



TO: Members of the Legislative Commission on Pensions and Retirement
 FROM: Lawrence A. Martin, Executive Director *LAM*
 RE: Consideration of Proposed Demographic Actuarial Assumption Changes for Various Statewide and Major Local Minnesota Defined Benefit Retirement Plans
 DATE: July 18, 2012 (Revised 7/20/12)

Introduction

At the request of the governing boards and administrators of several of the Minnesota statewide and major local defined benefit public employee retirement plans, the Commission chair, Representative Morrie Lanning, has scheduled Commission consideration of various proposed demographic actuarial assumption changes for use in the July 1, 2012, and subsequent actuarial valuations.

This document attempts to summarize the relevant Minnesota law governing the establishment of actuarial assumptions to be used in preparing actuarial valuations, summarizes and briefly discusses the proposed actuarial assumption changes, and summarizes the prepared Commission motions that would implement the proposed actuarial assumption changes.

Minnesota Law Governing Legislative Approval of Actuarial Assumption Changes

Minnesota law requires legislative action to implement changes in actuarial assumptions used to value Minnesota statewide and major local defined benefit retirement plans.

For economic actuarial assumptions (i.e., interest/investment return, salary increase, and payroll increase), the applicable actuarial assumptions are specified in statute (M.S., Sec. 356.215, Subd. 8) and require a legislative enactment to implement a change. Laws 2012, Chapter 286, Article 1, Section 2, modified the interest rate, salary increase rate, and payroll growth rate actuarial assumptions, implementing the interest rate change proposed by the various retirement plan experience study recommendations on a temporary basis (i.e., a five-year period reduction of the rate by 0.5%) and the salary increase and payroll growth rate assumptions as proposed by the consulting actuaries retained by the major and statewide retirement plans.

For the balance of the actuarial assumptions, which are demographic actuarial assumptions, Minnesota Statutes, Section 356.215, Subdivision 9, requires the assumptions be set consistent with the most recent experience study or best estimate of future experience, and Minnesota Statutes, Section 356.215, Subdivision 18, requires that the assumption changes be approved by the Legislative Commission on Pensions and Retirement.

Summary of Proposed Demographic Actuarial Assumption Changes and Implementing Commission Motions

The demographic actuarial assumption changes proposed by the consulting actuaries retained by the various statewide or larger local Minnesota defined benefit retirement plans and the plans' governing boards and administrations contained in the attached implementing motions prepared by the Commission staff to facilitate potential Commission action are as follows:

<u>Plan</u>	<u>Motion</u>	<u>Assumption Change(s) Proposed</u>
Local Government Correctional Service Retirement Plan (PERA-Correctional)	LCPR12-M2	mortality, retirement age, disablement, annuity form, termination
Correctional State Employees Retirement Plan (MSRS-Correctional)	LCPR12-M3	mortality, retirement age, disablement, annuity form, termination
State Patrol Retirement Plan	LCPR12-M4	mortality, retirement age, disablement, marital status, beneficiary age, annuity form, termination
Judges Retirement Plan	LCPR12-M5	mortality, retirement age, disablement, Combined Service Annuity loading
Legislators Retirement Plan	LCPR12-M6	mortality, retirement age
Elective State Officers Retirement Plan	LCPR12-M7	mortality
St. Paul Teachers Retirement Fund Association (SPTRFA)	LCPR12-M8	mortality, retirement age, disablement, termination, Combined Service Annuity loading, deferred annuity commencement

Discussion of Proposed Demographic Actuarial Assumption Change Review Process and Changes

1. Assumption Change Review Process in General. Policymakers faced with the question of approving actuarial assumption change proposals generally focus on three basic questions, which are:
 - What has the retirement plan experienced in comparison to what it expected to experience under the current actuarial assumption?
 - Does that retirement plan experience indicate a need to depart from or modify the current actuarial assumption?
 - Does the actuarial assumption change proposed by the retirement plan actuary, governing board, and administration better fit the recent experience and the likely future experience than the current actuarial assumption?

Because the complexity involved in sifting through retirement plan experience and its comparison to current and proposed actuarial assumptions, policymakers will tend to rely in making these judgments on the experts in the area.

