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EMPLOYEES'
RETIREMENT SYSTEM
OF GEORGIA

GEORGIA LEGISLATIVE RETIREMENT SYSTEM

**EXPERIENCE INVESTIGATION FOR THE
FIVE-YEAR PERIOD ENDING JUNE 30, 2009**





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

December 16, 2010

Board of Trustees,
Georgia Legislative Retirement System
Suite 400, Two Northside 75
Atlanta, GA 30318

Members of the Board:

We are pleased to submit the results of an investigation of the economic and demographic experience for the Georgia Legislative Retirement System. The purpose of the investigation was to assess the reasonability of the actuarial assumptions currently used by the Retirement System. This investigation covers the five-year period from July 1, 2004 to June 30, 2009.

This report shows a comparison of the actual and expected cases of separation from active service, and actual and expected number of deaths. A comparison between the rates of separation and mortality presently in use and the recommended revised rates are also shown in this report.

All new assumptions are shown in the attached tables in Appendix C of this report. In the actuary's judgment, the recommended assumptions are suitable for use until further experience indicates that modifications are desirable.

The experience investigation was performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement systems. The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

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TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
I	Executive Summary	1
II	Financial Impact	2
III	Economic Assumptions	3
IV	Demographic Assumptions	9
	Rates of Withdrawal	10
	Rates of Disability Retirement	12
	Rates of Retirement	12
	Rates of Mortality	13
V	Other Assumptions and Methods	14
<u>Appendix</u>		
A	Historical CPI (U) Index	15
B	Capital Market Assumptions and Asset Allocation	16
C	Recommended Rates	17



Section I Executive Summary

The following table summarizes the findings and recommendations with regard to the assumptions utilized for the Georgia Legislative Retirement System. Detailed explanations for the recommendations are found in the sections that follow.

Summary of Recommended Assumptions	
Economic Assumptions	
Investment Rate of Return	Composed of Inflation component and Real Rate of Return component.
Inflation	Recommend change to annual rate of inflation assumption from 3.75% to 3.00%.
Real Rate of Investment Return	Recommend 4.50% assumption resulting in no change to the 7.50% net investment return assumption.
Demographic Assumptions	
Withdrawal	Recommend change to current assumption.
Disability	Recommend no change to current assumption.
Retirement	Recommend no change to current assumption.
Mortality	Recommend change to current assumption.
Other Assumptions and Methods and Administrative Changes	
Administrative Expenses	Recommend change to current assumption.
Amortization Method	Recommend no change to current method.
Asset Smoothing	Recommend no change to current method.
Option Factors	Recommend change in current option factors to reflect change in mortality rate table.
All others	Recommend no change to other actuarial methods.



Section II Financial Impact

The following table highlights the impact of the recommended changes on the principal valuation results.

Impact on Principal Valuation Results		
	Valuation Results 2009	Recommended Assumptions*
Unfunded Accrued Liability	\$ (6,780,467)	\$ (5,805,242)
Funding Ratio	128.8%	123.7%
Employer Annual Required Contribution		
Normal	\$18,551	\$175,663
Accrued Liability	<u>\$(18,551)</u>	<u>\$(175,663)</u>
Total	\$0.00	\$0.00
Amortization Period (in years)	N/A**	N/A**

* Normal Cost includes estimated administrative expenses.

**The amortization period is infinite which means that the System would be expected to remain over 100% funded.



Section III Economic Assumptions

There are two economic assumptions used in the actuarial valuations performed for the System. They are:

- Price Inflation
- Investment Return

The Actuarial Standards Board has issued Actuarial Standard of Practice (ASOP) No. 27, “*Selection of Economic Assumptions for Measuring Pension Obligations*”, which provides guidance to actuaries in selecting economic assumptions for measuring obligations under defined benefit plans. As noted in ASOP No. 27, because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes based on a mixture of past experience and future expectations. These estimates therefore are best stated as a range utilizing the actuary’s professional judgment. In setting the range and the single point within that range to use, the actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period.

In our opinion, the economic assumptions recommended in this report have been developed in accordance with ASOP No. 27. The following table shows our recommendations followed by detailed discussions of each assumption.

Item	Current	Proposed
Price Inflation	3.75%	3.00%
Real Rate of Return	<u>3.75</u>	<u>4.50</u>
Investment Return	7.50%	7.50%



Price Inflation

Background: As can be seen from the table on the previous page, assumed price inflation is used as the basis for both the investment return assumption and the wage inflation assumption. These latter two assumptions will be discussed in detail in the following sections.

