



H.F. 660
(O'Driscoll)

S.F. 613
(Pappas)

Executive Summary of Commission Staff Materials

<i>Affected Pension Plan(s):</i>	MSRS, PERA, SPTRFA
<i>Relevant Provisions of Law:</i>	Minnesota Statutes, Section 356.215, Subdivision 8
<i>General Nature of Proposal:</i>	Interest, salary, and payroll growth assumption changes
<i>Date of Summary:</i>	February 27, 2015

Specific Proposed Changes

- Elimination of select and ultimate interest rate actuarial assumption.
- Reduction of interest rate actuarial assumption from 8.5% to 8.0%.
- One-quarter of one percent reduction in future salary increase actuarial assumption.
- One-quarter of one percent reduction in future payroll growth actuarial assumption.

Policy Issues Raised by the Proposed Legislation

1. Appropriateness of change to 8.0% interest rate actuarial assumption.
2. Appropriateness in light of the self-correcting design of full actuarial pension plan funding.
3. Appropriateness of process in considering assumption change without recent experience study.
4. Appropriateness of a further lack of uniformity in interest rate actuarial assumptions
5. Appropriateness of a 0.25% reduction in salary and future payroll growth actuarial assumptions.
6. Collateral change issue: Interest on refund repayments.
7. Collateral change issue: Interest on leave payments and prior uncredited service credit purchases.
8. Appropriateness of the mandate for annuity reserve factor, optional annuity form factors, and actuarial equivalent early retirement reduction rate reformulations.
9. Actuarial cost impact of the actuarial assumption changes.

Potential Amendments

Technical Amendment

H0660-9A corrects a salary increase actuarial assumption change error for the State Patrol Retirement Plan discovered by the consulting actuary retained by MSRS.

Substantive Amendments

- H0660-1A would shift the amortization procedure from a level percentage of an increasing covered payroll basis to a level dollar amortization procedure, the debt service calculation method used in most debtor/creditor scenarios in the economy.
- H0660-2A includes TRA in the changes proposed for the other statewide plans.
- H0660-3A makes the same salary and payroll growth actuarial assumptions change for the SPTRFA as is proposed for the various statewide retirement plans.
- H0660-4A makes the same salary increase actuarial assumption change for the Judges Retirement Plan.
- H0660-5A resets the refund repayment compound interest rate at the current 8.5% rate through June 30, 2015, and at an 8.0% rate after June 30, 2015.
- H0660-6A resets the prior service credit purchase payment determination interest rate at the current 8.5% rate through June 30, 2015, and at an 8.0% rate after June 30, 2015.
- H0660-7A requires the rates and factors update by each plan's consulting actuary and the review of the update by the actuary retained by the Commission, to be reimbursed by the applicable plan.
- H0660-8A would impose a contribution increase for members and employers for the various retirement plans in an amount to be determined by the Commission.

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TO: Members of the Legislative Commission on Pensions and Retirement

FROM: Lawrence A. Martin, Executive Director *LA Martin*

RE: H.F. 660 (O'Driscoll); S.F. 613 (Pappas): MSRS- and PERA-Administered, SPTRFA Retirement Plan Interest Rate, Salary Rate, and Payroll Growth Assumption Changes

DATE: February 26, 2015

Summary of H.F. 660 (O'Driscoll); S.F. 613 (Pappas)

H.F. 660 (O'Driscoll); S.F. 613 (Pappas) amends Minnesota Statutes, Section 356.215, Subdivision 8, the specification for Minnesota defined benefit public employee retirement plans of actuarial valuation interest rate, post-retirement adjustment, salary increase, and payroll growth assumptions, for the four defined benefit retirement plans administered by the Minnesota State Retirement System (MSRS), the three defined benefit retirement plans administered by the Public Employees Retirement Association (PERA), and the defined benefit retirement plan administered by the St. Paul Teachers Retirement Fund Association (SPTRFA), by making the following changes:

1. Elimination of Select and Ultimate Interest Rate Actuarial Assumption. The current 8.0% select (Fiscal Year 2012 through Fiscal Year 2017) and 8.5% ultimate interest rate actuarial assumption for the eight affected retirement plans would be replaced by a single interest rate actuarial assumption (lines 1.7-2.17);
2. Reduction of Interest Rate Actuarial Assumption from 8.5% to 8.0%. The post-June 30, 2015, interest rate actuarial assumption for the eight affected retirement plans would be reduced from 8.5% to 8.0% (lines 1.12-1.22 and 2.4-2.14);
3. One-Quarter of One Percent Reduction in Future Salary Increase Actuarial Assumption. The post-June 30, 2015, future salary increase nominal rate actuarial assumption for seven of the eight affected retirement plans would be reduced by 0.25% for all ages or all years of service (lines 3.24-4.41 and 5.12-5.42); and
4. One-Quarter of One Percent Reduction in Future Payroll Growth Actuarial Assumption. The post-June 30, 2015, payroll growth rate actuarial assumption for the eight affected retirement plans would be reduced by 0.25% (lines 6.4-6.12).

Background Information on Relevant Topics

The following attachments provide background information on topics relevant to the proposed legislation:

- **Attachment A:** Role and Function of Interest Rate Actuarial Assumptions
- **Attachment B:** Public Retirement Plan Interest Rate Actuarial Assumptions: Other States
- **Attachment C:** Actuarial Funding of Defined Benefit Retirement Plans and Actuarial Reporting
- **Attachment D:** Select and Ultimate Interest Rate Actuarial Assumptions

Discussion and Analysis

H.F. 660 (O'Driscoll); S.F. 613 (Pappas) amends the economic actuarial assumption specification portion of the Minnesota public employee retirement plan actuarial valuation reporting law by eliminating the 2011 select and ultimate interest rate actuarial assumption for almost all statewide and major local retirement plans, by reducing in most instances the future interest rate actuarial assumption to 8% for the applicable retirement plans, and by reducing in most instances the salary increase actuarial assumption and the payroll growth assumption for the applicable retirement plans.

The proposed legislation raises several pension and related public policy issues for consideration by and possible discussion between members of the Commission, as follows:

1. Appropriateness of Change to 8.0% Interest Rate Actuarial Assumption. The policy issue is the appropriateness of shifting to an 8.0% interest rate actuarial assumption for most of the statewide and major local Minnesota public pension plans for the period after Fiscal Year 2017. Under the practice standards applicable to actuaries (Actuarial Standards of Practice No. 27), the interest rate assumption

to be used in defined benefit retirement plan actuarial reporting is supposed to be set considering appropriate recent and long-term historic economic data, without giving undue weight to recent economic data. The choice of an 8.0% interest rate actuarial assumption in the proposed legislation appears to be the result of uneasiness by a number of the current retirement plan administrators with the outlier status of Minnesota nationally of the current 8.5% ultimate interest rate actuarial assumption and the results of projections of likely investment performance for the State Board of Investment's current portfolio composition performed by Mercer, the former actuarial consultant of several of the plan administrations, and by the consultants utilized by the State Board of Investment two to four years ago. Minnesota has been an outlier in this regard since the 1989 change to an 8.5% interest rate actuarial assumption. The recent and long-term fiscal year investment performance results of the State Board of Investment do not clearly argue for an 8.0% interest rate assumption, with the investment performance of the State Board of Investment exceeding 8.5% in four of the last five years, in seven of the last ten years, in 14 of the last 20 years, and in 17 of the last 25 years. The fact that many public pension plans have been utilizing an interest rate actuarial assumption less than the 8.5% (and frequently less than 8.0%) for some period of time and that some large public employee pension plans have recently reduced their interest rate actuarial assumption merits noting, but might not be a convincing reason for a change in Minnesota three years after the Legislative Commission on Pensions and Retirement revised its interest rate actuarial assumption and after the topic had been reviewed during two recent interims.

2. Appropriateness in Light of the Self-Correcting Design of Full Actuarial Pension Plan Funding. The policy issue is the appropriateness of reducing the interest rate actuarial assumption without recognizing the self-correction for variances in experience from actuarial assumptions that is inherent in the design of full actuarial funding of defined benefit retirement plans. While actuarial assumptions are intended to represent the best estimate of future experience over the long term (the remaining expected average working lifetime of the active membership for demographic assumptions or the remaining average expected lifetime of the active and retired membership for the major economics assumption), variability in experience is anticipated year to year and the full actuarial funding method accommodates for experience gains and losses. With variable experience with respect to investment performances measured by the interest rate actuarial assumption, any experience loss results in an additional amortization contribution requirement, with interest on the experience loss payable at the higher rate. Policy makers can bolster this self-correction function of the full actuarial funding method by selecting a level dollar amortization procedure and by standing firm against pressures to regularly revise the amortization target date whenever contribution deficiencies occur. The Legislative Commission on Pensions and Retirement, in the 1960s, 1970s, and early 1980s, did so, but subsequently shifted to a level percentage of covered payroll amount amortization procedure rather than a level dollar amortization procedure at the lobbying of the Department of Finance in 1984, which the State of Minnesota had a budget crisis and started a pattern of recurring amortization target date revisions in the late 1990s. The level percentage of an increasing covered payroll amortization procedure is less corrective of experience losses and resulting unfunded actuarial accrued liability increases because the procedure delays much of the amortization contribution until the last third or half of the amortization period, constituting a balloon payment. For the General State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-General), for example, the unfunded actuarial accrued liability is \$2.1 billion, uses a current level percentage of payroll amortization factor of 0.06424, about 2% less than the current interest rate assumption, meaning that the MSRS-General unfunded actuarial accrued liability will increase by design by \$42 million in FY2015, an amount almost equal to the unfunded actuarial accrued liability increase from the plan's current 1.82% of covered pay contribution deficiency. If the plan was amortized on a level dollar bases, the amortization factor would be 0.09379, or almost 3% of covered pay than the current result.
 - If the Commission wants to bolster the self-corrective nature of full actuarial funding, **Amendment H0660-1A** would shift the amortization procedure from a level percentage of an increasing covered payroll basis to a level dollar amortization procedure, the debt service calculation method used in most debtor/creditor scenarios in the economy.
3. Appropriateness of Process in Considering Assumption Change without Recent Experience Study. The policy issue is the appropriateness of the various retirement plan administrators pursuing a change in the interest rate actuarial assumption during the 2015 Legislative Session after having successfully argued for a delay in the regular experience studies to June 30, 2015, in order to obtain experience data on which to further consider the topic. Experience studies, required for the largest defined benefit retirement plans under Minnesota Statutes, Section 356.215, Subdivisions 1, 2, 3, 16, and 17, are the basis for the retirement plan boards, the Pension Commission, and the Legislature to reconsider and revise the various economic and demographic actuarial assumptions used in preparing annual actuarial valuations. Minnesota Statutes, Section 356.215 requires that experience studies be conducted for the three retirement plans every four years and present a comparison of the actual experience of the retirement plan with the experience of the retirement plan predicted by the actuarial assumptions in

force during the study period. In 2012 (Laws 2012, Ch. 286, Art. 1, Sec. 4), as part of the most recent legislative change in the interest rate actuarial assumption, the experience study that was scheduled to be reported in Fiscal Year 2013 and covering the period of Fiscal Years 2009, 2010, 2011, and 2012, was expanded to cover two additional fiscal years, Fiscal Years 2013 and 2014, and delayed in filing to Fiscal Year 2015. The argument for the period expansion and the reporting delay made by the retirement plan administrators was that the one-time sexennial experience study would allow for a systematic reappraisal of the newly established select and ultimate interest rate actuarial assumption on the cusp of the shift back to a single rate actuarial rate assumption. Prematurely, given the experience study delay and retirement plan administrators' argument in favor of it, a majority of the retirement administrators now are pursuing an interest rate assumption change. It may be more appropriate to adhere to the plan put in forth in 2012 and wait for the 2016 Legislative Session or the 2017 Legislative Session to consider a different interest rate actuarial assumption.

