<sup>\*</sup> Total market value of assets (after adjusting for accruals) is \$5,768,482,476 and \$5,467,099,987 as of December 31, 2007 and December 31, 2006, respectively.

# SUMMARY STATEMENT OF INCOME AND DISBURSEMENTS FOR THE YEARS ENDED DECEMBER 31, 2007 AND 2006 (ACTUARIAL VALUE BASIS)

	Decembe	er 31, 2007	December 31, 2006					
Contribution Income:								
Employer Contributions	\$ 79,900,428		\$ 70,144,155					
Employee Contributions	78,495,298		69,020,297					
Other Contributions	3,248,808		2,520,248					
Total Contribution Income	\$ 161,644,534	-	\$ 141,684,700					
Less: Administrative Expenses	(2,005,783)		(1,949,051)					
Net Contribution Income		\$ 159,638,751		\$ 139,735,649				
Investment Income:								
Interest and Dividends	\$ 160,071,960		\$ 135,465,186					
Less: Investment Expenses	(13,507,529)		(12,642,365)					
Net Interest and Dividends	\$ 146,564,431	-	\$ 122,822,821					
Write-Up of Assets	149,715,382		16,709,018					
Expected Increase in Asset Value	284,997,672		269,097,299					
Adjustment for 20% Corridor	0		0					
Net Investment Income Before Securities Lending		\$ 581,277,485		\$ 408,629,138				
Gross Income from Securities Lending	\$ 28,510,379		\$ 22,169,502					
Securities Lending Deductions	(26,240,183)		(20,849,706)					
Net Income from Securities Lending		\$ 2,270,196		\$ 1,319,796				
Total Income Available for Benefit Payments and Reserves		\$ 743,186,432	<del>-</del>	\$ 549,684,583				
Benefit Payments:								
Pension Benefits	\$ (239,855,784)		\$ (222,184,180)					
Refunds	(9,909,304)		(10,759,984)					
Total Benefit Payments		\$ (249,765,088)		\$ (232,944,164)				
Addition to Reserve for Future Benefit Payments		\$ 493,421,344	<del>-</del>	\$ 316,740,419				
Actuarial Value of Assets, Beginning of Year		5,160,601,533		4,843,861,114				
Actuarial Value of Assets, End of Year		\$ 5,654,022,877	_	\$ 5,160,601,533				

# PROGRESS OF THE FUND THROUGH DECEMBER 31, 2007 (ACTUARIAL VALUE BASIS)

Plan Year Employer Employe		Employee	Administrative Net Investment					Benefit	Transfers		Fund at		
Fiail Teal	c	Employer Contributions*	(	Contributions	A	Expenses	IN	Income**		Payments	Out		Year End
22 Years Through		- Citti Bationo		Jona Datione		<u> </u>				1 ayındır.	- Out		Tour Ena
	\$	1,088,544,773	\$	1,078,548,822	\$	(24,873,706)	\$	5,577,123,496	\$	(2,715,900,610)	\$ (115,653,895)	\$	5,654,022,877
As of													
12/31/1985	\$		\$		\$		\$		\$		\$	\$	766,233,997***
12/31/1986		41,364,465		36,365,804		(782,000)		98,998,090		(42,082,765)			900,097,591
12/31/1987		39,901,834		36,039,418		(808,023)		91,374,783		(50,604,364)			1,016,001,239
12/31/1988		38,414,939		33,222,264		(444,343)		103,025,282		(48,627,479)			1,141,591,902
12/31/1989		36,139,394		36,231,108		(424,136)		128,370,680		(55,459,353)			1,286,449,595
12/31/1990		38,668,634		38,960,372		(850,148)		114,218,588		(61,154,261)			1,416,292,780
12/31/1991		38,903,350		39,288,267		(863,301)		148,064,188		(69,348,501)			1,572,336,783
12/31/1992		42,354,843		42,883,874		(909,653)		175,246,400		(75,211,430)			1,756,700,817
12/31/1993		41,596,571		42,266,219		(801,026)		189,281,426		(82,480,713)			1,946,563,294
12/31/1994		42,791,243		43,415,880		(888,518)		136,210,578		(89,707,717)			2,078,384,760
12/31/1995		43,714,263		44,435,762		(937,480)		230,731,781		(99,689,985)			2,296,639,101
12/31/1996		43,495,146		44,761,611		(1,028,163)		233,212,720		(108,536,621)			2,508,543,794
12/31/1997		44,958,544		46,152,691		(1,147,818)		314,340,179		(117,126,096)			2,795,721,294
12/31/1998		46,183,091		47,366,181		(1,074,562)		436,098,461		(123,858,991)			3,200,435,474
12/31/1999		48,681,209		50,106,535		(1,182,899)		475,758,627		(132,428,572)			3,641,370,374
12/31/2000		50,539,675		51,868,059		(1,096,747)		592,379,739		(144,620,949)			4,190,440,151
12/31/2001		56,517,377		53,792,429		(1,387,930)		439,286,379		(156,189,100)			4,582,462,306
12/31/2002		57,377,428		58,234,324		(1,281,554)		(66,209,697)		(171,160,286)	(106,978,719)		4,352,423,802
12/31/2003		55,363,788		60,848,296		(1,435,922)		376,524,142		(185,826,481)			4,657,897,625
12/31/2004		60,573,670		61,412,824		(1,644,382)		127,831,761		(201,772,174)			4,704,299,324
12/31/2005		65,191,670		63,381,309		(1,930,627)		238,882,774		(217,308,520)	(8,655,176)		4,843,861,114
12/31/2006		72,664,403		69,020,297		(1,949,051)		409,948,934		(232,944,164)			5,160,601,533
12/31/2007		83,149,236		78,495,298		(2,005,783)		583,547,681		(249,765,088)			5,654,022,877