It is important that the price inflation assumption be consistently applied throughout the economic assumptions utilized in an actuarial valuation. This is called for in ASOP No. 27 and is also required to meet the parameters for determining pension liabilities and expense under Governmental Accounting Standards Board (GASB) Statements No. 25 and 27.

The current price inflation assumption is 3.75% per year.

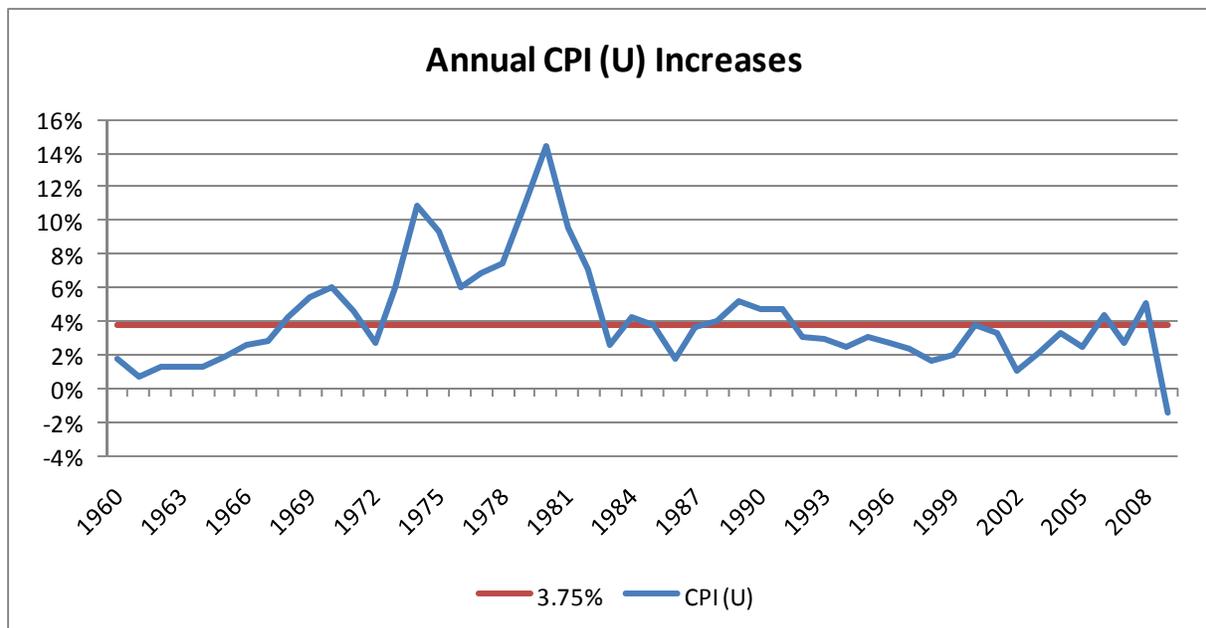
Past Experience: The Consumer Price Index, US City Average, All Urban Consumers, CPI (U), has been used as the basis for reviewing historical levels of price inflation. The level of that index in June of each of the last 50 years is provided in Appendix A.

In analyzing this data, annual rates of inflation have been determined by measuring the compound growth rate of the CPI (U) over various time periods. The results are as follows:

Period	Inflation
2000-2009	2.64%
1990-1999	2.96
1980-1989	5.55
1970-1979	7.04
1960-1969	2.32
1990-2009	2.80%
1980-2009	3.71
1970-2009	4.53
1960-2009	4.09



The graph below shows the annual increases in the CPI (U) over the entire 50 year period.



Recommendation: It is difficult to accurately predict inflation. Inflation’s short-term volatility is illustrated by comparing its average rate over the last 10, 30 and 50 years. Although the 10-year average of 2.6% is significantly lower than the System’s assumed rate of 3.75%, the longer 30, 40 and 50-year averages of 3.7%, 4.5% and 4.1% respectively, are at or slightly higher than the System’s rate. The validity of the System’s assumption is, therefore, dependent upon the emphasis one assigns to the short and long-terms.

