

The Police and Firemen's Retirement System of New Jersey Report on an Investigation of Experience

Prepared as of June 30, 2013



©2014 Xerox Corporation and Buck Consultants, LLC. All rights reserved. Xerox® and Xerox and Design® are trademarks of Xerox Corporation in the United States and/or other countries. Buck Consultants® is a registered trademark of Buck Consultants, LLC in the United States and/or other countries. BRXXXX.

Other company trademarks are also acknowledged.

Document Version: 1.0 (July 2014).



David L. Driscoll

Principal, Consulting Actuary

Aaron Shapiro

Principal, Consulting Actuary

aaron.shapiro@xerox.com

Buck Consultants, LLC.

500 Plaza Drive

Secaucus, NJ 07096-1533

Tel 201.902.2300

Fax 201.553.6402

January 30, 2015

Board of Trustees
The Police and Firemen's Retirement System
of New Jersey
Trenton, New Jersey

Ladies and Gentlemen:

This year, an actuarial investigation of the mortality, service and compensation experience of the members and beneficiaries of the retirement system was made in accordance with the provisions of Section 13, Subsection (13) of Chapter 255, P.L. 1944 and amended by Chapter 157, P.L. 1972 of the New Jersey Statutes. This subsection specifies that such an investigation shall be made once in every three-year period. The results of this investigation are described in detail in the attached report.

Buck performed the experience review based on data supplied by the State of New Jersey Division of Pensions and Benefits. Buck Consultants did not audit the data, although it was reviewed for reasonableness and consistency with prior data. The accuracy of the results of this review are dependent on the accuracy of the data.

The assumptions recommended in this report are proposed for use in valuing the pension benefits for members in the Police and Firemen's Retirement System. Use of these assumptions for any other purpose may not be appropriate. No one may make any representations or guarantees based on any statements or conclusions contained in this report without the written consent of Buck Consultants.

To the best of our knowledge, this experience investigation report is complete and accurate. Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

This report was prepared under our supervision. We are both Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We meet the Academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice and we are available to answer questions about it.

We are available at the Board's convenience to discuss this report.

Respectfully submitted,

David L. Driscoll, FSA, EA, MAAA
Principal, Consulting Actuary

Aaron Shapiro, FSA, EA, MAAA
Principal, Consulting Actuary

Table of Contents

Section	Item	Page No.
I	Introduction	1
II	Examination of Experience	2
III	Comments and General Recommendation of the Actuary	3
IV	Summary of Proposed Assumptions	28
V	Cost Impact of the Proposed Assumptions	29
Appendix A	Comparison of Actual, Current and Proposed Rates of Separation and Mortality	30
Appendix B	Complete Set of Proposed Assumptions	43

Report on an Investigation of The Experience of The Police and Firemen's Retirement System of New Jersey

Prepared as of June 30, 2013

I. Introduction

Section 13, Subsection (13) of Chapter 255, P.L. 1944, as amended by Chapter 157, P.L. 1972 of the New Jersey Statutes provides that once in every three-year period the actuary shall examine in detail the mortality, service and compensation experience of the members and beneficiaries of the Retirement System. This investigation is designed to ensure that the tables used for determining expected liabilities of the Retirement System are consistent with recent experience. If tables are not updated periodically, the resulting contributions may either be too large or too small to fund the actual accruing liabilities.

This report was prepared in accordance with applicable Actuarial Standards of Practice (ASOP). The Standards of Practice provide guidance to actuaries in selecting various actuarial assumptions for measuring obligations under defined benefit plans.

This report summarizes the Retirement System experience for the period from July 1, 2010 through June 30, 2013. Experience for State employees and for employees of the various Municipalities & Local Groups participating in the System were examined in total. Please note that, in instances where the data being examined appeared inconsistent with prior results or incomplete, we made no current recommendation. These items will be reviewed closely when the next scheduled experience study is prepared as of June 30, 2016 and proposed changes, if warranted, will be recommended at that time.

In reviewing the Salary experience we examined the period July 1, 2010 through June 30, 2014 in light of recent legislation limiting overall budgetary increases. We did not deem it necessary to consider this additional year of experience for the other assumptions contained in the valuation which would not be significantly impacted by the this legislation. All recommendations contained in this report are consistent with each other, as appropriate.

II. Examination of Experience

Although this study covers the period from July 1, 2010 to June 30, 2013, it will also make reference to the results from prior studies, where appropriate.

The experience among active members, retired members and beneficiaries has been compared with the experience expected according to the active service tables and retirement tables adopted by the Board of Trustees as a result of the July 1, 2007 - June 30, 2010 experience study.

In the case of withdrawals, since the Board has adopted select rates of withdrawal, the data for employees with less than two years of service, exactly two years of service, exactly three years of service, exactly four years of service, five to nine years of service and ten or more years of service were tabulated separately. Similarly, rates of retirement were tabulated separately for employees with less than 21 years of service, 21 to 24 years of service, exactly 25 years of service and 26 or more years of service. However, in investigating the experience with respect to death and disability, the employees were treated in one group. The expected number of separations from service on account of withdrawal, death, disability and service retirement was calculated by multiplying the rates of separation used as a basis for the active service tables by the number of those exposed to risk. Similarly, the expected number of deaths among service retirees, beneficiaries of deceased members and disability retirees was calculated by multiplying the rate of mortality used as a basis for the inactive tables by the number exposed to risk. The actual number was then compared with the expected number. The tables shown in Section III present the results of these comparisons. If the ratio of actual to expected is 1.000, the tables have exactly predicted what actually occurred. If the ratio of actual to expected is greater than 1.000, then the tables have underestimated actual experience. If the ratio is less than 1.000, then the tables have overstated actual experience.

Finally, the expected salaries of those members who remain in service from year to year were obtained and these expected salaries were compared with the actual salaries. Again, a ratio of actual to expected of 1.000 would indicate that actual salary increases were identical to anticipated increases while a ratio greater than 1.000 indicates that salaries have increased faster than anticipated and a ratio less than 1.000 indicates that salaries have increased more slowly than anticipated.

III. Comments and General Recommendation of the Actuary

The following presents the tabular results of the experience data studied, a discussion of the results and our recommendation.

The tables present a summary of the number of exposures, actual and expected experience and the ratios of actual to expected experience. In addition, we have prepared graphs that illustrate the actual current and proposed (if applicable) rates for each assumption. Please note that the experience for certain assumptions, such as accidental death that has a large exposed population and a rather small incidence, does not graph well because of the relative number of members.

A. Active Plan Experience

The first portion of this section contains a summary of active plan experience, which examines the following rates:

- a. Non-Vested Withdrawal Rates
- b. Vested Withdrawal Rates
- c. Ordinary Disability Rates
- d. Accidental Disability Rates
- e. Service Retirement Rates
- f. Salary Increase Rates

a. Non-Vested Withdrawal Rates

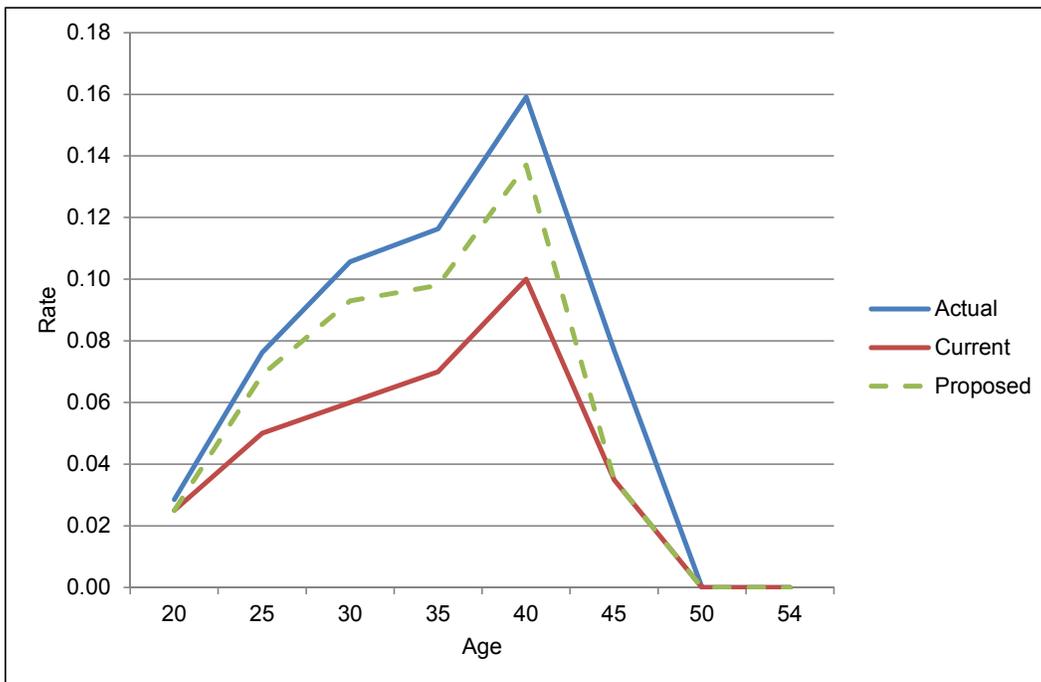
1. Less than two years of service

The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations of non-vested withdrawals with less than two years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	105	3	2.63	2.63	1.141	1.141
25	1,549	118	77.45	106.88	1.524	1.104
30	1,022	108	61.32	95.05	1.761	1.136
35	447	52	31.29	43.81	1.662	1.187
40	88	14	8.80	12.06	1.591	1.161
45	26	2	0.92	0.92	2.174	2.174
50	0	0	0.00	0.00	0.000	0.000
54	0	0	0.00	0.00	0.000	0.000
Total	3,237	297	182.41	261.35	1.628	1.136

Recommendation: Increase rates for ages 25 to 40.

Actual withdrawals were about 63% higher than those expected. This has been the trend during the prior five studies in which the actual rates of withdrawal were greater than assumed. Therefore, we propose a further increase in the assumed rates of withdrawal in this category at ages 25 through 40 to more closely reflect this eighteen-year trend.



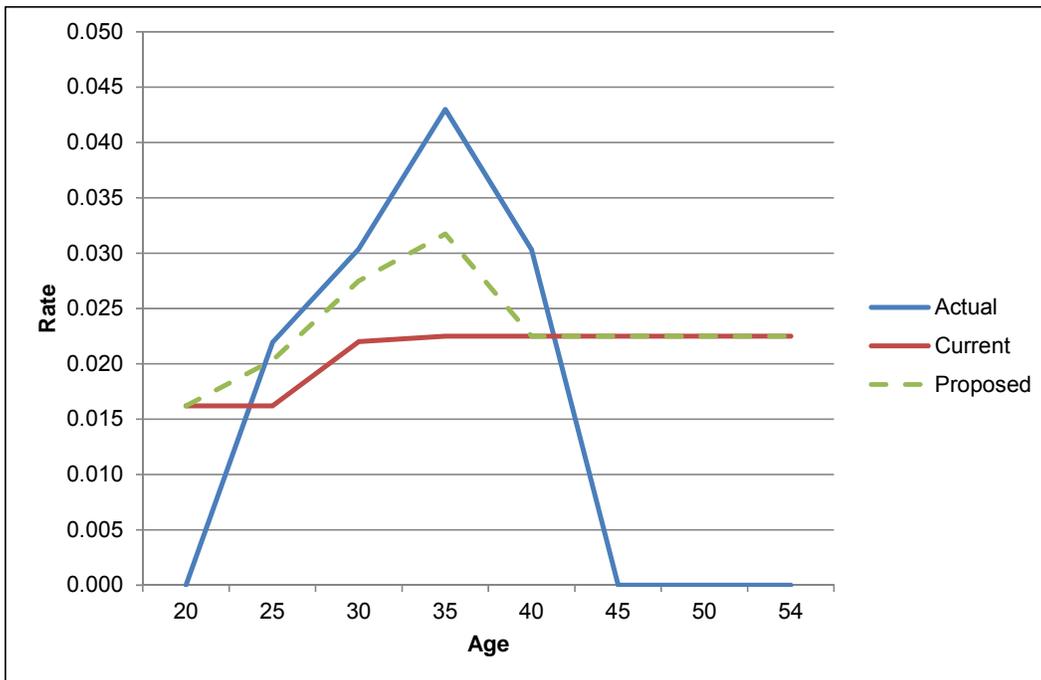
2. Two years of service

The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations of non-vested withdrawals with two years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	26	0	0.42	0.42	0.000	0.000
25	1,322	29	21.42	26.84	1.354	1.080
30	1,053	32	23.17	28.96	1.381	1.105
35	442	19	9.95	14.02	1.910	1.355
40	99	3	2.23	2.23	1.345	1.345
45	5	0	0.11	0.11	0.000	0.000
50	1	0	0.02	0.02	0.000	0.000
54	2	1	0.04	0.04	25.000	25.000
Total	2,950	84	57.36	72.64	1.464	1.156

Recommendation: Increase rates for ages 25 to 35.

The total number of actual terminations was about 46% higher than those expected, mainly at the earlier ages. Therefore, we propose an increase in the assumed rates of withdrawal in this category at ages 25 through 35.



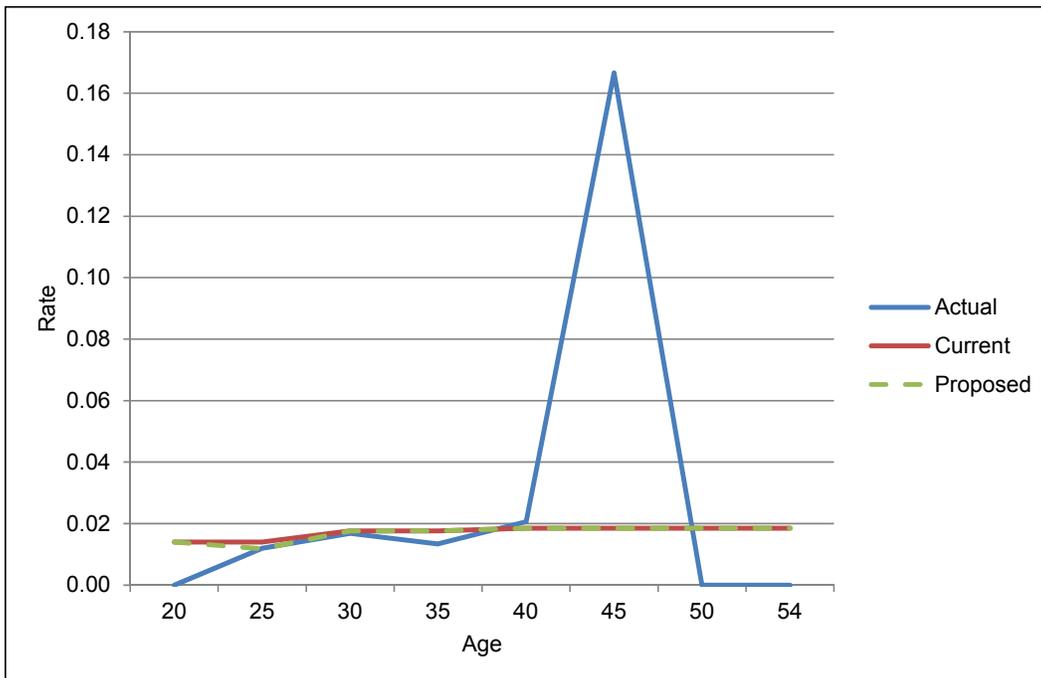
3. Three years of service

The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations of non-vested withdrawals with three years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	13	0	0.18	0.18	0.000	0.000
25	1,342	16	18.78	15.84	0.852	1.010
30	1,609	27	28.32	28.32	0.953	0.953
35	673	9	11.84	11.84	0.760	0.760
40	243	5	4.50	4.50	1.111	1.111
45	6	1	0.11	0.11	9.091	9.091
50	5	0	0.10	0.10	0.000	0.000
54	1	0	0.02	0.02	0.000	0.000
Total	3,892	58	63.85	60.91	0.908	0.952

Recommendation: Decrease rate for age 25.