<sup>\*</sup> Includes other State funding sources.

<sup>\*\*</sup> Net of investment expenses.

Includes contributions and investment income net of expenses and benefit payments through December 31, 1985.

# SUMMARY OF INVESTMENT RESULTS (ACTUARIAL VALUE BASIS)

Assumed Investment Income					(ACTOARIAE VALUE BAGIO)					Total Investment			
Plan Average Amount Year of Assets in Fund		Amount %			Net Dividends & Appreciation Interest Income* Recognized**			Amount %			Investment Gain (Loss)		
1986	\$ 783,667,000	\$	58,775,000	7.50%	\$	75,380,000	\$	23,618,000	\$	98,998,000	12.6%	\$	40,223,000
1987	912,362,000		68,427,000	7.50		76,183,000		15,192,000		91,375,000	10.0		22,948,000
1988	1,027,284,000		77,046,000	7.50		86,933,000		16,092,000		103,025,000	10.0		25,979,000
1989	1,149,835,000		86,238,000	7.50		88,865,000		39,506,000		128,371,000	11.7		42,133,000
1990	1,294,112,000		103,529,000	8.00		94,715,000		19,504,000		114,219,000	8.9		10,690,000
1991	1,420,283,000		113,623,000	8.00		99,550,000		48,514,000		148,064,000	10.4		34,441,000
1992	1,576,896,000		126,152,000	8.00		104,559,000		70,687,000		175,246,000	11.2		49,094,000
1993	1,757,392,000		140,591,000	8.00		106,022,000		83,259,000		189,281,000	10.8		48,690,000
1994	1,944,813,000		155,585,000	8.00		110,883,000		25,327,000		136,210,000	7.0		(19,375,000)
1995	2,072,615,000		165,809,000	8.00		117,721,000		113,011,000		230,732,000	11.1		64,923,000
1996	2,286,238,000		182,899,000	8.00		125,022,000		108,191,000		233,213,000	10.2		50,314,000
1997	2,495,225,000		199,618,000	8.00		123,671,000		190,669,000		314,340,000	12.6		114,722,000
1998	2,780,566,000		222,445,000	8.00		98,831,000		337,268,000		436,098,000	15.7		213,654,000
1999	3,183,615,000		254,689,000	8.00		133,493,000		342,266,000		475,759,000	14.9		221,070,000
2000	3,620,264,000		289,621,000	8.00		124,283,000		468,097,000		592,380,000	16.4		302,759,000**
2001	4,167,502,000		333,400,000	8.00		123,241,000		316,045,000		439,286,000	10.5		105,886,000
2002	4,501,189,000		360,095,000	8.00		112,650,000		(178,860,000)		(66,210,000)	(1.5)		(426,305,000)
2003	4,317,617,000		345,409,000	8.00		109,207,000		267,317,000		376,524,000	8.7		31,115,000
2004	4,617,183,000		369,375,000	8.00		97,587,000		30,245,000		127,832,000	2.8		(241,543,000)
2005	4,654,639,000		372,371,000	8.00		105,399,000		133,484,000		238,883,000	5.1		(133,488,000)
2006	4,797,257,000		383,781,000	8.00		124,143,000		285,806,000		409,949,000	8.5		26,168,000
2007	5,115,538,000		409,243,000	8.00		148,835,000		434,713,000		583,548,000	11.4		174,305,000
Total A	mount	\$	4,818,721,000		\$	2,387,173,000	\$	3,189,950,000	\$	5,577,123,000		\$	758,402,000
Averag	e Rate of Investmen	t Inc	come Over Period								9.9%		

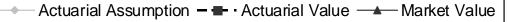
<sup>\*</sup> Includes securities lending income and net of rebates, fees, and investment expenses.