Current economic forecasts suggest lower inflation but are generally looking at a shorter time period than appropriate for our purposes. In the 2009 OASDI Trustees Report, the Chief Actuary for Social Security bases the 75 year cost projections on an intermediate inflation assumption of 2.8% with a range of 1.8% to 3.8%. We concur in general with a range of 2.0% - 4.0%, and recommend use of a 3.00% per year rate recognizing the likely inflation pressures built into the economy at the current time.

Price Inflation Assumption	
Current	3.75%
Reasonable Range	2.00% - 4.00%
Recommended	3.00%



Investment Return

Background: The assumed investment return is one of the most significant assumptions in the annual actuarial valuation process as it is used to discount the expected benefit payments for all active, inactive and retired members of the System. Minor changes in this assumption can have a major impact on valuation results. The investment return assumption should reflect the asset allocation target for the funds set by the Board of Trustees.

The current assumption is 7.50%, consisting of a price inflation assumption of 3.75% and a real rate of return assumption of 3.75%. The return is net of all investment and administrative expenses.

Past Experience: The assets for the System are valued using a widely accepted asset-smoothing methodology that fully recognizes the expected investment income and also recognizes 1/7 of each year's investment gain or loss (the difference between actual and expected investment income). The recent experience over the last five years is shown in the table below.

Year Ending 6/30	Actuarial Value	Market Value
2005	6.7%	7.8%
2006	7.0	6.2
2007	7.8	14.7
2008	6.7	(3.5)
2009	3.2	(13.0)
Average	6.3%	2.4%

Because of the significant variability in past year-to-year results and the inter-play of inflation on those results in the short term, we prefer to base our investment return assumption on the capital market assumptions utilized by the Board in setting investment policy and the asset allocation established by the Board as a result of that policy. This approach is referred to as the building block method in ASOP No. 27.



Analysis: The current capital market assumptions and asset allocation are shown in Appendix B. Using stochastic projection results provides an expected range of real rates of return over a 50 year time horizon. Looking at one year results produces an expected real return of 5.85% but also has a high standard deviation or measurement of volatility. By expanding the time horizon, the average return does not change much but the volatility declines significantly. The following table provides a summary of results.

Time Span In Years	Mean Real Return	Standard Deviation	Real Returns by Percentile				
			5 th	25 th	50 th	75 th	95 th
1	6.81%	15.33%	-16.43%	-4.13%	5.85%	16.63%	33.54%
5	6.03%	6.73%	-4.44%	1.34%	5.81%	10.42%	17.65%
10	6.00%	4.73%	-1.50%	2.74%	5.90%	9.16%	13.97%
20	5.98%	3.32%	0.61%	3.61%	5.96%	8.17%	11.45%
30	5.95%	2.72%	1.55%	4.04%	5.95%	7.74%	10.43%
40	5.98%	2.33%	2.18%	4.38%	5.97%	7.53%	9.77%
50	5.98%	2.07%	2.66%	4.55%	5.95%	7.37%	9.43%

The percentile results are percentage of the 5,000 random results that produce returns over the time span shown of less than the amount indicated. Thus for the 10 year time span, 5% of the resulting real rates of return were below -1.50% and 95% were above that. As the time span increases, the results begin to merge. Over a 50 year time span, the results indicate there is a 25% chance that real returns will be below 4.55% and a 25% chance they will be above 7.37%. In other words there is a 50% chance the real returns will be between 4.55% and 7.37%.

Investment Expenses: There are currently no investment expenses allocated to the System. We recommend that a portion of the investment expenses incurred by the fund as a whole be allocated to this System. We would not expect the investment expense ratio long term to exceed 0.10% and are recommending that level in setting the net investment return assumption.



Recommendation: Using the building block approach of ASOP No. 27 and the projection results outlined above, we are recommending a range for the investment return assumption of the 25th to 75th percentile real returns over the 50 year time span plus the recommended inflation assumption less the recommended expense ratio. The following table details the range.

Item	25 th Percentile	50 th Percentile	75 th Percentile
Real Rate of Return	4.55%	5.95%	7.37%
Inflation	3.00	3.00	3.00
Expenses	<u>(0.10)</u>	<u>(0.10)</u>	<u>(0.10)</u>
Net Investment Return	7.45%	8.85%	10.27%

There is a 50% chance that the net return will be 8.85% or more over a 50-year period. A net return of 7.50% is at the 26th percentile. Although not in the center of the recommended range, in our opinion a return of 7.50% is conservative yet reasonable. We recommend that the long-term net investment return assumption remain at 7.50%.