4. Appropriateness of a Further Lack of Uniformity in Interest Rate Actuarial Assumptions. The policy issue is the appropriateness of some, but not all, of Minnesota's statewide and major local defined benefit retirement plans proposing a change in the interest rate actuarial assumptions, which all of these plans are invested using professional management (the State Board of Investment for all but one retirement plan) and are functioning in the same economic and investment environment. The current lack of uniformity (8.00% select/8.50% ultimate for statewide and major local plans, 6.00% for the Bloomington Fire Department Relief Association and the Voluntary Statewide Volunteer Firefighter Retirement Plan, and 5.00% for local volunteer firefighters' relief associations) has a rationale in that the plans with lower interest rate actuarial assumptions generally have investment portfolios that are not professionally managed and, frequently providing lump sum service pensions, do not operate in the same economic environment. Setting different interest rate actuarial assumptions for retirement plans that are operationally identical or significantly similar is inherently an admission that one or the other interest rate actuarial assumption does not represent the best estimate.
 - **Amendment H0660-2A** includes TRA in the changes proposed for the other statewide plans.
5. Appropriateness of a Quarter Percent Reduction in Salary and Future Payroll Growth Actuarial Assumptions. The policy issue is whether or not it is appropriate to make a blanket 0.25% reduction in the salary increase and future payroll growth actuarial assumptions for the Local Government Correctional Service Retirement Plan (PERA-Correctional), the General State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-General), the General Employee Retirement Plan of the Public Employees Retirement Association (PERA-General), the Public Employees Police and Fire Retirement Plan (PERA-P&F), the State Patrol Retirement Plan, and the MSRS Correctional State Employees Retirement Plan (MSRS-Correctional). The future covered payroll increase actuarial assumption, but not the salary increase actuarial assumption, for the Judges Retirement Plan is also reduced by 0.25%. The change is problematic because it clearly represents an arbitrary modification, because it is being forwarded without any documentation that would indicate that reduced rates are reasonable and that the magnitude of the reduction is appropriate, and because it is being proposed in tandem with a reduction in the actuarial rate actuarial assumption, offsetting some or all of the likely cost of the interest rate actuarial assumption change, except for the St. Paul Teachers Retirement Fund Association (SPTRFA). The Commission should consider questioning the retirement plan directors on the rationale for and any supporting materials relating to the proposed change in the salary increase and payroll growth actuarial assumptions.
 - **Amendment H0660-3A** makes the same salary and payroll growth actuarial assumptions change for the SPTRFA as is proposed for the various statewide retirement plans.
 - **Amendment H0660-4A** makes the same salary increase actuarial assumption change for the Judges Retirement Plan.
6. Collateral Change Issue: Interest on Refund Repayments. The policy issue is a question whether or not it will be necessary to make a change in addition to the interest rate actuarial assumption change in the interest rate to be charged on the repayment of refunds by former members who return to active plan membership. Currently, the refund repayment interest rate is identical to the interest rate actuarial assumption. If unchanged, the higher interest rate will function as a penalty on refund re-payers, discouraging the repayment of refunds. Historically, the Commission has encouraged the repayment of refunds, even if the refund repayment involves additional unfunded actuarial accrued liabilities.
 - **Amendment H0660-5A** resets the refund repayment compound interest rate at the current 8.5% rate through June 30, 2015, and at an 8.0% rate after June 30, 2015.
7. Collateral Change Issue: Interest on Leave Payments and Prior Uncredited Service Credit Purchases. The policy issue is a question whether or not it is appropriate to change the interest rate used to calculate the payment amount required when a leave of absence payment and purchase of prior uncredited allowable service credit is authorized. The prior service credit purchase payment required

under statute for the past three decades has been intended to represent the full actuarial value of the improvements in benefits obtained by the service credit purchase and hence uses the same interest rate actuarial assumption as used for retirement plan actuarial valuations. If the interest rate for the prior service credit purchase payment is not reset, the payment amount would understate the full actuarial value of the added benefit resulting from the service credit purchase.

- **Amendment H0660-6A** resets the prior service credit purchase payment determination interest rate at the current 8.5% rate through June 30, 2015, and at an 8.0% rate after June 30, 2015.

8. Appropriateness of the Mandate for Annuity Reserve Factor, Optional Annuity Form Factors, and Actuarial Equivalent Early Retirement Reduction Rate Reformulations. The policy issue is whether or not it is appropriate for the Legislature to mandate that the various retirement plans revise their annuity reserve factors, optional annuity form factors, and actuarial early retirement reduction rates as a consequence of the interest rate actuarial assumption modification in the proposed legislation and whether or not requiring the retirement plans to submit those revisions for review, at their cost, by the consulting actuary retained by the Commission is appropriate.

The benefits payable under these factors and rates are required by current statute to be the actuarial equivalent to the retirement annuities or benefits calculated under statute at the normal retirement age or equivalent date. Actuarial equivalency is a function, in most cases, of the assumed interest rate actuarial assumption and the mortality table actuarial assumption. Unless the factors and rates are revised upon the change of either actuarial assumption, the applicable retirement plan will incur either an unintended actuarial gain or an actuarial loss. To avoid this, it would appear to be reasonable that rates and factors be updated as soon as possible following the actuarial assumption change.

- **Amendment H0660-7A** requires the rates and factors update by each plan's consulting actuary and the review of the update by the actuary retained by the Commission, to be reimbursed by the applicable plan.

The requirement that factor and rate changes be reviewed by the Commission-retained actuary insures that the factor and rate changes are undertaken by the various retirement plan consulting actuaries in a consistent and accurate manner. The requirement that this review be done at the expense of the retirement plan is a question of fiscal expediency, since the Commission has not previously requested an appropriation to cover this actuarial service within its budget and the Commission has not been allocated the fiscal resources to cover the cost of the review.

9. Actuarial Cost Impact of the Actuarial Assumption Changes. The policy issue is the magnitude of the estimated actuarial cost impact of the proposed actuarial assumption changes for the retirement plans affected by the proposed legislation and any changes in member or employer contribution rates that may be needed in response to the estimated actuarial cost impact. The Commission staff has only been provided with a preliminary actuarial cost estimate for four retirement plans, the General State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-General), the Correctional State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-Correctional), the State Patrol Retirement Plan, and the Teachers Retirement Association (TRA).

The provided actuarial cost estimates for the MSRS-administered retirement plans are for an interest rate actuarial assumption that was not entirely consistent with the proposed legislation, set at 7.9% rather than the 8.0% in the proposed legislation. The preliminary actuarial cost estimates provided by MSRS for the 7.9% interest rate actuarial assumption and for a 0.25% reduction in the salary scale increase actuarial assumption (but apparently omitting any change in the payroll growth assumption, although the proposed legislation would reduce the assumption by 0.25%) for the three plans are as shown in **Table 1** (attached).

The actuarial cost estimate provided by TRA, for three different interest rate actuarial assumptions (8.25%, 8.00%, and 7.50%), no change in the salary increase or payroll growth actuarial assumptions, and no automatic revision of the amortization target date as provided in Minnesota Statutes, Section 356.215, Subdivision 11, are shown in **Table 2** (attached).

With the estimated impact of the actuarial assumption changes covered by the supplied actuarial work, the contribution deficiencies of all three retirement plans are such that the Commission may wish to consider contribution rate increases to bolster the funding support for the plans

- **Amendment H0660-8A** would impose a contribution increase for members and employers for the various retirement plans in an amount to be determined by the Commission.

Corrective Amendment

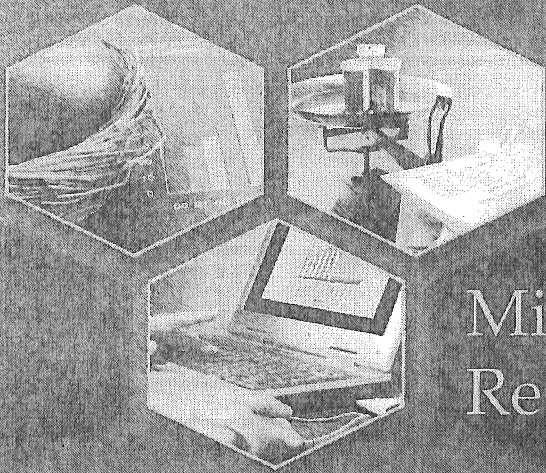
- **Amendment H0660-9A** corrects a salary increase actuarial assumption change error for the State Patrol Retirement Plan discovered by the consulting actuary retained by MSRS.

Table 1 – MSRS Plans

	MSRS-General			MSRS-Correctional			State Patrol Plan		
	FY2014	Effect of Interest/Salary Assumption Changes	Resulting Actuarial Condition	FY2014	Effect of Interest/Salary Assumption Changes	Resulting Actuarial Condition	FY2014	Effect of Interest/Salary Assumption Changes	Resulting Actuarial Condition
Membership									
Active Members	49,663	--	49,663	4,504	--	4,504	858	--	858
Service Retirees	29,225	--	29,225	2,075	--	2,075	776	--	776
Disabilitants	1,818	--	1,818	268	--	268	54	--	54
Survivors	3,686	--	3,686	174	--	174	155	--	155
Deferred Retirees	16,472	--	16,472	1,232	--	1,232	44	--	44
Nonvested Former Members	5,818	--	5,818	384	--	384	17	--	17
Total Membership	106,682	--	106,682	8,637	--	8,637	1,904	--	1,904
Funded Status									
Accrued Liability	\$12,445,126,000	\$200,000,000	\$12,645,126,000	\$1,122,474,000	\$69,700,000	\$1,192,174,000	\$800,421,000	\$24,400,000	\$824,821,000
Current Assets	\$10,326,272,000	--	\$10,326,272,000	\$790,304,000	--	\$190,304,000	\$597,870,000	--	\$597,670,000
Unfunded Accr. Liability	\$2,118,854,000	\$200,000,000	\$2,318,854,000	\$332,170,000	\$69,700,000	\$401,870,000	\$202,551,000	\$24,400,000	\$226,951,000
Funding Ratio	82.97%		81.66%	70.41%		66.29%	74.69%		72.46%
Financing Requirements									
Covered Payroll	\$2,653,367,000	--	\$2,653,367,000	\$227,008,000	--	\$227,008,000	\$67,386,000	--	\$67,386,000
Benefits Payable	\$623,942,000	--	\$623,942,000	\$50,842,000	--	\$50,842,000	\$53,697,000	--	\$53,697,000
Normal Cost	7.37%	0.60%	7.97%	16.10%	1.20%	17.30%	22.74%	0.90%	23.64%
Administrative Expenses	0.32%	--	0.32%	0.31%	--	0.31%	0.23%	--	0.23%
Amortization	5.13%	0.40%	5.53%	10.02%	1.70%	11.72%	20.59%	2.10%	22.69%
Total Requirements	12.82%	1.00%	13.82%	26.43%	2.90%	29.33%	43.56%	3.00%	46.56%
Employee Contributions	5.50%	--	5.50%	9.10%	--	9.10%	13.40%	--	13.40%
Employer Contributions	5.50%	--	5.50%	12.85%	--	12.85%	20.10%	--	20.10%
Employer Add'l Cont.	0.00%	--	0.00%	\$0	--	\$0	\$0	--	0.00%
Direct State Funding	0.00%	--	0.00%	\$0	--	\$0	\$1,000,000	--	1.48%
Other Govt. Funding	0.00%	--	0.00%	\$0	--	\$0	\$0	--	0.00%
Administrative Assessment	0.00%	--	0.00%	\$0	--	\$0	\$0	--	0.00%
Total Contributions	11.00%	--	11.00%	21.95%	--	21.95%	34.98%	--	34.98%
Total Requirements	12.82%	1.00%	13.82%	26.43%	2.90%	29.33%	43.56%	3.00%	46.56%
Total Contributions	11.00%	--	11.00%	21.95%	--	21.95%	34.98%	--	34.98%
Deficiency (Surplus)	1.82%	1.00%	2.82%	4.48%	2.90%	7.38%	8.58%	3.00%	11.58%
							\$5,779,000	\$2,021,000	\$7,645,000