Because the actuarial assumption change proposals before the Commission come from experience studies that were not required by statute (only experience studies for the General State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-General), the General Employees Retirement Plan of the Public Employees Retirement Association (PERA-General), and the Teachers Retirement Association (TRA) are required by M.S., Sec. 356.215, Subd. 2, Para. (a)), and consequently were not regularly and predictably scheduled for preparation, no review of these experience studies was provided for in the contract between Milliman, the Commission's actuarial advisor, and the Commission and the Commission does not have its contracted expert available to rely upon. If the Commission is to rely on technical experts, it will be relying on the consulting actuaries retained by the applicable retirement plans.

2. General Difficulties with Experience Studies and Assumption Reviews. The experience studies or assumption reviews underlying the proposals are not without difficulties. Of the six documents (covering seven retirement plans) underlying the retirement assumption change proposals, only one (SPTRFA) included a certification that the experience study conformed with the Commission's Standards for Actuarial Work, the Actuarial Standards of Practice established by the Actuarial Standards Board, a non-governmental credentialing organization, and generally accepted actuarial principles and practices as well as certifying compliance with the qualification standards of the American Academy of Actuaries, another non-governmental credentialing organization. The remaining five documents only contain certifications that the actuary met the qualification standards as an actuary of the American Academy of Actuaries.

Although the Standards for Actuarial Work promulgated by the Commission (last revised in 2010, with input from plan actuaries and plan administrators) require the inclusion in the experience study of actual and expected occurrences for all assumptions for each plan year considered and for all plan years combined, the various documents underlying the assumption change proposals failed to include occurrence data either entirely or in any detail for various actuarial assumptions. Instances are any assumption for the Legislators Retirement Plan, children's ages for the State Patrol Retirement Plan, retirement from inactive status, marital status, beneficiary age, annuity form, and Combined Service Annuity loading for the Judges Retirement Plan, marital status for PERA-Correctional, and disabled mortality, active mortality, disablement, Combined Service Annuity loading, deferred annuity commencement, and marital status for SPTRFA.

3. Mortality Table Revision Considerations. For all seven retirement plans for which actuarial assumption changes have been proposed, a change to the RP-2000 mortality table was recommended, with six recommendations for an RP-2000 generational mortality, with a white collar adjustment, and one recommendation for an RP-2000 combined (mixed collar) mortality table projected to 2020 using Scale AA (SPTRFA).

The RP-2000 mortality table is a set of tables that were developed by the Society of Actuaries and that were based solely on retirement plan mortality experience. The tables were constructed from private employer retirement plan data for plan years 1990 through 1994, with the rates adjusted for mortality improvements to 2000 using data from the federal Civil Service Retirement System. The Society of Actuaries has published a mortality improvement calculation process, known as Scale AA. The RP-2000 mortality tables also introduced three differentiations, which are the white collar adjustment, to be used where at least 70% of the retirement plan population are salaried employees or non-unionized employees, the blue collar adjustment, to be used where at least 70% of the retirement plan population

are hourly employees or unionized employees, or combined, where the retirement plan population is mixed. The RP-2000 mortality tables also can be static or generational. The static table projects mortality improvements by factoring in the same number of years of mortality improvement built into each age. The generational table utilizes a separate table constructed for each year-of-birth cohort based on the expected improvements for each cohort, with each cohort getting a different extent of improvement. In the November/December 2005 issue of Contingencies, a periodical published by the American Academy of Actuaries, author Emily Kessler provides an example of differences between static mortality tables, including the 1983 Group Annuity Mortality table generally used by Minnesota public employee retirement plans previously, and the RP-2000 Generational table, as follows:

Participant	Life Expectancy (Age at Expected Death)			
	GAM-83	RP-2000	RP-2000 @ 2025	RP-2000 Generational
Male born 1940	81.7	82.6	84.2	83.9
Male born 1960	81.7	82.6	84.2	85.4
Male born 1980	81.7	82.6	84.2	86.7

In the mortality table changes proposed for all of the applicable retirement plans other than SPTRFA (and for the mortality tables approved by the Commission in 2010 for MSRS-General, PERA-General, PERA-P&F, and TRA, and in 2011 for PERA-P&F), a white collar adjustment is used in all instances, even for retirement plans likely with a large number of union-represented employees and a large number of non-salaried employees in plan membership, and used a generational projection without specifying what scale or other basis for projection (i.e., Scale AA or other). The SPTRFA mortality assumption change is a combined or mixed table, not specifying either a white collar adjustment or a blue collar adjustment, and is a static projection to 2020 using Scale AA.