Investment Return Assumption	
Current	7.50%
Reasonable Range	7.45% - 10.27%
Recommended	7.50%



Section IV Demographic Assumptions

There are several demographic assumptions used in the actuarial valuations performed for the Georgia Legislative Retirement System. They are:

- Rates of Withdrawal
- Rates of Disability Retirement
- Rates of Service Retirement
- Rate of Mortality

The Actuarial Standards Board has issued Actuarial Standard of Practice (ASOP) No. 35, “*Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*”, which provides guidance to actuaries in selecting demographic assumptions for measuring obligations under defined benefit plans. In our opinion, the demographic assumptions recommended in this report have been developed in accordance with ASOP No. 35.

The purpose of a study of demographic experience is to compare what actually happened to the membership during the study period (July 1, 2004, through June 30, 2009) with what was expected to happen based on the assumptions used in the most recent Actuarial Valuations.

Detailed tabulations by age, service and/or gender are performed over the entire study period. These tabulations look at all active and retired members during the period as well as separately annotating those who experience a demographic event, also referred to as a decrement. In addition the tabulation of all members together with the current assumptions permits the calculation of the number of expected decrements during the study period.

If the actual experience differs significantly from the overall expected results, or if the pattern of actual decrements, or rates of decrement, by age, gender, or service does not follow the expected pattern, new assumptions are recommended. Recommended changes usually do not follow the exact actual experience during the observation period. Judgment is required to extrapolate future experience from past trends and current member behavior. In addition non-recurring events, such as the layoffs and forced work hour reductions that occurred in 2009, need to be taken into account in determining the weight to give to recent experience.

The remainder of this section presents the results of the demographic study. We have prepared tables that show a comparison of the actual and expected decrements and the overall ratio of actual to expected results (A/E Ratios) under the current assumptions. If a change is being proposed, the revised A/E Ratios are shown as well. Salary adjustments, other than the economic assumption for wage inflation discussed in the previous section, are treated as demographic assumptions.

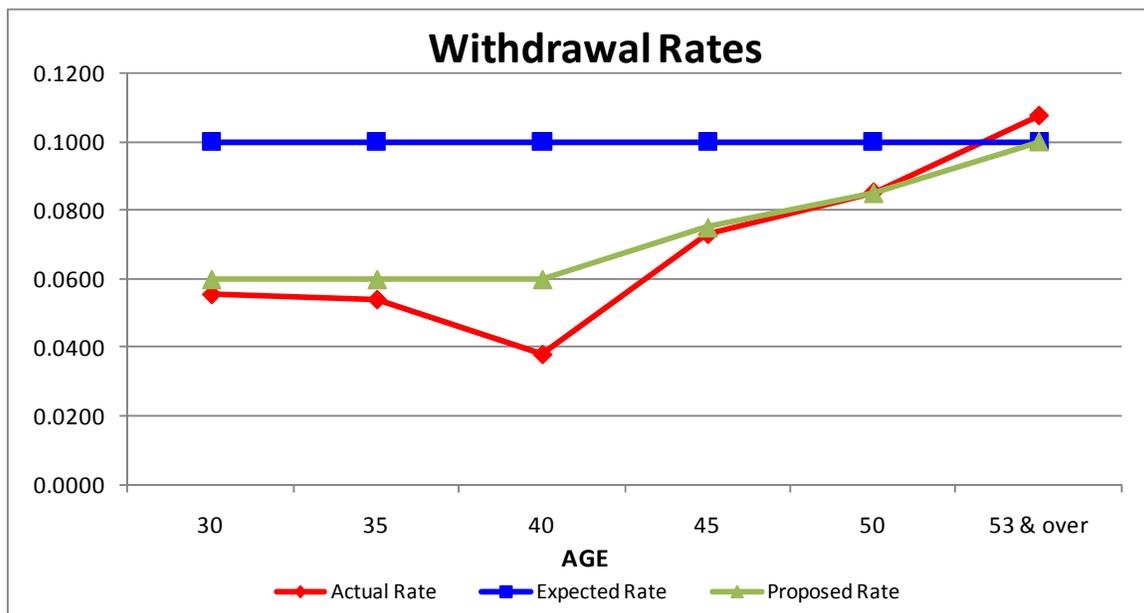


RATES OF WITHDRAWAL

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS FROM ACTIVE SERVICE

CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS		
	CURRENT RATES		
	Actual	Expected	Ratio of Actual to Expected
20	0	0.00	0.000
25	0	0.30	0.000
30	1	1.80	0.556
35	4	7.40	0.541
40	4	10.50	0.381
45	10	13.70	0.730
50	18	21.10	0.853
53 & over	37	34.40	1.076
TOTAL	74	89.20	0.830