Table 2 – TRA

	8.00% Interest Assumption		8.25% Interest Assumption		7.50% Interest Assumption	
	Effect of Interest/Salary Assumption Changes	Resulting Actuarial Condition	Effect of Interest/Salary Assumption Changes	Resulting Actuarial Condition	Effect of Interest/Salary Assumption Changes	Resulting Actuarial Condition
Membership	FY2014					
Active Members	77,243	77,243	--	77,243	--	77,243
Service Retirees	53,774	53,774	--	53,774	--	53,774
Disabilitants	563	563	--	563	--	563
Survivors	4,472	4,472	--	4,472	--	4,472
Deferred Retirees	12,907	12,907	--	12,907	--	12,907
Nonvested Former Members	29,984	29,984	--	29,984	--	29,984
Total Membership	178,943	178,943	--	178,943	--	178,943
Funded Status						
Accrued Liability	\$24,528,506,000	\$25,400,000,000		\$24,800,000,000		\$26,800,000,000
Current Assets	\$18,181,932,000	\$18,181,932,000	--	\$18,181,932,000	--	\$18,181,932,000
Unfunded Accr. Liability Funding Ratio	74.13%	71.6%		73.3%		67.8%
Financing Requirements						
Covered Payroll	\$4,353,988,000	\$4,353,988,000	--	\$4,353,988,000	--	\$4,353,988,000
Benefits Payable	\$1,580,120,000	\$1,580,120,000	--	\$1,580,120,000	--	\$1,580,120,000
Normal Cost	8.70%	9.61%		9.23%		10.98%
Administrative Expenses	0.22%	0.22%	--	0.22%	--	0.22%
Amortization	10.23%	11.63%	1.43%	10.67%	3.66%	13.89%
Total Requirements	19.15%	21.46%	2.34%	20.12%	5.94%	25.09%
Employee Contributions	7.50%	7.50%	--	7.50%	--	7.50%
Employer Contributions	7.70%	7.70%	--	7.70%	--	7.70%
Employer Add'l Cont.	0.00%	0.00%	--	0.00%	--	0.00%
Direct State Funding	0.48%	0.48%	--	0.48%	--	0.48%
Other Govt. Funding	0.00%	0.00%	--	0.00%	--	0.00%
Administrative Assessment	0.00%	0.00%	--	0.00%	--	0.00%
Total Contributions	15.68%	15.68%	--	15.68%	--	15.68%
Total Requirements	19.15%	21.46%	2.34%	20.12%	5.94%	25.09%
Total Contributions	15.68%	15.68%	--	15.68%	--	15.68%
Deficiency (Surplus)	3.47%	5.78%	2.34%	4.44%	5.94%	9.41%



Minnesota State Retirement System

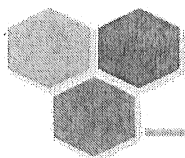
Estimated Impact of Lower
Investment Return Assumption as
of July 1, 2014

November 19, 2014

GRS

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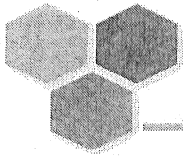
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Estimated Funding Ratios and Contributions State Employees Retirement Fund

\$ in Billions, Contributions as % of Pay

Discount Rate	8% to 2017; 8.5% after	7.9%
Salary Scale Range	3.50% to 10.50%	3.25% to 10.25%
COLA Assumption	2.5% beginning 1/1/2016	2.5% beginning 1/1/2029
Amortization Period	26 years	26 years
Actuarial Accrued Liability	\$ 12.6	\$12.8
Market Value of Assets	11.5	11.5
Unfunded Actuarial Accrued Liability	1.1	1.3
Funding Ratio	91.4%	89.9%
Normal Cost plus Expenses, % of Pay	7.6%	8.2%
Amortization of Unfunded Liability, % of Pay	2.7%	3.1%
Total Required Contribution, % of Pay	10.3%	11.3%
Employee plus Employer Contributions	11.0%	11.0%
Contribution Sufficiency/(Deficiency)	0.7%	(0.3)%



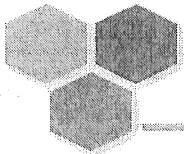
Estimated Funding Ratios and Contributions Correctional Employees Retirement Fund

\$ in Millions, Contributions as % of Pay

Discount Rate	8% to 2017; 8.5% after	7.9%
Salary Scale Range	3.75% to 6.00%	3.50% to 5.75%
COLA Assumption	2.5% beginning 1/1/2033	2.0% indefinitely
Amortization Period	24 years	24 years
Actuarial Accrued Liability	\$ 1,104.4	\$1,174.1
Market Value of Assets	876.0	877.1
Unfunded Actuarial Accrued Liability	228.4	297.0
Funding Ratio	79.3%	74.7%
Normal Cost plus Expenses, % of Pay	16.2%	17.4%
Amortization of Unfunded Liability, % of Pay	7.1%	8.8%
Total Required Contribution, % of Pay	23.3%	26.2%
Employee plus Employer Contributions	22.0%	22.0%
Contribution Sufficiency/(Deficiency)	(1.3)%	(4.2)%

3

GRS



Estimated Funding Ratios and Contributions State Patrol Retirement Fund

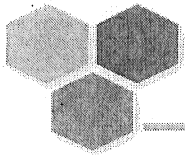
\$ in Millions, Contributions as a % of pay

COLA Scenario 1 COLA Scenario 2

Discount Rate	8% to 2017; 8.5% after	7.9%	7.9%
Salary Scale Range	4.00% to 8.00%	3.75% to 7.75%	3.75% to 7.75%
COLA Assumption	1.5% in 2020; 2.5% in 2033	1.5% in 2019; 2.5% in 2046	1.0% indefinitely
Amortization Period	23 years	23 years	23 years
Actuarial Accrued Liability	\$ 802.3	\$826.7	\$796.6
Market Value of Assets	666.8	667.3	667.3
Unfunded Actuarial Accrued Liability	135.5	159.4	129.3
Funding Ratio	83.1%	80.7%	83.8%
Normal Cost plus Expenses, % of Pay	23.3%	24.2%	22.8%
Amortization of Unfunded Liability, % of Pay	14.3%	16.4%	13.3%
Total Required Contribution, % of Pay	37.6%	40.6%	36.1%
Employee/Employer/State Contributions	35.0%	35.0%	35.0%
Future contribution increase	2.5%	2.5%	2.5%
Contribution Sufficiency/(Deficiency)	(0.1)%	(3.1)%	1.4%

4

GRS



Disclaimers

- The calculations are based upon assumptions regarding future events, which may or may not materialize. They are also based upon the data, assumptions, methods and Plan provisions that are outlined in the State Employees Retirement Fund, the Correctional Employees Retirement, and the State Patrol Retirement Fund 2013 valuation reports, unless noted otherwise.
- Refer to Estimated 2014 Valuation Results presentation dated July 15, 2014 for additional detail about the 8.0%/8.5% discount rate estimates.
- The 7.9% discount rate estimates are based on participant data and market value of assets as of July 1, 2014
- If you have reason to believe that the assumptions that were used are unreasonable, that the plan provisions are incorrectly described, that important plan provisions relevant to this proposal are not described, or that conditions have changed since the calculations were made, you should contact the author of this report prior to relying on information in the report.
- These estimates should not be relied upon as final.

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January 16, 2015

Ms. Laurie Hacking
Executive Director
Teacher Retirement Association of Minnesota
60 Empire Drive, Suite 400
St. Paul, MN 55103

Re: Cost Studies for Investment Return Assumption of 8.25% or 8.00% With and Without Extension of Amortization Period

Dear Laurie:

As you know, one of the key actuarial assumptions used in the actuarial valuation is the investment return assumption. That assumption for TRA, which is set in state statute, is a “select and ultimate” assumption reflecting an 8.00% return for the five year period from July 1, 2012 to June 30, 2017 and 8.50% thereafter. In the last valuation (July 1, 2014) the remaining select period was three years with a resulting equivalent investment return assumption of 8.41%. At your request, we have prepared several actuarial cost studies to estimate the impact of lowering the investment return assumption to either a flat 8.00% or 8.25% for all years. In addition, we have also included analysis showing the impact of extending the amortization period from the current 23 year period to 30 years.

Cost Analysis

The cost estimates provided herein are based on the results of the July 1, 2014 actuarial valuation. Each of the cost estimates use the same inflation, salary and payroll growth assumptions that were used in the July 1, 2014 actuarial valuation. The law provides that the annual cost of living adjustment (COLA) will increase from 2.0% to 2.5% once the system has been at least 90% funded for two consecutive years. Based on our projections for the 2014 valuation, which assume that all actuarial assumptions are met in future years, the COLA was assumed to increase to 2.5% in 2031. All else being the same, lowering the investment return assumption to 8.00% or 8.25% will increase the actuarial accrued liability at July 1, 2014 and decrease the funded ratio. Because the contribution rates are fixed in statute, it will also lower the projected funded ratios in future years. As a result, the date at which the system meets the statutory requirement for the COLA to increase to 2.5% is deferred. Using an investment return assumption of 8.25% and the current financing provisions (member, employer and State contributions), the system’s funded ratio is not expected to be 90% or above for two consecutive years for an additional 6 years, so the COLA is assumed to increase to 2.5% in 2037. Note that this delay in the date the COLA is assumed to increase to 2.5% partially offsets the increase in the actuarial accrued liability from lowering the investment return assumption. Using an investment return assumption of 8.00% and the current financing provisions (member, employer and State contributions), the system’s funded ratio is never expected to reach 90%, so the COLA is not assumed to increase; i.e., it remains at 2.0% for all future years.

You also asked us to include the cost impact of extending the amortization period from the current 23 years to 30 years, moving the end of the amortization period from June 30, 2037 to June 30, 2044. This change does not impact the funded ratio, but will reduce the required (actuarial) contribution rate and impact the sufficiency or deficiency of the statutory contribution rate.

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Ms. Laurie Hacking
January 16, 2015
Page 2



Exhibit A, attached to this letter provides a comparison of the July 1, 2014 valuation results (select/ultimate) and four cost studies:

- (1) Assumed investment return of 8.25%, a 2.0% COLA assumption, increasing to 2.5% in 2037, and no extension of the amortization period (23 years).
- (2) Same as the first study, except the amortization period is extended to 30 years.
- (3) Assumed investment return of 8.00%, a 2.0% COLA assumption, and no extension of the amortization period (23 years).
- (4) Same as the third study, except the amortization period is extended to 30 years.

Please note that all of the results shown in Exhibit A reflect the market value of assets.

Data, Assumptions and Methodology

The analysis contained in this letter and Exhibit A is based on the July 1, 2014 actuarial valuation results. To the extent that any of the underlying data is inaccurate or incomplete, our analysis may need to be revised. Except as otherwise noted, the assumptions and methods used are the same as those used in the July 1, 2014 actuarial valuation and are shown in Appendix C of that report. Specifically, the same inflation, salary and payroll growth assumptions that were used in the July 1, 2014 actuarial valuation were used in these studies. Please note, as described earlier, the COLA was assumed to increase to 2.5% in 2031 in the July 1, 2014 valuation, in 2037 using the 8.25% assumed rate of return, but was not assumed to increase in any future years under the 8.00% assumed rate of return.

The comments and analysis contained in this letter are not intended to give exact calculations of costs. They should be considered to be estimates. The emerging costs will vary from those presented in this letter to the extent that actual experience differs from that projected by the actuarial assumptions. This cost analysis has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Statements of Actuarial Opinion of the American Academy of Actuaries.

We are available to answer any questions on the material contained in this study or to provide explanations or further details upon request. We, Patrice A. Beckham and Brent A. Banister, are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We also meet the requirements of "approved actuary" under Minnesota Statutes, Section 356.215, Subdivision 1, Paragraph (c).