Actual terminations are about 9% less than that expected, specifically at age 25. This is a continuation of a trend identified during the three previous studies. We are proposing a further decrease in the assumed rate at age 25.



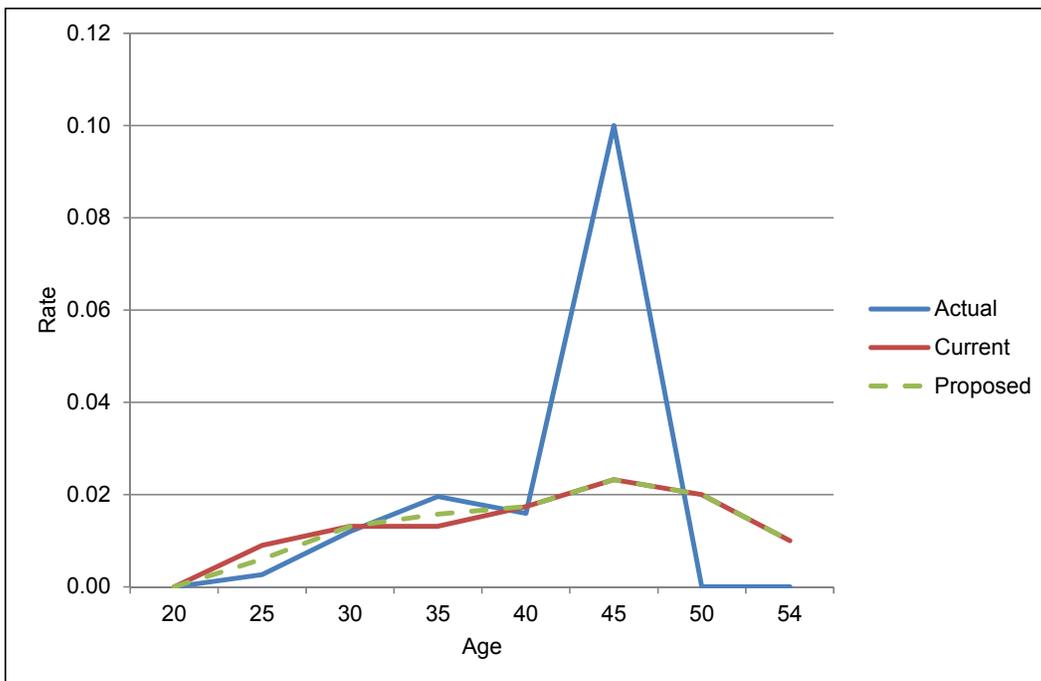
4. Four years of service

The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations of non-vested withdrawals with four years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	0	0	0.00	0.00	0.000	0.000
25	1,133	3	10.20	6.80	0.294	0.441
30	2,083	25	27.28	27.28	0.916	0.916
35	1,022	20	13.38	16.07	1.495	1.245
40	440	7	7.66	7.66	0.914	0.914
45	20	2	0.47	0.47	4.255	4.255
50	6	0	0.12	0.12	0.000	0.000
54	1	0	0.01	0.01	0.000	0.000
Total	4,705	57	59.12	58.41	0.964	0.976

Recommendation: Decrease rate for age 25 and increase the rate for age 35.

Actual terminations have been about 4% less than expected and are within an acceptable range of those expected. However, actual terminations at age 25 are about 71% less than those expected, while actual terminations at age 35 are about 50% more than expected. We recommend a decrease of the rate at age 25 and an increase of the rate at age 35 to better reflect the experience during these ages while keeping the overall ratio of actual terminations to the expected number of terminations generally the same.



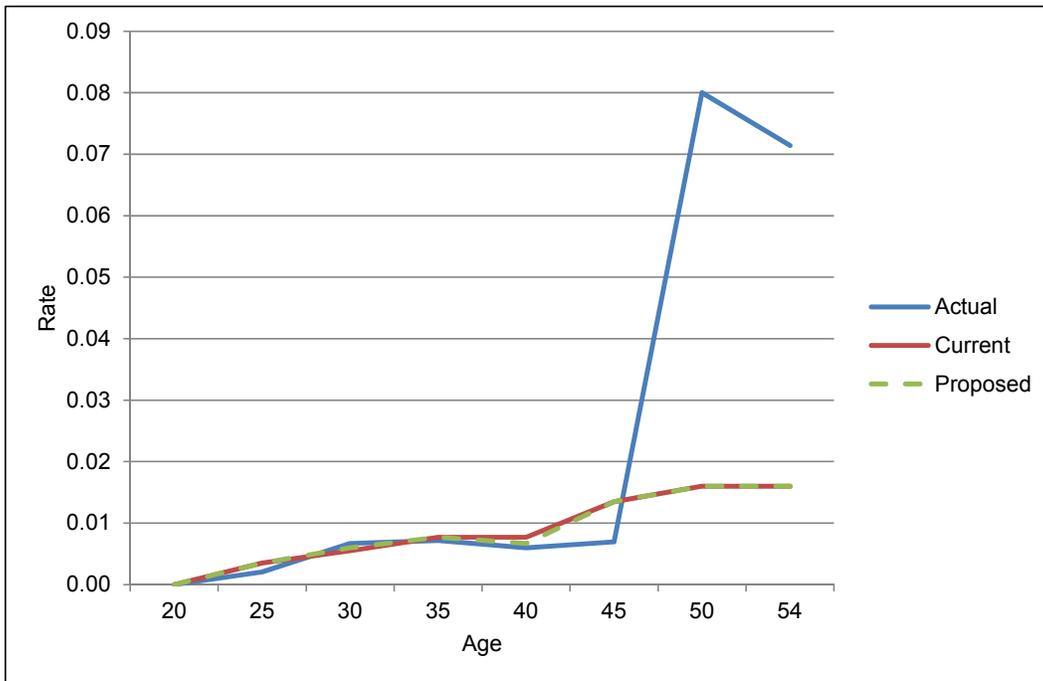
5. Five to nine years of service

The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations of non-vested withdrawals with five to nine years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	0	0	0.00	0.00	0.000	0.000
25	1,448	3	5.06	5.06	0.593	0.593
30	10,309	69	56.69	61.85	1.217	1.116
35	8,072	58	62.16	62.16	0.933	0.933
40	4,508	27	34.71	30.20	0.778	0.894
45	1,005	7	13.57	13.57	0.516	0.516
50	50	4	0.80	0.80	5.000	5.000
54	11	0	0.17	0.17	0.000	0.000
Total	25,403	168	173.16	173.81	0.970	0.967

Recommendation: Increase rate for age 30 and decrease the rate for age 40.

Actual terminations were about 3% less than expected and are within an acceptable range of those expected. However, actual terminations at age 30 are about 22% more than those expected, while actual terminations at age 40 were about 22% less than expected. We recommend an increase of the rate at age 30 and a decrease of the rate at age 40 to better reflect the experience during these ages while keeping the overall ratio of actual terminations to the expected number of terminations generally the same.



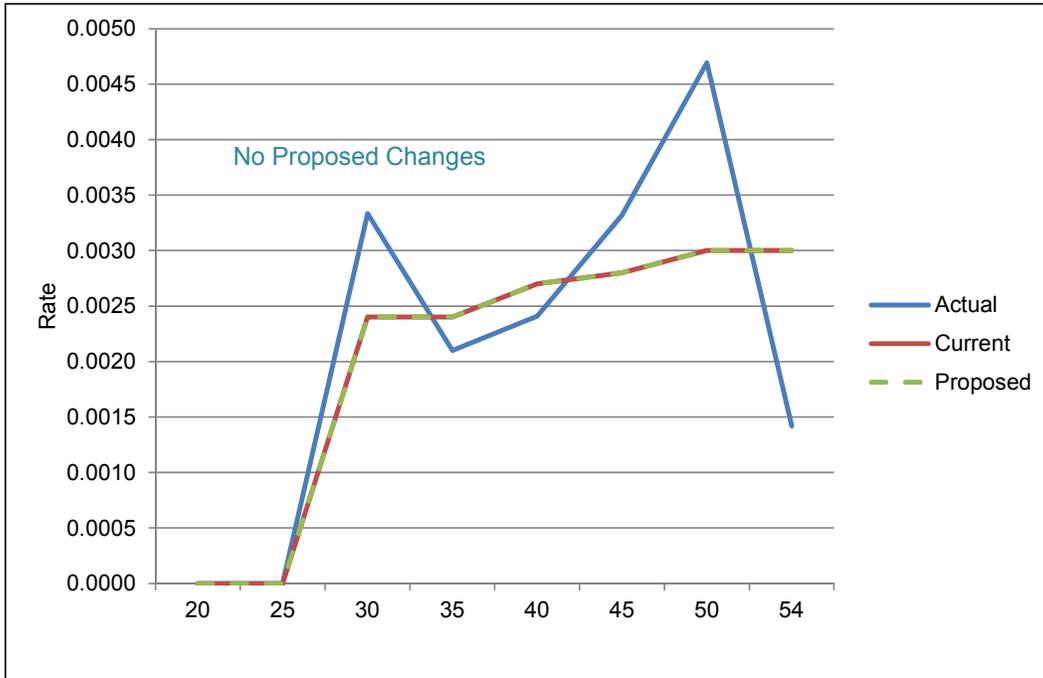
b. Vested Withdrawal Rates

The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations of vested withdrawals with ten or more years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	0	0	0.00	0.00	0.000	0.000
25	2	0	0.00	0.00	0.000	0.000
30	1,800	6	4.33	4.33	1.386	1.386
35	11,436	24	27.45	27.45	0.874	0.874
40	20,758	50	56.04	56.04	0.892	0.892
45	12,653	42	35.43	35.43	1.185	1.185
50	4,263	20	12.79	12.79	1.564	1.564
54	704	2	2.10	2.10	0.952	0.952
Total	51,616	144	138.14	138.14	1.042	1.042

Recommendation: No change.

Actual terminations were about 4% more than expected. In total, this is a reversal from the trend identified in the prior study, in which actual terminations were found to be less than expected. However, this is within an acceptable range of expected experience, and their incidence is quite small in relation to the total number of members who were exposed. We recommend no change to these rates at this time.



c. Ordinary Disability Rates

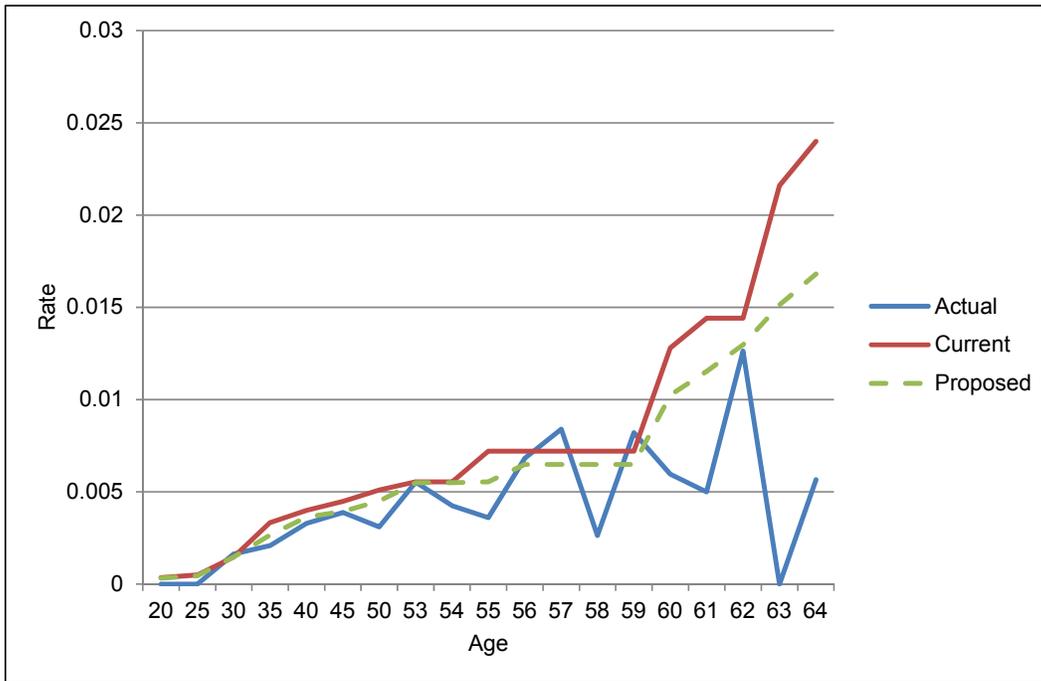
The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations due to ordinary disability.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	144	0	0.05	0.05	0.000	0.000
25	6,796	0	3.40	3.06	0.000	0.000
30	17,876	29	26.78	26.78	1.083	1.083
35	22,094	46	73.75	58.55	0.624	0.786
40	28,580	94	114.53	103.46	0.821	0.909
45	26,021	101	116.28	102.52	0.869	0.985
50	15,220	47	76.77	68.34	0.612	0.688
53	1,994	11	11.05	10.97	0.995	1.003
54	1,651	7	9.15	9.08	0.765	0.771
55	1,393	5	10.03	7.72	0.499	0.648
56	1,173	8	8.45	7.60	0.947	1.053
57	953	8	6.86	6.18	1.166	1.294
58	760	2	5.47	4.92	0.366	0.407
59	610	5	4.39	3.95	1.139	1.266
60	504	3	6.45	5.16	0.465	0.581
61	400	2	5.76	4.61	0.347	0.434
62	317	4	4.56	4.11	0.877	0.973
63	227	0	4.91	3.43	0.000	0.000
64	177	1	4.25	2.97	0.235	0.337
Total	126,890	373	492.89	433.46	0.757	0.861

Recommendation: Decrease rates at all ages, except age 30.