The rates of withdrawal adopted by the Board are used to determine the expected number of separations from active service which will occur as a result of resignation or dismissal. The experience indicates that during the period studied, there were fewer withdrawals than expected at younger ages. We therefore recommend that we adjust the rates to partially reflect the experience. The following graph shows a comparison of the current expected, actual, and proposed rates of withdrawal for actives.





The charts below provide our recommended changes to this assumption and the resulting A/E (actual to expected) ratio.

COMPARATIVE RATES OF WITHDRAWAL

RATES OF WITHDRAWAL		
AGE	Present	Proposed
20	10.0%	6.0%
25	10.0%	6.0%
30	10.0%	6.0%
35	10.0%	6.0%
40	10.0%	6.0%
45	10.0%	7.5%
50	10.0%	8.5%
55	10.0%	10.0%
60	10.0%	0.0%
65+	10.0%	0.0%

COMPARISON OF ACTUAL AND EXPECTED WITHDRAWALS BASED ON PROPOSED RATES

CENTRAL AGE OF GROUP	NUMBER OF WITHDRAWALS		
	PROPOSED RATE		
	Actual	Expected	Ratio of
20	0	0.00	0.000
25	0	0.18	0.000
30	1	1.08	0.926
35	4	4.44	0.901
40	4	6.30	0.635
45	10	10.28	0.973
50	18	17.93	1.004
53 & over	37	34.50	1.072
TOTAL	74	74.71	0.990



RATES OF DISABILITY RETIREMENT

Since the Retirement System has minimal disability retirement experience, we recommend no change in the disability retirement rates at this time.

RATES OF RETIREMENT

COMPARISON OF ACTUAL AND EXPECTED RETIREMENTS

NUMBER OF SERVICE RETIREMENTS			
CENTRAL AGE OF GROUP	CURRENT RATES		
	Actual	Expected	Ratio of Actual to Expected
60	1	1.60	0.625
61	0	1.70	0.000
62	2	1.90	1.053
63	2	1.90	1.053
64	0	1.50	0.000
65	4	1.80	2.222
66	2	1.80	1.111
67	1	0.90	1.111
68	1	0.70	1.429
69	3	0.70	4.286
70	1	1.40	0.714
71	2	0.90	2.222
72	2	0.75	2.667
73	1	1.00	1.000
74	1	1.20	0.833
75+	4	13.00	0.308
TOTAL	27	32.75	0.824

The analysis of the experience reflects that the current assumed rates of retirement are reasonable overall. Due to the small sample size we recommend no change in the current assumption at this time. The following graphs show a comparison of the present and actual rates of service retirements.



RATES OF MORTALITY

Post-Retirement Mortality Rates

Since the Retirement System has minimal post-retirement mortality experience, we recommend that the rates of post-retirement mortality be revised to the same mortality tables used for the Employees' Retirement System of Georgia. The recommended table for service retirements and beneficiaries of deceased member is the RP-2000 Combined Morality Table. We recommend that the rates for disabled mortality be changed to the RP-2000 Disabled Mortality Table set back 11 years for males.

Pre-Retirement Mortality

Since the Retirement System has minimal pre-retirement mortality experience, we recommend that the rates of mortality in active service be changed to the same mortality table that is used for post-retirement mortality, which is the RP-2000 Combined Mortality Table.



Section V

Other Assumptions and Methods

ADMINISTRATIVE EXPENSES: There is currently no explicit assumption for administrative expenses. We recommend adding the budgeted expenses for the fiscal year to the normal cost.

AMORTIZATION METHOD: Currently the valuation uses a level dollar amortization method. We recommend no change to this method.

ASSETS: Currently the actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 1/7 of the difference between market value and expected actuarial value. We recommend maintaining the current smoothing method.

COST OF LIVING: Currently we assume cost of living increases of 1.5% semi-annually. We recommend maintaining this assumption.