4. Combined Service Annuity Loading Changes. For two retirement plans (Judges/SPTRFA), the actuary retained by the retirement plan and the retirement plan administration are proposing eliminating (Judges) or reducing (SPTRFA) the loading for the use of the Combined Service Annuity, the primary Minnesota defined benefit public employee retirement plan portability mechanism. No data were presented to support the loading changes. The SPTRFA experience study indicates that a study of the Combined Service Annuity loads would require a review of all plans, which was beyond the scope of the SPTRFA experience study, and bases its recommendation on unquantified observations attributed to the SPTRFA staff and a unquantified change in the active membership composition and the active membership qualification for and utilization of the "Rule of 90" early normal retirement age provision.
5. Potential Improvements in the Actuarial Assumption Consideration and Revision Process. The current process for reviewing and modifying Minnesota public employee defined benefit retirement plan actuarial assumptions in statute and in the Commission's Standards for Actuarial Work has obvious difficulties and problems as to information and data, comprehensiveness, and timelines. Currently, only three of the 12 statewide and major local defined benefit retirement plans in Minnesota are required to have regular experience studies, with the other retirement plans having experience studies conducted infrequently if at all, without any clear process for assessing the adequacy of their actuarial assumptions. For the three retirement plans for which experience studies are required, the experience studies are frequently filed late, are less than complete, and frequently do not result in more timely consideration because of continuing disputes over the interest/investment return actuarial assumption. The differing methods for approving retirement assumptions (statutory amendment for economic assumptions and Legislative Commission on Pensions and Retirement approval for demographic assumptions) combined with past disputes over the appropriate interest/investment return rate assumption has led to disconnected consideration of experience studies and proposed assumption revision by the Commission.

The Commission staff would recommend for consideration by the Commission the following suggestions and plans to prepare draft proposed implementing legislation for Commission review for the 2013 Legislative Session:

- a. Increase Actuarial Valuation Gain and Loss Analysis. An indication of unsuitability for an actuarial assumption is a pattern of significant actuarial gains or losses produced by a given assumption in the annual actuarial valuations over a period of years. Currently, specific gain and loss analyses are required only for the interest/investment return rate, post-retirement mortality, and salary increase assumptions. Adding the gain and loss analysis requirement for other actuarial assumptions, such as the retirement age and withdrawal/termination assumptions, will provide an

additional "early warning" indication for the Commission of the need to consider actuarial assumption changes.

- b. Mandate Experience Studies for All but the Smallest Membership Retirement Plans. Currently, experience studies are required for only the three largest membership retirement plans, the General State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-General), the General Employees Retirement Plan of the Public Employees Retirement Association (PERA-General), and the Teachers Retirement Association (TRA). Extending the requirement to all of the plans that recently produced experience studies or that are still conducting an experience study (i.e., the Duluth Teachers Retirement Fund Association (DTRFA)) would provide for the Commission a more comprehensive review of actuarial assumptions and would avoid the past situation of "forgotten" assumptions in the smaller membership retirement plans. The change would also permit the inclusion of a full experience study review in the Commission's contract with its consulting actuary.
- c. Set the Experience Study Filing Date More in Accord with Actuarial and Commission Schedules. Currently, the filing date for the experience studies required by statute is the June 30 occurring one year after the fiscal year end of the last plan year reviewed in the study. Any statutory (economic) assumption changes can only occur in the legislative session occurring six or seven months following the experience study filing date, which could allow the Commission-retained actuary time to review the studies. Following that review by the Commission-retained actuary and the resolution of any statutory (economic) assumption changes during the initial post-experience study legislative session, the Commission can then consider the balance of the proposed assumption changes early in the subsequent interim, in time for the assumptions to be effective for the next set of actuarial valuations. Without any penalty for missing the experience study filing date, a delay in any experience study threatens to throw the whole schedule off. The current schedule may not well suit any of the participants in the experience study process and may be open to greater optimization.

Conclusion

The Commission staff hopes that this issue memorandum regarding the various experience studies and actuarial assumption reviews is of assistance to the Commission. If the Commission has any questions about this memorandum or the experience studies, the Commission staff will attempt to provide additional assistance.