The data for termination due to ordinary disability indicates that the number of actual disabilities was about 24% lower than that expected during the measurement period. This result is consistent with the results of the prior study, in which a significant reversal of the trend for disability retirements was first recognized. As in the prior study, we note that this continued decrease in ordinary disability retirements is caused by the liberalization of the conditions for receiving an accidental disability pension due to the New Jersey Supreme Court ruling in the *Richardson v. Board of Trustees*. Therefore, except at age 30, we are recommending a further decrease in the assumed rates of ordinary disability.

c. Ordinary Disability Rates (cont'd)



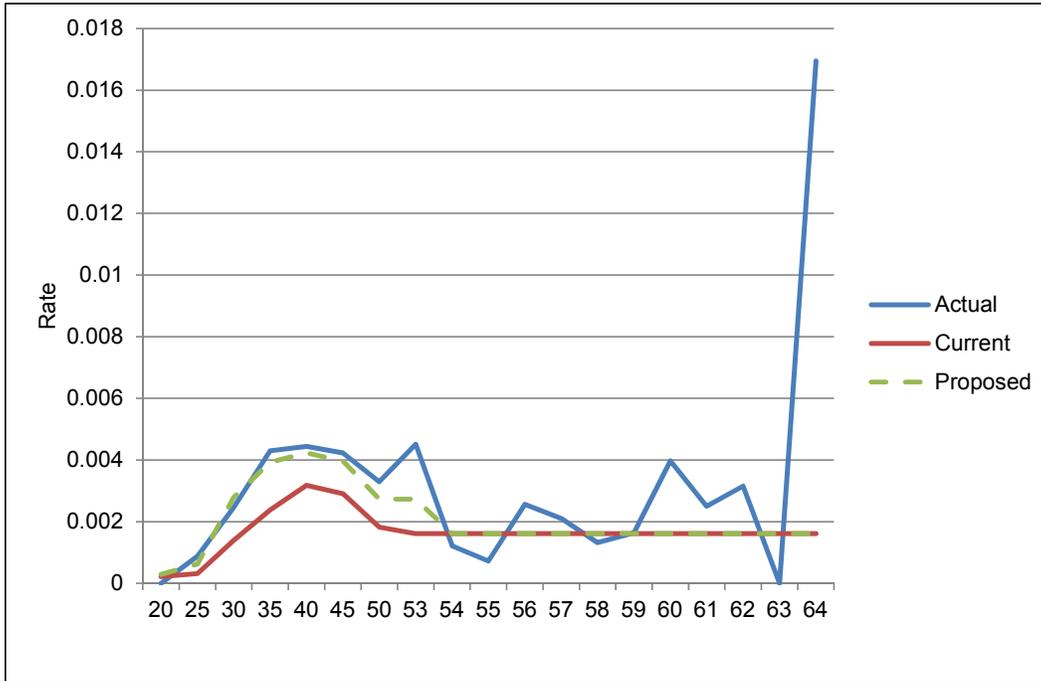
d. Accidental Disability Rates

The following table presents a summary of the number of exposures, actual and expected terminations and the ratios of actual to expected terminations due to accidental disability.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	144	0	0.03	0.04	0.000	0.000
25	6,796	6	2.22	4.21	2.703	1.425
30	17,876	44	25.49	49.70	1.726	0.885
35	22,094	95	52.70	86.83	1.803	1.094
40	28,580	127	91.57	120.89	1.387	1.051
45	26,021	110	76.83	103.04	1.432	1.068
50	15,220	50	27.96	41.55	1.788	1.203
53	1,994	9	3.21	5.44	2.804	1.654
54	1,651	2	2.66	2.66	0.752	0.752
55	1,393	1	2.24	2.24	0.446	0.446
56	1,173	3	1.89	1.89	1.587	1.587
57	953	2	1.53	1.53	1.307	1.307
58	760	1	1.22	1.22	0.820	0.820
59	610	1	0.99	0.99	1.010	1.010
60	504	2	0.81	0.81	2.469	2.469
61	400	1	0.65	0.65	1.538	1.538
62	317	1	0.51	0.51	1.961	1.961
63	227	0	0.37	0.37	0.000	0.000
64	177	3	0.28	0.28	10.714	10.714
Total	126,890	458	293.16	424.85	1.562	1.078

Recommendation: Increase for ages 20 through 53.

The data for accidental disabilities indicates that the number of actual disabilities was about 56% greater than that expected during the measurement period. The increase in actual accidental disability retirements is expected due to liberalization of the conditions for receiving an accidental disability pension due to the New Jersey Supreme Court ruling in the *Richardson v. Board of Trustees*. Therefore, we are recommending an increase in the assumed rates of accidental disability retirements at ages 20 through 53 where most of the actual incidence of accidental disability retirements occurred during the examination period.



e. Service Retirement Rates

Prior to the enactment of Chapter 428, P.L. 1999, the System provided an allowance upon attaining age 55, with no minimum service requirement, with retirement mandatory at age 65. A higher allowance was also provided upon completion of 25 years of service. Chapter 428 provided (a) a higher allowance for members who have 20 or more years of service and (b) enhanced benefits for members with 20 to 24 years of service who attain age 65. Due to the Chapter 428 changes, experience prior to age 55 was examined in the four prior studies. The following Tables present the experience for service retirements during the study period.

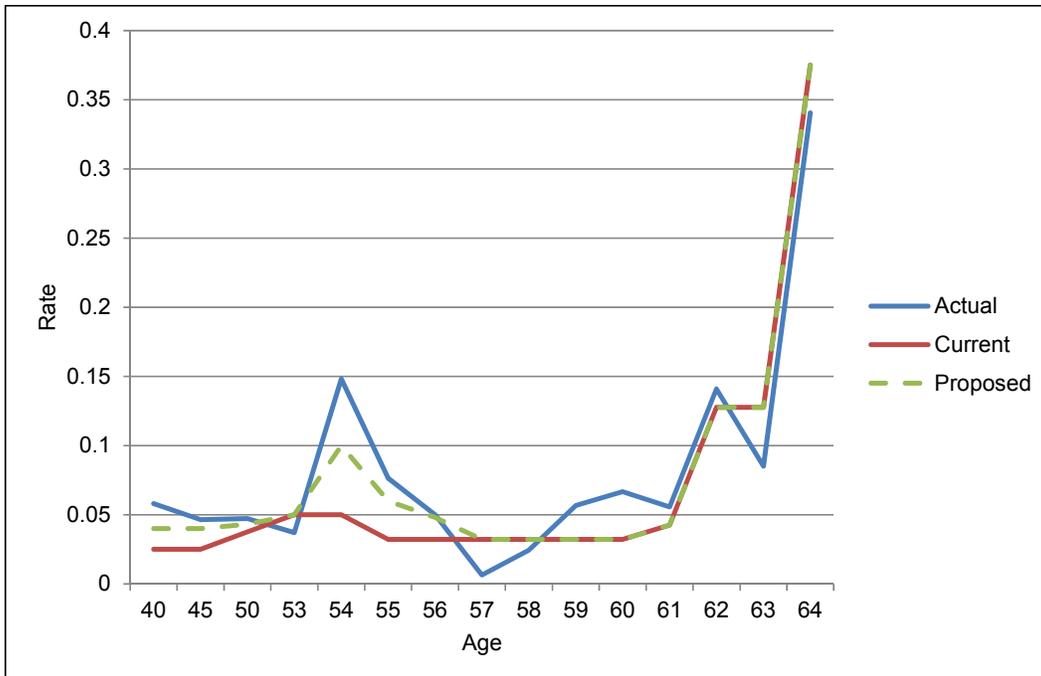
1. Less than 21 years of service

The following table presents a summary of the number of exposures, actual and expected retirements and the ratios of actual to expected retirements among members with less than 21 years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
40	983	57	23.98	39.32	2.377	1.450
45	1,981	92	49.53	79.24	1.857	1.161
50	848	40	31.80	36.46	1.258	1.097
53	108	4	5.40	5.40	0.741	0.741
54	81	12	4.05	8.10	2.963	1.481
55	301	23	9.63	18.06	2.388	1.274
56	220	11	7.04	10.56	1.563	1.042
57	156	1	4.99	4.99	0.200	0.200
58	123	3	3.93	3.93	0.763	0.763
59	106	6	3.39	3.39	1.770	1.770
60	90	6	2.88	2.88	2.083	2.083
61	72	4	3.07	3.07	1.303	1.303
62	71	10	9.05	9.05	1.105	1.105
63	47	4	5.99	5.99	0.668	0.668
64	47	16	17.62	17.62	0.908	0.908
Total	5,234	289	182.35	248.06	1.585	1.165

Recommendation: Increase rates at ages 40 through 50 and ages 54 through 56.

The data indicates that the number of actual retirements has been higher than that expected in this service group, continuing the trend seen in the previous study. Therefore, we recommend increasing the rates at the ages where actual incidence is much greater than expected (i.e., ages 40 through 50 and ages 54 through 56).



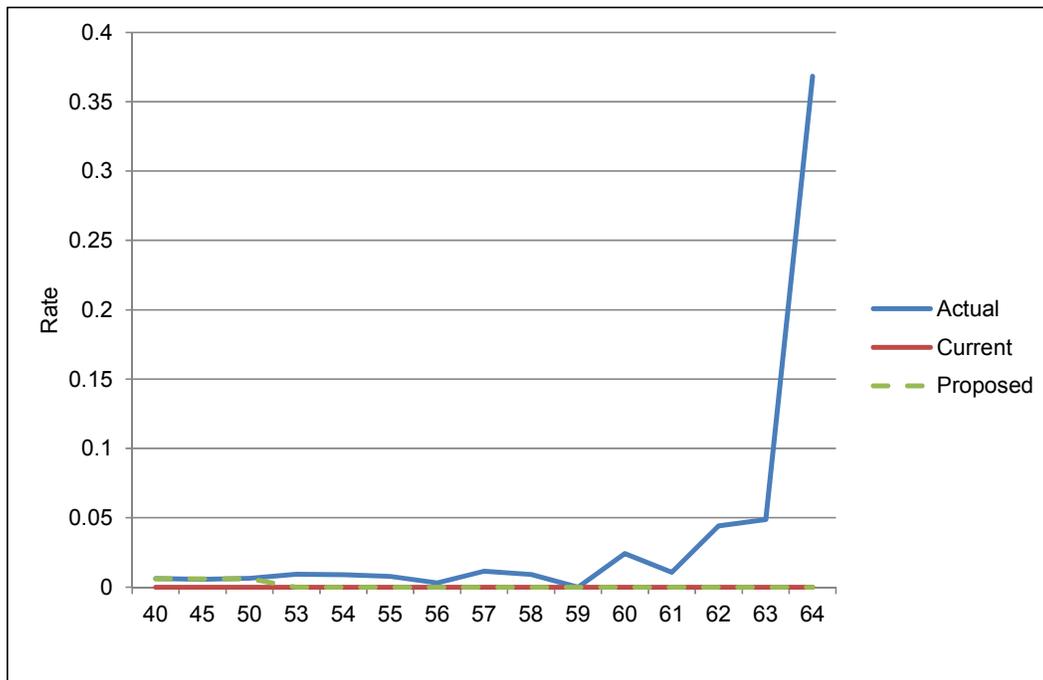
2. 21 to 24 years of service

The following table presents a summary of the number of exposures, actual and expected retirements and the ratios of actual to expected retirements among members with 21 to 24 years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
40	1,464	9	0.00	8.78	0.000	1.025
45	8,335	47	0.00	50.01	0.000	0.940
50	4,959	32	0.00	29.75	0.000	1.076
53	536	5	0.00	0.00	0.000	0.000
54	447	4	0.00	0.00	0.000	0.000
55	389	3	0.00	0.00	0.000	0.000
56	332	1	0.00	0.00	0.000	0.000
57	263	3	0.00	0.00	0.000	0.000
58	218	2	0.00	0.00	0.000	0.000
59	161	0	0.00	0.00	0.000	0.000
60	124	3	0.00	0.00	0.000	0.000
61	93	1	0.00	0.00	0.000	0.000
62	68	3	0.00	0.00	0.000	0.000
63	41	2	0.00	0.00	0.000	0.000
64	19	7	0.00	0.00	0.000	0.000
Total	17,449	122	0.00	88.54	0.000	1.378

Recommendation: Increase rates for ages 40 through 50.

Actual retirements were about 0.7% of those eligible to retire during the measurement period when no retirements were expected. The actual retirements occurred, mostly, at ages 40 through 50. We recommend an increase to the rates at ages 40 through 50 to better reflect anticipated experience at these ages.



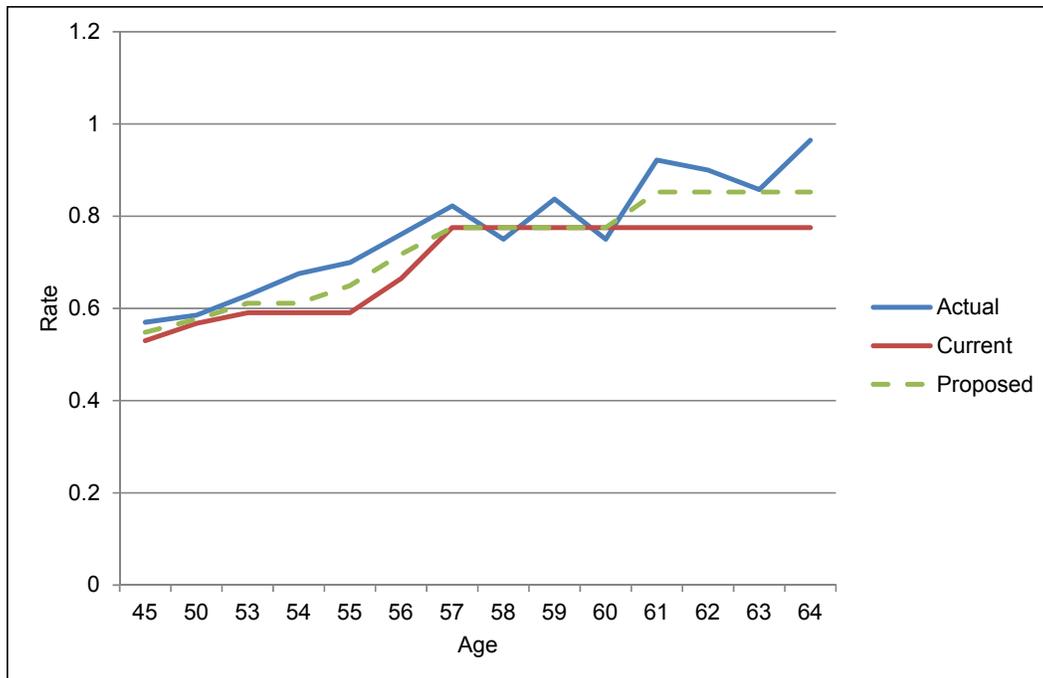
3. 25 years of service

The following table presents a summary of the number of exposures, actual and expected retirements and the ratios of actual to expected retirements among members with 25 years of service (the eligibility for Special Retirement).