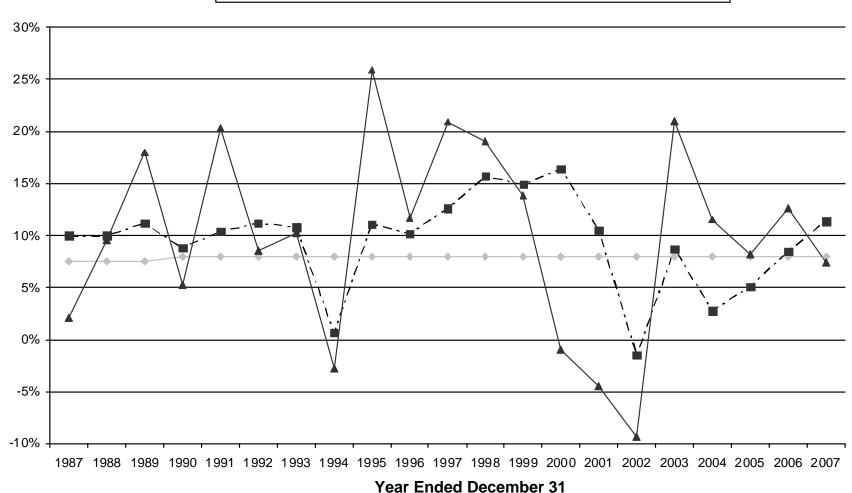


<sup>\*\*</sup> Recognizes write-up of assets on an actuarial value basis and any adjustments necessary to bring the actuarial value within the 80% to 120% of market value corridor.

<sup>\*\*\*</sup> Includes effect of change in actuarial asset method.

# **Investment Return**





#### VI. CONTRIBUTION REQUIREMENTS

We have utilized the Individual Entry Age Normal Actuarial Cost Method for funding all benefits. This method is used in situations where a cost is desired that will relatively remain level as a percentage of the participating payroll.

Under the Individual Entry Age Normal Actuarial Cost Method, the total contribution requirement has three components: an annual normal cost, an administrative expense requirement and a payment with respect to the unfunded actuarial accrued liability over a scheduled period of years.

The annual normal cost is calculated as the level percentage of pay required over each employee's period of covered employment to fund the total expected benefits. If the average entry age remains stable, the total normal cost rate should remain a level percentage of payroll.

The normal cost payments are not sufficient to finance the benefit program when there is an unfunded actuarial liability. An unfunded actuarial liability may be created by changes in the benefits, actuarial assumptions, or funding method and by experience which differs from that projected by the actuarial assumptions. When plan assets exceed the actuarial liability, there is a negative unfunded liability indicating that past changes and experience have been favorable.

We have calculated the cost of funding (or amortizing) the unfunded actuarial accrued liability (UAAL) over an open period of 30 years. This methodology was adopted by the Retirement Board effective January 1, 2005. The amortization method uses payments that are assumed to increase at 4.0% per annum, the rate at which the covered payroll is assumed to grow. This amortization is added to the normal cost with administrative expenses to determine the total cost.



#### VI. CONTRIBUTION REQUIREMENTS (continued)

The contribution requirements are shown below.

#### **Contribution Requirements**

	Maximum 3.0% COLA	2008 Cost as a % of Salaries	2008 Dollar Cost*	2007 Cost as a % of Salaries
1.	Entry Age Normal Cost			
	a. Total employee and employer	11.00%	\$ 160,954,000	10.99%
	b. Employee share	<u>(5.57%)</u>	(81,460,000)	(5.57%)
	c. Employer share equals (a) + (b)	5.43%	\$ 79,494,000	5.42%
2.	Cost to Amortize Unfunded Actuarial Accrued Liability	5.19%	75,960,000	5.39%
3.	Administrative Expenses	0.15%	2,127,000	0.16%
4.	Total Employer Cost	10.77%	\$ 157,581,000	10.97%
5.	Total Cost (Employee + Employer)	16.34%	\$ 239,041,000	16.54%
	Break-even 1.03% COLA	2008 Cost as a % of Salaries	2008 Dollar Cost*	
1.	Entry Age Normal Cost		2000 Dollar Cost	
١.	, ,	9.70%	\$ 141.811.000	
	a. Total employee and employer		<b>+</b> ,,	
	b. Employee share	(5.57%)	(81,460,000)	
	c. Employer share equals (a) + (b)	4.13%	\$ 60,351,000	
2.	Cost to Amortize Unfunded Actuarial Accrued Liability	1.40%	20,558,000	
3.	Administrative Expenses	0.15%	2,127,000	
4.	Total Employer Cost	5.68%	\$ 83,036,000	
5.	Total Cost (Employee + Employer)	11.25%	\$ 164,496,000	

<sup>\*</sup> Dollar costs based on 2008 estimated payroll of \$1,462,474,000.

