THE POLICE AND FIREMEN'S RETIREMENT SYSTEM OF NEW JERSEY REPORT ON AN INVESTIGATION OF EXPERIENCE PREPARED AS OF JUNE 30, 2010

buckconsultants⁻

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October 28, 2011

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 and service 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 results of this review are dependent on the accuracy of the data.

The recommended assumptions contained in this report are to be used to value 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. The experience investigation was performed by, and under the supervision of, independent qualified actuaries who are members of the American Academy of Actuaries with experience in performing experience investigations for public retirement systems.

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

Respectfully submitted,

Ash

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REPORT ON AN INVESTIGATION OF THE EXPERIENCE OF THE POLICE AND FIREMEN'S RETIREMENT SYSTEM OF NEW JERSEY PREPARED AS OF JUNE 30, 2010

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 and service 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 Actuarial Standards of Practice No. 35 (ASOP 35). ASOP 35 provides guidance to actuaries in selecting demographic and other noneconomic assumptions (including, but not limited to retirement, mortality and mortality improvement, termination of employment and disability) for measuring obligations under defined benefit plans.

This report summarizes the Retirement System experience for the period from July 1, 2007 through June 30, 2010. 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, 2013 and proposed changes, if warranted, will be recommended at that time.

To avoid inflating assumed future rates of retirement that are not representative of "normal" retirement experience, we removed the effects of Chapter 126, P.L. 2000 and other unauthorized Early Retirement Incentive (ERI) programs. To remove the effect of the ERI's, all members who elected to retire under one of the ERI programs were excluded from the examination of the active members' experience portion of the study.

Finally, we have included an examination of the current salary increase assumption in this study.

II. EXAMINATION OF EXPERIENCE

Although this study covers the period from July 1, 2007 to June 30, 2010, 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, 2004 - June 30, 2007 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 Sections (A) and (B) of this section 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.

(A) ACTIVE PLAN EXPERIENCE

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

- Non-Vested Withdrawal Rates
- Vested Withdrawal Rates
- Ordinary Death Rates
- Accidental Death Rates
- Ordinary Disability Rates
- Accidental Disability Rates
- Service Retirement Rates
- Salary Increase Rates

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

NON-VESTED WITHDRAWALS

SCHEDULE A: LESS THAN 2 YEARS OF SERVICE

		NUMBER OF SEPARATIONS							
CENTRAL		Ratio of Actual							
AGE OF			Expe	ected	to Exp	ected			
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed			
20	366	8	9.16	9.15	0.873	0.874			
25	2,997	165	138.46	149.85	1.192	1.101			
30	1,766	116	93.24	105.96	1.244	1.095			
35	916	81	49.46	64.12	1.638	1.263			
40	167	25	10.02	16.70	2.495	1.497			
45	9	0	0.32	0.32	0.000	0.000			
50	0	0	0.00	0.00	0.000	0.000			
54	0	0	0.00	0.00	0.000	0.000			
Total	6,221	395	300.66	346.10	1.314	1.141			

Recommendation: Increase rates for ages 25 to 40.

		NUMBER OF SEPARATIONS							
CENTRAL					Ratio o	f Actual			
AGE OF			Expe	ected	to Exp	ected			
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed			
20	86	0	1.64	1.39	0.000	0.000			
25	2,126	25	40.61	34.44	0.616	0.726			
30	1,723	35	37.91	37.91	0.923	0.923			
35	926	19	20.84	20.84	0.912	0.912			
40	228	7	5.13	5.13	1.365	1.365			
45	3	0	0.07	0.07	0.000	0.000			
50	4	0	0.09	0.09	0.000	0.000			
54	0	0	0.00	0.00	0.000	0.000			
Total	5,096	86	106.29	99.87	0.809	0.861			

SCHEDULE B: 2 YEARS OF SERVICE

Recommendation: Decrease rates for ages 20 to 25.

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

NON-VESTED WITHDRAWALS (Continued)

SCHEDULE C: 3 YEARS OF SERVICE

		NUMBER OF SEPARATIONS							
CENTRAL					Ratio of	f Actual			
AGE OF			Expe	ected	to Exp	ected			
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed			
20	16	0	0.25	0.22	0.000	0.000			
25	1,691	16	26.55	23.67	0.603	0.676			
30	1,886	36	33.19	33.19	1.085	1.085			
35	1,041	17	18.32	18.32	0.928	0.928			
40	335	8	6.20	6.20	1.290	1.290			
45	8	0	0.15	0.15	0.000	0.000			
50	3	0	0.06	0.06	0.000	0.000			
54	0	0	0.00	0.00	0.000	0.000			
Total	4,980	77	84.72	81.81	0.909	0.941			

Recommendation: Decrease rates for ages 20 to 25.

		NUMBER OF SEPARATIONS							
CENTRAL					Ratio o	f Actual			
AGE OF			Expe	ected	to Exp	ected			
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed			
20	10	0	0.00	0.00	0.000	0.000			
25	1,285	8	15.68	11.57	0.510	0.691			
30	2,129	23	37.04	27.78	0.621	0.828			
35	1,091	11	18.98	14.24	0.580	0.772			
40	472	8	10.95	8.21	0.731	0.974			
45	18	2	0.42	0.42	4.762	4.762			
50	11	3	0.22	0.22	13.636	13.636			
54	0	0	0.00	0.00	0.000	0.000			
Total	5,016	55	83.29	62.44	0.660	0.881			

SCHEDULE D: 4 YEARS OF SERVICE

Recommendation: Decrease rates for ages 25 to 40.

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

NON-VESTED WITHDRAWALS (Continued)

SCHEDULE E: 5 - 9 YEARS OF SERVICE

		NUMBER OF SEPARATIONS							
CENTRAL		Ratio of Actual							
AGE OF			Expe	ected	to Exp	ected			
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed			
20	0	0	0.00	0.00	0.000	0.000			
25	1,761	4	9.33	6.16	0.429	0.649			
30	10,263	42	66.71	56.45	0.630	0.744			
35	9,452	71	72.78	72.78	0.976	0.976			
40	4,925	30	44.32	37.92	0.677	0.791			
45	914	13	12.34	12.34	1.053	1.053			
50	73	0	1.17	1.17	0.000	0.000			
54	14	1	0.23	0.23	4.348	4.348			
Total	27,402	1 <mark>6</mark> 1	206.88	187.05	0.778	0.861			

Recommendation: Decrease rates for ages 20 to 40.

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

		NUMBER OF SEPARATIONS							
CENTRAL		Ratio of Actual							
AGE OF			Expe	ected	to Exp	ected			
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed			
20	0	0	0.00	0.00	0.000	0.000			
25	0	0	0.00	0.00	0.000	0.000			
30	1,496	3	5.98	3.59	0.502	0.836			
35	12,314	22	36.95	29.55	0.595	0.745			
40	20,924	50	62.77	56.49	0.797	0.885			
45	11,209	29	33.63	31.39	0.862	0.924			
50	4,123	16	12.37	12.37	1.293	1.293			
54	705	1	2.11	2.11	0.474	0.474			
Total	50,771	121	153.81	135.50	0.787	0.893			

VESTED WITHDRAWALS WITH 10 OR MORE YEARS OF SERVICE

Recommendation: Decrease rates for ages 30 to 45.

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

		N	UMBER OF	MALE DEATI	IS	NUMBER OF MALE DEATHS							
CENTRAL					Ratio o	f Actual							
AGE OF			Expe	ected	to Exp	ected							
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed							
20	417	0	0.15	0.14	0.000	0.000							
25	8 <mark>,</mark> 634	5	3.26	3.18	1.534	1.572							
30	16,593	15	7.75	6.46	1.935	2.322							
35	22,622	12	17.69	13.10	0.678	0.916							
40	27,179	9	29.37	24.38	0.306	0.369							
45	22,031	13	32.91	26.74	0.395	0.486							
50	14,052	23	29.71	24.12	0.774	0.954							
53	1,956	3	5.13	4.18	0.585	0.718							
54	1,662	4	4.67	3.80	0.857	1.053							
55	1,362	5	4.13	3.33	1.211	1.502							
56	1,135	2	3.75	2.97	0.533	0.673							
57	988	1	3.58	2.78	0.279	0.360							
58	843	4	3.37	2.55	1.187	1.569							
59	725	0	3.20	2.40	0.000	0.000							
60	591	2	2.88	2.14	0.694	0.935							
61	503	2	2.71	2.01	0.738	0.995							
62	343	1	2.03	1.51	0.493	0.662							
63	232	2	1.50	1.13	1.333	1.770							
64	170	0	1.19	0.91	0.000	0.000							
Total	122,038	103	158.98	127.83	0.648	0.806							

ORDINARY DEATH

Recommendation: Decrease rates for all ages. In addition, provide for future improvements in mortality using a generational approach.

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

		NU	IMBER OF F	EMALE DEA	THS	NUMBER OF FEMALE DEATHS							
CENTRAL						f Actual							
AGE OF				ected	to Expected								
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed							
20	61	0	0.01	0.01	0.000	0.000							
25	1,226	0	0.26	0.24	0.000	0.000							
30	2,670	0	0.75	0.60	0.000	0.000							
35	3,124	0	1.49	1.11	0.000	0.000							
40	2,796	4	1.98	1.55	2.020	2.581							
45	1,882	2	2.08	1.58	0.962	1.266							
50	1,022	1	1.68	1.33	0.595	0.752							
53	118	0	0.25	0.20	0.000	0.000							
54	124	0	0.29	0.22	0.000	0.000							
55	98	0	0.25	0.19	0.000	0.000							
56	92	0	0.25	0.20	0.000	0.000							
57	78	0	0.23	0.18	0.000	0.000							
58	71	1	0.23	0.18	4.348	5.556							
59	45	0	0.16	0.12	0.000	0.000							
60	42	0	0.17	0.13	0.000	0.000							
61	40	0	0.17	0.13	0.000	0.000							
62	36	0	0.17	0.13	0.000	0.000							
63	23	0	0.12	0.09	0.000	0.000							
64	12	0	0.07	0.05	0.000	0.000							
Total	13,560	8	10.61	8.24	0.754	0.971							

ORDINARY DEATH (Continued)

Recommendation: Decrease rates for all ages. In addition, provide for future improvements in mortality using a generational approach.