_____ moves that the Legislative Commission on Pensions and Retirement approve the following replacement actuarial assumptions for the Local Government Correctional Service Retirement Plan, beginning with the July 1, 2012, actuarial valuation, under Minnesota Statutes, Section 356.215, Subdivision 18:

Mortality Rates:

Post-Retirement Mortality for Healthy Lives

RP-2000 annuitant generational mortality table, white collar adjustment
 Males: No set back or set forward
 Females: No set back or set forward

Post-Retirement Mortality for Disabled Lives

RP-2000 disabled mortality table
 Males: No set back or set forward
 Females: No set back or set forward

Pre-Retirement Mortality for Healthy Lives

RP-2000 non-annuitant generational mortality table, white collar adjustment
 Males: No set back or set forward
 Females: No set back or set forward

Retirement Rates:

Retirements from		Retirements from	
Age	Active Status	Age	Active Status
50	3%	60	15%
51	2%	61	15%
52	2%	62	30%
53	2%	63	30%
54	5%	64	30%
55	20%	65	40%
56	8%	66	40%
57	8%	67	40%
58	8%	68	40%
59	8%	69	40%
		70	100%

Disablement Rates:

Age	Male	Female	Age	Male	Female	Age	Male	Female
20	0.04%	0.04%	40	0.23%	0.18%	60	1.41%	2.41%
21	0.04%	0.04%	41	0.25%	0.20%	61	1.54%	2.54%
22	0.05%	0.05%	42	0.27%	0.22%	62+	1.67%	2.67%
23	0.05%	0.05%	43	0.29%	0.24%			
24	0.06%	0.06%	44	0.31%	0.26%			
25	0.06%	0.06%	45	0.34%	0.39%			
26	0.06%	0.06%	46	0.37%	0.42%			
27	0.07%	0.07%	47	0.41%	0.46%			
28	0.07%	0.07%	48	0.46%	0.51%			
29	0.08%	0.08%	49	0.51%	0.56%			
30	0.10%	0.08%	50	0.55%	0.70%			
31	0.12%	0.09%	51	0.62%	0.77%			
32	0.14%	0.09%	52	0.69%	0.84%			
33	0.14%	0.10%	53	0.77%	0.92%			
34	0.16%	0.10%	54	0.85%	1.00%			
35	0.18%	0.11%	55	0.88%	1.18%			
36	0.18%	0.12%	56	0.98%	1.28%			
37	0.20%	0.13%	57	1.08%	1.38%			
38	0.20%	0.15%	58	1.18%	1.48%			
39	0.21%	0.16%	59	1.29%	1.59%			

Annuity Form:

(% of married members electing)

Annuity Form	Males	Females
Straight Life	40%	80%
25% Joint & Survivor	5%	5%
50% Joint & Survivor	10%	5%
75% Joint & Survivor	10%	5%
100% Joint & Survivor	35%	5%

Termination from Active Status:

Years of Service Select Withdrawal Rates

0	25%
1	20%
2	15%

Ultimate Withdrawal Rates			Ultimate Withdrawal Rates		
Age	Male	Female	Age	Male	Female
20	14.70%	14.20%	40	4.40%	6.90%
21	14.70%	14.20%	41	4.20%	6.40%
22	14.70%	14.20%	42	4.00%	5.80%
23	14.70%	14.20%	43	3.80%	5.20%
24	14.70%	14.20%	44	3.60%	4.70%
25	14.70%	14.20%	45	3.40%	4.30%
26	13.30%	13.60%	46	3.20%	3.90%
27	12.10%	13.10%	47	3.00%	3.70%
28	11.00%	12.50%	48	2.80%	3.50%
29	10.00%	12.00%	49	2.60%	3.30%
30	9.10%	11.40%	50	2.40%	3.10%
31	8.30%	10.80%	51	2.20%	2.90%
32	7.60%	10.30%	52	2.00%	2.70%
33	7.00%	9.70%	53	1.80%	2.60%
34	6.50%	9.20%	54	1.60%	2.40%
35	6.00%	8.60%	55	1.40%	2.20%
36	5.60%	8.40%	56	1.20%	1.90%
37	5.20%	8.10%	57	1.00%	1.50%
38	4.90%	7.80%	58	0.70%	1.10%
39	4.60%	7.40%	59	0.40%	0.60%
			60+	0.00%	0.00%