The detailed results of our valuation are shown in Exhibit 1.

The total employer cost based on the maximum COLA is \$157,581,000, or 10.77% of payroll. This is more than the statutory contribution rate of 5.68% of covered payroll. Hence, the current contribution rate does not meet the contribution requirements based upon the actuarial assumptions, actuarial method and financing objectives accepted by the Board.

The cost-of-living adjustment has been set to less than the maximum since the statutory contribution rate is less than the employer cost for the maximum COLA.



# VI. CONTRIBUTION REQUIREMENTS (continued)

The employer cost requirement of 10.77% as of January 1, 2008, represents a decrease from 10.97% calculated one year ago. An explanation of the change since the previous actuarial valuation is as follows:

Employer Cost Rate as of January 1, 2007	10.97%
Actual investment return higher than assumed	(0.68%)
Contributions below the actuarially determined rate	0.20%
Change due to teacher salary increase*	0.21%
Other experience factors	<u>0.07%</u>
Employer Cost Rate as of January 1, 2008	10.77%

<sup>\*</sup>The increase in the unfunded liability due to the large salary increases for the teachers was \$109,061,000.

These costs are based on the maximum allowable COLA of 3.0%.

## VII. ANALYSIS OF FINANCIAL EXPERIENCE

## Gains & Losses in Accrued Liabilities During the Year Ended 12/31/2007 Resulting From Differences Between Assumed Experience & Actual Experience

Type of Activity	Gain (L	oss) For Year 2007
Age & Service Retirements. If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss.	\$	(53,061,216)
<u>Disability Retirements</u> . If disability claims are less than assumed, there is a gain. If more claims, a loss.		(2,395,592)
<u>Death-In-Service Benefits.</u> If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.		2,344,569
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.		(15,157,347)
New Entrants. New employees entering the plan will create a loss.		(15,894,303)
<u>Pay Increases</u> . If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.		(212,865,514)
Contribution Income. If more contributions are received than expected, there is a gain. If less, a loss.		(52,907,581)
Investment Income. If there is greater investment income than assumed, there is a gain. If less income, a loss.		227,142,839
<u>Death After Retirement.</u> If retirees live longer than assumed, there is a loss. If not as long, a gain.		(3,486,033)
Other. Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, break-even COLA being granted, etc.		82,152,627
Gain (Loss) During Year From Financial Experience		(44,127,551)
Non-Recurring Items. Adjustments for plan amendments, etc.		-
Composite Gain (Loss) During Year	\$	(44,127,551)

#### VIII. FUNDING STATUS

One measure of the progress of funding a retirement plan is by comparing benefit security ratios on a historic basis. The benefit security ratio is the ratio of plan assets to plan liabilities. The greater the ratio, the better funded the retirement plan. This ratio can be calculated using different measures of the retirement plan's liabilities.

Chart 3 on page 38 shows the funded status of the Plan graphically.

## Funding Basis - Actuarial Accrued Liability

This measure of liabilities is used in calculating pension costs. It uses the Individual Entry Age Normal Actuarial Cost Method that spreads costs as a level percentage of payroll over a member's working career.

For determining Plan costs, a smoothed value of assets (called actuarial value) is used. Hence, for the benefit security ratio, the actuarial value of assets was used.

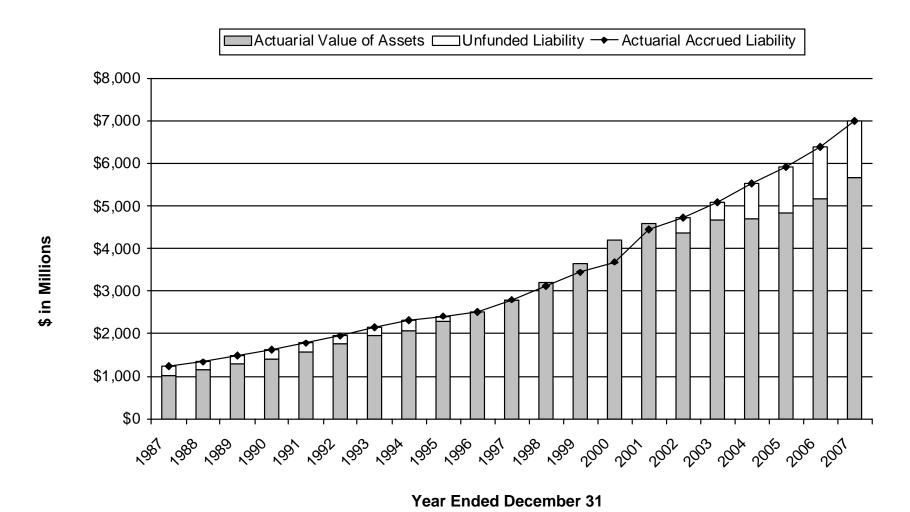
#### **Historical Results**

The benefit security ratio for the last twenty-two actuarial valuations are developed in Table 24 on page 39. The graph shows that on a funding basis, the benefit security ratio has steadily improved until 2001. The benefit ratio has decreased since then due to benefit improvements and investment return lower than expected in 2001 and 2002.