Sincerely,

Patrice Beckham

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

Brent A. Banister

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Pension Actuary



Exhibit A

(All results reflect the market value of assets)

	July 1, 2014 Valuation Results (Market Value of Assets)					
	Select/Ultimate 23-Year Amortization	8.25% 23-Year Amortization	8.25% 30-Year Amortization	8.00% 23-Year Amortization	8.00% 30-Year Amortization	8.00% 30-Year Amortization
Actuarial Accrued Liability (\$ billions)	\$ 24.5	\$ 24.8	\$ 24.8	\$ 25.4	\$ 25.4	\$ 25.4
Asset Value (\$ billions)	\$ 20.3	\$ 20.3	\$ 20.3	\$ 20.3	\$ 20.3	\$ 20.3
Unfunded Actuarial Accrued Liability, UAAL (\$ billions)*	\$ 4.2	\$ 4.6	\$ 4.6	\$ 5.1	\$ 5.1	\$ 5.1
Funded Ratio	82.7%	81.7%	81.7%	80.0%	80.0%	80.0%
Normal Cost (with expenses)	8.92%	9.23%	9.23%	9.61%	9.61%	9.61%
Amortization of UAAL	<u>6.83%</u>	<u>7.28%</u>	<u>6.30%</u>	<u>7.94%</u>	<u>6.83%</u>	<u>6.83%</u>
Total Required Contribution Rate	15.75%	16.51%	15.53%	17.55%	16.44%	16.44%
Member plus Employer Contributions	15.68%	15.68%	15.68%	15.68%	15.68%	15.68%
Contribution Sufficiency/(Deficiency)	(0.07%)	(0.83%)	0.15%	(1.87%)	(0.76%)	(0.76%)
Projected Covered Payroll for FY 2015(\$ millions)	\$ 4,354	\$ 4,354	\$ 4,354	\$ 4,354	\$ 4,354	\$ 4,354
Contribution Sufficiency/(Deficiency) (\$ millions)	\$ (3.05)	\$ (36.14)	\$ 6.53	\$ (81.42)	\$ (33.09)	\$ (33.09)
Expected COLA Increase Year	2031	2037	2037	After 2044	After 2044	After 2044

* Numbers may not add or subtract due to rounding



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February 2, 2015

Ms. Laurie Hacking
Executive Director
Teacher Retirement Association of Minnesota
60 Empire Drive, Suite 400
St. Paul, MN 55103

Re: Cost Studies for Investment Return Assumption of 7.50% with and without Extension of Amortization Period

Dear Laurie:

As you know, one of the key actuarial assumptions used in the actuarial valuation is the investment return assumption. That assumption for TRA, which is set in state statute, is a “select and ultimate” assumption reflecting an 8.00% return for the five year period from July 1, 2012 to June 30, 2017 and 8.50% thereafter. In the last valuation (July 1, 2014) the remaining select period was three years with a resulting equivalent investment return assumption of 8.41%. At your request, we have prepared an actuarial cost study to estimate the impact of lowering the investment return assumption to a flat 7.50% for all years. In addition, we included another set of results showing the impact of extending the amortization period from the current 23 year period to 30 years.

Cost Analysis

The cost estimates provided herein are based on the results of the July 1, 2014 actuarial valuation. Each of the cost estimates uses the same inflation, salary, and payroll growth assumptions that were used in the July 1, 2014 actuarial valuation. The law provides that the annual cost of living adjustment (COLA) will increase from 2.0% to 2.5% once the system has been at least 90% funded for two consecutive years. Based on our projections for the 2014 valuation, which assume that all actuarial assumptions are met in future years, the COLA was assumed to increase to 2.5% in 2031. All else being the same, lowering the investment return assumption to 7.50% will increase the actuarial accrued liability at July 1, 2014 and decrease the funded ratio. Assuming that the contribution stabilizer is not applied in future years, the contribution rates will remain fixed at their current level in statute. As a result, the projected funded ratios in future years will also be lower. Therefore, the date at which the system meets the statutory requirement for the COLA to increase to 2.5% is deferred. Using an investment return assumption of 7.50% and the current financing provisions without the stabilizer (member, employer and State contributions), the system’s funded ratio is never expected to reach 90%, so the COLA is not assumed to increase; i.e., it remains at 2.0% for all future years. Note that this delay in the date the COLA is assumed to increase to 2.5% partially offsets the increase in the actuarial accrued liability from lowering the investment return assumption to 7.5%.

You also asked us to include the cost impact of extending the amortization period from the current 23 years to 30 years, moving the end of the amortization period from June 30, 2037 to June 30, 2044. This change does not impact the funded ratio, but it will reduce the required (actuarial) contribution rate and impact the sufficiency or deficiency of the statutory contribution rate.

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Ms. Laurie Hacking
February 2, 2015
Page 2



Exhibit A, attached to this letter, provides a comparison of the July 1, 2014 valuation results (select/ultimate) and two cost studies reflecting a change in the investment return assumption:

- (1) Assumed investment return of 7.50%, a 2.0% COLA assumption, and no extension of the amortization period (23 years).
- (2) Same as the first study, except the amortization period is extended to 30 years.

Please note that all of the results shown in Exhibit A reflect the market value of assets.

Data, Assumptions and Methodology

The analysis contained in this letter and Exhibit A is based on the July 1, 2014 actuarial valuation results. To the extent that any of the underlying data is inaccurate or incomplete, our analysis may need to be revised. Except as otherwise noted, the assumptions and methods used are the same as those used in the July 1, 2014 actuarial valuation and are shown in Appendix C of that report. Specifically, the same inflation, salary and payroll growth assumptions that were used in the July 1, 2014 actuarial valuation were used in these studies. Please note, as described earlier, the COLA was assumed to increase to 2.5% in 2031 in the July 1, 2014 valuation, but was not assumed to increase in any future years under the 7.50% assumed rate of return.

The comments and analysis contained in this letter are not intended to give exact calculations of costs. They should be considered to be estimates. The emerging costs will vary from those presented in this letter to the extent that actual experience differs from that projected by the actuarial assumptions. This cost analysis has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Statements of Actuarial Opinion of the American Academy of Actuaries.

We are available to answer any questions on the material contained in this study or to provide explanations or further details upon request. We, Patrice A. Beckham and Brent A. Banister, are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We also meet the requirements of "approved actuary" under Minnesota Statutes, Section 356.215, Subdivision 1, Paragraph (c).

Sincerely,

A handwritten signature in cursive script that reads "Patrice Beckham".

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in cursive script that reads "Brent A. Banister".

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Pension Actuary



Exhibit A

(All results reflect the market value of assets)

	July 1, 2014 Valuation Results (Market Value of Assets)			
	Select/Ultimate 23-Year Amortization	7.50% 23-Year Amortization	7.50% 30-Year Amortization	7.50%
Actuarial Accrued Liability (\$ billions)	\$ 24.5	\$ 26.8	\$ 26.8	\$ 26.8
Asset Value (\$ billions)	\$ 20.3	\$ 20.3	\$ 20.3	\$ 20.3
Unfunded Actuarial Accrued Liability, UAAL (\$ billions)*	\$ 4.2	\$ 6.5	\$ 6.5	\$ 6.5
Funded Ratio	82.7%	75.6%	75.6%	75.6%
Normal Cost (with expenses)	8.92%	10.98%	10.98%	10.98%
Amortization of UAAL	<u>6.83%</u>	<u>9.76%</u>	<u>8.31%</u>	<u>8.31%</u>
Total Required Contribution Rate	15.75%	20.74%	19.29%	19.29%
Member plus Employer Contributions	15.68%	15.68%	15.68%	15.68%
Contribution Sufficiency/(Deficiency)	(0.07%)	(5.06%)	(3.61%)	(3.61%)
Projected Covered Payroll for FY 2015(\$ millions)	\$ 4,354	\$ 4,354	\$ 4,354	\$ 4,354
Contribution Sufficiency/(Deficiency) (\$ millions)	\$ (3.05)	\$(220.31)	\$(157.18)	\$(157.18)
Expected COLA Increase Year	2031	Never	Never	Never

* Numbers may not add or subtract due to rounding

**Background Information on the
Role and Function of Interest Rate Actuarial Assumptions**

1. Actuarial Funding for Defined Benefit Retirement Plans. Because defined benefit plans specify eventual retirement benefits through the use of a formula or some manner other than the magnitude of the dollar value of the trust fund amassed for the payment of retirement annuities and benefits, defined benefit plans require the preparation of actuarial valuations to set their financial needs and costs and to assess the extent that the pension plan is complying with that funding budget.

Those actuarial valuations depend on an actuarial valuation method, which implements a view of how to allocate the burden of amassing assets to equal those future retirement annuities and benefits over the working lifetime of the active pension plan membership, and actuarial assumptions, including the interest rate assumption, investment performance assumption, or the discount rate assumption.

2. Interest Rate Actuarial Assumption. Actuarial cost or valuation methods begin with the present value of retirement annuities and benefits and allocate portions of that present value figure over time. The present value of benefits adjusts the total dollar amount of retirement annuities and benefits for the time value of money, since the outlays of annuities and benefits from a retirement plan extend over a prolonged period of time, reducing the dollar amount of each future outlay by the amount of investment earnings that could be earned on a pool of assets underlying those annuities and benefits. Thus, the \$100 of benefits that will be payable when a retiring active member reaches age 78 would not be valued as a full \$100 when the active member retires at age 65, because of the investment return earnable over the 13-year period. The following are the present values of \$100 that becomes payable 13 years after the valuation date at various interest rates:

<u>Interest Rate</u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Amount</u>
2.0%	\$77.30	4.5%	\$56.43	7.0%	\$41.50
2.5%	\$72.54	5.0%	\$53.03	7.5%	\$39.06
3.0%	\$68.10	5.5%	\$49.86	8.0%	\$36.77
3.5%	\$63.94	6.0%	\$46.88	8.5%	\$34.57
4.0%	\$60.05	6.5%	\$44.10	9.0%	\$32.62

Under the example, almost twice as much money would have to be deposited in a pension trust for \$100 retirement benefit payable 13 years later if the compounded investment earnings would be assumed to be 2.5% rather than 8.0%.

Two desirable characteristics of a rate of return actuarial assumption are accuracy and consistency. The actuarial assumption ought to be the best estimate of the long-term return expected to be earned by the pension fund. Frequent changes in the investment return actuarial assumption are not desirable. Frequent changes in the actuarial assumption could cause similar individuals to be treated quite differently, depending upon the assumption in place in the year the individual retires. Frequent actuarial assumption changes will also undermine the usefulness of the annual actuarial reports. These reports are intended as a budgeting tool, permitting the employers and the Legislature to determine whether contributions to the fund are adequate to keep the fund on track for full funding by the required full funding date. Frequent changes in the investment return actuarial assumption can produce radical differences in the actuarial report results from one year to the next, undermining their usefulness.

Unfortunately, estimating the long-term investment return is not an easy task. It is an attempt to perceive the future, but that future is always unknowable. In practice, estimates of future long-term returns generally are based on past results, with consideration given to how those results may change in the future.

3. Setting the Interest Rate Assumption. Actuarial valuations are approximations or projections of future benefit accruals and payments with the goal of recognizing the annual funding requirements for the retirement plan in order to set contribution rates that would be adequate to ensure the financial solvency of the plan. As a projection dependent on various assumptions, the process depends on the accuracy of those assumptions as predictions of the future.

For a number of retirement plans, the actuary performing the actuarial valuation has the authority implicitly or explicitly to choose the actuarial valuation method, to select the asset valuation method, to select the economic assumptions, and to select the demographic and other non-economic assumptions. Where the actuary has this authority, guidance is provided to the actuary by the Actuarial Standards Board, a nine-member board serving three-year staggered terms. Members of the Actuarial Standards Board are appointed by the Council of U.S. Presidents, which is composed of the

presidents and presidents-elect of the American Academy of Actuaries, the American Society of Pension Professionals and Actuaries, the Casualty Actuarial Society, the Conference of Consulting Actuaries, and the Society of Actuaries.

The Actuarial Standards Board has issued four Actuarial Standards of Practice to provide general guidance for pension plan actuarial valuations, which are:

- 1) ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or contributions* (adopted 2007, updated 2011; revision pending);
- 2) ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* (adopted 2007, updated 2011; revision pending);
- 3) ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations* (adopted 2010, updated 2011); and
- 4) ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations* (adopted 2007, clarified 2009, updated 2011).

For situations such as Minnesota, where statute or other binding regulation specifies economic actuarial assumptions, ASOP No. 27 indicates that it does not apply, but requires the actuary to use the standard principles to assess the reasonableness of the prescribed assumption.

Although ASOP No. 27 does not apply to the process of the Commission initially and the Legislature ultimately in determining the interest rate actuarial assumption, the Commission should have a sense of the assumption-setting process that an actuary is required to use and that would be the basis for any valuation statement by an actuary about the reasonableness of the statutory interest rate assumption. The second exposure draft of the proposed revision of ASOP No. 27, issued in January 2012 with a comment deadline of May 31, 2012, requires the actuary to identify the component parts of the assumption, if any, to evaluate the relevant data, to consider the factors specific to the measurement, to consider other general factors, and then to select a reasonable assumption. In considering the relevant data, the actuary is required to review recent and long-term historical economic data without giving undue weight to recent experience. The general factors for consideration includes allowance for adverse deviations, the balance between the refinement of an assumption and its materiality, the balance between a refined economic assumption and the cost of that refinement, the need for rounding using an unbiased rounding technique, the need to recognize a change in circumstances that occurred after the valuation date, and input of views from relevant experts. Reasonableness is to be determined by both historical data and the actuary's estimate of future experience or estimates of future experience inherent in financial market data. In determining the interest rate actuarial assumption, the second exposure draft of ASOP No. 27 provides little specific guidance, but indicates that the actuary should consider a broad range of data and other informational inputs. The second exposure draft of ASOP No. 27 dropped the examples of acceptable methods to construct an investment return range, which were the building block method, where inflation and the real rate of return for each investment portfolio class were combined, or the cash flow matching method based on bond portfolio returns.