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

			NUMBER	OF DEATHS		
CENTRAL						f Actual
AGE OF				ected		pected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
20	478	0	0.03	0.03	0.000	0.000
25	9,860	0	0.59	0.59	0.000	0.000
30	19,263	1	1.16	1.16	0.862	0.862
35	25,746	2	1.88	1.88	1.064	1.064
40	29,975	3	2.39	2.39	1.255	1.255
45	23,913	0	2.04	2.04	0.000	0.000
50	15,074	0	1.35	1.35	0.000	0.000
53	2,074	0	0.19	0.19	0.000	0.000
54	1,786	0	0.16	0.16	0.000	0.000
55	1,460	0	0.20	0.20	0.000	0.000
56	1,227	0	0.17	0.17	0.000	0.000
57	1,066	1	0.15	0.15	6.667	6.667
58	914	0	0.13	0.13	0.000	0.000
59	770	0	0.11	0.11	0.000	0.000
60	633	0	0.09	0.09	0.000	0.000
61	543	0	0.04	0.04	0.000	0.000
62	379	0	0.03	0.03	0.000	0.000
63	255	0	0.02	0.02	0.000	0.000
64	182	0	0.01	0.01	0.000	0.000
Total	135,598	7	10.74	10.74	0.652	0.652

ACCIDENTAL DEATH

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

		N	UMBER OF	SEPARATIO	NS		
CENTRAL					Ratio of Actual		
AGE OF			•	ected	•	pected	
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed	
20	478	0	0.33	0.17	0.000	0.000	
25	9,860	1	9.86	4.93	0.101	0.203	
30	19,263	25	33.81	28.32	0.739	0.883	
35	25,746	79	94.16	85.73	0.839	0.921	
40	29,975	95	145.12	119.90	0.655	0.792	
45	23,913	95	125.63	107.13	0.756	0.887	
50	15,074	63	89.61	76.88	0.703	0.819	
53	2,074	8	14.38	11.49	0.556	0.696	
54	1,786	9	12.38	9.89	0.727	0.910	
55	1,460	3	13.14	10.51	0.228	0.285	
56	1,227	6	11.04	8.83	0.543	0.680	
57	1,066	9	9.59	7.68	0.938	1.172	
58	914	6	8.23	6.58	0.729	0.912	
59	770	5	6.92	5.54	0.723	0.903	
60	633	1	10.13	8.10	0.099	0.123	
61	543	7	9.77	7.82	0.716	0.895	
62	379	1	6.82	5.46	0.147	0.183	
63	255	3	6.88	5.51	0.436	0.544	
64	182	1	5.46	4.37	0.183	0.229	
Total	135,598	417	613.26	514.84	0.680	0.810	

ORDINARY DISABILITY

Recommendation: Decrease rates for all ages.

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

		N	UMBER OF	SEPARATIO	NS		
CENTRAL					Ratio of Actual		
AGE OF				ected	to Exp		
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed	
20	478	0	0.11	0.11	0.000	0.000	
25	9,860	10	3.18	3.18	3.145	3.145	
30	19,263	20	27.30	27.30	0.733	0.733	
35	25,746	75	<mark>61.74</mark>	<mark>61.74</mark>	1.215	1.215	
40	29,975	103	94.81	94.81	1.086	1.086	
45	23,913	67	71.07	71.07	0.943	0.943	
50	15,074	44	27.63	27.63	1.592	1.592	
53	2,074	3	3.34	3.34	0.898	0.898	
54	1,786	2	2.88	2.88	0.694	0.694	
55	1,460	3	2.35	2.35	1.277	1.277	
56	1,227	0	1.98	1.98	0.000	0.000	
57	1,066	0	1.72	1.72	0.000	0.000	
58	914	2	1.47	1.47	1.361	1.361	
59	770	1	1.24	1.24	0.806	0.806	
60	633	3	1.02	1.02	2.941	2.941	
61	543	2	0.87	0.87	2.299	2.299	
62	379	1	0.61	0.61	1.639	1.639	
63	255	1	0.41	0.41	2.439	2.439	
64	182	0	0.29	0.29	0.000	0.000	
Total	135,598	337	304.02	304.02	1.108	1.108	

ACCIDENTAL DISABILITY

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

SERVICE RETIREMENTS

SCHEDULE A: LESS THAN 21 YEARS OF SERVICE

		NUMBER OF SEPARATIONS				
CENTRAL				Ratio of Actual		
AGE OF			Expe	ected	to Exp	pected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
40	1,475	48	35.84	35.84	1.339	1.339
45	2,300	55	57.50	57.50	0.957	0.957
50	910	32	34.13	34.13	0.938	0.938
53	121	4	6.05	6.05	0.661	0.661
54	101	15	5.05	5.05	2.970	2.970
55	332	13	10.62	10.62	1.224	1.224
56	258	2	8.25	8.25	0.242	0.242
57	211	3	6.75	6.75	0.444	0.444
58	176	3	5.63	5.63	0.533	0.533
59	152	4	4.86	4.86	0.823	0.823
60	112	4	3.58	3.58	1.117	1.117
61	101	6	4.30	4.30	1.395	1.395
62	80	14	10.20	10.20	1.373	1.373
63	65	9	8.28	8.28	1.087	1.087
64	47	23	17.62	17.62	1.305	1.305
Total	6,441	235	218.66	218.66	1.075	1.075

Recommendation: No change.

SCHEDULE B: 21 - 24 YEARS OF SERVICE

		N	UMBER OF	SEPARATIO	NS	NUMBER OF SEPARATIONS				
CENTRAL					Ratio o	f Actual				
AGE OF			Expe	ected	to Exp	ected				
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed				
40	1,445	6	0.00	0.00	0.000	0.000				
45	7,934	23	0.00	0.00	0.000	0.000				
50	4,978	20	0.00	0.00	0.000	0.000				
53	591	1	0.00	0.00	0.000	0.000				
54	516	4	0.00	0.00	0.000	0.000				
55	402	1	0.00	0.00	0.000	0.000				
56	345	0	0.00	0.00	0.000	0.000				
57	291	3	0.00	0.00	0.000	0.000				
58	224	2	0.00	0.00	0.000	0.000				
59	173	4	0.00	0.00	0.000	0.000				
60	152	2	0.00	0.00	0.000	0.000				
61	120	2	0.00	0.00	0.000	0.000				
62	70	1	0.00	0.00	0.000	0.000				
63	46	1	0.00	0.00	0.000	0.000				
64	32	6	0.00	0.00	0.000	0.000				
Total	17,319	76	0.00	0.00	0.000	0.000				

COMPARISON OF ACTUAL AND EXPECTED SEPARATIONS FROM ACTIVE SERVICE

SERVICE RETIREMENTS (Continued)

SCHEDULE C: 25 YEARS OF SERVICE

		NUMBER OF SEPARATIONS				
CENTRAL					Ratio o	f Actual
AGE OF			Expe	ected	to Exp	pected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
45	1,090	567	582.08	582.08	0.974	0.974
50	1,729	<mark>8</mark> 81	979.01	979.01	0.900	0.900
53	196	104	115.72	115.72	0.899	0.899
54	178	107	105.09	105.09	1.018	1.018
55	141	72	83.24	83.24	0.865	0.865
56	98	63	65.09	65.09	0.968	0.968
57	109	71	84.46	84.46	0.841	0.841
58	110	73	85.24	85.24	0.856	0.856
59	76	51	58.89	58.89	0.866	0.866
60	63	43	48.81	48. <mark>8</mark> 1	0.881	0.881
61	52	40	40.28	40.28	0.993	0.993
62	38	31	29.44	29.44	1.053	1.053
63	23	21	17.82	17.82	1.178	1.178
64	17	12	13.16	13.16	0.912	0.912
Total	3,920	2,136	2,308.33	2,308.33	0.925	0.925

Recommendation: No change.

SCHEDULE D: GREATER THAN 25 YEARS OF SERVICE

		NUMBER OF SEPARATIONS				
CENTRAL					Ratio o	f Actual
AGE OF			Expe	ected	to Exp	ected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
45	430	50	66.22	66.22	0.755	0.755
50	3,242	421	499.26	499.26	0.843	0.843
53	753	135	131.63	131.63	1.026	1.026
54	682	120	119.21	119.21	1.007	1.007
55	585	123	102.25	102.25	1.203	1.203
56	526	107	91.95	91.95	1.164	1.164
57	455	102	79.53	79.53	1.283	1.283
58	404	88	70.62	70.62	1.246	1.246
59	369	100	84.06	84.06	1.190	1.190
60	306	67	69.70	69.70	0.961	0.961
61	270	71	61.50	61.50	1.154	1.154
62	191	57	43.51	43.51	1.310	1.310
63	121	35	27.57	27.57	1.269	1.269
64	86	55	32.51	32.51	1.692	1.692
Total	8,420	1,531	1,479.52	1,479.52	1.035	1.035