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
45	1,510	860	800.00	827.93	1.075	1.039
50	2,206	1,291	1,252.35	1,271.10	1.031	1.016
53	250	157	147.59	152.78	1.064	1.028
54	200	135	118.08	122.22	1.143	1.105
55	183	128	108.04	118.84	1.185	1.077
56	167	127	110.92	119.79	1.145	1.060
57	135	111	104.61	104.61	1.061	1.061
58	116	87	89.88	89.88	0.968	0.968
59	92	77	71.29	71.29	1.080	1.080
60	72	54	55.79	55.79	0.968	0.968
61	51	47	39.51	43.47	1.190	1.081
62	40	36	30.99	34.10	1.162	1.056
63	35	30	27.11	29.83	1.107	1.006
64	28	27	21.69	23.87	1.245	1.131
Total	5,085	3,167	2,977.85	3,065.50	1.064	1.033

Recommendation: Increase rates at all ages, except ages 57 through 60.

The data indicate that there were 6.4% more actual retirements than expected. The number of actual retirements is much higher than that expected at ages 55 and 56 and at ages 60 through 64. Therefore, we recommend increasing the rates at the ages at which this actual incidence has been much greater than expected.



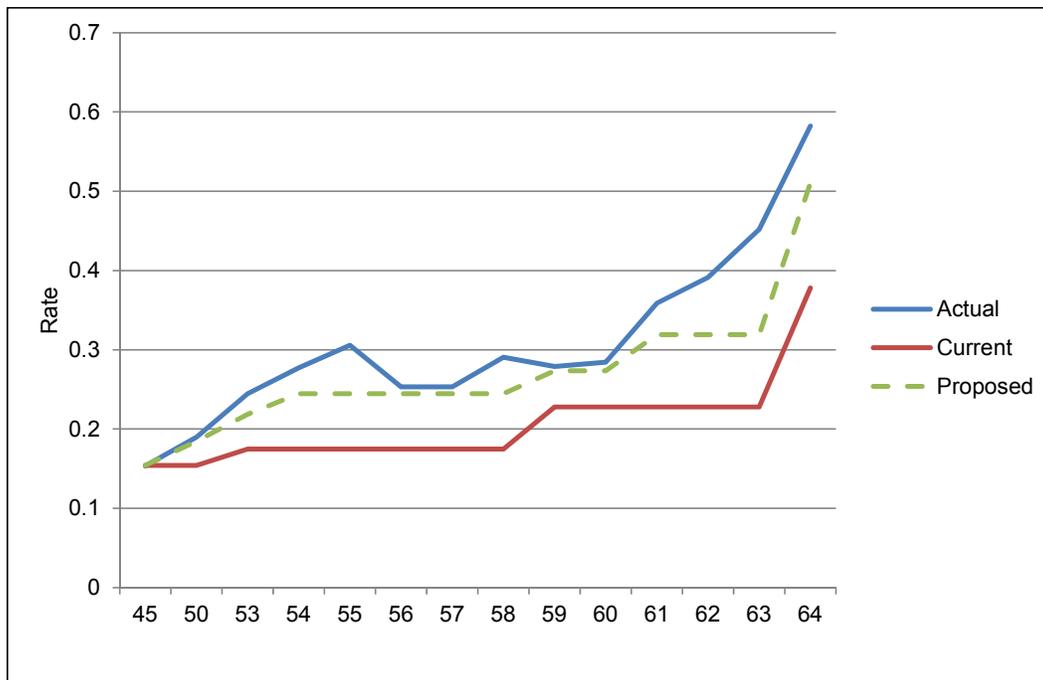
4. Greater than 25 years of service

The following table presents a summary of the number of exposures, actual and expected retirements and the ratios of actual to expected retirements among members with more than 25 years of service.

CENTRAL AGE OF GROUP	NUMBER OF SEPARATIONS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
45	502	77	77.31	77.31	0.996	0.996
50	2,885	548	444.29	533.15	1.233	1.028
53	695	170	121.49	151.86	1.399	1.119
54	617	171	107.85	150.98	1.586	1.133
55	520	159	90.90	127.24	1.749	1.250
56	454	115	79.36	111.09	1.449	1.035
57	399	101	69.75	97.64	1.448	1.034
58	303	88	52.96	74.14	1.662	1.187
59	251	70	57.18	68.62	1.224	1.020
60	218	62	49.66	59.60	1.248	1.040
61	184	66	41.91	58.68	1.575	1.125
62	138	54	31.44	44.01	1.718	1.227
63	104	47	23.70	33.17	1.983	1.417
64	79	46	29.86	40.31	1.541	1.141
Total	7,349	1,774	1,277.66	1,627.80	1.388	1.090

Recommendation: Increase rates at all ages, except age 45.

The data indicates that the number of actual retirements has been much higher than those expected at most ages. Therefore, we recommend increasing the rates at the ages at which this actual incidence has been much greater than expected (i.e., all ages except age 45).



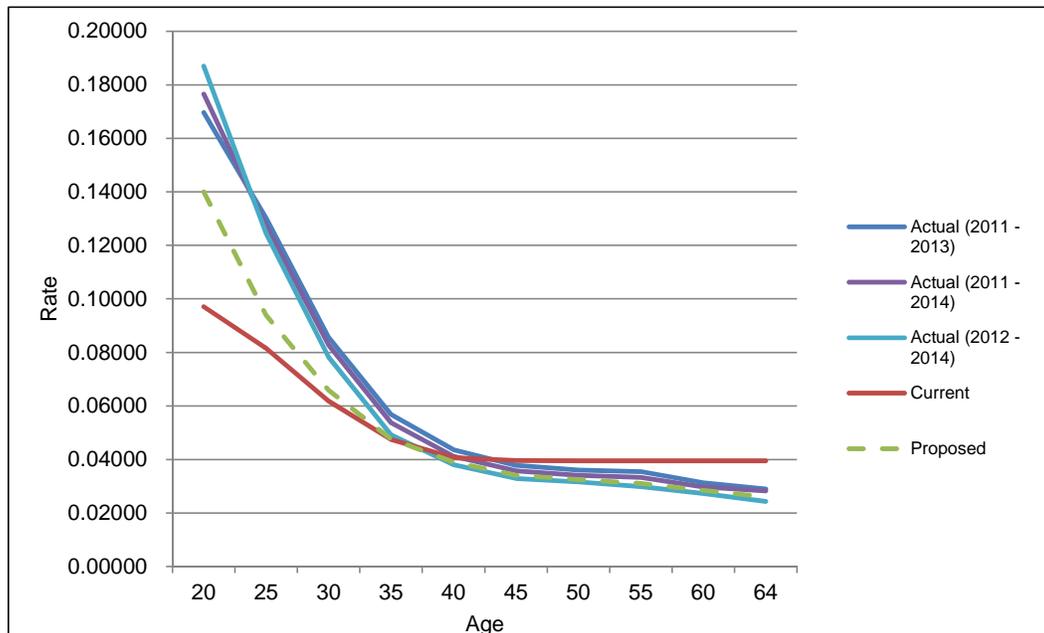
Salary Increase Rates

The following table presents a summary of the total salary from the prior year, actual and expected salary for the following year and the ratios of actual to expected salary among continuing actives. In light of recent legislation limiting overall budgetary increases, the table reflects the Salary experience during the period July 1, 2011 through June 30, 2014.

CENTRAL AGE OF GROUP	SALARY INCREASE			Ratio of Actual to Expected
	Actual Salary from Previous Year	Actual	Expected	
20	\$ 4,710,273	\$ 5,591,146	\$ 5,167,688	1.082
25	290,435,647	326,571,750	314,048,704	1.040
30	1,163,549,316	1,254,634,126	1,235,270,046	1.016
35	1,738,111,207	1,823,738,898	1,820,611,413	1.002
40	2,425,692,433	2,517,976,841	2,524,425,781	0.997
45	2,481,225,623	2,562,873,563	2,579,442,604	0.994
50	1,386,818,432	1,430,642,505	1,441,597,758	0.992
55	590,182,207	607,791,854	613,494,403	0.991
60	189,087,056	194,254,156	196,555,995	0.988
63 & 64	20,474,262	20,973,438	21,282,995	0.985
Total	\$ 10,290,286,456	\$ 10,745,048,277	\$ 10,751,897,387	0.999

Recommendation: Increase rates at ages 20 to 30 and decrease rates at ages 40 to 64.

The previous study recommended a salary increase assumption that varied by age and graded down from just under 12% at age 21 to a flat 5.95% per year for ages 45 and above. However, in accordance with economic assumptions recommended by the Treasurer, the current salary increase assumption projects future salary increases that are reduced by 2.00% per annum for fiscal year ending 2012 through fiscal year ending 2021 and 1.00% per annum for fiscal years ending 2022 and thereafter. The above table shows that, in total, the annual salary increase assumption is within an acceptable range of actual experience. However, we recommend an increase to the rates at ages 20 through 30 and a decrease to the rates at ages 40 to 64 to better reflect expected experience at these ages.



B. Mortality Experience Among Active and Inactive Plan Members

Mortality Improvement

As noted in prior experience studies, we have seen continued and steady improvement in mortality rates over time. This trend is expected to continue into the future. In fact, Actuarial Standards of Practice No. 35 states that the actuary should “include an assumption as to expected mortality improvement after the measurement date.” Therefore, we recommended the use projection Scale AA in the projection of the mortality tables to provide a generational approach toward future mortality improvements during the previous study.

Since the last study, mortality improvement Scale BB has been published by the Society of Actuaries (SOA) as a tool for actuaries to project mortality improvement. The rates of mortality improvement in the US have differed quite substantially from those predicted by Scale AA. Consequently, an alternative to Scale AA, called Scale BB, was developed and is recommended for use. Therefore, we recommend the use of projection Scale BB in the projection of the mortality tables.

The mortality experience for male service retirements meets the criteria of having “credible experience” (i.e., having, at least, 1,000 expected deaths over the examination period). Therefore, we have recommended the use of the RP-2000 with a 2011 base year projected one year using projection Scale AA. This base table will be effective during 2013 and will reflect mortality improvement after 2013 using the generational approach determined by projection Scale BB.

The mortality experience for all other retirees, beneficiaries and active participants eligible for ordinary death benefits is not sufficient to be considered statistically credible. Therefore, we have recommended the use of the RP-2000 mortality tables with a base year of 2000 for these participants. The base tables will be projected to each valuation date using projection Scale BB and further projected on a generational basis by Scale BB into the future.

It should be noted that during the preparation of this study, the Society of Actuaries finalized its latest report on mortality, which included a recommendation to update mortality tables and projection scales. Therefore, we would recommend that the mortality assumption be reviewed again prior to the July 1, 2015 valuation.

a. Ordinary and Accidental Death Rates among Active Members

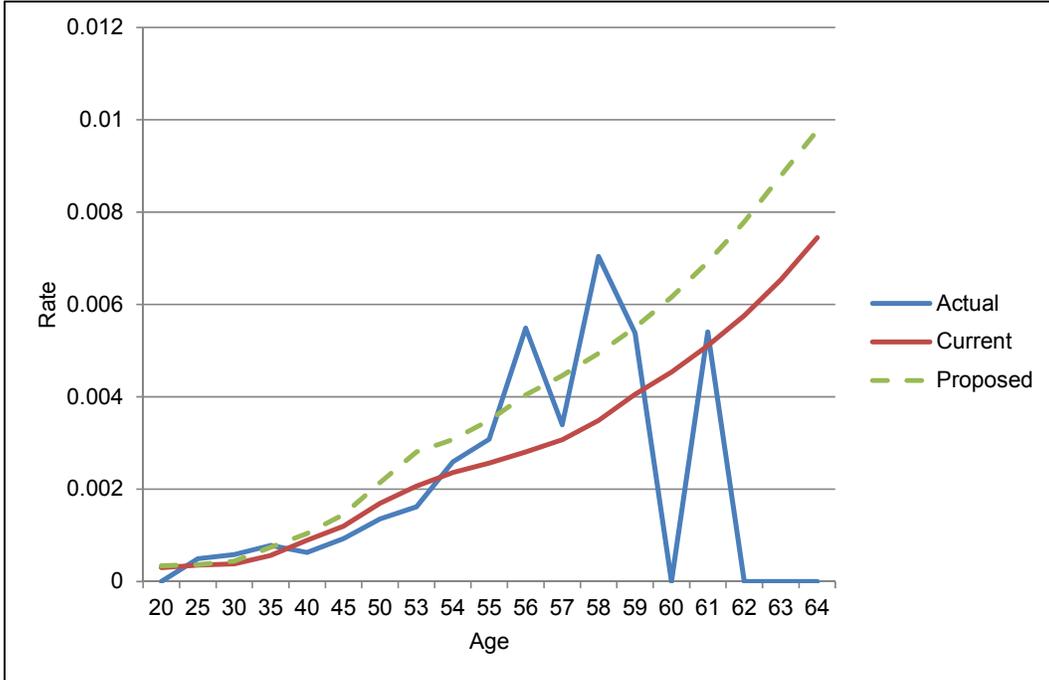
The experience for ordinary and accidental death among Active members is presented in the following tables. For ordinary death, actual deaths were about 5% lower than expected for males and 58% higher than expected for females. In accordance with ASOP 35, we recommend the use of the RP2000 Employee Pre-Retirement mortality tables projected to the valuation date by projection Scale BB. The base table will then be projected from the valuation date on a generational basis using projection Scale BB.

1. Ordinary Death Rates

CENTRAL AGE OF GROUP	NUMBER OF MALE DEATHS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	124	0	0.04	0.04	0.000	0.000
25	6,082	3	2.23	2.22	1.345	1.351
30	15,552	9	6.02	7.02	1.495	1.282
35	19,246	15	10.94	14.42	1.371	1.040
40	25,577	16	23.01	27.01	0.695	0.592
45	23,805	22	28.61	34.51	0.769	0.637
50	14,091	19	23.66	28.71	0.803	0.662
53	1,855	3	3.89	4.70	0.771	0.638
54	1,545	4	3.46	4.20	1.156	0.952
55	1,299	4	3.12	3.80	1.282	1.053
56	1,094	6	2.82	3.50	2.128	1.714
57	885	3	2.45	3.07	1.224	0.977
58	710	5	2.12	2.69	2.358	1.859
59	557	3	1.81	2.30	1.657	1.304
60	465	0	1.66	2.10	0.000	0.000
61	370	2	1.46	1.83	1.370	1.093
62	296	0	1.29	1.59	0.000	0.000
63	211	0	1.01	1.22	0.000	0.000
64	162	0	0.86	1.01	0.000	0.000
Total	113,926	114	120.46	145.94	0.946	0.781

Recommendation: RP2000 Employee Pre-Retirement Male mortality table projected to the valuation date by projection scale BB. This base table will be projected from the valuation date on a generational basis using projection scale BB.