The second exposure draft of ASOP No. 27 does not specifically address the time horizon for the interest rate actuarial assumption. The interest rate actuarial assumption is a long-term assumption. For the three largest Minnesota defined benefit 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), the period between the average entry age and the expected average age at death during which pension plan assets can be amassed and invested is 50-55 years (2012 active member average age of 34.7 years for MSRS-General, 36.2 years for PERA-General, and 31.5 years for TRA, compared to the average life expectancy at birth for Minnesota of 81.1 years or to the average life expectancy at age 65 for Minnesota of 85.1 years).

Over the extended time period that public employee defined benefit retirement plans are financed, the goal is to ensure that the generation of public jurisdiction taxpayers that were served by the public employees appropriately fund the public employee retirement benefits accrued by those employees during that period without shifting costs to a future generation of taxpayers.

Background Information on Public Retirement Plan Interest Rate Actuarial Assumptions: Other States

	Interest Assumption		Interest Assumption
Alabama		California	
Anniston City Policemen's and Firemen's Retirement Fund ¹	8.00%	Judges Retirement Plan II ²	7.00%
Birmingham City Firemen's and Policemen's Supplemental Pension System ²	7.00%	Kern Co. Employees' Retirement Assoc. ⁷	7.75%
Birmingham City Health Dept. Employees Retirement and Relief System ²	7.00%	Legislators Retirement Plan ²	5.75%
Birmingham City Limited Firemen's Retirement and Relief Plan ²	7.00%	Long Beach City Public Agency Retirement System Defined Benefit Plans for Special Status Contractors & Seasonal & Temporary Employees ²	5.00%
Birmingham City Limited Policemen's Retirement and Relief Plan ²	7.00%	Los Angeles City Employees' Retirement Plan ²	7.75%
Birmingham City Policemen's Pension and Relief System ²	7.00%	Los Angeles City Fire and Police Pension Plan ²	7.75%
Birmingham City Retirement and Relief System ²	7.00%	Los Angeles City Water & Power Employees' Retirement, Disability & Death Benefit Insurance Plan ²	7.75%
Birmingham City Unclassified Employees Pension and Relief System ²	7.00%	Los Angeles Co. Employees Retirement Assoc. ¹²	7.60%
Employees' Retirement System ³	8.00%	Marin Co. Employees' Retirement Assoc. ⁷	7.50%
Florence City Employees' Retirement System ³	7.50%	Mendocino Co. Employees' Retirement Assoc. ⁷	7.75%
Jefferson Co. Genl. Retirement System ⁴	7.00%	Merced Co. Employees' Retirement Assoc. ⁷	7.75%
Judicial Retirement System ³	8.00%	Oakland Municipal Employees' Retirement System ²	6.50%
Mobile City Police and Firefighters Retirement Plan ¹	8.00%	Oakland Police and Fire Retirement System ²	6.75%
Teachers Retirement System ³	8.0%	Orange Co. Employees Retirement System ¹¹	7.75%
Tuscaloosa City Employees Retirement Plan ³	6.00%	Pasadena Fire and Police Retirement System ²	6.00%
Tuscaloosa City Fire and Police Retirement System ³	8.00%	Public Employees Retirement Plan ²	7.50%
Tuscaloosa Police Officers and Firefighters Supplemental Retirement Plan ³	6.00%	Sacramento City Employees' Retirement System ²	6.50%
	Interest Assumption	Sacramento Co. Employees' Retirement System ⁷	7.50%
Alaska		San Bernardino Co. Employees' Retirement Assoc. ⁷	7.75%
Anchorage Municipality Police & Fire Retirement System ²	8.00%	San Clemente City Employees' Retirement Plan ²	7.25%
Elected Public Officers Retirement System ⁵	4.75%	San Diego City Employees' Retirement System ²	7.50%
Judicial Retirement System ⁵	8.00%	San Diego Co. Employees Retirement Assoc. ¹³	8.00%
National Guard & Naval Militia Retirement System ⁵	7.00%	San Francisco City Employees' Retirement System ²	7.75%
Public Employees' Retirement System ⁶	8.00%	San Joaquin Co. Employees' Retirement Assoc. ⁷	7.75%
Teachers' Retirement System ⁶	8.00%	San Jose City Federated City Employees' Retirement System ²	7.50%
	Interest Assumption	San Jose City Police and Fire Dept. Retirement Plan ²	7.50%
Arizona		San Luis Obispo Co. Pension Trust ¹¹	7.75%
Corrections Officer Retirement Plan ⁷	8.00%	San Mateo Co. Employees' Retirement Assoc. ⁷	7.50%
Elected Officials' Retirement Plan ⁷	8.00%	Santa Barbara Co. Employees' Retirement System ⁷	7.75%
Phoenix City Employees' Retirement Plan ²	8.00%	Sonoma Co. Employees' Retirement Assoc. ¹⁴	7.50%
Public Safety Personnel Retirement System ⁷	8.00%	Stanislaus Co. Employees' Retirement Assoc. ⁷	7.75%
State Retirement System ^{8/7}	8.0%	State Teachers Retirement System ⁷	7.50%
Tucson City Supplemental Retirement System ⁴	7.75%	Tulare Co. Employees' Retirement Assoc. ⁷	7.75%
	Interest Assumption	University of California Retirement Plan ⁹	7.50%
Arkansas		Ventura Co. Employees' Retirement Assoc. ⁷	7.75%
Judicial Retirement System ⁷	7.25%		Interest Assumption
Little Rock City Firemen's Pension & Relief Fund ⁹	5.00%	Colorado	
Little Rock City Policemen's Pension & Relief Fund ⁹	5.00%	Adams Co. Retirement Plan ¹⁵	7.50%
Little Rock City Nonuniformed Employees' Defined Benefit Pension Plan ⁹	5.00%	Arapahoe Co. Retirement Plan ⁹	7.50%
144 Municipal Police and Fire Pension & Relief Funds ⁹	3% (81) 5% (51) 7% (12)	City of Aurora Genl. Employees' Retirement Plan ¹⁶	8.00%
Public Employees Retirement System ⁷	8.00%	City of Boulder Old Hire Fire Defined Benefit Plan ¹¹	7.50%
State Highway Employees Retirement System ¹⁰	8.00%	City of Boulder Old Hire Police Defined Benefit Plan ¹¹	7.50%
State Police Retirement System ⁷	8.00%	City of Denver Employees Retirement Plan ⁹	8.00%
Teacher Retirement System ⁴	8.0%	City and Co. of Denver Water Utility Pension Plan ¹¹	7.50%
	Interest Assumption	El Paso Co. Retirement Plan ¹⁵	8.00%
California		Fire & Police Pension Assoc. ⁹	7.50%
Alameda Co. Employees' Retirement Assoc. ¹¹	7.80%	Public Employees Retirement Assoc. ²	7.75%
Contra Costa Co. Employees' Retirement Assoc. ¹¹	7.80%	City of Bridgeport Public Safety Plan A ²	8.00%
Fresno City Employees Retirement System ²	8.00%	City of Bridgeport Police Retirement Plan B ²	8.00%
Fresno City Fire and Police Retirement System ²	8.00%	City of Bridgeport Firefighters' Retirement Plan B ²	8.00%
Fresno Co. Employees' Retirement Assoc. ⁷	7.75%	City of Bridgeport Janitors' and Engineers' Retirement Plan ²	8.00%
Imperial Co. Employees' Retirement System ²	7.75%	City of Bristol Firefighters' Benefit Plan ⁴	7.75%
Irvine City Defined Benefit Pension Plan ²	5.50%	City of Bristol Retirement System ⁴	7.75%
Judges Retirement Plan ²	4.25%	City of Bristol Police Benefit Plan ⁴	7.75%
		City of Danbury Genl. Employees Plan ²	7.25%
		City of Danbury Pre-1967 Policemen Pension Plan ²	7.25%
		City of DanburyPre-1967 Firemen Pension Plan ²	7.25%
		City of Danbury Post-1967 Policemen Pension Plan ²	8.00%
		City of Danbury Post-1967 Firemen Pension Plan ²	8.00%
		City of Danbury Post-1983 Policemen Pension Plan ²	8.00%
		City of Groton Employees' Retirement Plan ²	7.50%
		City of Hartford Municipal Employees' Retirement Fund ²	8.00%
		City of Hartford RAF/PBF/FRF Plan ²	8.00%
		City of Hartford 415 (m) Fund ²	8.00%