COMPARISON OF ACTUAL AND EXPECTED ACTIVE SALARY INCREASES

	SALARY INCREASE						
CENTRAL	Actual			Ratio of			
AGE OF	Salary from			Actual to			
GROUP	Previous Year	Actual	Expected	Expected			
20	\$ 17,777,423	\$ 21,072,632	\$ 19,860,804	1.061			
25	462,623,715	529,633,166	509,990,200	1.039			
30	1,171,378,147	1,287,300,528	1,267,370,776	1.016			
35	1,859,950,630	1,978,933,548	1,984,973,417	0.997			
40	2,442,718,049	2,555,653,662	2,591,331,250	0.986			
45	2,054,529,132	2,136,263,103	2,176,951,820	0.981			
50	1,261,056,010	1,307,927,195	1,336,088,816	0.979			
55	616,617,322	638,432,241	653,306,040	0.977			
60	239,264,468	247,201,151	253,500,699	0.975			
63 <mark>& 6</mark> 4	25,505,438	26,198,289	27,023,012	0.969			
Total	\$ 10,151,420,334	\$ 10,728,615,515	\$ 10,820,396,834	0.992			

(B) INACTIVE PLAN EXPERIENCE

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

- Service Retirement Mortality Rates
- Beneficiary Mortality Rates
- Disability Mortality Rates

COMPARISON OF ACTUAL AND EXPECTED RATES OF MORTALITY AFTER RETIREMENT

		NUMBER OF MALE DEATHS				
CENTRAL					Ratio o	f Actual
AGE OF			Expe	ected	to Exp	pected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
45	1,273	1	2.01	2.01	0.498	0.498
50	5,258	20	12.11	12.11	1.652	1.652
55	9,711	39	36.58	36.58	1.066	1.066
60	13,303	121	92.70	92.70	1.305	1.305
65	12,342	163	158.55	158.55	1.028	1.028
70	8,679	208	190.65	190.65	1.091	1.091
75	5,754	203	218.02	218.02	0.931	0.931
80	4,333	274	280.30	280.30	0.978	0.978
85	2,890	301	311.29	311.29	0.967	0.967
90	839	127	145.31	145.31	0.874	0.874
Total	64,382	1,457	1,447.52	1,447.52	1.007	1.007

SERVICE RETIREMENT

Recommendation: No change in base mortality table; however, provide for future improvements in mortality using a generational approach.

		NUMBER OF FEMALE DEATHS				
CENTRAL					Ratio o	f Actual
AGE OF			Expe	ected	to Exp	ected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
45	156	0	0.18	0.18	0.000	0.000
50	360	0	0.63	0.63	0.000	0.000
55	406	0	1.11	1.11	0.000	0.000
60	285	3	1.44	1.44	2.083	2.083
65	208	3	2.03	2.03	1.478	1.478
70	168	3	2.78	2.78	1.079	1.079
75	86	1	2.35	2.35	0.426	0.426
80	45	4	1.99	1.99	2.010	2.010
85	28	2	2.13	2.13	0.939	0.939
90	7	2	0.85	0.85	2.353	2.353
Total	1,749	18	15.49	15.49	1.162	1.162

Recommendation: No change in base mortality table; however, provide for future improvements in mortality using a generational approach.

COMPARISON OF ACTUAL AND EXPECTED RATES OF MORTALITY AFTER RETIREMENT

		NUMBER OF MALE DEATHS					
CENTRAL					Ratio of	f Actual	
AGE OF			Expe	ected	to Exp	ected	
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed	
Under 45	45	0	0.05	0.05	0.000	0.000	
50	20	1	0.04	0.04	25.000	25.000	
55	11	0	0.04	0.04	0.000	0.000	
60	13	0	0.09	0.09	0.000	0.000	
65	16	0	0.19	0.19	0.000	0.000	
70	9	0	0.18	0.18	0.000	0.000	
75	8	1	0.32	0.32	3.125	3.125	
80	11	0	0.73	0.73	0.000	0.000	
85	5	0	0.49	0.49	0.000	0.000	
90	0	0	0.00	0.00	0.000	0.000	
Total	138	2	2.13	2.13	0.939	0.939	

BENEFICIARY OF DECEASED ACTIVE AND RETIRED MEMBERS

Recommendation: No change in base mortality table; however, provide for future improvements in mortality using a generational approach.

		NUMBER OF FEMALE DEATHS				
CENTRAL					Ratio o	f Actual
AGE OF			Expe	ected	to Exp	ected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
Under 45	719	4	0.62	0.62	6.452	6.452
50	624	3	1.09	1.09	2.752	2.752
55	865	2	2.47	2.47	0.810	0.810
60	1,339	14	7.03	7.03	1.991	1.991
65	1,806	33	18.06	18.06	1.827	1.827
70	2,043	43	34.78	34.78	1.236	1.236
75	2,430	64	69.45	<mark>69.45</mark>	0.922	0.922
80	3,158	130	147.51	147.51	0.881	0.881
85	2,521	159	192.98	192.98	0.824	0.824
90	984	128	127.35	127.35	1.005	1.005
Total	16,487	580	601.34	601.34	0.965	0.965

Recommendation: No change in base mortality table; however, provide for future improvements in mortality using a generational approach.

COMPARISON OF ACTUAL AND EXPECTED DEATHS AFTER RETIREMENT

DISABILITY RETIREMENT

		NUMBER OF DEATHS				
CENTRAL					Ratio of	f Actual
AGE OF			Expe	ected	to Exp	ected
GROUP	Exposures	Actual	Current	Proposed	Current	Proposed
Under 45	4,913	29	<mark>63.19</mark>	34.53	0.459	0.840
50	2,007	21	28.32	21.24	0.742	0.989
55	1,936	27	31.13	23.35	0.867	1.156
60	1,948	23	36.99	27.75	0.622	0.829
65	1,441	34	37.39	28.04	0.909	1.213
70	787	20	24.83	18.62	0.805	1.074
75	520	21	25.66	21.69	0.818	0.968
80	272	25	21.32	21.32	1.173	1.173
85	191	22	21.56	21.56	1.020	1.020
90	29	6	4.45	4.45	1.348	1.348
Total	14,046	228	294.84	222.55	0.773	1.024

Recommendation: Decrease rates for ages 75 and younger.

III. COMMENTS AND GENERAL RECOMMENDATION OF THE ACTUARY

RATES OF WITHDRAWAL

The actual and expected numbers of non-vested withdrawals have been summarized in Table 1.

Schedule A of Table 1 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. Actual withdrawals were about 31% higher than those expected. This has been the trend during the prior four studies where the actual rates of withdrawal were greater than assumed. Therefore, we propose a further increase in the assumed rates of withdrawal in this category from ages 25 through 40 to more closely reflect this fifteen-year trend.

Schedule B examines the non-vested withdrawal experience for members with two years of service. The total number of actual terminations was about 20% less than that expected, mainly at the earlier ages. In total, this is a reversal from the prior study, where actual terminations were higher than expected. However, during the three studies prior to the last experience review, the number of actual withdrawals had been consistently lower than that expected at ages 20 to 25. Therefore, we are proposing a decrease in the assumed rates for ages 20 to 25.

Schedule C examines the experience for members with three years of service. Actual terminations are about 10% less than that expected, specifically at the earlier ages. This is a continuation of a trend in the two previous studies. We are proposing a decrease in the assumed rates for ages 20 to 25.

Schedule D examines the experience for non-vested withdrawals with four years of service. Actual terminations are about 34% less than expected. This trend at younger ages is consistent with the prior three studies. However, similar to the previous study, the actual experience for the older ages

was close to expected. Therefore, we recommend a decrease in the assumed rates for ages 25 to 40.

Schedule E shows that the rates assumed for non-vested withdrawals with 5 to 9 years of service are greater than actual experience. This is consistent with the three prior studies. This continued pattern warrants a further reduction in the assumed rates.

Finally, Table 2 presents the experience for vested withdrawals with 10 or more years of service. As in the past six studies, actual terminations continue to be less than expected for ages 30 through 45. We believe that this continued pattern warrants a further reduction in the rates at these ages.

RATES OF DISABILITY RETIREMENT

The experience for ordinary disability is presented in Table 5. It indicates that the number of actual disabilities was about 32% lower than that expected during the measurement period. This result is inconsistent with the results of the prior three studies, when the actual disabilities were significantly greater than those expected. However, in 2007 the New Jersey Supreme Court in Richardson v. Board of Trustees, PFRS, liberalized the conditions for receiving an accidental disability pension. Therefore, we are recommending a decrease in the assumed rates of ordinary disability at this time.

The data for accidental disabilities, as illustrated in Table 6, indicates that there were somewhat more accidental disability retirements than expected during the measurement period (337 actual versus about 304 expected). This result is within an acceptable range and we recommend no change to the current rates.

RATES OF SERVICE RETIREMENT

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 three prior studies. Table 7 presents the experience for service retirements during the study period.

The experience for retirements with less than 21 years of service is presented in Schedule A of Table 7. The data indicates that the number of actual retirements is only slightly higher than that expected (235 actual versus approximately 219 expected). Therefore, we recommend no change in the rates at this time.

The experience for individuals retiring with between 21 and 24 years of service, as presented in Schedule B, is consistent with that expected. Current assumptions assume no terminations for this group and actual experience shows that less than 0.5% of those eligible retired during the measurement period. Therefore, no change is proposed at this time.

Examining the experience for retirements with exactly 25 years of service (the eligibility for Special Retirement), Schedule C indicates that there were 7.5% less actual retirements than expected. This result is within an acceptable range and we are recommending no change in the assumed rates of retirement at this time.

Finally, Schedule D presents the results of the retirement experience for members with greater than 25 years of service. In total, actual retirements were slightly more than expected but are well



within an acceptable range. Therefore, we propose no change in the assumed rates.

RATES OF SALARY INCREASE

The current salary increase assumption varies by age and grades down from just under 12% at age 21 to a flat 5.95% per year for ages 45 and above. Table 8 shows that, in total, the graded annual salary increase assumption is within an acceptable range of actual experience. Therefore, we recommend no changes to the assumed rates at this time.

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." In light of these recommendations, we recommend the use of a generational approach toward future mortality improvements for all inactive members.