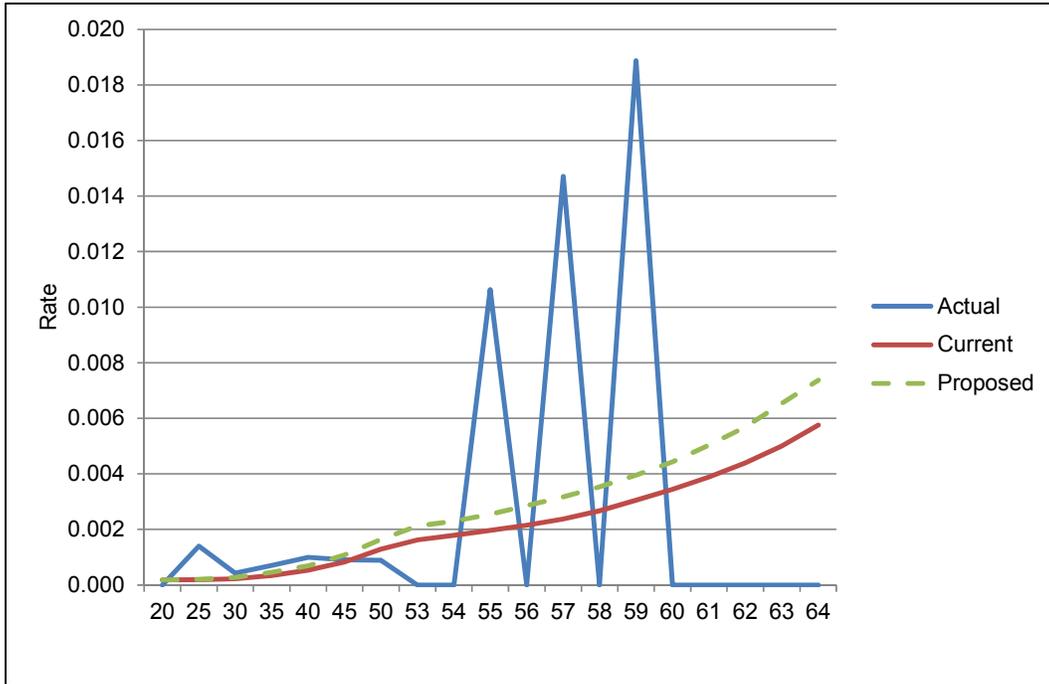
1. Ordinary Death Rates (cont'd)



CENTRAL AGE OF GROUP	NUMBER OF FEMALE DEATHS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	20	0	0.00	0.00	0.000	0.000
25	714	1	0.14	0.13	7.143	7.692
30	2,324	1	0.53	0.65	1.887	1.538
35	2,848	2	0.99	1.30	2.020	1.538
40	3,003	3	1.65	2.07	1.818	1.449
45	2,216	2	1.85	2.38	1.081	0.840
50	1,129	1	1.44	1.80	0.694	0.556
53	139	0	0.23	0.28	0.000	0.000
54	106	0	0.19	0.23	0.000	0.000
55	94	1	0.18	0.23	5.556	4.348
56	79	0	0.17	0.20	0.000	0.000
57	68	1	0.16	0.19	6.250	5.263
58	50	0	0.13	0.16	0.000	0.000
59	53	1	0.15	0.17	6.667	5.882
60	39	0	0.12	0.13	0.000	0.000
61	30	0	0.10	0.11	0.000	0.000
62	21	0	0.08	0.09	0.000	0.000
63	16	0	0.06	0.07	0.000	0.000
64	15	0	0.06	0.07	0.000	0.000
Total	12,964	13	8.23	10.26	1.580	1.267

Recommendation: RP2000 Employee Pre-Retirement Female mortality table projected to the valuation date by projection scale BB. This base table will be projected from the valuation date on a generational basis using projection scale BB.

1. Ordinary Death Rates (cont'd)

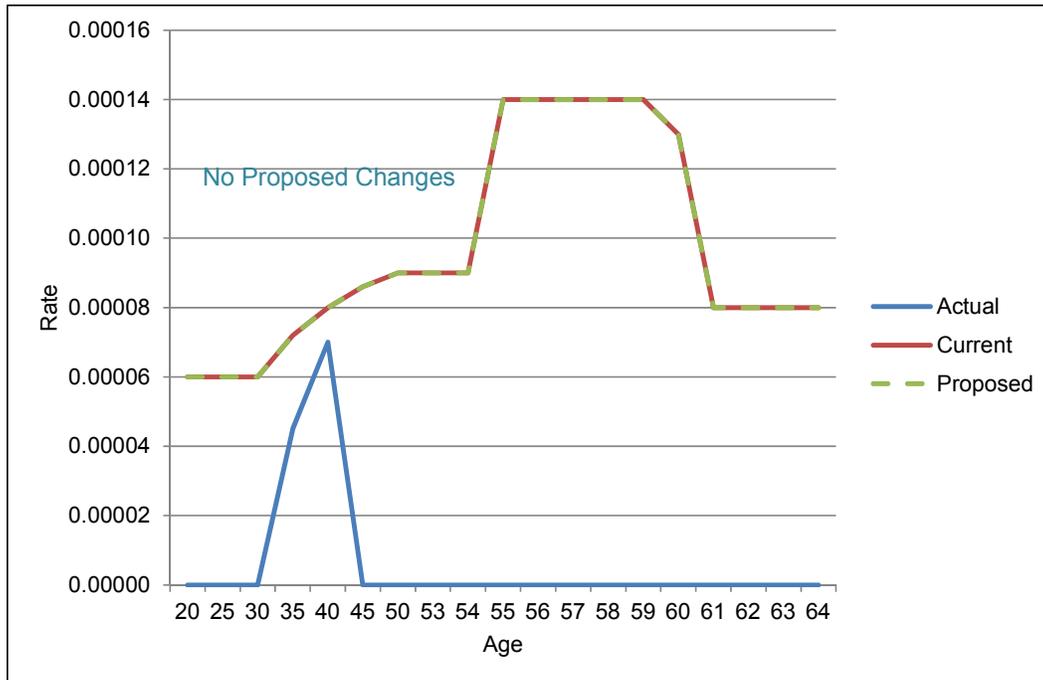


2. Accidental Death Rates

CENTRAL AGE OF GROUP	NUMBER OF DEATHS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
20	144	0	0.01	0.01	0.000	0.000
25	6,796	0	0.40	0.40	0.000	0.000
30	17,876	0	1.07	1.07	0.000	0.000
35	22,094	1	1.59	1.59	0.629	0.629
40	28,580	2	2.29	2.29	0.873	0.873
45	26,021	0	2.23	2.23	0.000	0.000
50	15,220	0	1.37	1.37	0.000	0.000
53	1,994	0	0.18	0.18	0.000	0.000
54	1,651	0	0.15	0.15	0.000	0.000
55	1,393	0	0.19	0.19	0.000	0.000
56	1,173	0	0.16	0.16	0.000	0.000
57	953	0	0.13	0.13	0.000	0.000
58	760	0	0.11	0.11	0.000	0.000
59	610	0	0.09	0.09	0.000	0.000
60	504	0	0.07	0.07	0.000	0.000
61	400	0	0.03	0.03	0.000	0.000
62	317	0	0.02	0.02	0.000	0.000
63	227	0	0.02	0.02	0.000	0.000
64	177	0	0.01	0.01	0.000	0.000
Total	126,890	3	10.12	10.12	0.296	0.296

Recommendation: No change

2. Accidental Death Rates (cont'd)



The incidence of accidental death is small and no change is recommended.

b. Inactive Plan Experience

The second portion of this section contains a summary of inactive plan experience which examines the following rates:

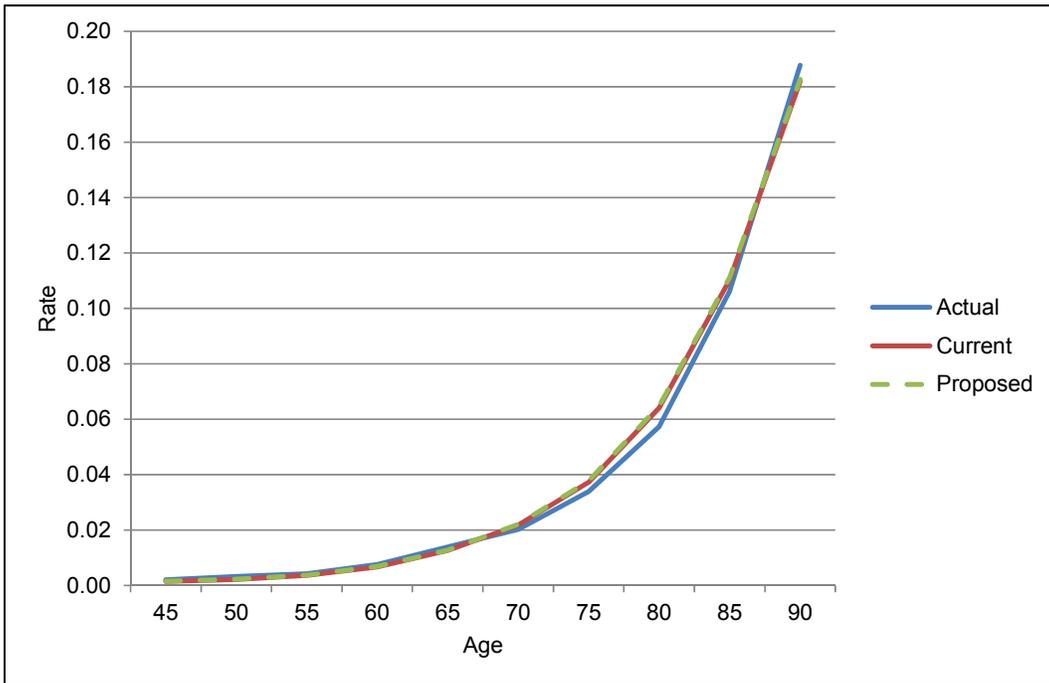
1. Service Retirement Mortality Rates
2. Beneficiary Mortality Rates
3. Disability Mortality Rates

1. Service Retirement Mortality Rates

The experience indicates that actual deaths among retirees were well within acceptable limits for both male and female retirees. For male retirees, we recommend the use of the RP2000 Combined Healthy Male mortality table projected one year using projection Scale AA as the base table as of the 2013 measurement date with respect to members retired on account of service retirements. For female retirees, we recommend the use of the RP2000 Combined Health Mortality Table projected to the valuation date by projection Scale BB for members retired on account of service retirements. The base tables will be projected from the valuation date on a generational basis using projection Scale BB.

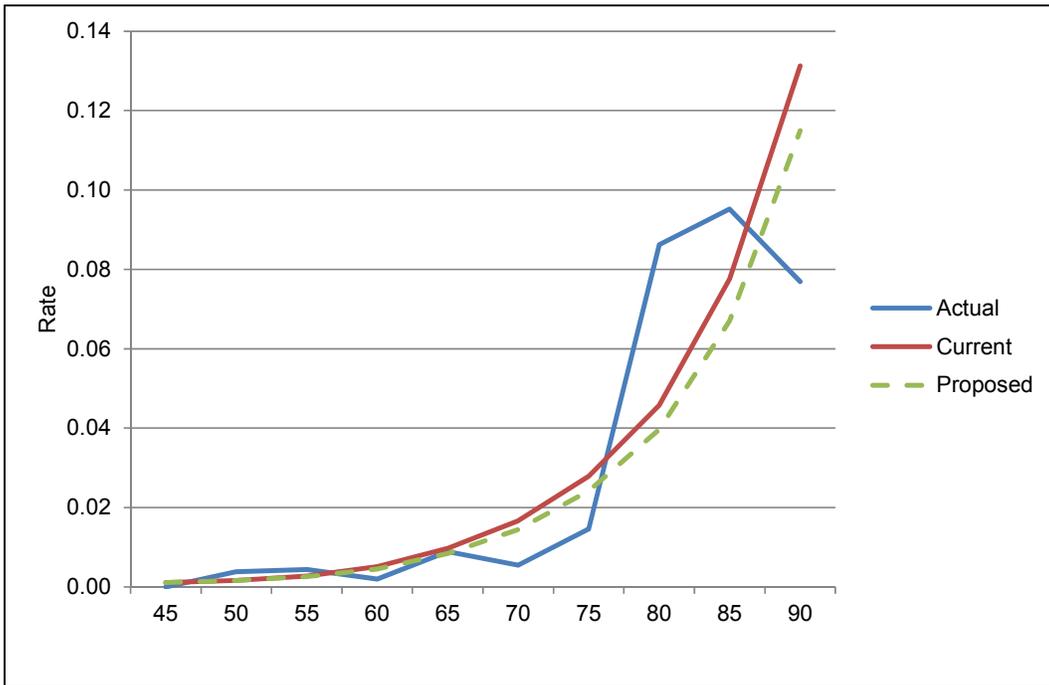
CENTRAL AGE OF GROUP	NUMBER OF MALE DEATHS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
45	1,948	4	3.08	3.06	1.297	1.309
50	6,981	22	15.81	15.63	1.391	1.408
55	11,615	49	43.81	43.27	1.119	1.132
60	13,080	98	90.15	89.22	1.087	1.098
65	14,163	197	179.13	177.53	1.100	1.110
70	10,718	216	233.39	231.17	0.925	0.934
75	6,667	226	247.63	245.36	0.913	0.921
80	4,447	255	285.34	283.47	0.894	0.900
85	2,976	316	327.10	325.55	0.966	0.971
90	1,209	227	209.59	209.01	1.083	1.086
Total	73,804	1,610	1,635.03	1,623.26	0.985	0.992

Recommendation: RP2000 Combined Healthy Male mortality table projected one-year using projection scale AA for members in receipt of a benefit. This base table is effective 2013 and will be projected on a generational basis using projection scale BB.