Colorado	Interest Assumption	Colorado	Interest Assumption
City of Meriden Employees' Retirement Plan ²	8.00%	Town of Ledyard Public Employee Retirement System ¹⁷	6.25%
City of Meriden Police Pension Plan ²	8.00%	Town of Litchfield Town Retirement Plan ²	7.00%
City of Meriden Firefighters' Retirement Plan ²	8.00%	Town of Litchfield Merit Service Plan ²	7.00%
City of Middletown Public Employee Retirement System ²	7.60%	Town of Manchester Public Employee Retirement System ²	7.75%
City of Milford Retirement System ²	8.25%	Town of Middlebury Public Employee Retirement System ⁴	7.50%
City of New Britain Police & Fire Retirement Plan ²	7.50%	Town of New Hartford Employee Retirement Plan ²	8.00%
City of New Haven City Employees' Retirement Fund ¹⁷	8.50%	Town of Newington Municipal Employees' Pension Plan ²	7.75%
City of New Haven Policemen's and Firemen's Retirement Fund ¹⁷	8.50%	Town of Newington Police Officers' Pension Plan ²	7.75%
City of New London Noncontributory Pension System ²	7.50%	Town of Newington Administrative Employees' Pension Plan ²	7.75%
City of New London Contributory Pension System ²	7.50%	Town of Newington Volunteer Firefighters' Pension Plan ²	6.00%
City of Norwalk Employees' Pension Plan ²	8.00%	Town of Newtown Selectmen and Board of Education Personnel Pension Plan ²	7.75%
City of Norwalk Fire Benefit Fund ²	8.00%	Town of Newtown Police Personnel Pension Plan ²	7.75%
City of Norwalk Food Service Employees' Pension Plan ²	8.00%	Town of North Haven Genl. Employees Retirement Plan ⁷	7.00%
City of Norwalk Police Benefit Fund ²	8.00%	Town of North Haven Police Dept. Pension Plan ⁷	7.50%
City of Norwich Retirement System ²	8.25%	Town of North Haven Fire Dept. Pension Plan ⁷	7.00%
City of Norwich Volunteer Firefighters' Relief Plan ²	7.00%	Town of North Haven Volunteer Fire Retirement Plan ⁷	7.00%
City of Stamford Classified Employees' Retirement Fund ²	8.00%	Town of North Haven Chief Executive, Town Clerk, and Tax Collector Retirement Plan ⁷	7.00%
City of Stamford Police Pension Trust Fund ²	8.00%	Town of Plainville Municipal Empl. Pension System ²	8.00%
City of Stamford Firefighters' Pension Trust Fund ²	8.00%	Town of Plainville Police Pension Plan ²	8.00%
City of Stamford Custodians' and Mechanics' Retirement Fund ²	8.00%	Town of Plymouth Pension Plan ⁴	6.50%
City of Waterbury Retirement System ²	8.50%	Town of Rocky Hill Ambulance Pension System ²	6.50%
City of West Haven Public Employee Retirement System ¹⁷	8.50%	Town of Rocky Hill Firefighters Pension System ²	7.50%
Connecticut Municipal Employees' Retirement System ¹²	8.00%	Town of Rocky Hill Genl. Employee Pension System ²	7.50%
Connecticut State Teachers' Retirement System ⁷	8.50%	Town of Rocky Hill Police Officers Pension System ²	7.50%
Judges, Family Support Magistrates and Compensation Commissioners Retirement System ⁷	8.00%	Town of Simsbury Genl. Government Plan ⁴	7.75%
Plymouth Board of Education Retirement Plan ⁴	7.25%	Town of Simsbury Police Plan ⁴	7.75%
Policemen and Firemen Survivors' Benefit Fund ⁷	8.00%	Town of Simsbury Board of Education Plan ⁴	7.75%
Probate Judges and Employees Retirement System ¹¹	8.25%	Town of Somers Board of Education Employees' Pension Plan ⁴	7.00%
Retirement Plan of the Town of Darien ²	7.50%	Town of Somers Town Employees Pension Plan ⁴	6.50%
Retirement System of the Town of Greenwich ¹²	7.50%	Town of Somers Volunteer Firefighters Incentive Plan ⁴	6.50%
State Employees Retirement Plan ⁷	8.00%	Town of Stratford Employee Defined Benefit Pension Plan ²	8.25%
Town of Avon Board of Education Pension Plan ²	8.00%	Town of Thomaston Retirement Plan ²	7.00%
Town of Avon Dispatchers Pension Plan ²	8.00%	Town of Vernon Police Pension Plan ²	7.50%
Town of Avon Nonorganized Pension Plan ²	8.00%	Town of Vernon Town Pension Plan ²	7.50%
Town of Avon Police Pension Plan ²	8.00%	Town of Vernon Volunteer Firefighters Length of Service Award Program ²	6.50%
Town of Avon Public Works Pension Plan ²	8.00%	Town of Wallingford Consolidated Pension Plan ²	7.60%
Town of Berlin Public Employee Retirement System ²	6.00%	Town of Waterford Pension Trust Fund ⁴	7.25%
Town of Bethel Pension Plan ⁴	8.00%	Town of West Hartford Retirement System ²	8.50%
Town of Bethel Police Pension Plan ⁴	7.00%	Town of Westport Police Pension Plan ⁴	7.50%
Town of Bloomfield Retirement Income Plan ⁴	8.00%	Town of Westport Fire Pension Plan ⁴	7.50%
Town of Bloomfield Police Retirement Income Plan ⁴	8.00%	Town of Westport Public Works Pension Plan ⁴	7.50%
Town of Canton Employee Retirement Plan ²	7.00%	Town of Westport Municipal Interim Plan ⁴	7.50%
Town of Canton Volunteer Firefighters and Ambulance Plan ²	7.00%	Town of Westport Non-Union Plans ⁴	7.50%
Town of Cheshire Town Pension Plan ²	8.25%	Town of Wethersfield Public Empl. Retirement System ²	7.75%
Town of Cheshire Police Pension Plan ²	8.25%	Town of Willington Pension Plan ²	6.50% pre/ 6.00% post
Town of Cheshire Volunteer Firefighter Pension Plan ²	8.25%		
Town of Coventry Employee Retirement System ²	7.50%	Town of Wilton Public Employee Retirement System ²	7.60%
Town of Cromwell Public Employee Retirement System ²	8.00%	Town of Winchester Employees' Retirement Fund ⁴	8.00%
Town of Darien Police Pension Fund ²	7.50%	Town of Windsor Retirement Plan ²	7.75%
Town of East Hampton Public Employee Retirement System ²	8.00%		
Town of East Hartford Retirement System ²	8.25%		Interest Assumption
Town of Easton Retirement Plan I and II ²	7.00%	Delaware	
Town of Enfield Town Retirement Plan ²	7.50%	City of Dover Genl. Employee Pension Plan ²	7.00%
Town of Enfield Police Retirement Plan ²	7.50%	City of Dover Police Pension Plan ²	7.00%
Town of Fairfield (Town Employees Retirement Plan ²	7.75%	City of Wilmington Firefighters Pension Plan ²	7.50%
Town of Fairfield Police and Fire Retirement Plan ²	7.75%	City of Wilmington NonUniformed Pension Plan I ²	7.50%
Town of Farmington Employee Retirement System ²	8.50%	City of Wilmington NonUniformed Pension Plan II ²	7.50%
Town of Granby Public Employee Retirement System ⁴	8.00%	City of Wilmington NonUniformed Pension Plan III ²	7.50%
Town of Greenwich Police Benefit Fund ²	7.75%	City of Wilmington Police Pension Plan ²	7.50%
Town of Groton Retirement System ²	8.00%	Co. & Municipal Pension Plan ⁷	7.50%
Town of Guilford Employees' Pension Plan ²	7.00%	Co. & Municipal Police Officers' & Firefighters' Pension Plan ⁷	7.50%
Town of Guilford Police Retirement Fund ²	7.00%		
Town of Guilford Public School Employees' Pension Plan ²	7.00%	State Employee Pension Plan ⁷	7.50%

Delaware	Interest Assumption	Florida	Interest Assumption
State Judiciary Pension Plan ⁷	7.50%	City of Cocoa Beach Fire Ret. System ¹⁹	8.00%
State Police Pension Plan ⁷	7.50%	City of Cocoa Beach Genl. Empl. Ret. System ¹⁹	8.00%
State Port Corporation Pension Plan ⁷	7.50%	City of Cocoa Beach Police Ret. System ¹⁹	8.00%
State Volunteer Firemen Pension Plan ⁷	7.50%	City of Copper City Fire Ret. System ¹⁹	7.50%
Wilmington Park Trust Pension Plan ²	8.00%	City of Copper City Genl. Empl. Ret. System ²⁰	7.50%
		City of Copper City Management Empl. Ret. System ¹⁹	7.50%
		City of Copper City Police Ret. System ¹⁹	7.50%
		City of Coral Gables Genl. Empl., Police & Fire Ret. System ¹⁹	7.75%
District of Columbia	Interest Assumption	City of Coral Springs Fire Ret. System ¹⁹	8.00%
Police Officers' & Firefighters' Retirement Plan ¹⁸	6.50%	City of Coral Springs Genl. Empl. Ret. System ¹⁹	7.50%
Teachers' Retirement Plan ¹⁸	6.50%	City of Coral Springs Police Ret. System ¹⁹	8.00%
		City of Crescent City Fire Ret. System ²⁰	6.50%
Florida	Interest Assumption	City of Crescent City Police Ret. System ²⁰	8.00%
Alachua Co. Library Genl. Empl. Ret. Plan ¹⁹	7.75%	City of Crestview Genl. Empl. Ret. System ¹⁹	8.00%
Bal Harbour Village Genl. Empl. Ret. System ²⁰	7.50%	City of Crestview Police and Fire Ret. System ¹⁹	8.00%
Bal Harbour Village Police Ret. System ¹⁹	8.00%	City of Dade City Fire Ret. System ¹⁹	7.80%
Bay Medical Center Genl. Empl. Ret. System ¹⁹	8.00%	City of Dade City Police Ret. System ¹⁹	7.80%
Belle Glade Housing Auth. Genl. Empl. Ret. System ¹⁹	5.50%	City of Dania Beach Fire Ret. System ¹⁹	8.00%
Boca Grande Fire Control District Fire Ret. System ¹⁹	7.75%	City of Dania Beach Genl. Empl. Ret. System ²⁰	7.50%
Boca Raton Housing Auth. Genl. Empl. Ret. System ¹⁹	7.50%	City of Davie Fire Ret. System ¹⁹	7.90%
Bonita Springs Fire Control District Fire Ret. System ¹⁹	8.00%	City of Davie Genl. & Management Empl. Ret. System ²⁰	7.75%
Bonita Springs Fire Control District Genl. Empl. Ret. System ¹⁹	8.00%	City of Davie Police Ret. System ¹⁹	7.90%
City of Altamonte Springs Genl. Empl. Ret. Plan ¹⁹	7.50%	City of Dania Beach Police Ret. System ¹⁹	8.00%
City of Altamonte Springs Police Ret. System ¹⁹	7.50%	City of Daytona Police & Fire Ret. System ¹⁹	7.50%
City of Apopka Fire Ret. System ²⁰	8.00%	City of Deerfield Beach Fire Ret. System ²⁰	7.63%
City of Apopka Genl. Empl. Ret. System ²⁰	8.00%	City of Deerfield Beach Genl. Empl. Ret. System ²³	7.50%
City of Apopka Police Ret. System ²⁰	8.00%	City of Deerfield Beach Police Ret. System ¹⁹	6.75%
City of Arcadia Genl. Empl. Ret. System ²¹	6.50%	City of Deland Firefighters' Ret. Trust Fund ³	8.00%
City of Arcadia Police and Fire Ret. System ¹⁹	8.00%	City of Deland Genl. Empl. Ret. Trust Fund ³	7.50%
City of Atlantic Beach Genl. Empl. Ret. System ²²	8.00%	City of Deland Police Officers' Ret. Trust Fund ³	7.50%
City of Atlantic Beach Police Ret. System ²²	8.00%	City of Deltona Firefighters' Pension Plan ³	8.00%
City of Atlantis Police Ret. System ¹⁹	7.69%	City of Dunedin Fire Ret. System ¹⁹	7.75%
City of Auburndale Fire Ret. System ¹⁹	7.75%	City of Dunnellon Firefighters & Police Officers Defined Benefit Ret. Plan ¹	7.50%
City of Auburndale Genl. Empl. Ret. System ¹⁹	7.50%	City of Eatonville Police Ret. System ²⁰	8.00%
City of Auburndale Police Ret. System ¹⁹	7.75%	City of Edgewater Fire Ret. System ¹⁹	7.50%
City of Aventura Police Officers' Ret. Plan ¹	7.50%	City of Edgewater Genl. Empl. Ret. System ¹⁹	7.50%
City of Avon Park Fire Ret. System ¹⁹	7.75%	City of Edgewater Police Ret. System ²⁰	7.50%
City of Avon Park Police Ret. System ¹⁹	8.00%	City of Eustis Fire Ret. System ¹⁹	8.00%
City of Bartow Fire Ret. System ¹⁹	8.00%	City of Eustis Police Ret. System ²⁰	8.00%
City of Bartow Genl. Empl. Ret. System ¹⁹	7.75%	City of Fernandina Beach Genl. Empl. Ret. System ¹⁹	8.00%
City of Bartow Police Ret. System ¹⁹	8.00%	City of Fernandina Beach Police & Fire Ret. System ¹⁹	8.00%
City of Belle Glade Genl. Empl. Ret. System ¹⁹	7.75%	City of Flagler Beach Fire Ret. System ²⁰	8.00%
City of Belle Glade Police & Fire Ret. System ¹⁹	6.50%	City of Flagler Beach Police Ret. System ²⁰	8.00%
City of Belleair Police Ret. System ¹⁹	7.75%	City of Florida City Police Ret. System ²⁰	7.00%
City of Belleair Bluffs Fire Ret. System ¹⁹	8.00%	City of Fort Lauderdale Genl. Empl. Ret. System ²⁴	7.75%
City of Belleview Police Ret. System ¹⁹	7.75%	City of Fort Lauderdale Police and Fire Ret. System ¹⁵	7.50%
City of Boca Raton Executive Empl. Ret. System ¹⁹	7.75%	City of Fort Meade Fire Ret. System ²⁰	7.50%
City of Boca Raton Genl. Empl. Ret. System ¹⁹	8.00%	City of Fort Meade Genl. Empl. Ret. System ²⁰	7.50%
City of Boca Raton Police & Fire Ret. System ¹⁹	8.00%	City of Fort Meade Police Ret. System ²⁰	7.50%
City of Boynton Beach Fire Ret. System ¹⁹	7.95%	City of Fort Myers Fire Ret. System ¹⁹	8.50%
City of Boynton Beach Genl. Empl. Ret. System ¹⁹	8.00%	City of Fort Myers Genl. Empl. Ret. System ¹⁹	8.50%
City of Boynton Beach Police Ret. System ¹⁹	7.75%	City of Fort Myers Police Ret. System ¹⁹	8.00%
City of Bradenton Fire Ret. System ¹⁹	8.00%	City of Fort Pierce Genl. Empl. Ret. System ¹⁹	8.00%
City of Bradenton Police Ret. System ¹⁹	8.00%	City of Fort Pierce Police Ret. System ¹⁹	8.00%
City of Brooksville Fire Ret. System ¹⁹	7.75%	City of Fort Pierce Police Supplemental Ret. System ¹⁹	7.50%
City of Brooksville Police Ret. System ¹⁹	7.50%	City of Fort Pierce Utilities Genl. Empl. Ret. System ²²	8.00%
City of Bunnell Fire Ret. System ²⁰	8.00%	City of Fort Walton Beach Fire Ret. System ¹⁹	8.00%
City of Bushnell Genl. Empl. Ret. System ¹⁹	8.00%	City of Fort Walton Beach Genl. Empl. Ret. System ¹⁹	7.90%
City of Bushnell Police Ret. System ¹⁹	8.00%	City of Fort Walton Beach Police Ret. System ¹⁹	8.00%
City of Cape Coral Fire Ret. System ¹⁹	8.00%	City of Frostproof Genl. Empl. Ret. System ²⁰	7.25%
City of Cape Coral Genl. Empl. Ret. System ¹⁹	7.75%	City of Frostproof Police Ret. System ¹⁹	8.00%
City of Cape Coral Police Ret. System ¹⁹	8.00%	City of Fruitland Park Fire Ret. System ²⁰	4.00%
City of Casselberry Police & Fire Ret. System ¹⁹	8.00%	City of Gainesville Consolidated Police Officers' & Firefighters' Ret. Plan ³	8.50%
City of Chattahoochee Fire Ret. System ²⁰	6.00%	City of Gainesville Empl. Disability Plan ³	8.50%
City of Clearwater Fire Ret. System ²¹	3.50%	City of Gainesville Empl. Pension Plan ³	8.50%
City of Clearwater Genl. Empl., Police & Fire Ret. System ²¹	7.50%	City of Golden Beach Genl. Empl. Ret. System ²⁰	7.50%
City of Clermont Fire Ret. System ¹⁹	7.50%	City of Golden Beach Police Ret. System ²⁰	7.50%
City of Clermont Genl. Empl. Ret. System ¹⁹	7.50%	City of Green Cove Springs Police Ret. System ¹⁹	7.50%
City of Clermont Police Ret. System ¹⁹	7.50%	City of Greenacres Police & Fire Ret. System ¹⁹	7.25%
City of Clewiston Genl. Empl. Ret. System ²⁰	8.00%	City of Gulf Breeze Police Ret. System ²⁰	7.50%
City of Cocoa Fire Ret. System ¹⁹	8.00%	City of Gulfport Fire Ret. System ¹⁹	8.00%
City of Cocoa Genl. Empl. Ret. System ¹⁹	8.00%	City of Gulfport Genl. Empl. Ret. System ¹⁹	7.50%
City of Cocoa Police Ret. System ¹⁹	8.00%		