The projection of mortality improvements on a generational basis results in a separate table for each year of birth. The rates of mortality decrease as the year of birth increases. For example, a participant born in 1960 will have a higher rate of mortality at each age than a participant born in 1965. The mortality table for birth year 1965 will have five more years of mortality improvement than the table for birth year 1960.

To create this dynamic mortality table, we will select a base mortality table that represents the current experience of the plan. Each year after the measurement date, this base table will be projected with an additional year of improvement. The resulting generational mortality table will better reflect expected future mortality improvements compared to a static table and should decrease the losses experienced by the plan over time.

We recommend the use of projection scale AA in the projection of the mortality tables.

The following table demonstrates the impact of the generational mortality improvement. It compares the expected age at death for members of various ages before and after incorporating the recommended mortality projections. The base table is the current mortality assumption for members retired on account of service retirement which is the RP2000 Combined Healthy Mortality Table.

	Expected Age a	at Death (Males)
Age at Measurement Date	Zero Future Mortality Improvement	Generational Mortality Improvement
50	80.8	82.9
55	81.2	82.8
60	81.7	83.0
65	82.6	83.5

RATES OF DEATH AMONG ACTIVE MEMBERS

The experience for ordinary and accidental death is presented in Tables 3 and 4, respectively. For ordinary death, actual deaths were about 35% lower than expected for males and 25% lower than expected for females. We recommend the continued use of the RP2000 Employee Pre-Retirement Mortality Tables but with a 3 year setback for both males and females resulting in a decrease in rates. This setback mortality table will be used as the base mortality assumption at the measurement date. The base table will then be projected on a generational basis using projection scale AA. The incidence of accidental death is small and no change is recommended. We recommend an assumption of zero future mortality improvement for the accidental death rates.

RATES OF MORTALITY AMONG SERVICE RETIREMENTS

Table 9 summarizes the mortality experience with respect to members retired on account of service retirement. The experience indicates that actual deaths were well within acceptable limits for both male and female retirees. Therefore, we recommend using the current mortality table (RP2000 Combined Health Mortality Tables) as the base table at the measurement date with respect to members retired on account of service retirements. This base table will be projected on a generational basis using projection scale AA.

RATES OF MORTALITY AMONG BENEFICIARIES

Table 10 presents the mortality experience for beneficiaries in receipt of a benefit. The actual number of deaths was close to expected for both male and female beneficiaries. Therefore, we recommend using the current mortality table (RP2000 Combined Health Mortality Tables) as the base table at the measurement date for beneficiaries in receipt of a benefit. This base table will be projected on a generational basis using projection scale AA.

RATES OF MORTALITY AMONG DISABILITY RETIREMENTS

Table 11 summarizes the mortality experience for disability retirements. The total actual deaths are about 23% less than expected. In particular, the actual number of deaths indicates that younger disability retirees are living longer. This is consistent with the results of the previous study. Therefore, we recommend a decrease in the mortality rates for ages 75 and younger. We recommend zero future mortality improvement for disabled members.

IV. SUMMARY OF PROPOSED ASSUMPTIONS

As noted earlier in the report, the experience investigation for the period from July 1, 2007 to June 30, 2010 indicates the need for certain changes in the tables used for determining expected liabilities of the System. The proposed changes are summarized as follows:

Rates	Proposed <u>Changes</u>
 Non-Vested Withdrawal Less Than Two Years of Service Two Years of Service Three Years of Service Four Years of Service Five to Nine Years of Service 	Increase Decrease Decrease Decrease Decrease
Vested WithdrawalTen or More Years of Service	Decrease
Death Ordinary Accidental 	Decrease* No change
Disability Ordinary Accidental 	Decrease No change
 Service Retirement Less Than 21 Years of Service 21 to 24 Years of Service 25 Years of Service Greater Than 25 Years of Service 	No change No change No change No change
Salary Increase	No change
 Inactive Mortality Service Retirements Beneficiaries of Deceased Active and Retired Members Disability Retirements 	No change** No change** Decrease

- * In addition, provide for future improvements in mortality using a generational approach.
- ** No change in base mortality table; however, provide for future improvements in mortality using a generational approach.

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

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.

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

NON-VESTED WITHDRAWALS

SCHEDULE A: LESS THAN 2 YEARS OF SERVICE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.0250	0.0219	0.0250
25	0.0462	0.0551	0.0500
30	0.0528	0.0657	0.0600
35	0.0540	0.0884	0.0700
40	0.0600	0.1497	0.1000
45	0.0350	0.0000	0.0350
50	0.0000	0.0000	0.0000
54	0.0000	0.0000	0.0000

SCHEDULE B: 2 YEARS OF SERVICE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.0191	0.0000	0.0162
25	0.0191	0.0118	0.0162
30	0.0220	0.0203	0.0220
35	0.0225	0.0205	0.0225
40	0.0225	0.0307	0.0225
45	0.0225	0.0000	0.0225
50	0.0225	0.0000	0.0225
54	0.0225	0.0000	0.0225

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

NON-VESTED WITHDRAWALS (Continued)

SCHEDULE C: 3 YEARS OF SERVICE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.0157	0.0000	0.0140
25	0.0157	0.0095	0.0140
30	0.0176	0.0191	0.0176
35	0.0176	0.0163	0.0176
40	0.0185	0.0239	0.0185
45	0.0185	0.0000	0.0185
50	0.0185	0.0000	0.0185
54	0.0185	0.0000	0.0185

SCHEDULE D: 4 YEARS OF SERVICE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.0000	0.0000	0.0000
25	0.0122	0.0062	0.0090
30	0.0174	0.0108	0.0131
35	0.0174	0.0101	0.0131
40	0.0232	0.0169	0.0174
45	0.0232	0.1111	0.0232
50	0.0200	0.2727	0.0200
54	0.0100	0.0000	0.0100

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

NON-VESTED WITHDRAWALS (Continued)

SCHEDULE E: 5 - 9 YEARS OF SERVICE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.0000	0.0000	0.0000
25	0.0053	0.0023	0.0035
30	0.0065	0.0041	0.0055
35	0.0077	0.0075	0.0077
40	0.0090	0.0061	0.0077
45	0.0135	0.0142	0.0135
50	0.0160	0.0000	0.0160
54	0.0160	0.0714	0.0160

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

CENTRAL AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0040	0.0020	0.0024
35	0.0030	0.0018	0.0024
40	0.0030	0.0024	0.0027
45	0.0030	0.0026	0.0028
50	0.0030	0.0039	0.0030
54	0.0030	0.0014	0.0030

VESTED WITHDRAWALS WITH 10 OR MORE YEARS OF SERVICE

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.00035	0.00000	0.00031
25	0.00038	0.00058	0.00036
30	0.00046	0.00090	0.00039
35	0.00077	0.00053	0.00057
40	0.00108	0.00033	0.00090
45	0.00151	0.00059	0.00123
50	0.00215	0.00164	0.00174
53	0.00262	0.00153	0.00214
54	0.00281	0.00241	0.00229
55	0.00303	0.00367	0.00245
56	0.00331	0.00176	0.00262
57	0.00363	0.00101	0.00281
58	0.00400	0.00474	0.00303
59	0.00441	0.00000	0.00331
60	0.00488	0.00338	0.00363
61	0.00538	0.00398	0.00400
62	0.00592	0.00292	0.00441
63	0.00647	0.00862	0.00488
64	0.00703	0.00000	0.00538

ORDINARY DEATH - MALE

ORDINARY DEATH - FEMALE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.00019	0.00000	0.00019
25	0.00021	0.00000	0.00019
30	0.00028	0.00000	0.00023
35	0.00047	0.00000	0.00035
40	0.00072	0.00143	0.00056
45	0.00113	0.00106	0.00086
50	0.00169	0.00098	0.00133
53	0.00214	0.00000	0.00168
54	0.00232	0.00000	0.00181
55	0.00253	0.00000	0.00197
56	0.00276	0.00000	0.00213
57	0.00301	0.00000	0.00232
58	0.00329	0.01408	0.00253
59	0.00360	0.00000	0.00276
60	0.00393	0.00000	0.00301
61	0.00428	0.00000	0.00329
62	0.00466	0.00000	0.00360
63	0.00504	0.00000	0.00393
64	0.00543	0.00000	0.00428

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

ACCIDENTAL DEATH

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE
20	0.00006	0.00000	0.00006
25	0.00006	0.00000	0.00006
30	0.00006	0.00005	0.00006
35	0.00007	0.0008	0.00007
40	0.00008	0.00010	0.00008
45	0.00009	0.00000	0.00009
50	0.00009	0.00000	0.00009
53	0.00009	0.00000	0.00009
54	0.00009	0.00000	0.00009
55	0.00014	0.00000	0.00014
56	0.00014	0.00000	0.00014
57	0.00014	0.00094	0.00014
58	0.00014	0.00000	0.00014
59	0.00014	0.00000	0.00014
60	0.00013	0.00000	0.00013
61	0.00008	0.00000	0.00008
62	0.00008	0.00000	0.00008
63	0.00008	0.00000	0.00008
64	0.0008	0.00000	0.00008

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
20	0.00070	0.00000	0.00035
25	0.00100	0.00010	0.00050
30	0.00173	0.00130	0.00147
35	0.00360	0.00307	0.00333
40	0.00485	0.00317	0.00400
45	0.00527	0.00397	0.00448
50	0.00600	0.00418	0.00510
53	0.00693	0.00386	0.00554
54	0.00693	0.00504	0.00554
55	0.00900	0.00205	0.00720
56	0.00900	0.00489	0.00720
57	0.00900	0.00844	0.00720
58	0.00900	0.00656	0.00720
59	0.00900	0.00649	0.00720
60	0.01600	0.00158	0.01280
61	0.01800	0.01289	0.01440
62	0.01800	0.00264	0.01440
63	0.02700	0.01176	0.02160
64	0.03000	0.00549	0.02400