Funding ratios change over time due to several factors. These factors include the level of contributions, actual experience (including investment returns), Plan amendments and changes in assumptions.



# **Funded Status**



# **BENEFIT SECURITY RATIOS**

As of Jan. 1	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability (UAAL)	Benefit Security Ratio	Covered Payroll	UAAL as % of Covered Payroll
1987	\$ 1,119,666,000	\$ 900,098,000	\$ 219,568,000	80.4%	\$ 700,527,000	31.3%
1988	1,225,515,000	1,016,001,000	209,514,000	82.9	679,401,000	30.8
1989	1,334,110,000	1,141,592,000	192,518,000	85.6	681,101,000	28.3
1990	1,482,235,000	1,286,450,000	195,785,000	86.8	712,693,000	27.5
1991	1,627,934,000	1,416,293,000	211,641,000	87.0	712,860,000	29.7
1992	1,777,417,000	1,572,337,000	205,080,000	88.5	743,632,000	27.6
1993	1,944,477,000	1,756,701,000	187,776,000	90.3	756,248,000	24.8
1994	2,151,784,000	1,946,563,000	205,221,000	90.5	760,859,000	27.0
1995	2,310,624,000	2,078,385,000	232,239,000	90.0	793,782,000	29.3
1996	2,408,980,000	2,296,639,000	112,341,000	95.3	789,639,000	14.2
1997	2,500,667,000	2,508,544,000	(7,877,000)	100.3	803,239,000	(1.0)
1998	2,799,891,000	2,795,721,000	4,170,000	99.9	827,991,000	0.5
1999	3,125,121,000	3,200,435,000	(75,314,000)	102.4	873,530,000	(8.6)
2000	3,440,152,000	3,641,370,000	(201,218,000)	105.8	862,512,000	(23.3)
2001	3,683,174,000	4,190,440,000	(507,266,000)	113.8	897,641,000	(56.5)
2002	4,442,033,000	4,582,462,000	(140,429,000)	103.2	964,121,000	(14.6)
2003	4,718,618,000	4,352,424,000	366,194,000	92.2	988,135,000	37.1
2004	5,077,443,000	4,657,898,000	419,545,000	91.7	1,032,259,000	40.6
2005*	4,902,322,000	4,704,299,000	198,023,000	96.0	1,086,736,000	18.2
2006*	5,091,763,000	4,843,861,000	247,902,000	95.1	1,156,400,000	21.4
2007*	5,468,229,000	5,160,602,000	307,627,000	94.4	1,285,096,000	23.9
2008*	6,015,985,000	5,654,023,000	361,962,000	94.0	1,462,474,000	24.7

<sup>\*</sup> Beginning in 2005, results are based on the actuarially sound COLA benefit determined by the Board in accordance with a change in State statutes.



### IX. ACTUARIAL ASSUMPTIONS AND METHODS

The actuarial assumptions and methods applied in this actuarial valuation are the same as those used in the previous valuation.

The assumptions and methods applied within the valuation are described below.

#### **Investment Return**

The actuarial calculations are based on the assumption that the effective return on the assets of the System will be 8.0% per year net of investment expenses. This includes 3.0% for inflation and 5.0% real rate of return.

### **Salary Increases and Inflation**

A salary scale is used in an actuarial valuation to estimate the salary progression of employees in the future. The long-term salary increase assumption in this valuation is 5.0% per year. It includes 3.0% for inflation, as assumed in the investment yield. There is an allowance for 1.0% for standard-of-living growth per year and 1.0% annually for merit, promotion and longevity.

The salary scale used in this actuarial valuation does not necessarily take full account of general across-the-board increases in salaries resulting from inflation and other factors under short-term current conditions. This is because actuarial assumptions are meant to be reasonable over the long-term and should not be unduly influenced by short-term economic conditions.

The following is a summary of the long-term economic assumptions applied in this valuation:

Investment yield	8.00%
Salary increases	5.00%
Inflation	3.00%

### **Demographic Assumptions**

Assumptions as to retirement incidence, withdrawal, disability and mortality are specified in Exhibit III of the actuarial certification.