Florida	Interest Assumption	Florida	Interest Assumption
City of Gulfport Police Ret. System ¹⁹	8.00%	City of Lauderdale Confidential & Managerial Empl. Ret. Plan ³	7.75%
City of Haines City Fire Ret. System ¹⁹	7.50%	City of Lauderdale Firefighter Ret. System ³	8.00%
City of Haines City Genl. Empl. Ret. System ¹⁹	8.00%	City of Lauderdale Genl. Employee Ret. System ³	8.00%
City of Haines City Police Ret. System ¹⁹	7.50%	City of Lauderdale Police Ret. System ³	7.75%
City of Hallandale Beach Genl. Empl. Ret. System ¹⁹	7.50%	City of Leesburg Fire Ret. System ¹⁹	7.75%
City of Hallandale Beach Police and Fire Ret. System ¹⁹	7.75%	City of Leesburg Genl. Empl. Ret. System ¹⁹	7.50%
City of Hallandale Beach Professional & Management Empl. Ret. System ¹⁹	7.75%	City of Leesburg Police Ret. System ¹⁹	7.90%
City of Hallandale Beach Professional & Management Employees Excess Benefits Ret. System ¹⁹	7.75%	City of Lighthouse Point Police and Fire Ret. System ¹⁹	7.75%
City of Havana Fire Ret. System ²⁰	8.00%	City of Live Oak Fire Ret. System ²⁰	7.50%
City of Hialeah Genl. Empl., Police & Fire Ret. System ²⁰	8.00%	City of Longboat Key Fire Ret. System ¹⁹	8.00%
City of Hialeah Elected Officials Ret. Plan ²³	6.00%	City of Longboat Key Genl. Empl. Ret. System ¹⁹	8.00%
City of Hialeah Gardens Police Ret. System ¹⁹	7.75%	City of Longboat Key Police Ret. System ¹⁹	8.00%
City of Holly Hill Fire Ret. System ¹⁹	7.50%	City of Longwood Police and Fire Ret. System ¹⁹	7.50%
City of Holly Hill Police Ret. System ¹⁹	7.50%	City of Lynn Haven Fire Ret. System ¹⁹	8.00%
City of Hollywood Police Officers' Ret. System ¹⁸	7.75/8.00%	City of Lynn Haven Genl. Empl. Ret. System ¹⁹	8.00%
City of Holmes Beach Police Ret. System ¹⁹	7.50%	City of Lynn Haven Police Ret. System ¹⁹	8.00%
City of Homestead Fire Ret. System ²¹	6.50%	City of Macclenny Fire Ret. System ²⁰	7.50%
City of Homestead Genl. & Hospital Empl. Ret. System ¹⁹	7.00%	City of Madison Fire Ret. System ¹⁹	8.00%
City of Homestead New Elected Officials & Senior Management Empl. Ret. System ²⁵	7.00%	City of Madison Police Ret. System ¹⁹	8.00%
City of Homestead Old Elected Officials Ret. System ²⁰	7.00%	City of Maitland Police and Fire Ret. System ¹⁹	7.90%
City of Homestead Police Ret. System ¹⁹	8.00%	City of Marathon Fire Ret. System ²⁰	7.50%
City of Howey-In-The-Hills Police Ret. System ²⁰	8.00%	City of Marco Island Fire Ret. System ¹⁹	7.50%
City of Indialantic Genl. Empl. Ret. System ¹⁹	7.00%	City of Marco Island Police Ret. System ²⁰	8.00%
City of Indialantic Police and Fire Ret. System ¹⁹	8.00%	City of Marianna Fire Ret. System ¹⁹	7.50%
City of Indian Harbour Beach Police Ret. System ¹⁹	8.00%	City of Marianna Police Ret. System ¹⁹	7.50%
City of Indian River Shores Police Ret. System ¹⁹	6.90%	City of Medley Police Ret. System ¹⁹	7.50%
City of Indian Shores Police Ret. System ¹⁹	7.50%	City of Medley Elected and Genl. Empl. Ret. System ²⁰	7.00%
City of Jacksonville Corrections Officers Ret. Plan ¹⁸	7.75%	City of Melbourne Fire Ret. System ²⁰	8.00%
City of Jacksonville Genl. Empl. Ret. Plan ¹⁸	7.75%	City of Melbourne Genl. Empl. Ret. System ¹⁹	8.00%
City of Jacksonville Police and Fire Pension Plan ²⁶	7.75/7.50/7.25%	City of Melbourne Police Ret. System ¹⁹	7.50%
City of Jacksonville Beach Fire Ret. System ¹⁹	8.00%	City of Melbourne Special Risk Empl. Ret. System ¹⁹	8.00%
City of Jacksonville Beach Genl. Empl. Ret. System ¹⁹	8.00%	City of Melbourne Beach Police Ret. System ¹⁹	8.00%
City of Jacksonville Beach Police Ret. System ¹⁹	8.00%	City of Miami Elected Officers Ret. Plan ²⁷	3.75%
City of Jupiter Police Ret. System ¹⁹	7.50%	City of Miami Firefighters' & Police Officers' Ret. Plan ¹	7.75%
City of Jupiter Island Genl. Empl., Police & Fire Ret. System ¹⁹	7.00%	City of Miami Genl. Empl. & Sanitation Empl. Ret. Plan ²⁷	8.10%
City of Key Biscayne Police & Fire Ret. System ¹⁹	8.00%	City of Miami Off-Street Parking Genl. Empl. Ret. Plan ¹⁹	7.50%
City of Key West Genl. Empl. Ret. Plan ³	8.00%	City of Miami Beach Empl. Ret. System ³	8.15%
City of Key West Housing Empl. Ret. System ¹⁹	8.00%	City of Miami Beach Firefighters & Police Officers Ret. System ³	8.10%
City of Key West Police Officers & Firefighters Ret. Plan ³	7.90%	City of Miami Springs Genl. Empl. Ret. System ¹⁹	7.70%
City of Key West Utility Empl. Ret. System ²¹	8.00%	City of Miami Springs Police and Fire Ret. System ¹⁹	7.70%
City of Kissimmee Fire Ret. System ¹⁹	8.00%	City of Milton Fire Ret. System ¹⁹	8.00%
City of Kissimmee Genl. Empl. Ret. System ¹⁹	8.00%	City of Milton Genl. Empl. Ret. System ¹⁹	8.00%
City of Kissimmee Police Ret. System ¹⁹	8.00%	City of Milton Police Ret. System ¹⁹	8.00%
City of Labelle Fire Ret. System ¹⁹	6.75%	City of Miramar Firefighters' Ret. Plan ³	8.50%
City of Lady Lake Police Ret. System ¹⁹	7.75%	City of Miramar Genl. Empl. Ret. Plan ³	7.50%
City of Lake Alfred Genl. Empl. Ret. System ¹⁹	7.75%	City of Miramar Management Ret. Plan ³	7.50%
City of Lake Alfred Police & Fire Ret. System ¹⁹	8.00%	City of Miramar Police Officers' Ret. Plan ³	7.75%
City of Lake City Fire Ret. System ²⁰	7.75%	City of Monticello Fire Ret. System ²⁰	8.00%
City of Lake City Genl. Empl. Ret. System ²⁰	7.75%	City of Monticello Police Ret. System ¹⁹	7.50%
City of Lake City Police Ret. System ¹⁹	7.75%	City of Mount Dora Fire Ret. System ²⁰	8.00%
City of Lake Helen Police Ret. System ²⁰	7.50%	City of Mount Dora Genl. Empl. Ret. System ¹⁹	7.60%
City of Lake Mary Fire Ret. System ¹⁹	7.90%	City of Mount Dora Police Ret. System ¹⁹	7.50%
City of Lake Mary Police Ret. System ¹⁹	7.50%	City of Naples Fire Ret. System ²⁰	7.50%
City of Lake Park Police Ret. System ¹⁹	8.00%	City of Naples Genl. Empl. Ret. System ¹⁹	7.50%
City of Lake Wales Fire Ret. System ¹⁹	7.75%	City of Naples Police Ret. System ¹⁹	7.50%
City of Lake Wales Genl. Empl. Ret. System ¹⁹	7.75%	City of Neptune Beach Police Ret. System ¹⁹	8.00%
City of Lake Wales Police Ret. System ¹⁹	7.75%	City of New Port Richey Fire Ret. System ¹⁹	8.00%
City of Lake Worth Fire Ret. System ¹⁹	8.20%	City of New Port Richey Police Ret. System ¹⁹	8.00%
City of Lake Worth Genl. Empl. Ret. System ¹⁹	8.05%	City of New Smyrna Beach Municipal Firefighters' Ret. Plan ¹	7.90%
City of Lake Worth Police Ret. System ¹⁹	8.05%	City of New Smyrna Beach Municipal Police Officers' Ret. Plan ¹	8.00%
City of Lakeland Empl. Pension & Ret. Plan ¹	7.25%	City of North Miami Fire Ret. System ²⁰	7.50%
City of Lakeland Police Ret. System ²⁰	7.75%	City of North Miami Genl. Empl. Ret. Plan ²⁰	7.50%
City of Lakeland Fire Supplemental Ret. System ²³	7.50%	City of North Miami Police Ret. System Ord. 691 ²⁰	7.50%
City of Lantana Fire Ret. System ²²	8.00%	City of North Miami Police Ret. System Ord. 748 ²⁰	8.50%
City of Lantana Police Ret. System ¹⁹	7.50%	City of North Miami Beach Genl. Empl. Ret. System ¹⁹	7.75%
City of Largo Police and Fire Ret. System ¹⁹	7.50%	City of North Miami Beach Management Empl. Ret. System ²⁰	7.75%
City of Lauderdale-By-The-Sea Vol. Fire Ret. System ²³	7.00%	City of North Miami Beach Police & Fire Ret. System ²⁰	8.00%
		City of North Port Fire Ret. System ¹⁹	8.00%