ORDINARY DISABILITY

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

ACCIDENTAL DISABILITY

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE
20	0.00022	0.00000	0.00022
25	0.00031	0.00101	0.00031
30	0.00139	0.00104	0.00139
35	0.00238	0.00291	0.00238
40	0.00318	0.00344	0.00318
45	0.00291	0.00280	0.00291
50	0.00182	0.00292	0.00182
53	0.00161	0.00145	0.00161
54	0.00161	0.00112	0.00161
55	0.00161	0.00205	0.00161
56	0.00161	0.00000	0.00161
57	0.00161	0.00000	0.00161
58	0.00161	0.00219	0.00161
59	0.00161	0.00130	0.00161
60	0.00161	0.00474	0.00161
61	0.00161	0.00368	0.00161
62	0.00161	0.00264	0.00161
63	0.00161	0.00392	0.00161
64	0.00161	0.00000	0.00161

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

SERVICE RETIREMENTS

SCHEDULE A: LESS THAN 21 YEARS OF SERVICE

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE
40	0.0250	0.0325	0.0250
45	0.0250	0.0239	0.0250
50	0.0375	0.0352	0.0375
53	0.0500	0.0331	0.0500
54	0.0500	0.1485	0.0500
55	0.0320	0.0392	0.0320
56	0.0320	0.0078	0.0320
57	0.0320	0.0142	0.0320
5 8	0.0320	0.0170	0.0320
59	0.0320	0.0263	0.0320
60	0.0320	0.0357	0.0320
61	0.0425	0.0594	0.0425
62	0.1275	0.1750	0.1275
63	0.1275	0.1385	0.1275
64	0.3750	0.4894	0.3750

SCHEDULE B: 21 - 24 YEARS OF SERVICE

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE
40	0.0000	0.0042	0.0000
45	0.0000	0.0029	0.0000
50	0.0000	0.0040	0.0000
53	0.0000	0.0017	0.0000
54	0.0000	0.0078	0.0000
55	0.0000	0.0025	0.0000
56	0.0000	0.0000	0.0000
57	0.0000	0.0103	0.0000
58	0.0000	0.0089	0.0000
59	0.0000	0.0231	0.0000
60	0.0000	0.0132	0.0000
61	0.0000	0.0167	0.0000
62	0.0000	0.0143	0.0000
63	0.0000	0.0217	0.0000
64	0.0000	0.1875	0.0000

COMPARISON OF ACTUAL AND EXPECTED RATES OF SEPARATION FROM ACTIVE SERVICE

SERVICE RETIREMENTS (Continued)

SCHEDULE C: 25 YEARS OF SERVICE

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE
40	0.4557	0.2000	0.4557
45	0.5298	0.5202	0.5298
50	0.5677	0.5095	0.5677
53	0.5904	0.5306	0.5904
54	0.5904	0.6011	0.5904
55	0.5904	0.5106	0.5904
56	0.6642	0.6429	0.6642
57	0.7749	0.6514	0.7749
58	0.7749	0.6636	0.7749
59	0.7749	0.6711	0.7749
60	0.7749	0.6825	0.7749
61	0.7749	0.7692	0.7749
62	0.7749	0.8158	0.7749
63	0.7749	0.9130	0.7749
64	0.7749	0.7059	0.7749

SCHEDULE D: GREATER THAN 25 YEARS OF SERVICE

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE
45	0.1540	0.1163	0.1540
50	0.1540	0.1299	0.1540
53	0.1748	0.1793	0.1748
54	0.1748	0.1760	0.1748
55	0.1748	0.2103	0.1748
56	0.1748	0.2034	0.1748
57	0.1748	0.2242	0.1748
58	0.1748	0.2178	0.1748
59	0.2278	0.2710	0.2278
60	0.2278	0.2190	0.2278
61	0.2278	0.2630	0.2278
62	0.2278	0.2984	0.2278
63	0.2278	0.2893	0.2278
64	0.3780	0.6395	0.3780

COMPARISON OF ACTUAL AND EXPECTED SALARY INCREASES

CENTRAL AGE OF	CURRENT	ACTUAL	PROPOSED RATES: NO
GROUP	RATES	RATES	CHANGE
20	11.74%	18.54%	11.74%
25	10.26%	14.49%	10.26%
30	8.17%	9.90%	8.17%
35	6.74%	6.40%	6.74%
40	6.08%	4.62%	6.08%
45	5.96%	3.98%	5.96%
50	5.95%	3.72%	5.95%
55	5.95%	3.54%	5.95%
60	5.95%	3.32%	5.95%
63 & 64	5.95%	2.72%	5.95%

COMPARISON OF ACTUAL AND EXPECTED RATES OF MORTALITY AFTER RETIREMENT

MALE SERVICE RETIREMENT

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE*
45	0.00151	0.00079	0.00151
50	0.00222	0.00380	0.00222
55	0.00373	0.00402	0.00373
60	0.00688	0.00910	0.00688
65	0.01290	0.01321	0.01290
70	0.02235	0.02397	0.02235
75	0.03824	0.03528	0.03824
80	0.06539	0.06324	0.06539
85	0.11182	0.10415	0.11182
90	0.18336	0.15137	0.18336

FEMALE SERVICE RETIREMENT

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE*
45	0.00113	0.00000	0.00113
50	0.00171	0.00000	0.00171
55	0.00278	0.00000	0.00278
60	0.00518	0.01053	0.00518
65	0.00982	0.01442	0.00982
70	0.01686	0.01786	0.01686
75	0.02832	0.01163	0.02832
80	0.04641	0.08889	0.04641
85	0.07844	0.07143	0.07844
90	0.13207	0.28571	0.13207

*No change in base mortality table; however, future mortality improvements are reflected on a generational basis.

COMPARISON OF ACTUAL AND EXPECTED RATES OF MORTALITY AFTER RETIREMENT

CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE*
45	0.00151	0.00000	0.00151
50	0.00222	0.05000	0.00222
55	0.00373	0.00000	0.00373
60	0.00688	0.00000	0.00688
65	0.01290	0.00000	0.01290
70	0.02235	0.00000	0.02235
75	0.03824	0.12500	0.03824
80	0.06539	0.00000	0.06539
85	0.11182	0.00000	0.11182
90	0.18336	0.00000	0.18336

MALE BENEFICIARY OF DECEASED ACTIVE AND RETIRED MEMBERS

FEMALE BENEFICIARY OF DECEASED ACTIVE AND RETIRED MEMBERS

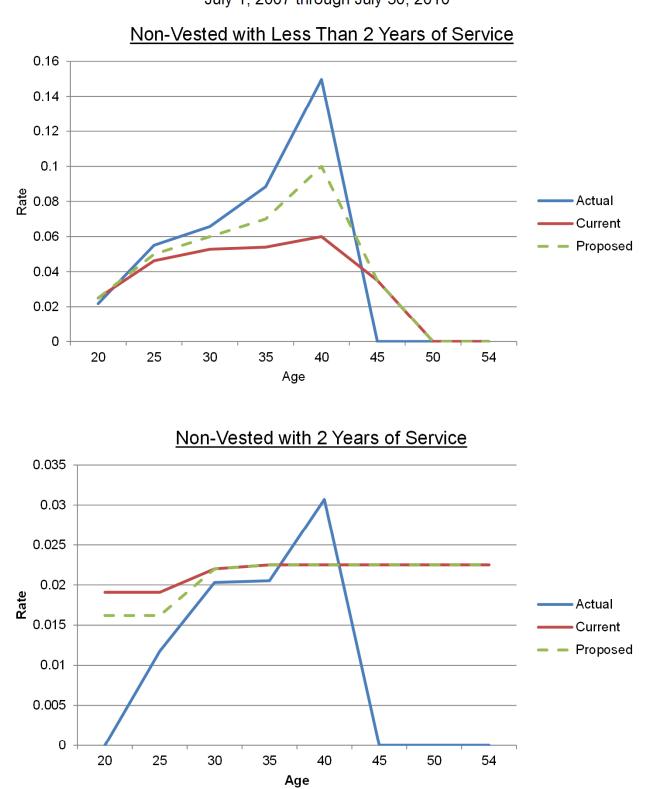
CENTRAL			PROPOSED
AGE OF	CURRENT	ACTUAL	RATES: NO
GROUP	RATES	RATES	CHANGE*
45	0.00113	0.00556	0.00113
50	0.00171	0.00481	0.00171
55	0.00278	0.00231	0.00278
60	0.00518	0.01046	0.00518
65	0.00982	0.01827	0.00982
70	0.01686	0.02105	0.01686
75	0.02832	0.02634	0.02832
80	0.04641	0.04117	0.04641
85	0.07844	0.06307	0.07844
90	0.13207	0.13008	0.13207

*No change in base mortality table; however, future mortality improvements are reflected on a generational basis.