CENTRAL AGE OF GROUP	NUMBER OF FEMALE DEATHS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
45	192	0	0.22	0.21	0.000	0.000
50	522	2	0.90	0.87	2.222	2.299
55	686	3	1.92	1.81	1.563	1.657
60	507	1	2.56	2.29	0.391	0.437
65	337	3	3.21	2.82	0.935	1.064
70	184	1	3.05	2.67	0.328	0.375
75	137	2	3.74	3.28	0.535	0.610
80	58	5	2.61	2.29	1.916	2.183
85	21	2	1.64	1.44	1.220	1.389
90	13	1	1.64	1.45	0.610	0.690
Total	2,658	20	21.49	19.13	0.931	1.045

Recommendation: RP2000 Combined Healthy Female mortality table projected to the valuation date by projection scale BB for members in receipt of a benefit. This base table will be projected from the valuation date on a generational basis using projection scale BB.



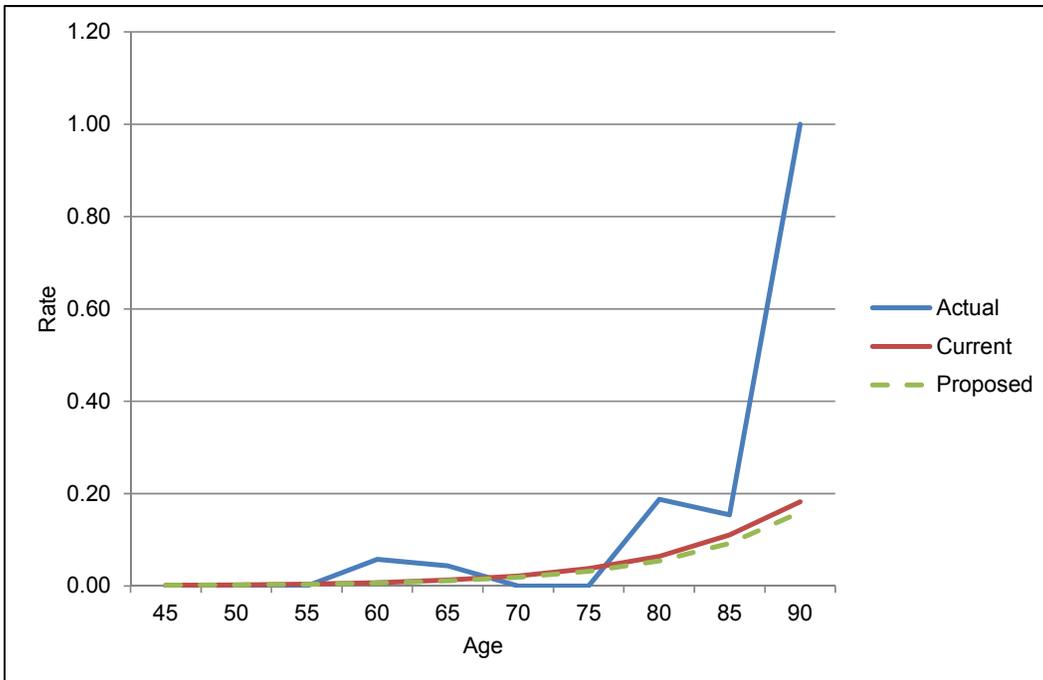
The current table is the RP-2000 projected on a generational basis using projection scale AA for 2 years. The proposed table is the RP-2000 projected on a generational basis using projection scale BB for 13 years.

2. Beneficiary Mortality Rates

The actual number of deaths was close to expected for female beneficiaries and for male beneficiaries the actual experience is negligible. However, in accordance with ASOP 35, we recommend the use of the RP2000 Combined Health Mortality Tables projected to the valuation date by projection Scale BB for beneficiaries in receipt of a benefit. This base table will be projected from the valuation date on a generational basis using projection Scale BB.

CENTRAL AGE OF GROUP	NUMBER OF MALE DEATHS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
Under 45	43	0	0.78	0.75	0.000	0.000
50	27	0	1.82	1.77	0.000	0.000
55	14	0	4.08	3.96	0.000	0.000
60	18	1	7.60	7.06	0.132	0.142
65	23	1	10.98	9.65	0.091	0.104
70	19	0	9.91	8.42	0.000	0.000
75	4	0	7.86	6.68	0.000	0.000
80	16	3	4.74	4.03	0.633	0.745
85	13	2	3.09	2.62	0.646	0.762
90	1	1	0.31	0.27	0.000	3.737
Total	178	8	51.16	45.22	0.156	0.177

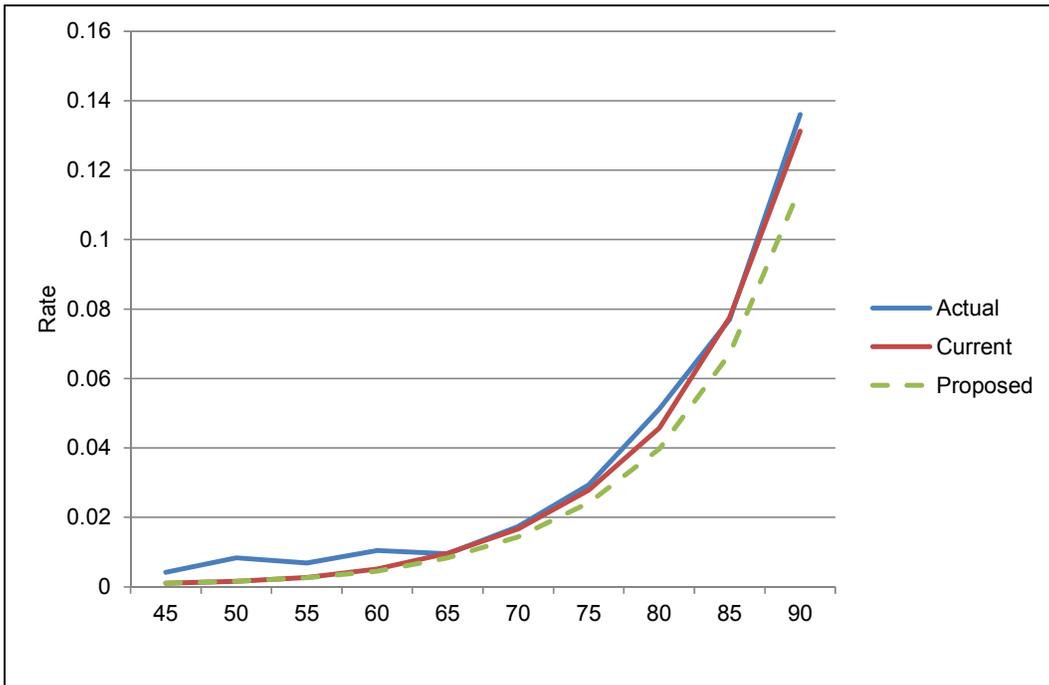
Recommendation: RP2000 Combined Healthy Male mortality table projected to the valuation date by projection scale BB for beneficiaries in receipt of a benefit. This base table will be projected from the valuation date on a generational basis using projection scale BB.



The current table is the RP-2000 projected on a generational basis using projection scale AA for 2 years. The proposed table is the RP-2000 projected on a generational basis using projection scale BB for 13 years.

CENTRAL AGE OF GROUP	NUMBER OF FEMALE DEATHS					
	Exposures	Actual	Ratio of Actual to Expected			
			Expected		to Expected	
			Current	Proposed	Current	Proposed
Under 45	729	3	0.63	0.61	4.768	4.901
50	607	5	1.04	1.02	4.786	4.919
55	1,019	7	2.86	2.70	2.447	2.589
60	1,337	14	7.08	6.32	1.977	2.214
65	1,887	19	18.58	16.29	1.023	1.166
70	2,423	42	40.75	35.74	1.031	1.175
75	2,521	74	71.58	62.83	1.034	1.178
80	2,889	148	135.02	118.53	1.096	1.249
85	3,066	236	237.22	208.09	0.995	1.134
90	1,571	190	198.65	175.90	0.956	1.080
Total	18,049	738	713.41	628.04	1.034	1.175

Recommendation: RP2000 Combined Healthy Female mortality table projected to the valuation date by projection scale BB for beneficiaries in receipt of a benefit. This base table will be projected from the valuation date on a generational basis using projection scale BB.



The current table is the RP-2000 projected on a generational basis using projection scale AA for 2 years. The proposed table is the RP-2000 projected on a generational basis using projection scale BB for 13 years.

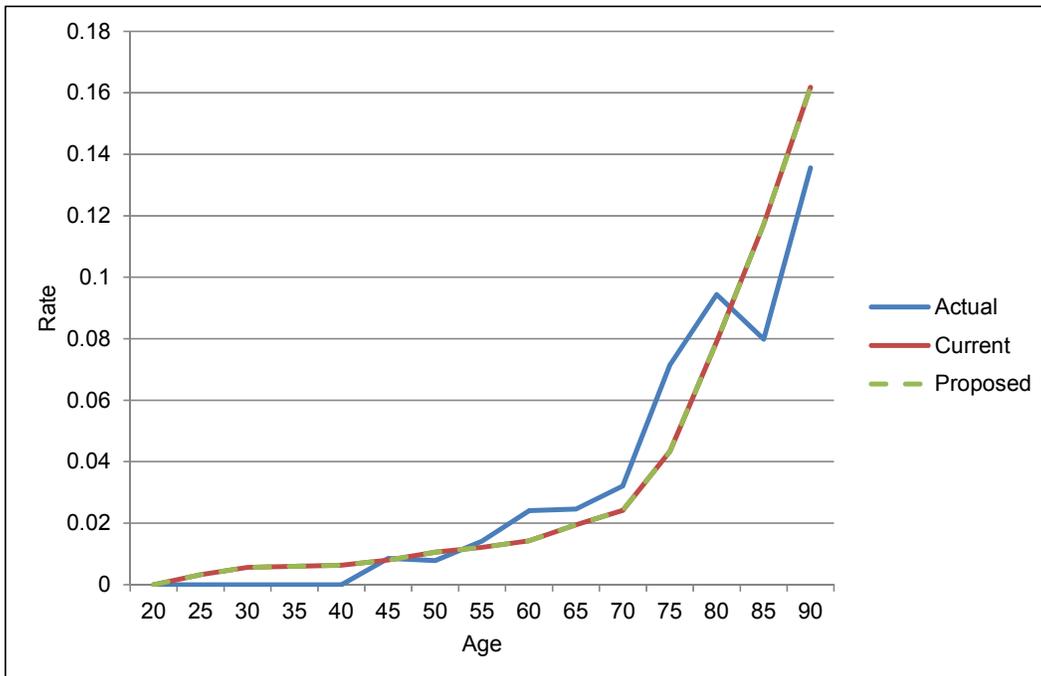
3. Disability Mortality Rates

The total actual deaths were about 22% more than expected. This is inconsistent with the results of the two previous studies, in which a trend was observed regarding longer life expectancies and rates resulting in the reduction of mortality rates. Therefore, we recommend no change to the assumptions at this time.

DISABILITY RETIREMENT

CENTRAL AGE OF GROUP	NUMBER OF DEATHS					
	Exposures	Actual	Expected		Ratio of Actual to Expected	
			Current	Proposed	Current	Proposed
Under 45	5,265	45	37.62	37.62	1.196	1.196
50	2,430	19	25.69	25.69	0.739	0.739
55	2,123	30	25.67	25.67	1.169	1.169
60	1,873	45	26.72	26.72	1.684	1.684
65	1,708	42	33.11	33.11	1.269	1.269
70	1,123	36	26.56	26.56	1.355	1.355
75	574	41	24.43	24.43	1.678	1.678
80	318	30	24.29	24.29	1.235	1.235
85	188	15	22.08	22.08	0.679	0.679
90	59	8	8.98	8.98	0.891	0.891
Total	15,661	311	255.16	255.16	1.219	1.219

Recommendation: No change.



IV. Summary of Proposed Assumptions

As noted earlier in the report, the experience investigation for the period from July 1, 2010 to June 30, 2013 indicates the need for certain changes in the tables used for determining the liabilities of the System. The proposed changes are summarized as follows:

Rates	Proposed Changes
Non-Vested Withdrawal	
• Less Than Two Years of Service	Increase
• Two Years of Service	Increase
• Three Years of Service	Decrease
• Four Years of Service	Adjust ¹
• Five to Nine Years of Service	Adjust ²
Vested Withdrawal	
• Ten or More Years of Service	No change
Disability	
• Ordinary	Decrease
• Accidental	Increase
Service Retirement	
• Less Than 21 Years of Service	Increase
• 21 to 24 Years of Service	Increase
• 25 Years of Service	Increase
• Greater Than 25 Years of Service	Increase
Salary Increase	Adjust ³
Active Death	
• Ordinary	Change to Standard Table ⁴
• Accidental	No change
Inactive Mortality	
• Service Retirements	Adjust ⁴
• Beneficiaries of Deceased Active and Retired Members	Decrease ⁴
• Disability Retirements	No change

1. Decrease rate for age 25 and increase the rate for age 35.
2. Increase rate for age 30 and decrease the rate for age 40.
3. Increase rate for age 20 through age 30 and decrease rate for age 40 through age 64.
4. In addition, the base table will be projected on a generational basis using projection Scale BB.

V. Cost Impact of the Proposed Assumptions

The overall effect of the proposed changes in assumptions would be to increase the normal contribution and the accrued liability payment for both State and Municipalities & Local Groups. The following chart presents a summary of the liabilities and contributions under the current and proposed assumptions:

	State		Local Employers	
	Current	Proposed	Current	Proposed
Actuarial Accrued Liability	\$ 4,188,523,037	\$ 4,193,200,081	\$ 28,811,698,272	\$ 29,111,143,102
Additional Accrued Liability		\$ 4,677,044		\$ 299,444,830
Unfunded Accrued Liability/(Surplus) ¹	\$ 3,227,028,780	\$ 3,231,705,824	\$ 5,475,479,771	\$ 5,774,924,601
Funded Ratios				
Actuarial Value of Assets	50.8%	50.7%	76.9%	76.2%
Market Value of Assets	45.3%	45.2%	72.0%	71.3%
Required Contribution:				
• Normal Cost	\$ 116,976,477	\$ 123,590,738	\$ 264,702,255	\$ 255,178,707
• Accrued Liability	<u>297,340,476</u>	<u>298,400,722</u>	<u>468,504,134</u>	<u>494,203,782</u>
• Total Contribution ³	\$ 414,316,953 ²	\$ 421,991,460 ²	\$ 733,206,389	\$ 749,382,489
Additional Annual Contribution		\$ 7,674,507		\$ 16,176,100

1. After reflecting reallocation of Local obligations which are to be paid by State.

2. Does not reflect the phase in under Chapter 1, P.L. 2010.

3. The amounts exclude ERI and Chapter 19, P.L. 2009 payments payable by certain Local employers.

The calculations were based on the same data and actuarial methods as were used in the July 1, 2013 valuation, including a 7.90% interest rate.

Appendix A. Comparison of Actual, Current and Proposed Rates of Separation and Mortality

The following tables give a comparison of the actual, current and proposed rates of separation from active service and rates of mortality for active and retired members at quinquennial ages.