# IX. ACTUARIAL ASSUMPTIONS AND METHODS (continued)

#### **Actuarial Cost Method**

For purposes of determining pension costs, we have applied the actuarial cost method known as the Individual Entry Age Normal Actuarial Cost Method. It is used in situations where a cost is desired that will remain relatively level as a percentage of the participating payroll.

Under the Individual Entry Age Normal Actuarial Cost Method, the total contribution requirement has three components: an annual normal cost, an administrative expense requirement and a payment with respect to the unfunded actuarial accrued liability.

The annual normal cost is calculated for each individual employee as the level percentage of pay required over the employee's period of covered employment to pay the total expected benefits. If the actuarial assumptions remain unchanged and actual experience matches the actuarial assumptions, the normal cost rate for each employee will remain a level percentage of payroll.

Unfunded actuarial accrued liability amounts are created by Plan implementation with prior benefit credit, actuarial losses, changes in the actuarial assumptions, actuarial cost method and improvements in the benefit provisions. To determine the amount necessary to provide for the unfunded liability, we applied an open amortization period of 30 years as of the valuation date. This methodology was adopted by the Retirement Board effective January 1, 2005. We assumed future unfunded liability payments would increase in dollar amount but remain a level percentage of aggregate covered salaries. It has been assumed that the aggregate covered payroll will increase at the combined assumed long-term inflation rate and the standard-of-living improvement rate of 4.0%.

#### **Asset Valuation Method**

The assets are valued on a moving market-related basis for actuarial purposes. The actuarial value includes the difference between expected appreciation and actual appreciation or depreciation, whether realized or not, spread over five years beginning with the year of occurrence. Interest, dividends, and other income are recognized immediately. This procedure results in recognition of all changes in market value after five years. If the actuarial asset value is less than 80% or more than 120% of market value, an adjustment will be made to bring it within that range.





April 11, 2008

#### STATE OF WYOMING RETIREMENT SYSTEM

## **Actuarial Valuation Certificate**

This is to certify that we have prepared an Actuarial Valuation of the Plan as of January 1, 2008, in accordance with generally accepted actuarial principles and practices.

The certificate contains the following attached exhibits:

- I. Actuarial Valuation Results
- II. Changes in Actuarial Assumptions and Methods
- III. Actuarial Assumptions and Methods
- IV. Changes in Plan Provisions
- V. Summary of Plan Provisions

The valuation is based on information supplied by the Retirement Office (as of January 1, 2008) with respect to members and financial data. We have not verified, and customarily would not verify, such information, but we have had no reason to doubt its substantial accuracy.

In our opinion, the assumptions used in the aggregate: (a) are reasonably related to the experience of the Plan and to reasonable expectations; and (b) represent our best estimate of anticipated experience under the Plan.

Michelle Reding DeLange, FSA, EA, MAAA

Director, Consulting Actuary

David H. Slishinsky, ASA, EA, MAAA

David H. Slockinsky

Principal, Consulting Actuary

## **ACTUARIAL VALUATION RESULTS**

The valuation was made with respect to the data for 75,835 members as of January 1, 2008:

- a. 34,482 active members
- b. 15,867 retired members and 1,728 beneficiaries
- c. 5,350 inactive vested members and 18,408 inactive nonvested members

			Maximum 3.0% COLA	Break-even 1.03% COLA
1.	Actuarial Accrued Liability on January 1, 2008:			
	<ul><li>a. Active members</li><li>b. Retired members and beneficiaries</li><li>c. Inactive nonretired members</li><li>d. Total</li></ul>	\$ _ \$	3,848,004,000 2,846,335,000 297,086,000 6,991,425,000	\$  3,316,480,000 2,435,725,000 263,780,000 6,015,985,000
2.	Assets at actuarial value on December 31, 2007*	\$_	5,654,023,000	\$ 5,654,023,000
3.	Unfunded actuarial accrued liability equals (1) - (2)	\$	1,337,402,000	\$ 361,962,000
4.	Employee and employer normal cost for ensuing year	\$	160,954,000	\$ 141,811,000
5.	Estimated annual salaries of covered employees	\$	1,462,474,000	\$ 1,462,474,000
6.	Employee contributions equals 5.57% of (5)	\$	(81,460,000)	\$ (81,460,000)
7.	Employer normal cost for ensuing year equals (4) - (6)	\$	79,494,000	\$ 60,351,000
8.	Amortization payment equals 30-year amortization of item (3) as a level percentage of payroll	\$	75,960,000	\$ 20,558,000
9.	Administrative expenses	\$_	2,127,000	\$ 2,127,000
10.	Total employer cost for ensuing year equals (7) + (8) + (9)	\$	157,581,000	\$ 83,036,000
11.	Total employer cost as percentage of payroll equals (10) $\div$ (5)		10.77%	5.68%

<sup>\* \$5,768,482,476</sup> at market value, adjusted for net accounts payable.