COMPARISON OF ACTUAL AND EXPECTED RATES OF MORTALITY AFTER RETIREMENT

DISABILITY

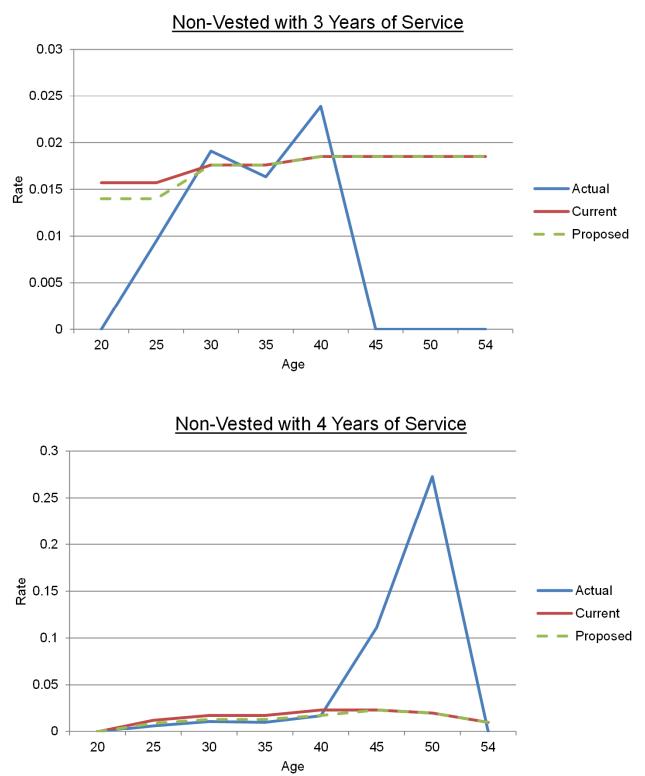
CENTRAL			
AGE OF	CURRENT	ACTUAL	PROPOSED
GROUP	RATES	RATES	RATES
45	0.01339	0.00590	0.00803
50	0.01411	0.01046	0.01059
55	0.01613	0.01395	0.01210
60	0.01901	0.01181	0.01426
65	0.02599	0.02359	0.01949
70	0.03216	0.02541	0.02412
75	0.05040	0.04038	0.04325
80	0.07899	0.09191	0.07899
85	0.11728	0.11518	0.11728
90	0.16179	0.20690	0.16179

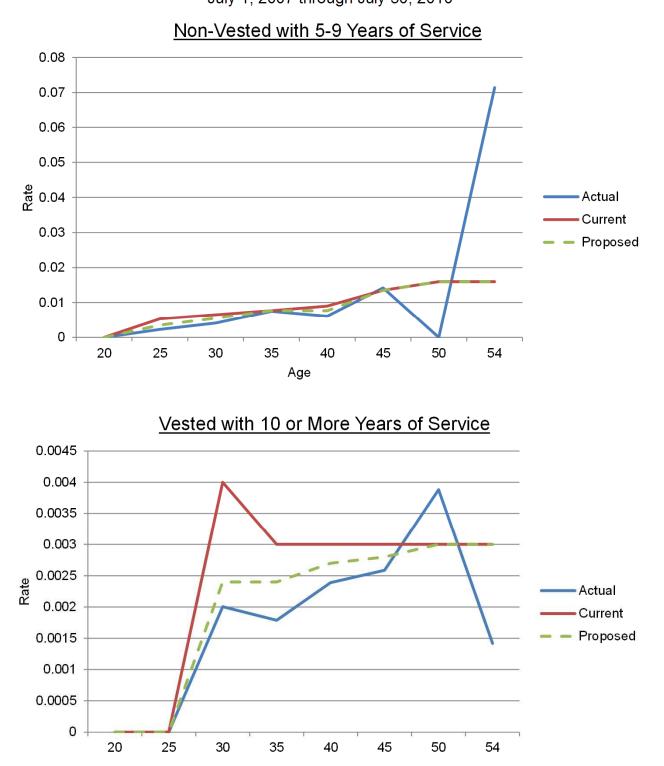


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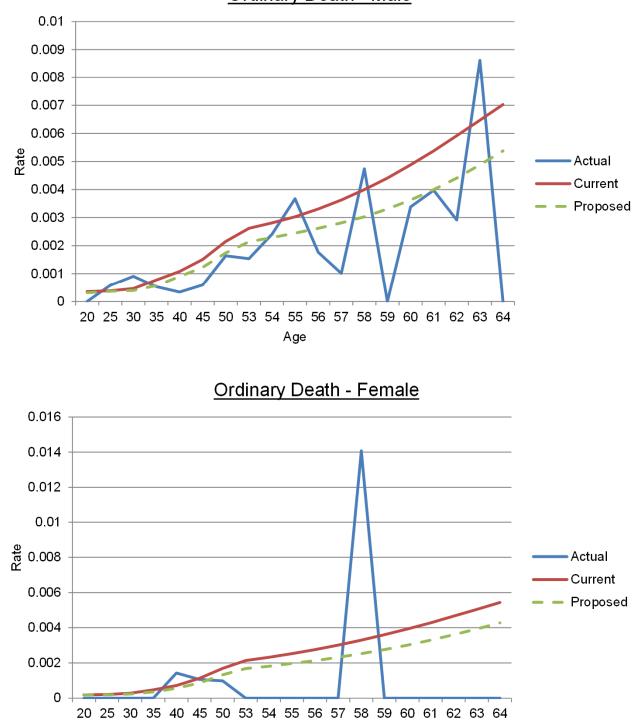
The Police and Firemen's Retirement System of New Jersey