_____ moves that the Legislative Commission on Pensions and Retirement approve the following replacement actuarial assumptions for the Correctional State Employees Retirement Plan of the Minnesota State Retirement System, beginning with the July 1, 2012, actuarial valuation, under Minnesota Statutes, Section 356.215, Subdivision 18:

Mortality Rates:

Post-Retirement Mortality for Healthy Lives

RP-2000 annuitant generational mortality table, white collar adjustment

Males: Set forward one year

Females: Set back one year

Post-Retirement Mortality for Disabled Lives

RP-2000 disabled mortality table

Males: No set back or set forward

Females: No set back or set forward

Pre-Retirement Mortality for Healthy Lives

RP-2000 non-annuitant generational mortality table, white collar adjustment

Males: No set back or set forward

Females: No set back or set forward

Retirement Rates:

Retirements from		Retirements from	
Age	Active Status	Age	Active Status
50	5%	60	10%
51	3%	61	10%
52	3%	62	30%
53	3%	63	30%
54	5%	64	30%
55	55%	65	50%
56	12%	66	50%
57	12%	67	50%
58	10%	68	50%
59	10%	69	50%
		70+	100%

Disablement Rates:

Age	Male	Female
20	0.05%	0.05%
25	0.08%	0.08%
30	0.11%	0.11%
35	0.15%	0.15%
40	0.24%	0.24%
45	0.39%	0.39%
50	0.67%	0.67%
55	1.17%	1.17%
60	1.88%	1.88%
65	0.00%	0.00%
70	0.00%	0.00%

Annuity Form:

(% of married members electing)

Annuity Form	Males	Females
Straight Life	40%	50%
15-Year Certain & Life	0%	0%
50% Joint & Survivor	10%	10%
75% Joint & Survivor	10%	10%
100% Joint & Survivor	40%	30%

Termination from Active Status:

Years of Service	Select Withdrawal Rates
1	20%
2	15%
3	8%

Ultimate Withdrawal Rates		
Age	Male	Female
20	13.20%	8.80%
21	12.10%	8.60%
22	11.00%	8.35%
23	9.95%	8.15%
24	8.95%	8.00%
25	8.10%	7.80%
26	7.30%	7.70%
27	6.65%	7.60%
28	6.05%	7.55%
29	5.50%	7.50%
30	5.00%	7.45%
31	4.75%	7.35%
32	4.35%	7.30%
33	4.05%	7.25%
34	3.75%	7.20%
35	3.45%	7.10%
36	3.20%	6.95%
37	3.00%	6.70%
38	2.80%	6.45%
39	2.65%	6.10%

Ultimate Withdrawal Rates		
Age	Male	Female
40	2.55%	5.70%
41	2.40%	5.30%
42	2.30%	4.80%
43	2.20%	4.30%
44	2.05%	3.85%
45	1.95%	3.50%
46	1.85%	3.25%
47	1.75%	3.10%
48	1.60%	2.90%
49	1.50%	2.75%
50	0.00%	0.00%
51	0.00%	0.00%
52	0.00%	0.00%
53	0.00%	0.00%
54	0.00%	0.00%
55	0.00%	0.00%
56	0.00%	0.00%
57	0.00%	0.00%
58	0.00%	0.00%
59	0.00%	0.00%
60+	0.00%	0.00%

_____ moves that the Legislative Commission on Pensions and Retirement approve the following replacement actuarial assumptions for the State Patrol Retirement Plan, beginning with the July 1, 2012, actuarial valuation, under Minnesota Statutes, Section 356.215, Subdivision 18:

Mortality Rates:

Post-Retirement Mortality for Healthy Lives

RP-2000 annuitant generational mortality table, white collar adjustment
 Males: Set back two years
 Females: Set forward one year

Post-Retirement Mortality for Disabled Lives

RP-2000 annuitant generational mortality table, white collar adjustment
 Males: Set back two years
 Females: Set forward one year

Pre-Retirement Mortality for Healthy Lives

RP-2000 non-annuitant generational mortality table, white collar adjustment
 Males: No set back or set forward
 Females: No set back or set forward

Retirement Rates:

Age	Retirements from Active Status
50	7%
51	6%
52	6%
53	6%
54	3%
55	65%
56	50%
57	30%
58	20%
59	20%
60+	100%