The current statutory contribution rate is sufficient to fund an annual cost-of-living adjustment (COLA) of 1.03% per year on an actuarially sound basis. When liabilities are measured with a COLA of 1.03%, the funded ratio on an Actuarial Value of Assets basis is 94.0%, while on a Market Value of Assets basis it is 95.9%.



# **CHANGES IN ACTUARIAL ASSUMPTIONS AND METHODS**

There were no changes in actuarial assumptions or cost methods for this actuarial valuation.

## **ACTUARIAL ASSUMPTIONS AND METHODS**

Unless noted otherwise below, these assumptions and methods were adopted in 2002 and first effective for the January 1, 2003 valuation.

## **Mortality Rates:**

Healthy Lives: 1994 Group Annuity Mortality Table (with margins)

Disabled Lives: 1979 PBGC Disabled Lives Receiving Social Security

## Termination Rates before retirement (sample rates):

#### RATE

	<u>D</u>	eath_	<u>Disability</u>	Withdr	awal
<u>Age</u>	<u>Male</u>	<u>Female</u>		<u>Male</u>	<u>Female</u>
25	.07%	.03%		31.91%	36.56%
30	.08%	.04%	.01%	18.38%	22.50%
35	.09%	.05%	.01%	10.03%	13.10%
40	.11%	.07%	.01%	7.61%	10.72%
45	.16%	.10%	.06%	7.29%	10.32%
50	.26%	.14%	.16%	6.32%	8.43%
55	.44%	.23%	.40%	4.62%	6.20%
60	.80%	.44%	<del></del>		

## **Retirement Rates (sample rates):**

<u>Age</u>	<u>Rate</u>
50	2%
55	6%
60	15%
62	25%
65	35%
70	100%

# **ACTUARIAL ASSUMPTIONS AND METHODS (continued)**

Interest Rate: 8.0% per annum, net of investment expenses

Salary Scale: 5.0% per annum

Payroll Growth: 4.0% per annum

**Inflation:** 3.0% per annum

Increase in Section 415 Maximum Pension and Section 401(a)(17) Limit

**on Compensation:** 3.0% per annum

**Spouse Assumptions:** 85% of members were married at time of death. It is

assumed that males are, on average, three years older than

their spouse.

**Interest on Member Contributions:** 5.5% per annum

Cost Method: Individual Entry Age Normal Actuarial Cost Method. This

method was adopted in 2007 and first effective for the

January 1, 2007 valuation.

#### **Liability for Vested Inactive Non Retired Members:**

No data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive nonretired members is approximated as (a) 195% of accumulated member contribution balances for benefits valued with a 3% COLA, and (b) 160% of accumulated member contribution balances for benefits valued with no (0%) COLA. This assumption was effective for the January 1, 2005 valuation.

#### **Actuarial Value of Assets:**

Adjusted market value that immediately recognizes interest and dividends. The procedure recognizes 20% of each plan year's total appreciation (depreciation) in excess of the expected return on a market value basis beginning with the year of occurrence. After five years, the appreciation (depreciation) is fully recognized. If the adjusted market value is less than 80% of market value, or more than 120%, an adjustment will be made to bring it within that range. This method was effective for the January 1, 2001 valuation.

#### **Administrative Expenses:**

Annual administrative expenses are assumed to increase 5% per year. Expenses for the valuation year are projected at this rate based on the prior two years' average adjusted expenses.



# **ACTUARIAL ASSUMPTIONS AND METHODS (continued)**

## **Cost-of-Living Adjustments:**

It is assumed that the maximum 3.0% COLA will be awarded every year. In addition, results are presented assuming no future COLAs are granted. Whenever the maximum COLA cannot be provided, we include the COLA level that can be provided on an actuarially sound basis.

### **Benefit Commencement Age:**

It is assumed that members who terminate with a vested deferred benefit will commence payment at age 60.

#### **Amortization Method:**

The unfunded liability is amortized over an open period of 30 years as a level percentage of payroll assumed to increase 4% per year. This methodology was adopted effective January 1, 2005.

# **CHANGE IN PLAN PROVISIONS**

There have been no changes to System provisions since the previous valuation.

#### **SUMMARY OF PLAN PROVISIONS**

Following are the major benefit provisions of the State of Wyoming Retirement System. This summary is not intended to be a complete statement of all provisions of the Retirement System.

#### 1. Service Retirement

Eligibility Members may retire from active service at age 60 with at least four years of service or a combined age plus service of 85 or more points and receive full benefits. Members may take early retirement at age 50 with at least four years of service, or any age with at least 25 years of service, with benefits reduced by 5.0% per year for retirement prior to 60.