TABLE 1

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE**

NON-VESTED WITHDRAWALS

LESS THAN 2 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.0286	0.0250	0.0250
25	0.0762	0.0500	0.0690
30	0.1057	0.0600	0.0930
35	0.1163	0.0700	0.0980
40	0.1591	0.1000	0.1370
45	0.0769	0.0350	0.0350
50	0.0000	0.0000	0.0000
54	0.0000	0.0000	0.0000

2 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.0000	0.0162	0.0162
25	0.0219	0.0162	0.0203
30	0.0304	0.0220	0.0275
35	0.0430	0.0225	0.0317
40	0.0303	0.0225	0.0225
45	0.0000	0.0225	0.0225
50	0.0000	0.0225	0.0225
54	0.0000	0.0225	0.0225

TABLE 2

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE**

**NON-VESTED WITHDRAWALS
(Continued)**

3 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.0000	0.0140	0.0140
25	0.0119	0.0140	0.0118
30	0.0168	0.0176	0.0176
35	0.0134	0.0176	0.0176
40	0.0206	0.0185	0.0185
45	0.1667	0.0185	0.0185
50	0.0000	0.0185	0.0185
54	0.0000	0.0185	0.0185

4 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.0000	0.0000	0.0000
25	0.0026	0.0090	0.0060
30	0.0120	0.0131	0.0131
35	0.0196	0.0131	0.0157
40	0.0159	0.0174	0.0174
45	0.1000	0.0232	0.0232
50	0.0000	0.0200	0.0200
54	0.0000	0.0100	0.0100

TABLE 3

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE**

**NON-VESTED WITHDRAWALS
(Continued)**

5 - 9 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.0000	0.0000	0.0000
25	0.0021	0.0035	0.0035
30	0.0067	0.0055	0.0060
35	0.0072	0.0077	0.0077
40	0.0060	0.0077	0.0067
45	0.0070	0.0135	0.0135
50	0.0800	0.0160	0.0160
54	0.0000	0.0160	0.0160

TABLE 4

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE**

VESTED WITHDRAWALS WITH 10 OR MORE YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES: NO CHANGE
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0033	0.0024	0.0024
35	0.0021	0.0024	0.0024
40	0.0024	0.0027	0.0027
45	0.0033	0.0028	0.0028
50	0.0047	0.0030	0.0030
54	0.0028	0.0030	0.0030

TABLE 5

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE
ORDINARY DISABILITY**

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.00000	0.00035	0.00032
25	0.00000	0.00050	0.00045
30	0.00162	0.00147	0.00147
35	0.00208	0.00333	0.00265
40	0.00329	0.00400	0.00362
45	0.00388	0.00448	0.00394
50	0.00309	0.00510	0.00449
53	0.00552	0.00554	0.00550
54	0.00424	0.00554	0.00550
55	0.00359	0.00720	0.00554
56	0.00682	0.00720	0.00648
57	0.00839	0.00720	0.00648
58	0.00263	0.00720	0.00648
59	0.00820	0.00720	0.00648
60	0.00595	0.01280	0.01024
61	0.00500	0.01440	0.01152
62	0.01262	0.01440	0.01296
63	0.00000	0.02160	0.01512
64	0.00565	0.02400	0.01680

TABLE 6

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE
ACCIDENTAL DISABILITY**

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.00000	0.00022	0.00029
25	0.00088	0.00031	0.00062
30	0.00246	0.00139	0.00278
35	0.00430	0.00238	0.00393
40	0.00444	0.00318	0.00423
45	0.00423	0.00291	0.00396
50	0.00329	0.00182	0.00273
53	0.00451	0.00161	0.00273
54	0.00121	0.00161	0.00161
55	0.00072	0.00161	0.00161
56	0.00256	0.00161	0.00161
57	0.00210	0.00161	0.00161
58	0.00132	0.00161	0.00161
59	0.00164	0.00161	0.00161
60	0.00397	0.00161	0.00161
61	0.00250	0.00161	0.00161
62	0.00315	0.00161	0.00161
63	0.00000	0.00161	0.00161
64	0.01695	0.00161	0.00161

TABLE 7

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE**

SERVICE RETIREMENTS

LESS THAN 21 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
40	0.0580	0.0250	0.0400
45	0.0464	0.0250	0.0400
50	0.0472	0.0375	0.0430
53	0.0370	0.0500	0.0500
54	0.1481	0.0500	0.1000
55	0.0764	0.0320	0.0600
56	0.0500	0.0320	0.0480
57	0.0064	0.0320	0.0320
58	0.0244	0.0320	0.0320
59	0.0566	0.0320	0.0320
60	0.0667	0.0320	0.0320
61	0.0556	0.0425	0.0425
62	0.1408	0.1275	0.1275
63	0.0851	0.1275	0.1275
64	0.3404	0.3750	0.3750

21 - 24 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
40	0.0061	0.0000	0.0060
45	0.0056	0.0000	0.0060
50	0.0065	0.0000	0.0060
53	0.0093	0.0000	0.0000
54	0.0089	0.0000	0.0000
55	0.0077	0.0000	0.0000
56	0.0030	0.0000	0.0000
57	0.0114	0.0000	0.0000
58	0.0092	0.0000	0.0000
59	0.0000	0.0000	0.0000
60	0.0242	0.0000	0.0000
61	0.0108	0.0000	0.0000
62	0.0441	0.0000	0.0000
63	0.0488	0.0000	0.0000
64	0.3684	0.0000	0.0000

TABLE 8

**COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE**

**SERVICE RETIREMENTS
(Continued)**

25 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
40	0.4000	0.4557	0.4557
45	0.5695	0.5298	0.5483
50	0.5852	0.5677	0.5762
53	0.6280	0.5904	0.6111
54	0.6750	0.5904	0.6111
55	0.6995	0.5904	0.6494
56	0.7605	0.6642	0.7173
57	0.8222	0.7749	0.7749
58	0.7500	0.7749	0.7749
59	0.8370	0.7749	0.7749
60	0.7500	0.7749	0.7749
61	0.9216	0.7749	0.8524
62	0.9000	0.7749	0.8524
63	0.8571	0.7749	0.8524
64	0.9643	0.7749	0.8524

GREATER THAN 25 YEARS OF SERVICE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
45	0.1534	0.1540	0.1540
50	0.1899	0.1540	0.1848
53	0.2446	0.1748	0.2185
54	0.2771	0.1748	0.2447
55	0.3058	0.1748	0.2447
56	0.2533	0.1748	0.2447
57	0.2531	0.1748	0.2447
58	0.2904	0.1748	0.2447
59	0.2789	0.2278	0.2734
60	0.2844	0.2278	0.2734
61	0.3587	0.2278	0.3189
62	0.3913	0.2278	0.3189
63	0.4519	0.2278	0.3189
64	0.5823	0.3780	0.5103

TABLE 9

**COMPARISON OF ACTUAL AND EXPECTED
SALARY INCREASES**

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES*	PROPOSED RATES*
20	18.70%	11.15%	15.00%
25	12.44%	9.53%	10.38%
30	7.83%	7.28%	7.59%
35	4.93%	5.77%	5.77%
40	3.80%	5.08%	4.90%
45	3.29%	4.96%	4.40%
50	3.16%	4.95%	4.25%
55	2.98%	4.95%	4.10%
60	2.73%	4.95%	3.85%
63 & 64	2.44%	4.95%	3.60%

* The assumed salary increases are reduced by 1.00% per annum through fiscal year 2021.

TABLE 10
COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE

ORDINARY DEATH - MALE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.00000	0.00030	0.00034
25	0.00049	0.00035	0.00036
30	0.00058	0.00038	0.00044
35	0.00078	0.00056	0.00074
40	0.00063	0.00089	0.00104
45	0.00092	0.00120	0.00145
50	0.00135	0.00169	0.00214
53	0.00162	0.00206	0.00280
54	0.00259	0.00236	0.00307
55	0.00308	0.00256	0.00349
56	0.00548	0.00280	0.00404
57	0.00339	0.00307	0.00446
58	0.00704	0.00349	0.00494
59	0.00539	0.00405	0.00550
60	0.00000	0.00454	0.00616
61	0.00541	0.00511	0.00692
62	0.00000	0.00576	0.00779
63	0.00000	0.00653	0.00879
64	0.00000	0.00745	0.00977

ORDINARY DEATH - FEMALE

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES
20	0.00000	0.00018	0.00018
25	0.00140	0.00019	0.00020
30	0.00043	0.00022	0.00027
35	0.00070	0.00034	0.00046
40	0.00100	0.00054	0.00069
45	0.00090	0.00083	0.00108
50	0.00089	0.00129	0.00164
53	0.00000	0.00162	0.00212
54	0.00000	0.00179	0.00230
55	0.01064	0.00196	0.00255
56	0.00000	0.00215	0.00286
57	0.01471	0.00238	0.00317
58	0.00000	0.00267	0.00353
59	0.01887	0.00305	0.00395
60	0.00000	0.00344	0.00444
61	0.00000	0.00388	0.00504
62	0.00000	0.00440	0.00569
63	0.00000	0.00501	0.00654
64	0.00000	0.00576	0.00737

TABLE 11

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION
FROM ACTIVE SERVICE

ACCIDENTAL DEATH

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES: NO CHANGE
20	0.00000	0.00006	0.00006
25	0.00000	0.00006	0.00006
30	0.00000	0.00006	0.00006
35	0.00005	0.00007	0.00007
40	0.00007	0.00008	0.00008
45	0.00000	0.00009	0.00009
50	0.00000	0.00009	0.00009
53	0.00000	0.00009	0.00009
54	0.00000	0.00009	0.00009
55	0.00000	0.00014	0.00014
56	0.00000	0.00014	0.00014
57	0.00000	0.00014	0.00014
58	0.00000	0.00014	0.00014
59	0.00000	0.00014	0.00014
60	0.00000	0.00013	0.00013
61	0.00000	0.00008	0.00008
62	0.00000	0.00008	0.00008
63	0.00000	0.00008	0.00008
64	0.00000	0.00008	0.00008

TABLE 12

**COMPARISON OF ACTUAL AND EXPECTED RATES
OF MORTALITY AFTER RETIREMENT**

MALE SERVICE RETIREMENT

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES*
45	0.00205	0.00147	0.00149
50	0.00315	0.00214	0.00218
55	0.00422	0.00359	0.00365
60	0.00749	0.00667	0.00677
65	0.01391	0.01256	0.01273
70	0.02015	0.02170	0.02202
75	0.03390	0.03717	0.03770
80	0.05734	0.06412	0.06475
85	0.10618	0.11028	0.11105
90	0.18776	0.18185	0.18261

*This base table is effective 2013 and will be projected on a generational basis using projection scale BB.

FEMALE SERVICE RETIREMENT

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES*
45	0.00000	0.00109	0.00108
50	0.00383	0.00165	0.00164
55	0.00437	0.00274	0.00260
60	0.00197	0.00513	0.00453
65	0.00890	0.00972	0.00839
70	0.00543	0.01667	0.01441
75	0.01460	0.02790	0.02421
80	0.08621	0.04576	0.03967
85	0.09524	0.07756	0.06704
90	0.07692	0.13124	0.11493

*The base table is the RP-2000 mortality table projected 13 years using projection Scale BB and will be further projected on a generational basis using projection Scale BB.

TABLE 13

**COMPARISON OF ACTUAL AND EXPECTED RATES
OF MORTALITY AFTER RETIREMENT**

MALE BENEFICIARY OF DECEASED ACTIVE AND RETIRED MEMBERS

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES*
45	0.00000	0.00147	0.00145
50	0.00000	0.00214	0.00214
55	0.00000	0.00359	0.00357
60	0.05714	0.00667	0.00626
65	0.04348	0.01256	0.01100
70	0.00000	0.02170	0.01836
75	0.00000	0.03717	0.03142
80	0.18750	0.06412	0.05372
85	0.15385	0.11028	0.09217
90	1.00000	0.18185	0.15920

*The base table is the RP-2000 mortality table projected 13 years using projection Scale BB and will be further projected on a generational basis using projection Scale BB.

FEMALE BENEFICIARY OF DECEASED ACTIVE AND RETIRED MEMBERS

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES*
45	0.00417	0.00109	0.00108
50	0.00833	0.00165	0.00164
55	0.00690	0.00274	0.00260
60	0.01051	0.00513	0.00453
65	0.00955	0.00972	0.00839
70	0.01733	0.01667	0.01441
75	0.02935	0.02790	0.02421
80	0.05123	0.04576	0.03967
85	0.07697	0.07756	0.06704
90	0.13601	0.13124	0.11493

*The base table is the RP-2000 mortality table projected 13 years using projection Scale BB and will be further projected on a generational basis using projection Scale BB.