Disablement Rates:

Age	Age	Age			
20	0.03%	40	0.14%	60	1.13%
21	0.03%	41	0.16%	61	1.23%
22	0.04%	42	0.18%	62	1.34%
23	0.04%	43	0.19%	63+	0.00%
24	0.05%	44	0.21%		
25	0.05%	45	0.23%		
26	0.05%	46	0.26%		
27	0.06%	47	0.29%		
28	0.06%	48	0.33%		
29	0.06%	49	0.37%		
30	0.06%	50	0.40%		
31	0.07%	51	0.46%		
32	0.07%	52	0.51%		
33	0.08%	53	0.58%		
34	0.08%	54	0.64%		
35	0.09%	55	0.70%		
36	0.10%	56	0.78%		
37	0.10%	57	0.86%		
38	0.12%	58	0.94%		
39	0.13%	59	1.03%		

Marital Status:

(percentage married)

Males: 85%
Females: 85%

Age of Beneficiary:

(beneficiary's age – member's age)

Males: 2 years older
Females: 2 years younger

Annuity Form:

(% of married members electing)

Annuity Form	Males	Females
Straight Life	25%	40%
15-Year Certain & Life	0%	0%
50% Joint & Survivor	15%	25%
75% Joint & Survivor	25%	30%
100% Joint & Survivor	35%	5%

Termination from Active Status:

Years of Service	Select Withdrawal Rates
1	5.00%
2	2.00%
3	2.00%

Age	Ultimate Withdrawal Rates	Age	Ultimate Withdrawal Rates
20	1.47%	40	0.40%
21	1.40%	41	0.40%
22	1.33%	42	0.40%
23	1.27%	43	0.40%
24	1.20%	44	0.40%
25	1.13%	45	0.40%
26	1.07%	46	0.40%
27	1.00%	47	0.40%
28	0.93%	48	0.40%
29	0.87%	49	0.20%
30	0.80%	50	0.00%
31	0.73%	51	0.00%
32	0.67%	52	0.00%
33	0.60%	53	0.00%
34	0.53%	54	0.00%
35	0.47%	55	0.00%
36	0.40%	56	0.00%
37	0.40%	57	0.00%
38	0.40%	58	0.00%
39	0.40%	59	0.00%
		60+	0.00%

_____ moves that the Legislative Commission on Pensions and Retirement approve the following replacement actuarial assumptions for the Judges Retirement Plan, beginning with the July 1, 2012, actuarial valuation, under Minnesota Statutes, Section 356.215, Subdivision 18:

Mortality Rates:

Post-Retirement Mortality for Healthy Lives

RP-2000 annuitant generational mortality table, white collar adjustment
 Males: Set back one year
 Females: Set back two years

Post-Retirement Mortality for Disabled Lives

RP-2000 annuitant generational mortality table, white collar adjustment
 Males: Set back one year
 Females: Set back two years

Pre-Retirement Mortality for Healthy Lives

RP-2000 non-annuitant generational mortality table, white collar adjustment
 Males: No set back or set forward
 Females: No set back or set forward

Retirement Rates:

Age	Retirements from Active Status
60	0%
61	0%
62	8%
63	5%
64	8%
65	25%
66	20%
67	10%
68	30%
69	10%
70+	100%

Disablement Rates:

Age	Male	Female	Age	Male	Female
30	0.00%	0.00%	50	0.07%	0.05%
31	0.01%	0.00%	51	0.08%	0.06%
32	0.01%	0.00%	52	0.10%	0.07%
33	0.01%	0.00%	53	0.12%	0.08%
34	0.01%	0.00%	54	0.14%	0.10%
35	0.01%	0.00%	55	0.17%	0.12%
36	0.01%	0.01%	56	0.20%	0.15%
37	0.01%	0.01%	57	0.23%	0.18%
38	0.01%	0.01%	58	0.28%	0.22%
39	0.01%	0.01%	59	0.33%	0.26%
40	0.01%	0.01%	60	0.38%	0.31%
41	0.01%	0.01%	61	0.45%	0.37%
42	0.01%	0.02%	62	0.55%	0.44%
43	0.02%	0.02%	63	0.68%	0.52%
44	0.02%	0.02%	64	0.87%	0.61%
45	0.02%	0.03%	65+	0.00%	0.00%
46	0.03%	0.03%			
47	0.04%	0.04%			
48	0.05%	0.04%			
49	0.06%	0.05%			