OPTION FACTORS: The option factors currently used by the Retirement System are based on the mortality tables used in the valuation. We recommend that the factors be revised if the mortality table recommended for the valuation is adopted.

PERCENT MARRIED: Currently 90% of active members are assumed to be married with the male three years older than his spouse. We recommend maintaining this assumption.

VALUATION COST METHOD: Currently the valuation uses the entry age actuarial cost method. This is the most widely used cost method of large public sector plans and has demonstrated the highest degree of stability as compared to alternative methods. We recommend no change to this assumption.



APPENDIX A

Historical June CPI (U) Index

Year	CPI (U)	Year	CPI (U)
1959	29.10	1985	107.60
1960	29.60	1986	109.50
1961	29.80	1987	113.50
1962	30.20	1988	118.00
1963	30.60	1989	124.10
1964	31.00	1990	129.90
1965	31.60	1991	136.00
1966	32.40	1992	140.20
1967	33.30	1993	144.40
1968	34.70	1994	148.00
1969	36.60	1995	152.50
1970	38.80	1996	156.70
1971	40.60	1997	160.30
1972	41.70	1998	163.00
1973	44.20	1999	166.20
1974	49.00	2000	172.40
1975	53.60	2001	178.00
1976	56.80	2002	179.90
1977	60.70	2003	183.70
1978	65.20	2004	189.70
1979	72.30	2005	194.50
1980	82.70	2006	202.90
1981	90.60	2007	208.35
1982	97.00	2008	218.82
1983	99.50	2009	215.69
1984	103.70		



APPENDIX B

Capital Market Assumptions and Asset Allocation

Real Rates of Return and Standard Deviations by Asset Class

Asset Class	Expected Real Rate of Return	Standard Deviation
Fixed Income	6.0%	8.0%
US Large Stocks	9.5%	21.5%
US Mid Stocks	13.0%	24.5%
US Small Stocks	16.0%	34.0%
Int'l Developed Mkt Stocks	9.5%	22.5%
Int'l Emerging Mkt Stocks	14.0%	28.0%

Asset Class Correlation Coefficients

Asset Class	Fixed Income	US Large Stocks	US Mid Stocks	US Small Stocks	Int'l Dev Mkt Stocks	Int'l EM Mkt Stocks
Fixed Income	1.00					
US Large Stocks	0.20	1.00				
US Mid Stocks	0.20	0.90	1.00			
US Small Stocks	0.20	0.85	0.90	1.00		
Int'l Developed Mkt Stocks	0.15	0.70	0.60	0.60	1.00	
Int'l Emerging Mkt Stocks	0.15	0.55	0.60	0.60	0.65	1.00

Asset Allocation Targets

Asset Class	Asset Allocation
Fixed Income	30.0%
US Large Stocks	39.7%
US Mid Stocks	3.7%
US Small Stocks	1.6%
Int'l Developed Mkt Stocks	18.9%
Int'l Emerging Mkt Stocks	6.1%