TABLE 14

**COMPARISON OF ACTUAL AND EXPECTED RATES
OF MORTALITY AFTER RETIREMENT**

DISABILITY

CENTRAL AGE OF GROUP	ACTUAL RATES	CURRENT RATES	PROPOSED RATES: NO CHANGE
45	0.00855	0.00803	0.00803
50	0.00782	0.01059	0.01059
55	0.01413	0.01210	0.01210
60	0.02403	0.01426	0.01426
65	0.02459	0.01949	0.01949
70	0.03206	0.02412	0.02412
75	0.07143	0.04325	0.04325
80	0.09434	0.07899	0.07899
85	0.07979	0.11728	0.11728
90	0.13559	0.16179	0.16179

Appendix B: Complete Set of Proposed Assumptions

TABLE 1

ACTIVE WITHDRAWAL TABLES

AGE	RATE OF WITHDRAWAL					
	Less Than 2 Years	2 Years of Service	3 Years of Service	4 Years of Service	5 -9 Years of Service	10 or More Years of Service
20	0.02500	0.01620	0.01400	0.00000	0.00000	0.00000
21	0.02500	0.01620	0.01400	0.00000	0.00000	0.00000
22	0.02500	0.01620	0.01400	0.00000	0.00000	0.00000
23	0.06900	0.02030	0.01180	0.00600	0.00350	0.00000
24	0.06900	0.02030	0.01180	0.00600	0.00350	0.00000
25	0.06900	0.02030	0.01180	0.00600	0.00350	0.00000
26	0.06900	0.02030	0.01180	0.00600	0.00350	0.00000
27	0.06900	0.02030	0.01180	0.00600	0.00350	0.00000
28	0.09300	0.02750	0.01760	0.01310	0.00600	0.00240
29	0.09300	0.02750	0.01760	0.01310	0.00600	0.00240
30	0.09300	0.02750	0.01760	0.01310	0.00600	0.00240
31	0.09300	0.02750	0.01760	0.01310	0.00600	0.00240
32	0.09300	0.02750	0.01760	0.01310	0.00600	0.00240
33	0.09800	0.03173	0.01760	0.01572	0.00770	0.00240
34	0.09800	0.03173	0.01760	0.01572	0.00770	0.00240
35	0.09800	0.03173	0.01760	0.01572	0.00770	0.00240
36	0.09800	0.03173	0.01760	0.01572	0.00770	0.00240
37	0.09800	0.03173	0.01760	0.01572	0.00770	0.00240
38	0.13700	0.02250	0.01850	0.01740	0.00670	0.00270
39	0.13700	0.02250	0.01850	0.01740	0.00670	0.00270
40	0.13700	0.02250	0.01850	0.01740	0.00670	0.00270
41	0.13700	0.02250	0.01850	0.01740	0.00670	0.00270
42	0.13700	0.02250	0.01850	0.01740	0.00670	0.00270
43	0.03500	0.02250	0.01850	0.02320	0.01350	0.00280
44	0.03500	0.02250	0.01850	0.02320	0.01350	0.00280
45	0.03500	0.02250	0.01850	0.02320	0.01350	0.00280
46	0.03500	0.02250	0.01850	0.02320	0.01350	0.00280
47	0.03500	0.02250	0.01850	0.02320	0.01350	0.00280
48	0.00000	0.02250	0.01850	0.02000	0.01600	0.00300
49	0.00000	0.02250	0.01850	0.02000	0.01600	0.00300
50	0.00000	0.02250	0.01850	0.02000	0.01600	0.00300
51	0.00000	0.02250	0.01850	0.02000	0.01600	0.00300
52	0.00000	0.02250	0.01850	0.02000	0.01600	0.00300
53	0.00000	0.02250	0.01850	0.01000	0.01600	0.00300
54	0.00000	0.02250	0.01850	0.01000	0.01600	0.00300

TABLE 2

ACTIVE DEATH AND DISABILITY TABLES

AGE	RATES OF DEATH			RATES OF DISABILITY	
	Ordinary		Accidental	Ordinary	Accidental
	MALE*	FEMALE*			
20	0.00033	0.00018	0.00006	0.00032	0.00021
21	0.00034	0.00019	0.00006	0.00032	0.00021
22	0.00035	0.00019	0.00006	0.00032	0.00025
23	0.00036	0.00019	0.00006	0.00045	0.00025
24	0.00036	0.00019	0.00006	0.00045	0.00029
25	0.00036	0.00020	0.00006	0.00045	0.00029
26	0.00036	0.00021	0.00006	0.00045	0.00033
27	0.00037	0.00021	0.00006	0.00045	0.00037
28	0.00038	0.00023	0.00006	0.00106	0.00366
29	0.00040	0.00024	0.00006	0.00127	0.00322
30	0.00043	0.00025	0.00006	0.00147	0.00278
31	0.00048	0.00030	0.00006	0.00167	0.00234
32	0.00054	0.00034	0.00006	0.00187	0.00190
33	0.00061	0.00038	0.00006	0.00189	0.00527
34	0.00068	0.00042	0.00006	0.00227	0.00460
35	0.00074	0.00046	0.00008	0.00265	0.00393
36	0.00081	0.00049	0.00008	0.00303	0.00326
37	0.00087	0.00053	0.00008	0.00341	0.00260
38	0.00093	0.00058	0.00008	0.00348	0.00477
39	0.00098	0.00062	0.00008	0.00355	0.00450
40	0.00104	0.00068	0.00008	0.00362	0.00423
41	0.00110	0.00074	0.00008	0.00369	0.00396
42	0.00117	0.00082	0.00008	0.00376	0.00370
43	0.00125	0.00090	0.00008	0.00379	0.00578
44	0.00134	0.00099	0.00008	0.00386	0.00487
45	0.00145	0.00108	0.00009	0.00394	0.00396
46	0.00155	0.00118	0.00009	0.00401	0.00305
47	0.00167	0.00128	0.00009	0.00409	0.00215
48	0.00179	0.00138	0.00009	0.00412	0.00197
49	0.00192	0.00149	0.00009	0.00430	0.00191
50	0.00206	0.00161	0.00009	0.00449	0.00179
51	0.00236	0.00178	0.00009	0.00467	0.00173
52	0.00257	0.00194	0.00009	0.00487	0.00168
53	0.00280	0.00212	0.00009	0.00550	0.00273
54	0.00307	0.00230	0.00009	0.00550	0.00161
55	0.00349	0.00255	0.00014	0.00554	0.00161
56	0.00404	0.00286	0.00014	0.00648	0.00161
57	0.00446	0.00317	0.00014	0.00648	0.00161
58	0.00494	0.00353	0.00014	0.00648	0.00161
59	0.00550	0.00395	0.00014	0.00648	0.00161
60	0.00616	0.00444	0.00013	0.01024	0.00161
61	0.00692	0.00504	0.00008	0.01152	0.00161
62	0.00779	0.00569	0.00008	0.01296	0.00161
63	0.00879	0.00654	0.00008	0.01512	0.00161
64	0.00977	0.00737	0.00008	0.01680	0.00161

* Projected from 2000 to 2013 with projection Scale BB.

TABLE 3

ACTIVE SERVICE RETIREMENT TABLES

AGE	RATES OF SERVICE RETIREMENTS			
	Less Than 21 Years of Service	21- 24 Years of Service	25 Years of Service	Greater Than 25 Years of Service
40	0.0400	0.0060	0.4557	0.1540
41	0.0400	0.0060	0.4557	0.1540
42	0.0400	0.0060	0.4557	0.1540
43	0.0400	0.0060	0.5483	0.1540
44	0.0400	0.0060	0.5483	0.1540
45	0.0400	0.0060	0.5483	0.1540
46	0.0400	0.0060	0.5483	0.1540
47	0.0400	0.0060	0.5483	0.1540
48	0.0430	0.0060	0.5762	0.1848
49	0.0430	0.0060	0.5762	0.1848
50	0.0430	0.0060	0.5762	0.1848
51	0.0430	0.0060	0.5762	0.1848
52	0.0430	0.0060	0.5762	0.1848
53	0.0500	0.0000	0.6111	0.2185
54	0.1000	0.0000	0.6111	0.2447
55	0.0600	0.0000	0.6494	0.2447
56	0.0480	0.0000	0.7173	0.2447
57	0.0320	0.0000	0.7749	0.2447
58	0.0320	0.0000	0.7749	0.2447
59	0.0320	0.0000	0.7749	0.2734
60	0.0320	0.0000	0.7749	0.2734
61	0.0425	0.0000	0.8524	0.3189
62	0.1275	0.0000	0.8524	0.3189
63	0.1275	0.0000	0.8524	0.3189
64	0.3750	0.0000	0.8524	0.5103
65	1.0000	1.0000	1.0000	1.0000

TABLE 4

ACTIVE SALARY INCREASE TABLE*

AGE	RATE	AGE	RATE
19	0.15704	42	0.04808
20	0.15236	43	0.04419
21	0.14768	44	0.04408
22	0.14300	45	0.04397
23	0.11229	46	0.04397
24	0.10856	47	0.04397
25	0.10484	48	0.04251
26	0.09943	49	0.04251
27	0.09402	50	0.04251
28	0.08503	51	0.04251
29	0.07987	52	0.04251
30	0.07470	53	0.04101
31	0.07156	54	0.04101
32	0.06842	55	0.04101
33	0.06265	56	0.04101
34	0.05966	57	0.04101
35	0.05666	58	0.03850
36	0.05535	59	0.03850
37	0.05404	60	0.03850
38	0.05081	61	0.03850
39	0.04956	62	0.03850
40	0.04831	63	0.03598
41	0.04819	64	0.03598

* The assumed salary increases are reduced by 1.00% per annum through fiscal year 2021.

TABLE 5

BASE MORTALITY TABLES FOR SERVICE RETIREMENTS*

AGE	RATES OF MORTALITY		AGE	RATES OF MORTALITY	
	MALE**	FEMALE***		MALE**	FEMALE***
40	0.00107	0.00068	75	0.03730	0.02402
41	0.00113	0.00074	76	0.04158	0.02647
42	0.00120	0.00082	77	0.04630	0.02915
43	0.00129	0.00090	78	0.05150	0.03213
44	0.00138	0.00099	79	0.05729	0.03548
45	0.00149	0.00108	80	0.06372	0.03922
46	0.00159	0.00118	81	0.07139	0.04340
47	0.00171	0.00128	82	0.07984	0.04812
48	0.00183	0.00138	83	0.08900	0.05343
49	0.00196	0.00149	84	0.09908	0.05942
50	0.00210	0.00161	85	0.10998	0.06620
51	0.00240	0.00178	86	0.12194	0.07383
52	0.00261	0.00194	87	0.13523	0.08234
53	0.00286	0.00212	88	0.14984	0.09172
54	0.00313	0.00230	89	0.16559	0.10185
55	0.00355	0.00255	90	0.18267	0.11405
56	0.00412	0.00286	91	0.19897	0.12689
57	0.00461	0.00317	92	0.21596	0.14014
58	0.00519	0.00353	93	0.23296	0.15353
59	0.00585	0.00395	94	0.24994	0.16685
60	0.00664	0.00444	95	0.26696	0.17987
61	0.00756	0.00504	96	0.28334	0.19242
62	0.00863	0.00569	97	0.29925	0.20431
63	0.00987	0.00654	98	0.31498	0.21258
64	0.01112	0.00737	99	0.32988	0.22252
65	0.01256	0.00830	100	0.34421	0.22837
66	0.01422	0.00936	101	0.35863	0.23854
67	0.01587	0.01040	102	0.37169	0.24796
68	0.01762	0.01149	103	0.38304	0.26261
69	0.01952	0.01270	104	0.39200	0.27545
70	0.02187	0.01431	105	0.39789	0.29312
71	0.02420	0.01588	106	0.40000	0.30781
72	0.02687	0.01766	107	0.40000	0.32273
73	0.02993	0.01963	108	0.40000	0.33744
74	0.03339	0.02176	109	0.40000	0.35154

* Base tables are projected from 2013 using projection Scale BB.

** Projected from 2011 to 2012 with projection Scale AA.

*** Projected from 2000 to 2013 with projection Scale BB.

TABLE 6

**BASE MORTALITY TABLES FOR BENEFICIARIES OF
DECEASED ACTIVES AND PENSIONERS***

AGE	RATES OF MORTALITY		AGE	RATES OF MORTALITY	
	MALE**	FEMALE**		MALE**	FEMALE**
20	0.00033	0.00018	65	0.01089	0.00830
21	0.00034	0.00019	66	0.01216	0.00936
22	0.00035	0.00019	67	0.01338	0.01040
23	0.00036	0.00019	68	0.01468	0.01149
24	0.00036	0.00019	69	0.01627	0.01270
25	0.00036	0.00020	70	0.01825	0.01431
26	0.00036	0.00021	71	0.02019	0.01588
27	0.00037	0.00021	72	0.02242	0.01766
28	0.00038	0.00023	73	0.02497	0.01963
29	0.00040	0.00024	74	0.02785	0.02176
30	0.00043	0.00025	75	0.03109	0.02402
31	0.00048	0.00030	76	0.03465	0.02647
32	0.00054	0.00034	77	0.03854	0.02915
33	0.00061	0.00038	78	0.04283	0.03213
34	0.00068	0.00042	79	0.04759	0.03548
35	0.00074	0.00046	80	0.05289	0.03922
36	0.00081	0.00049	81	0.05919	0.04340
37	0.00087	0.00053	82	0.06613	0.04812
38	0.00093	0.00058	83	0.07371	0.05343
39	0.00098	0.00062	84	0.08198	0.05942
40	0.00104	0.00068	85	0.09100	0.06620
41	0.00110	0.00074	86	0.10089	0.07383
42	0.00117	0.00082	87	0.11326	0.08234
43	0.00125	0.00090	88	0.12703	0.09172
44	0.00134	0.00099	89	0.14225	0.10185
45	0.00145	0.00108	90	0.15884	0.11405
46	0.00155	0.00118	91	0.17530	0.12689
47	0.00167	0.00128	92	0.19259	0.14014
48	0.00179	0.00138	93	0.21049	0.15353
49	0.00192	0.00149	94	0.22881	0.16685
50	0.00206	0.00161	95	0.24736	0.17987
51	0.00236	0.00178	96	0.26600	0.19242
52	0.00257	0.00194	97	0.28463	0.20431
53	0.00280	0.00212	98	0.29929	0.21258
54	0.00307	0.00230	99	0.31756	0.22252
55	0.00349	0.00255	100	0.33136	0.22837
56	0.00404	0.00286	101	0.34942	0.23854
57	0.00446	0.00317	102	0.36214	0.24796
58	0.00494	0.00353	103	0.37809	0.26261
59	0.00550	0.00395	104	0.38694	0.27545
60	0.00616	0.00444	105	0.39789	0.29312
61	0.00692	0.00504	106	0.40000	0.30781
62	0.00779	0.00569	107	0.40000	0.32273
63	0.00879	0.00654	108	0.40000	0.33744
64	0.00977	0.00737	109	0.40000	0.35154

* Base tables are projected from 2013 using projection Scale BB.

** Projected from 2000 to 2013 with projection Scale BB.

TABLE 7

UNISEX MORTALITY TABLE FOR DISABILITIES

RATES OF MORTALITY			
AGE	RATE	AGE	RATE
25	0.00540	68	0.02140
26	0.00540	69	0.02228
27	0.00540	70	0.02316
28	0.00547	71	0.02566
29	0.00555	72	0.02810
30	0.00562	73	0.03206
31	0.00569	74	0.03688
32	0.00576	75	0.04230
33	0.00583	76	0.04865
34	0.00591	77	0.05636
35	0.00598	78	0.06534
36	0.00605	79	0.07172
37	0.00612	80	0.07869
38	0.00619	81	0.08590
39	0.00627	82	0.09332
40	0.00634	83	0.10107
41	0.00641	84	0.10900
42	0.00648	85	0.11709
43	0.00786	86	0.12538
44	0.00795	87	0.13384
45	0.00803	88	0.14264
46	0.00812	89	0.15184
47	0.00821	90	0.16151
48	0.01037	91	0.17144
49	0.01048	92	0.18151
50	0.01058	93	0.19169
51	0.01070	94	0.20388
52	0.01080	95	0.21705
53	0.01124	96	0.23058
54	0.01166	97	0.24523
55	0.01210	98	0.26115
56	0.01253	99	0.27821
57	0.01296	100	0.29684
58	0.01340	101	0.31721
59	0.01382	102	0.33950
60	0.01426	103	0.36558
61	0.01469	104	0.39735
62	0.01512	105	0.43666
63	0.01847	106	0.48541
64	0.01898	107	0.54546
65	0.01949	108	0.61870
66	0.02001	109	0.70700
67	0.02052		