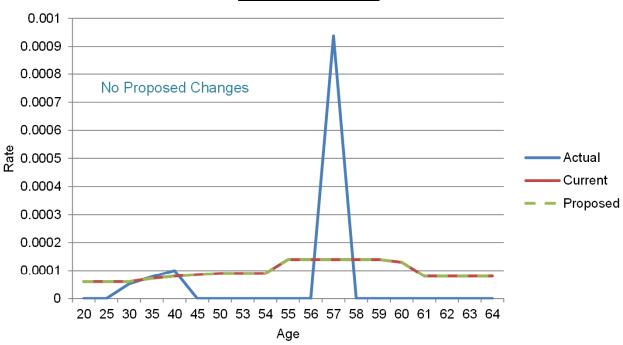
July 1, 2007 through July 30, 2010





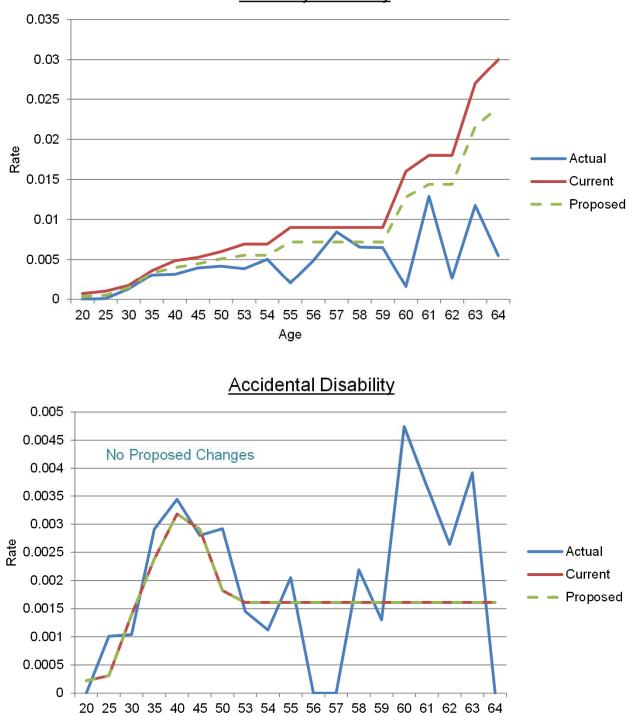
Ordinary Death - Male

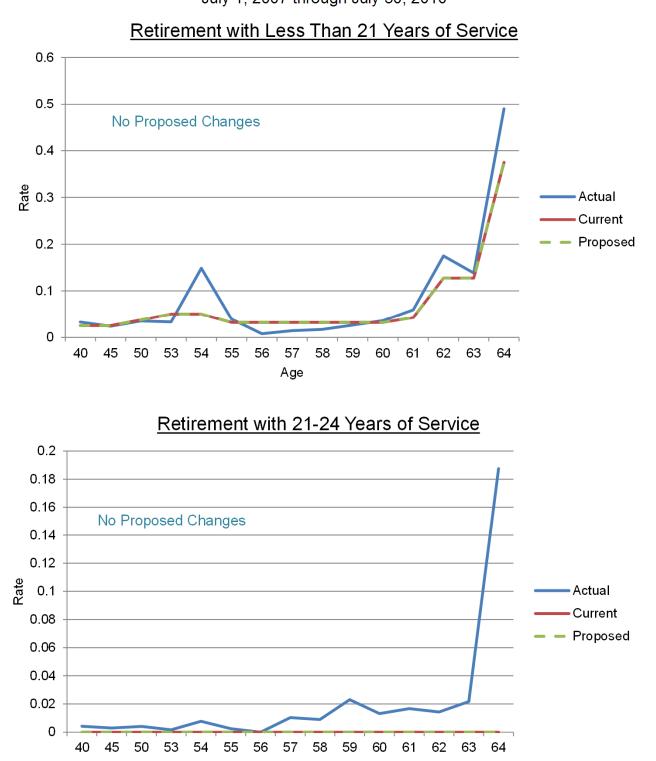


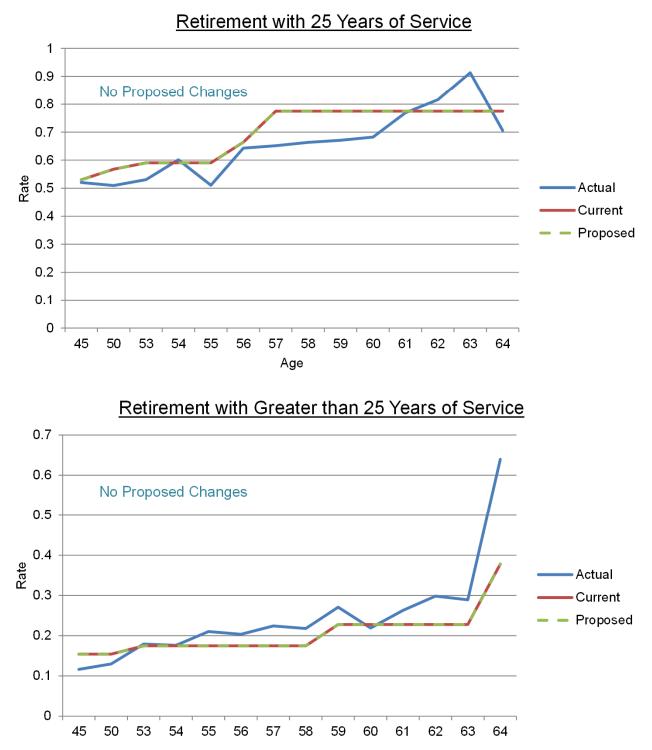


Accidental Death

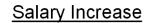
Ordinary Disability

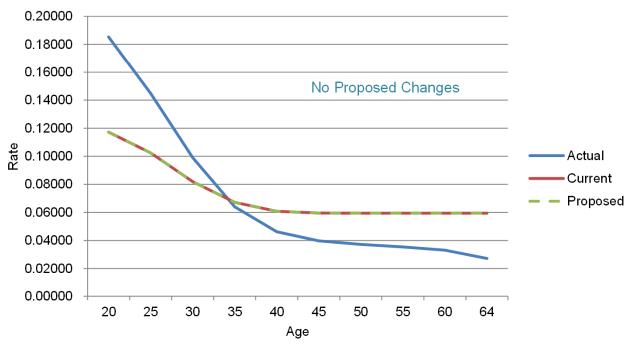


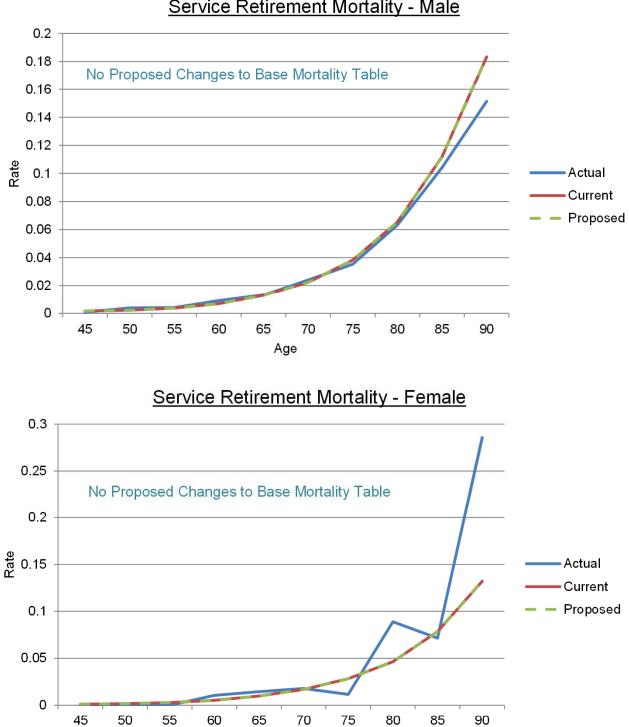




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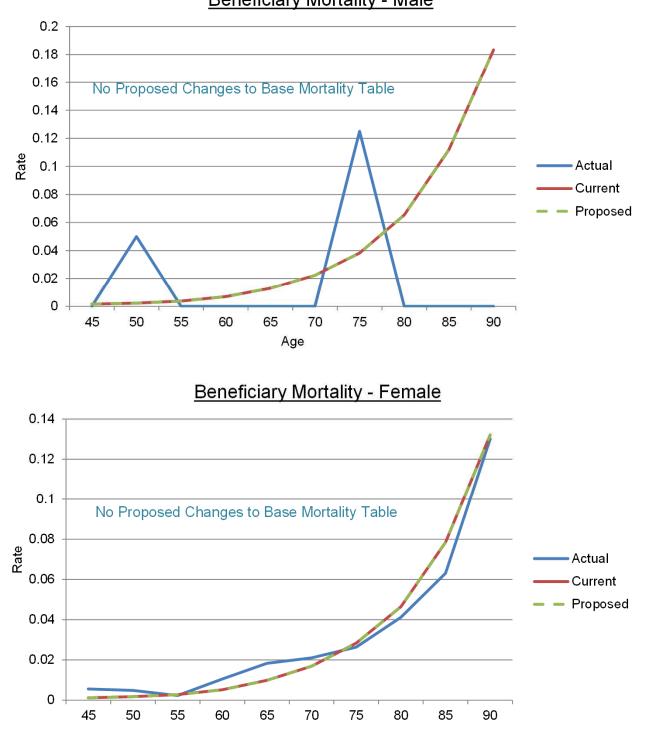




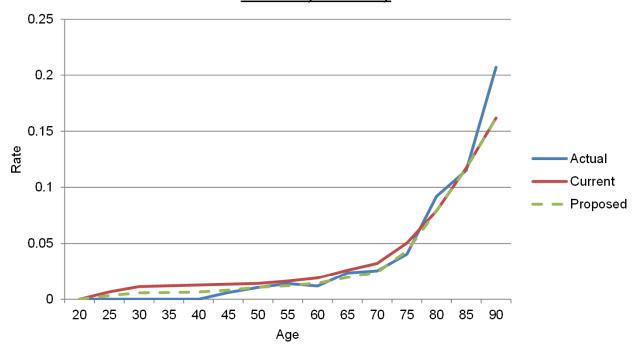


Service Retirement Mortality - Male

Beneficiary Mortality - Male



Disability Mortality



V. COST IMPACT OF THE PROPOSED ASSUMPTIONS

(Reflecting Chapter 78, P.L. 2011 and the 2 Year Lag Period)

The overall effect of the proposed changes in assumptions would be an increase in 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:

	Sta	ate	Local Er	nployers
	Current	Proposed	Current	Proposed
Actuarial Accrued Liability	\$ 3,672,361,258	\$ 3,715,749,445	\$25,601,998,126	\$25,902,573,673
Additional Accrued Liability		\$ 43,388,187		\$ 300,575,547
Unfunded Accrued Liability/(Surplus) ^Ø	\$ 1,481,706,300	\$ 1,525,094,487	\$ 5,234,132,139	\$ 5,534,707,686
Funded Ratios: Actuarial Value of Assets Market Value of Assets	59.7% 48.2%	59.0% 47.7%	79.6% 66.8%	78.6% 66.0%
Required Contribution: [†] Normal Cost Accrued Liability Total Contribution^{+†} 	<pre>\$ 152,709,038 222,525,728 \$ 375,234,766⁰⁰</pre>	 \$ 147,993,474 <u>227,374,363</u> \$ 375,367,837^{ØØ} 	\$ 347,841,756 <u>388,216,039</u> \$ 736,057,795	\$ 362,486,024 <u>414,644,338</u> \$ 777,130,362
Additional Annual Contribution		\$ 133,071		\$ 41,072,567

The calculations were based on the same data and actuarial methods as were used in the revised July 1,

2010 valuation, including an 8-1/4% interest rate.

- ^Ø After reflecting reallocation of liability for State paid Local obligations.
- Does not reflect the phase in under Chapter 1, P.L. 2010.
- ⁺ Required contribution for the fiscal year ending June 30, 2012.
- ⁺⁺ Excludes ERI and Chapter 19, P.L. 2009 payments.

VI. COMPLETE SET OF PROPOSED ASSUMPTIONS

ACTIVE WITHDRAWAL TABLES

			RATE OF	WITHDRAWA	L	
	Less Than	2 Years	3 Years	4 Years	5 -9 Years	10 or More
AGE	2 Years	of Service	of Service	of Service	of Service	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	0.05000	0.01620	0.01400	0.00900	0.00350	0.00000
24	0.05000	0.01620	0.01400	0.00900	0.00350	0.00000
25	0.05000	0.01620	0.01400	0.00900	0.00350	0.00000
26	0.05000	0.01620	0.01400	0.00900	0.00350	0.00000
27	0.05000	0.01620	0.01400	0.00900	0.00350	0.00000
28	0.06000	0.02200	0.01760	0.01310	0.00550	0.00240
29	0.06000	0.02200	0.01760	0.01310	0.00550	0.00240
30	0.06000	0.02200	0.01760	0.01310	0.00550	0.00240
31	0.06000	0.02200	0.01760	0.01310	0.00550	0.00240
32	0.06000	0.02200	0.01760	0.01310	0.00550	0.00240
33	0.07000	0.02250	0.01760	0.01310	0.00770	0.00240
34	0.07000	0.02250	0.01760	0.01310	0.00770	0.00240
35	0.07000	0.02250	0.01760	0.01310	0.00770	0.00240
36	0.07000	0.02250	0.01760	0.01310	0.00770	0.00240
37	0.07000	0.02250	0.01760	0.01310	0.00770	0.00240
38	0.10000	0.02250	0.01850	0.01740	0.00770	0.00270
39	0.10000	0.02250	0.01850	0.01740	0.00770	0.00270
40	0.10000	0.02250	0.01850	0.01740	0.00770	0.00270
41	0.10000	0.02250	0.01850	0.01740	0.00770	0.00270
42	0.10000	0.02250	0.01850	0.01740	0.00770	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