APPENDIX C

TABLE 1 -RATES OF SEPARATION FROM ACTIVE SERVICE

AGE	RATES OF WITHDRAWAL	RATES OF DISABILITY	RATES OF DEATH		RATES OF SERVICE RETIREMENT
			MALES	FEMALES	
20	0.060	0.0010	0.000345	0.000191	
21	0.060	0.0010	0.000357	0.000192	
22	0.060	0.0010	0.000366	0.000194	
23	0.060	0.0010	0.000373	0.000197	
24	0.060	0.0010	0.000376	0.000201	
25	0.060	0.0010	0.000376	0.000207	
26	0.060	0.0020	0.000378	0.000214	
27	0.060	0.0020	0.000382	0.000223	
28	0.060	0.0020	0.000393	0.000235	
29	0.060	0.0020	0.000412	0.000248	
30	0.060	0.0020	0.000444	0.000264	
31	0.060	0.0020	0.000499	0.000307	
32	0.060	0.0020	0.000562	0.000350	
33	0.060	0.0020	0.000631	0.000394	
34	0.060	0.0030	0.000702	0.000435	
35	0.060	0.0030	0.000773	0.000475	
36	0.060	0.0030	0.000841	0.000514	
37	0.060	0.0030	0.000904	0.000554	
38	0.060	0.0040	0.000964	0.000598	
39	0.060	0.0040	0.001021	0.000648	
40	0.060	0.0040	0.001079	0.000706	
41	0.060	0.0040	0.001142	0.000774	
42	0.060	0.0050	0.001215	0.000852	
43	0.075	0.0060	0.001299	0.000937	
44	0.075	0.0060	0.001397	0.001029	
45	0.075	0.0070	0.001508	0.001124	
46	0.075	0.0070	0.001616	0.001223	
47	0.075	0.0080	0.001734	0.001326	
48	0.085	0.0090	0.001860	0.001434	
49	0.085	0.0100	0.001995	0.001550	
50	0.085	0.0100	0.002138	0.001676	
51	0.085	0.0110	0.002449	0.001852	
52	0.085	0.0120	0.002667	0.002018	
53	0.100	0.0140	0.002916	0.002207	
54	0.100	0.0160	0.003196	0.002424	
55	0.100	0.0180	0.003624	0.002717	
56	0.100	0.0200	0.004200	0.003090	
57	0.100	0.0220	0.004693	0.003478	
58	0.100	0.0240	0.005273	0.003923	
59	0.100	0.0260	0.005945	0.004441	
60	0.100	0.0290	0.006747	0.005055	0.1000
61	0.100	0.0320	0.007676	0.005814	0.1000
62	0.100	0.0350	0.008757	0.006657	0.1000
63	0.100	0.0390	0.010012	0.007648	0.1000
64	0.100	0.0430	0.011280	0.008619	0.1000
65	0.100	0.0000	0.012737	0.009706	0.1000
66	0.100	0.0000	0.014409	0.010954	0.1000
67	0.100	0.0000	0.016075	0.012163	0.1000
68	0.100	0.0000	0.017871	0.013445	0.1000
69	0.100	0.0000	0.019802	0.014860	0.1000
70	0.100	0.0000	0.022206	0.016742	0.3500
71	0.100	0.0000	0.024570	0.018579	0.1500
72	0.100	0.0000	0.027281	0.020665	0.1500
73	0.100	0.0000	0.030387	0.022970	0.2500
74	0.100	0.0000	0.033900	0.025458	0.4000
75	0.100	0.0000	0.037834	0.028106	1.0000



TABLE 2
RATES OF MORTALITY FOR MEMBERS RETIRED ON ACCOUNT OF SERVICE
AND BENEFICIARIES OF DECEASED MEMBERS

AGE	MALES	FEMALES	AGE	MALES	FEMALES
19	0.000331	0.000190	70	0.022206	0.016742
20	0.000345	0.000191	71	0.024570	0.018579
21	0.000357	0.000192	72	0.027281	0.020665
22	0.000366	0.000194	73	0.030387	0.022970
23	0.000373	0.000197	74	0.033900	0.025458
24	0.000376	0.000201	75	0.037834	0.028106
25	0.000376	0.000207	76	0.042169	0.030966
26	0.000378	0.000214	77	0.046906	0.034105
27	0.000382	0.000223	78	0.052123	0.037595
28	0.000393	0.000235	79	0.057927	0.041506
29	0.000412	0.000248	80	0.064368	0.045879
30	0.000444	0.000264	81	0.072041	0.050780
31	0.000499	0.000307	82	0.080486	0.056294
32	0.000562	0.000350	83	0.089718	0.062506
33	0.000631	0.000394	84	0.099779	0.069517
34	0.000702	0.000435	85	0.110757	0.077446
35	0.000773	0.000475	86	0.122797	0.086376
36	0.000841	0.000514	87	0.136043	0.096337
37	0.000904	0.000554	88	0.150590	0.107303
38	0.000964	0.000598	89	0.166420	0.119154
39	0.001021	0.000648	90	0.183408	0.131682
40	0.001079	0.000706	91	0.199769	0.144604
41	0.001142	0.000774	92	0.216605	0.157618
42	0.001215	0.000852	93	0.233662	0.170433
43	0.001299	0.000937	94	0.250693	0.182799
44	0.001397	0.001029	95	0.267491	0.194509
45	0.001508	0.001124	96	0.283905	0.205379
46	0.001616	0.001223	97	0.299852	0.215240
47	0.001734	0.001326	98	0.315296	0.223947
48	0.001860	0.001434	99	0.330207	0.231387
49	0.001995	0.001550	100	0.344556	0.237467
50	0.002138	0.001676	101	0.358628	0.244834
51	0.002449	0.001852	102	0.371685	0.254498
52	0.002667	0.002018	103	0.383040	0.266044
53	0.002916	0.002207	104	0.392003	0.279055
54	0.003196	0.002424	105	0.397886	0.293116
55	0.003624	0.002717	106	0.400000	0.307811
56	0.004200	0.003090	107	0.400000	0.322725
57	0.004693	0.003478	108	0.400000	0.337441
58	0.005273	0.003923	109	0.400000	0.351544
59	0.005945	0.004441	110	0.400000	0.364617
60	0.006747	0.005055	111	0.400000	0.376246
61	0.007676	0.005814	112	0.400000	0.386015
62	0.008757	0.006657	113	0.400000	0.393507
63	0.010012	0.007648	114	0.400000	0.398308
64	0.011280	0.008619	115	0.400000	0.400000
65	0.012737	0.009706	116	0.400000	0.400000
66	0.014409	0.010954	117	0.400000	0.400000
67	0.016075	0.012163	118	0.400000	0.400000
68	0.017871	0.013445	119	0.400000	0.400000
69	0.019802	0.014860	120	1.000000	1.000000