Combined Service Annuity Loading:

0% loading

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_____ moves that the Legislative Commission on Pensions and Retirement approve the following replacement actuarial assumptions for the Legislators Retirement Plan, beginning with the July 1, 2012, actuarial valuation, under Minnesota Statutes, Section 356.215, Subdivision 18:

Mortality Rates:

Post-Retirement Mortality for Healthy Lives

RP-2000 annuitant generational mortality table, white collar adjustment

Males: No set back or set forward

Females: No set back or set forward

Pre-Retirement Mortality for Healthy Lives

RP-2000 non-annuitant generational mortality table, white collar adjustment

Males: Set forward three years

Females: Set back one year

Retirement Rates:

Age	Retirements from Active Status
<62	0%
62	40%
63-64	30%
65	40%
66	30%
67-69	25%
70	30%
71+	100%

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_____ moves that the Legislative Commission on Pensions and Retirement approve the following replacement actuarial assumptions for the Elective State Officers Retirement Plan, beginning with the July 1, 2012, actuarial valuation, under Minnesota Statutes, Section 356.215, Subdivision 18:

Mortality Rates:

Post-Retirement Mortality for Healthy Lives

RP-2000 annuitant generational mortality table, white collar adjustment

Males: No set back or set forward

Females: No set back or set forward

Pre-Retirement Mortality for Healthy Lives

RP-2000 non-annuitant generational mortality table, white collar adjustment

Males: Set forward three years

Females: Set back one year

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_____ moves that the Legislative Commission on Pensions and Retirement approve the following replacement actuarial assumptions for the St. Paul Teachers Retirement Fund Association, beginning with the July 1, 2012, actuarial valuation, under Minnesota Statutes, Section 356.215, Subdivision 18:

Mortality Rates:

Post-Retirement Mortality for Healthy Lives

RP2000 combined mortality table projected to 2020 using Scale AA
 Males: set back one year
 Females: set back three years

Post-Retirement Mortality for Disabled Lives

RP2000 disabled life mortality table
 Males: no set back or set forward
 Females: no set back or set forward

Pre-Retirement Mortality for Healthy Lives

RP2000 combined mortality table projected to 2020 using Scale AA
 Males: Set back one year
 Females: Set back three years

Retirement Rates:

Age	Coordinated Program			
	Rule of 90		Non-Rule of 90	
	Male	Female	Male	Female
55	0.3500	0.3500	0.0700	0.0500
56	0.3500	0.3500	0.0700	0.0500
57	0.3500	0.3500	0.0700	0.0500
58	0.3500	0.3500	0.0700	0.0500
59	0.3500	0.3500	0.0700	0.0500
60	0.3500	0.3500	0.1100	0.0800
61	0.3500	0.3500	0.1500	0.1100
62	0.3500	0.3500	0.1900	0.1400
63	0.3500	0.3500	0.2300	0.1900
64	0.3500	0.4000	0.2700	0.2400
65	0.3500	0.5000	0.3100	0.3500
66	0.3500	0.5000	0.3500	0.3500
67	0.3500	0.5000	0.3500	0.3500
68	0.3500	0.5000	0.3500	0.3500
69	0.3500	0.5000	0.3500	0.3500
70	1.0000	1.0000	1.0000	1.0000

Disablement Rates:

(occurrences per 10,000)

Age	Disability
20	2
25	2
30	3
35	3
40	3
45	5
50	10
55	20
60	40
65	40

Termination from Active Status:

(occurrences per 1,000 active members)

Years of Service	Male	Female
0	400	400
1	180	180
2	140	140
3	100	100
4	60	67
5	50	59
6	45	51
7	41	43
8	37	35
9	33	31
10	29	27
11	25	23
12	20	19
13	20	15
14	20	13
15 & Over	20	13

Combined Service Annuity Loading:

2.00% load on liabilities for active members hired after May 16, 1989

Deferred Retirement Annuity Commencement:

Age 61 for Basic Plan members

Age 62 for Coordinated Plan members

Marital Status:

75% of males are married

Age of Spouse:

Males are two years older than the person's spouse