Benefit Calculated in two parts, (A) plus (B)

- A. **Pre-1975 Benefits.** The larger of the monthly benefits calculated under the following two formulas (1) and (2):
  - 1. The amount of employee and matching employer contributions, with interest (currently 5.5%), is used to *purchase* an annuity based upon a unisex actuarial factor. The monthly benefit thus obtained is increased as approved by the 1967, 1973 and 1975 legislature as follows:
  - 1967 increase -- 25% (but not more than \$25 per month)
  - 1973 increase -- 40%
  - 1975 increase -- 20%
  - 2. Calculate pre-1975 benefits as 2.125% of the average earnings for the three highest years of service, times years of service prior to July 1, 1975, for the first 15 years of service credit, plus 2.25% of the average earnings for the three highest years of service for any years of service credit exceeding 15 years. This amount is reduced by 5.0% per year for retirement prior to age 60. However, members retiring with a combined age and service of 85 receive an unreduced benefit prior to age 60.
- B. **Post-1975 Benefits.** The larger of the monthly benefits calculated under the following two formulas (1) and (2):
  - 1. The same formula as for 1953-1975 benefits, except that the 20% increase does not apply.



2. 2.125% of the average earnings for the three highest years of service, times years of service after July 1, 1975, for the first 15 years of service credit, plus 2.25% of the average earnings for the three highest years of service for any years of service credit exceeding 15 years. This amount is reduced by 5.0% per year for retirement prior to age 60. However, members retiring with a combined age and service of 85 receive an unreduced benefit prior to age 60.

**NOTE:** Employees hired on and after July 1, 1981 will only be entitled to the benefit described under B.2. above.

#### 2. Options

- Option 1 Monthly benefit for life, with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total monthly benefits received. A choice of any option other than Option 1 changes the monthly benefit payable.
- Option 2 Monthly benefit for life, with 100% of the benefit continuing for the life of the beneficiary.
- Option 3 Monthly benefit for life, with 50% of the benefit continuing for the life of the beneficiary.
- Option 4 Monthly benefit for life, with a guarantee of 120 monthly payments.
- Option 5 Monthly benefit for life, with no death benefit. The choice of this option increases the monthly benefit slightly.
- Option 6 Monthly benefit for life, with 100% of the benefit continuing for the life of the beneficiary.

  Benefit reverts to Option 1 amount but without cash refund feature at beneficiary's death.
- Option 7 Monthly benefit for life, with 50% of the benefit continuing for the life of the beneficiary.

  Benefit reverts to Option 1 amount but without cash refund feature at beneficiary's death.

### 3. Disability Retirement

- Eligibility Disability prior to age 60, after 10 or more years of service.
- Benefit 100% of the service retirement benefit, calculated using Option 1 as if the employee were 60 years of age and service as of date of disability.



## 4. Vesting

An employee who terminates after at least 48 months of service can elect either to leave his contributions in the Retirement System and receive a service retirement benefit as described above, or to receive a lump-sum return of his contributions (including employer subsidies) with interest. An employee who terminates with less than 48 months of service is eligible only for the lump-sum benefit.

#### 5. Preretirement Death Benefit

The beneficiary of a vested employee can elect either to receive a monthly benefit based on the beneficiary's age and the calculation method described above for service retirement, or to receive a lump-sum payment of two times the employee contributions, with interest. The beneficiary of an employee who dies prior to achieving vested status is eligible for the lump-sum benefit only.

#### 6. Contributions

Currently 5.57% of salary by employee and 5.68% of salary by employer. The employer may subsidize all or part of the employee contributions. Interest is currently being credited at the rate of 5.50% on accumulated contributions.

#### 7. Ad Hoc Benefit Increases to Retirees

Ad hoc adjustments have been made to benefit payments. The most recent one was effective July 2001, for all retirees and beneficiaries. This increased pensions by \$3 monthly per year of service.

#### 8. Cost-of-Living Improvements

Benefits will increase by the lesser of 3.0% per year, or the increase in the Consumer Price Index. The Board may elect not to grant the full cost-of-living increase in any given year if the System's actuary determines such increases would not be actuarially sound. If the increase in the CPI exceeds the actual COLA granted in any year, the excess increase will be set aside and applied toward any future year in which the CPI increase is less than 3.0%. Cost-of-living adjustments are given on July 1 following the two-year anniversary of retirement. The first adjustments occurred in 1991.

The following table shows the historical adopted values since they have been calculated on a break-even basis beginning in 2004.

	Adopted
Year	Break-even COLA
2004	2.16%
2005	1.40%
2006	1.05%
2007	1.00%
2008	1.03% (recommended)

#### 9. Benefits Reflected in Valuation

All benefits were valued, including expected future cost-of-living increase.