TABLE 3
RATES OF MORTALITY FOR MEMBERS RETIRED ON ACCOUNT OF DISABILITY

AGE	MALES	FEMALES	AGE	MALES	FEMALES
19	0.022571	0.007450	70	0.040668	0.037635
20	0.022571	0.007450	71	0.042042	0.040140
21	0.022571	0.007450	72	0.043474	0.042851
22	0.022571	0.007450	73	0.044981	0.045769
23	0.022571	0.007450	74	0.046584	0.048895
24	0.022571	0.007450	75	0.048307	0.052230
25	0.022571	0.007450	76	0.050174	0.055777
26	0.022571	0.007450	77	0.052213	0.059545
27	0.022571	0.007450	78	0.054450	0.063545
28	0.022571	0.007450	79	0.056909	0.067793
29	0.022571	0.007450	80	0.059613	0.072312
30	0.022571	0.007450	81	0.062583	0.077135
31	0.022571	0.007450	82	0.065841	0.082298
32	0.022571	0.007450	83	0.069405	0.087838
33	0.022571	0.007450	84	0.073292	0.093794
34	0.022571	0.007450	85	0.077512	0.100203
35	0.022571	0.007450	86	0.082067	0.107099
36	0.022571	0.007450	87	0.086951	0.114512
37	0.022571	0.007450	88	0.092149	0.122464
38	0.022571	0.007450	89	0.097640	0.130972
39	0.022571	0.007450	90	0.103392	0.140049
40	0.022571	0.007450	91	0.109372	0.149698
41	0.022571	0.007450	92	0.115544	0.159924
42	0.022571	0.007450	93	0.121877	0.170433
43	0.022571	0.007450	94	0.128343	0.182799
44	0.022571	0.007450	95	0.134923	0.194509
45	0.022571	0.007450	96	0.141603	0.205379
46	0.022571	0.008184	97	0.148374	0.215240
47	0.022571	0.008959	98	0.155235	0.223947
48	0.022571	0.009775	99	0.162186	0.231387
49	0.022571	0.010634	100	0.169233	0.237467
50	0.022571	0.011535	101	0.183408	0.244834
51	0.022571	0.012477	102	0.199769	0.254498
52	0.022571	0.013456	103	0.216605	0.266044
53	0.022571	0.014465	104	0.233662	0.279055
54	0.022571	0.015497	105	0.250693	0.293116
55	0.022571	0.016544	106	0.267491	0.307811
56	0.022571	0.017598	107	0.283905	0.322725
57	0.023847	0.018654	108	0.299852	0.337441
58	0.025124	0.019710	109	0.315296	0.351544
59	0.026404	0.020768	110	0.330207	0.364617
60	0.027687	0.021839	111	0.344556	0.376246
61	0.028975	0.022936	112	0.358628	0.386015
62	0.030268	0.024080	113	0.371685	0.393507
63	0.031563	0.025293	114	0.383040	0.398308
64	0.032859	0.026600	115	0.392003	0.400000
65	0.034152	0.028026	116	0.397886	0.400000
66	0.035442	0.029594	117	0.400000	0.400000
67	0.036732	0.031325	118	0.400000	0.400000
68	0.038026	0.033234	119	0.400000	0.400000
69	0.039334	0.035335	120	1.000000	1.000000