ACTIVE DEATH AND DISABILITY TABLES

		RATES OF DEATH		RATES OF	DISABILITY
	Ordi	nary			
AGE	Male	Female	Accidental	Ordinary	Accidental
20	0.00030	0.00018	0.00006	0.00035	0.00021
21	0.00032	0.00019	0.00006	0.00035	0.00021
22	0.00033	0.00019	0.00006	0.00035	0.00025
23	0.00034	0.00019	0.00006	0.00050	0.00025
24	0.00036	0.00019	0.00006	0.00050	0.00029
25	0.00037	0.00019	0.00006	0.00050	0.00029
26	0.00037	0.00020	0.00006	0.00050	0.00033
27	0.00038	0.00020	0.00006	0.00050	0.00037
28	0.00038	0.00021	0.00006	0.00106	0.00087
29	0.00038	0.00021	0.00006	0.00127	0.00113
30	0.00038	0.00022	0.00006	0.00147	0.00139
31	0.00039	0.00024	0.00006	0.00167	0.00165
32	0.00041	0.00025	0.00006	0.00187	0.00190
33	0.00044	0.00026	0.00006	0.00289	0.00216
34	0.00050	0.00031	0.00006	0.00311	0.00227
35	0.00056	0.00035	0.00008	0.00333	0.00238
36	0.00063	0.00039	0.00008	0.00355	0.00249
37	0.00070	0.00043	0.00008	0.00376	0.00260
38	0.00077	0.00047	0.00008	0.00384	0.00266
39	0.00084	0.00051	0.00008	0.00392	0.00292
40	0.00090	0.00055	0.00008	0.00400	0.00318
41	0.00096	0.00060	0.00008	0.00408	0.00344
42	0.00102	0.00065	0.00008	0.00416	0.00370
43	0.00108	0.00071	0.00008	0.00431	0.00367
44	0.00114	0.00077	0.00008	0.00439	0.00329
45	0.00121	0.00085	0.00009	0.00448	0.00291
46	0.00130	0.00094	0.00009	0.00456	0.00253
40	0.00140	0.00103	0.00009	0.00465	0.00235
48	0.00151	0.00112	0.00009	0.00468	0.00197
40	0.00162	0.00122	0.00009	0.00489	0.00191
50	0.00173	0.00122	0.00009	0.00510	0.00179
51	0.00186	0.00143	0.00009	0.00531	0.00173
52	0.00200	0.00155	0.00009	0.00553	0.00168
53	0.00214	0.00168	0.00009	0.00554	0.00161
54	0.00229	0.00181	0.00009	0.00554	0.00161
55	0.00245	0.00197	0.00014	0.00720	0.00161
56	0.00262	0.00213	0.00014	0.00720	0.00161
57	0.00281	0.00232	0.00014	0.00720	0.00161
58	0.00303	0.00253	0.00014	0.00720	0.00161
59	0.00331	0.00276	0.00014	0.00720	0.00161
60	0.00363	0.00301	0.00013	0.01280	0.00161
61	0.00400	0.00329	0.00008	0.01440	0.00161
62	0.00441	0.00360	0.00008	0.01440	0.00161
63	0.00488	0.00393	0.00008	0.02160	0.00161
64	0.00538	0.00428	0.00008	0.02400	0.00161

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ACTIVE SERVICE RETIREMENT TABLES

		RATES OF SERVICE RETIREMENTS					
	Less Than 21	21- 24	25	Greater Than 25			
AGE	Years of Service	Years of Service	Years of Service	Years of Service			
40	0.0250	0.0000	0.4557	0.1540			
41	0.0250	0.0000	0.4557	0.1540			
42	0.0250	0.0000	0.4557	0.1540			
43	0.0250	0.0000	0.5298	0.1540			
44	0.0250	0.0000	0.5298	0.1540			
45	0.0250	0.0000	0.5298	0.1540			
46	0.0250	0.0000	0.5298	0.1540			
47	0.0250	0.0000	0.5298	0.1540			
48	0.0375	0.0000	0.5677	0.1540			
49	0.0375	0.0000	0.5677	0.1540			
50	0.0375	0.0000	0.5677	0.1540			
51	0.0375	0.0000	0.5677	0.1540			
52	0.0375	0.0000	0.5677	0.1540			
53	0.0500	0.0000	0.5904	0.1748			
54	0.0500	0.0000	0.5904	0.1748			
55	0.0320	0.0000	0.5904	0.1748			
56	0.0320	0.0000	0.6642	0.1748			
57	0.0320	0.0000	0.7749	0.1748			
58	0.0320	0.0000	0.7749	0.1748			
59	0.0320	0.0000	0.7749	0.2278			
60	0.0320	0.0000	0.7749	0.2278			
61	0.0425	0.0000	0.7749	0.2278			
62	0.1275	0.0000	0.7749	0.2278			
63	0.1275	0.0000	0.7749	0.2278			
64	0.3750	0.0000	0.7749	0.3780			
65	1.0000	1.0000	1.0000	1.0000			

AGE	RATE	AGE	RATE
19	0.12655	42	0.05987
20	0.12316	43	0.05975
21	0.11977	44	0.05963
22	0.11638	45	0.05950
23	0.11299	46	0.05950
24	0.10960	47	0.05950
25	0.10622	48	0.05950
26	0.10130	49	0.05950
27	0.09638	50	0.05950
28	0.09146	51	0.05950
29	0.08654	52	0.05950
30	0.08162	53	0.05950
31	0.07863	54	0.05950
32	0.07564	55	0.05950
33	0.07265	56	0.05950
34	0.06966	57	0.05950
35	0.06666	58	0.05950
36	0.06535	59	0.05950
37	0.06404	60	0.05950
38	0.06273	61	0.05950
39	0.06142	62	0.05950
40	0.06011	63	0.05950
41	0.05999	64	0.05950

ACTIVE SALARY INCREASE TABLE

	RATES OF N	MORTALITY		RATES OF	MORTALITY
AGE	MALE	FEMALE	AGE	MALE	FEMALE
40	0.00108	0.00071	75	0.03783	0.02811
41	0.00114	0.00077	76	0.04217	0.03097
42	0.00121	0.00085	77	0.04691	0.03411
43	0.00130	0.00094	78	0.05212	0.03759
44	0.00140	0.00103	79	0.05793	0.04151
45	0.00151	0.00112	80	0.06437	0.04588
46	0.00162	0.00122	81	0.07204	0.05078
47	0.00173	0.00133	82	0.08049	0.05629
48	0.00186	0.00143	83	0.08972	0.06251
49	0.00200	0.00155	84	0.09978	0.06952
50	0.00214	0.00168	85	0.11076	0.07745
51	0.00245	0.00185	86	0.12280	0.08638
52	0.00267	0.00202	87	0.13604	0.09634
53	0.00292	0.00221	88	0.15059	0.10730
54	0.00320	0.00242	89	0.16642	0.11915
55	0.00362	0.00272	90	0.18341	0.13168
56	0.00420	0.00309	91	0.19977	0.14460
57	0.00469	0.00348	92	0.21661	0.15762
58	0.00527	0.00392	93	0.23366	0.17043
59	0.00595	0.00444	94	0.25069	0.18280
60	0.00675	0.00506	95	0.26749	0.19451
61	0.00768	0.00581	96	0.28391	0.20538
62	0.00876	0.00666	97	0.29985	0.21524
63	0.01001	0.00765	98	0.31530	0.22395
64	0.01128	0.00862	99	0.33021	0.23139
65	0.01274	0.00971	100	0.34456	0.23747
66	0.01441	0.01095	101	0.35863	0.24483
67	0.01608	0.01216	102	0.37169	0.25450
68	0.01787	0.01345	103	0.38304	0.26604
69	0.01980	0.01486	104	0.39200	0.27905
70	0.02221	0.01674	105	0.39789	0.29312
71	0.02457	0.01858	106	0.40000	0.30781
72	0.02728	0.02066	107	0.40000	0.32272
73	0.03039	0.02297	108	0.40000	0.33744
74	0.03390	0.02546	109	0.40000	0.35154

		IORTALITY:	RATES OF MORTALI		
AGE	MALE	FEMALE	AGE	MALE	FEMALE
20	0.00034	0.00019	65	0.01274	0.00971
21	0.00036	0.00019	66	0.01441	0.01095
22	0.00037	0.00019	67	0.01608	0.01216
23	0.00037	0.00020	68	0.01787	0.01345
24	0.00038	0.00020	69	0.01980	0.01486
25	0.00038	0.00021	70	0.02221	0.01674
26	0.00038	0.00021	71	0.02457	0.01858
27	0.00038	0.00022	72	0.02728	0.02066
28	0.00039	0.00024	73	0.03039	0.02297
29	0.00041	0.00025	74	0.03390	0.02546
30	0.00044	0.00026	75	0.03783	0.02811
31	0.00050	0.00031	76	0.04217	0.03097
32	0.00056	0.00035	77	0.04691	0.03411
33	0.00063	0.00039	78	0.05212	0.03759
34	0.00070	0.00043	79	0.05793	0.04151
35	0.00077	0.00047	80	0.06437	0.04588
36	0.00084	0.00051	81	0.07204	0.05078
37	0.00090	0.00055	82	0.08049	0.05629
38	0.00096	0.00060	83	0.08972	0.06251
39	0.00102	0.00065	84	0.09978	0.06952
40	0.00108	0.00071	85	0.11076	0.07745
41	0.00114	0.00077	86	0.12280	0.08638
42	0.00121	0.00085	87	0.13604	0.09634
43	0.00130	0.00094	88	0.15059	0.10730
44	0.00140	0.00103	89	0.16642	0.11915
45	0.00151	0.00112	90	0.18341	0.13168
46	0.00162	0.00122	91	0.19977	0.14460
47	0.00173	0.00133	92	0.21661	0.15762
48	0.00186	0.00143	93	0.23366	0.17043
49	0.00200	0.00155	94	0.25069	0.18280
50	0.00214	0.00168	95	0.26749	0.19451
51	0.00245	0.00185	96	0.28391	0.20538
52	0.00267	0.00202	97	0.29985	0.21524
53	0.00292	0.00221	98	0.31530	0.22395
54	0.00320	0.00242	99	0.33021	0.23139
55	0.00362	0.00272	100	0.34456	0.23747
56	0.00420	0.00309	101	0.35863	0.24483
57	0.00469	0.00348	102	0.37169	0.25450
58	0.00527	0.00392	103	0.38304	0.26604
59	0.00595	0.00444	104	0.39200	0.27905
60	0.00675	0.00506	105	0.39789	0.29312
61	0.00768	0.00581	106	0.40000	0.30781
62	0.00876	0.00666	107	0.40000	0.32272
63	0.01001	0.00765	108	0.40000	0.33744
64	0.01128	0.00862	109	0.40000	0.35154

BASE MORTALITY TABLES FOR BENEFICIARIES OF DECEASED ACTIVES AND PENSIONERS

buckconsultants

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		

UNISEX MORTALITY TABLE FOR DISABILITIES