Florida	Interest Assumption	Florida	Interest Assumption
City of North Port Police Ret. System ¹⁹	8.00%	City of Rockledge Police Ret. System ²⁰	8.00%
City of Oakland Park Genl. Empl. Ret. System ²⁰	7.50%	City of Safety Harbor Fire Ret. System ¹⁹	7.50%
City of Oakland Park Police and Fire Ret. System ¹⁹	7.75%	City of Saint Augustine Fire Ret. System ¹⁹	7.50%
City of Ocala Firefighters' Ret. Plan ³	7.75%	City of Saint Augustine Genl. Empl. Ret. System ¹⁹	7.75%
City of Ocala Genl. Empl. Ret. System ³	8.00%	City of Saint Augustine Police Ret. System ¹⁹	7.75%
City of Ocala Police Officers' Ret. System ³	8.30%	City of St. Cloud Genl. Empl. Ret. Plan ¹	8.00%
City of Ocoee Genl. Empl. Ret. Plan ³	8.00%	City of St. Cloud Police Officers' & Firefighters' Ret. Plan ¹	8.50%
City of Ocoee Police Officers & Firefighters Ret. Plan ³	8.00%	City of Saint Pete Beach Fire Ret. System ²⁰	8.50%
City of Okeechobee Firefighters' Ret. Plan ¹⁹	7.00%	City of Saint Pete Beach Genl. Empl. Ret. System ²⁰	8.00%
City of Okeechobee Genl. Empl. Ret. Plan ¹⁹	7.00%	City of Saint Pete Beach Police Ret. System ¹⁹	7.75%
City of Okeechobee Police Ret. System ¹⁹	7.00%	City of St. Petersburg Fire Ret. System ³	8.00%
City of Oldsmar Fire Ret. System ¹⁹	7.50%	City of St. Petersburg Genl. Empl. Ret. System ³	7.75%
City of Orange Park Fire Ret. System ¹⁹	8.00%	City of St. Petersburg Police Ret. System ³	8.00%
City of Orange Park Genl. Empl. Ret. Plan ¹⁹	8.00%	City of Sanford Fire Ret. System ¹⁹	8.00%
City of Orange Park Police Ret. System ¹⁹	8.00%	City of Sanford Police Ret. System ¹⁹	8.00%
City of Orlando Firefighters' Pension Plan ³	8.00%	City of Sanibel Genl. Empl. Pension Plan ³	7.50%
City of Orlando Genl. Empl. Pension Plan ³	8.00%	City of Sanibel Municipal Police Officers' Pension Plan ³	8.00%
City of Orlando Police Pension Plan ³	8.00%	City of Sarasota Fire Ret. System ¹⁹	7.75%
City of Ormond Beach Fire Ret. System ¹⁹	7.50%	City of Sarasota Genl. Empl. Ret. System ²²	8.00%
City of Ormond Beach Genl. Empl. Ret. System ²⁰	7.50%	City of Sarasota Police Ret. System ²²	7.75%
City of Ormond Beach Police Ret. System ¹⁹	7.50%	City of Satellite Beach Genl. Empl. Ret. System ¹⁹	7.75%
City of Oviedo Fire Ret. System ¹⁹	8.00%	City of Satellite Beach Police and Fire Ret. System ¹⁹	7.75%
City of Oviedo Police Ret. System ¹⁹	8.00%	City of Sebastian Police Ret. System ²⁰	8.00%
City of Palatka Fire Ret. System ¹⁹	8.00%	City of Sebring Fire Ret. System ¹⁹	8.00%
City of Palatka Genl. Empl. Ret. System ¹⁹	8.00%	City of Sebring Police Ret. System ¹⁹	8.00%
City of Palatka Police Ret. System ¹⁹	8.00%	City of Seminole Fire Ret. System ¹⁹	8.00%
City of Palm Bay Fire Ret. System ¹⁹	8.00%	City of Shalimar Police Ret. System ¹⁹	7.50%
City of Palm Bay Genl. Empl. Ret. System ¹⁹	8.00%	City of South Miami Genl. Empl. Ret. System ¹⁹	7.00%
City of Palm Bay Police Ret. System ¹⁹	8.00%	City of South Miami Police Ret. System ¹⁹	7.00%
City of Palm Beach Fire Ret. System ²²	8.00%	City of South Pasadena Fire Ret. System ¹⁹	8.00%
City of Palm Beach Genl. Empl. Ret. System ²²	8.00%	City of Starke Fire Ret. System ²⁰	8.00%
City of Palm Beach Lifeguards Ret. System ²²	8.00%	City of Starke Genl. Empl. Ret. System ²⁰	8.00%
City of Palm Beach Police Ret. System ²²	8.00%	City of Starke Police Ret. System ²⁰	8.00%
City of Palm Beach Gardens Fire Ret. System ²²	8.25%	City of Sunrise Fire Ret. System ¹⁹	8.00%
City of Palm Beach Gardens Genl. Empl. Ret. System ¹⁹	7.25%	City of Sunrise Genl. Empl. Ret. System ¹⁹	8.00%
City of Palm Beach Gardens Police Ret. System ¹⁹	7.40%	City of Sunrise Police Officers' Ret. Plan ¹	8.20%
City of Palm Coast Volunteer Fire Ret. System ¹⁹	8.00%	City of Surfside Genl. Empl. Ret. System ¹⁹	7.50%
City of Palmetto Genl. Empl. Ret. System ¹⁹	7.50%	City of Surfside Police Ret. System ¹⁹	7.50%
City of Palmetto Police Ret. System ¹⁹	7.90%	City of Sweetwater Police Ret. System ¹⁹	7.50%
City of Panama City Fire Ret. System ¹⁹	8.00%	City of Tallahassee Fire Ret. System ²³	7.75%
City of Panama City Genl. Empl. Suppl. Ret. System ¹⁹	7.50%	City of Tallahassee Genl. Empl. Ret. System ²³	7.75%
City of Panama City Police Ret. System ¹⁹	8.00%	City of Tallahassee Police Ret. System ²³	7.75%
City of Parkland Police Ret. System ²⁰	7.00%	City of Tamarac Executive Empl. Ret. System ¹⁹	7.00%
City of Pembroke Pines Genl. Empl. Ret. System ¹⁹	7.75%	City of Tamarac Fire Ret. System ²⁰	7.00%
City of Pembroke Pines Police and Fire Ret. System ¹⁹	8.00%	City of Tamarac Genl. Empl. Ret. System ²⁰	7.00%
City of Pensacola Fire Ret. System ²⁰	8.00%	City of Tamarac Police Ret. System ¹⁹	7.00%
City of Pensacola Genl. Empl. Ret. System ²⁰	8.00%	City of Tampa Firefighters & Police Officers Pension Trust Fund ³	10.00%
City of Pensacola Police Ret. System ²³	8.00%	City of Tampa Genl. Empl. Ret. Trust Fund ³	8.00%
City of Perry Fire Ret. System ¹⁹	8.00%	City of Tarpon Springs Fire Ret. System ¹⁹	7.90%
City of Perry Police Ret. System ¹⁹	8.00%	City of Tarpon Springs Police Ret. System ¹⁹	7.90%
City of Pinellas Park Fire Ret. System ¹⁹	8.00%	City of Tavares Fire Ret. System ¹⁹	8.00%
City of Pinellas Park Genl. Empl. Ret. System ²⁰	7.50%	City of Tavares Police Ret. System ¹⁹	8.00%
City of Pinellas Park Police Ret. System ¹⁹	7.50%	City of Temple Terrace Fire Ret. System ¹⁹	8.00%
City of Plant City Safety Empl. Ret. Plan ¹	8.00%	City of Temple Terrace Police Ret. System ¹⁹	8.00%
City of Plantation Genl. Empl. Ret. Plan ³	7.70/7.50%	City of Tequesta Fire Ret. System ¹⁹	7.50%
City of Plantation Police Officers' Ret. Plan ³	7.10/6.50%	City of Tequesta Genl. Empl. Ret. System ¹⁹	7.50%
City of Plantation Volunteer Firefighters' Ret. Plan ³	7.00%	City of Tequesta Police Ret. System ¹⁹	7.50%
City of Pompano Beach Fire Ret. System ¹⁹	7.90%	City of Titusville Genl. Empl. Ret. System ¹⁹	8.00%
City of Pompano Beach Genl. Empl. Ret. System ¹⁹	8.00%	City of Titusville Police and Fire Ret. System ¹⁹	8.00%
City of Pompano Beach Police Ret. System ¹⁹	8.10%	City of Umatilla Police Ret. System ¹⁹	7.50%
City of Ponce Inlet Volunteer Fire Ret. System ²⁰	8.00%	City of Valparaiso Police and Fire Ret. System ¹⁹	7.50%
City of Port Orange Fire Ret. System ¹⁹	8.00%	City of Venice Fire Ret. System ¹⁹	7.75%
City of Port Orange Genl. Empl. Ret. Plan ¹⁹	7.50%	City of Venice Police Ret. System ¹⁹	7.90%
City of Port Orange Police Ret. System ²³	8.00%	City of Vero Beach Fire Ret. System ¹⁹	7.00%
City of Port St. Lucie Police Ret. System ²⁰	8.50%	City of Vero Beach Genl. Empl. Ret. System ¹⁹	7.75%
City of Punta Gorda Fire Ret. System ¹⁹	8.00%	City of Vero Beach Police Ret. System ¹⁹	8.00%
City of Punta Gorda Genl. Empl. Ret. System ¹⁹	8.00%	City of Wauchula Genl. Empl. & Police Ret. System ¹⁹	7.50%
City of Punta Gorda Police Ret. System ¹⁹	8.00%	City of West Melbourne Police Ret. System ¹⁹	7.75%
City of Quincy Police and Fire Ret. System ²⁰	8.00%	City of West Palm Beach Fire Ret. System ¹⁹	8.25%
City of Riviera Beach Fire Ret. System ¹⁹	7.60%	City of West Palm Beach Genl. Empl. Ret. System ²²	8.00%
City of Riviera Beach Genl. Empl. Ret. System ¹⁹	7.70%	City of West Palm Beach Police Ret. System ²²	8.00%
City of Riviera Beach Police Ret. System ²²	7.50%	City of Williston Genl. Empl. Ret. System ¹⁹	7.50%
City of Rockledge Fire Ret. System ²⁰	8.00%	City of Williston Police Ret. System ¹⁹	7.25%
City of Rockledge Genl. Empl. Ret. System ²⁰	8.00%		

Florida	Interest Assumption	Georgia	Interest Assumption
City of Wilton Manors Genl. Empl. Ret. System ¹⁹	7.50%	Albany City Pension Plan ²	8.50%
City of Wilton Manors Police Ret. System ¹⁹	7.50%	Athens City-Clarke Co. Pension Plan ²	8.00%
City of Wilton Manors Volunteer Fire Ret. System ¹⁹	8.00%	Atlanta City Firefighters' Pension Plan ²	7.75%
City of Winter Garden Firefighters & Police Officers Pension Plan ¹	7.25%	Atlanta City Genl. Employees' Pension Plan ²	8.00%
City of Winter Garden Genl. Employees Pension Plan ¹	7.50%	Atlanta City Police Pension Plan ²	7.75%
City of Winter Haven Fire Ret. System ¹⁹	8.00%	Augusta City Genl. Pension Plan ⁴	8.00%
City of Winter Haven Genl. Empl. Ret. System ¹⁹	8.00%	Bibb Co. Empl. Ret. System ²	7.50%
City of Winter Haven Police Ret. System ¹⁹	8.00%	Cobb Co. Employees Pension Plan ³	8.00%
City of Winter Park Fire Ret. System ¹⁹	7.75%	Employees' Ret. System ²	7.50%
City of Winter Park Police Ret. System ¹⁹	8.25%	Fulton Co. Empl. Ret. System Pension Plan ⁹	7.90%
City of Winter Springs Genl. Empl., Police & Fire Ret. System ²⁰	8.00%	Georgia Firefighters' Pension Fund ³¹	6.00%
Collier Co. Housing Auth. Genl. Empl. Ret. System ²³	7.00%	Glynn Co. Defined Benefit Pension Plan ²	8.00%
Destin Fire Control District Fire Ret. System ¹⁹	8.00%	Gwinnett Co. Ret. System ⁹	8.00%
East Lake Tarpon Fire Control District Fire Ret. System ¹⁹	8.00%	Gwinnett Co. Board of Education Ret. System ⁴	8.00%
East Naples Fire Control District Fire Ret. System ¹⁹	8.00%	Judicial Ret. System ²	7.50%
East Niceville Fire Control District Fire Ret. System ²⁰	8.00%	Legislative Ret. System ²	7.50%
Englewood Area Fire Control Dist. Fire Ret. System ²⁰	7.50%	Macon City Genl. Employees' Pension Plan ²	8.00%
Englewood Water District Genl. Empl. Ret. System ¹⁹	8.00%	Macon City Fire and Police Pension Plan ²	8.00%
Estero Fire Control District Fire Ret. System ¹⁹	7.50%	Military Pension Fund ²	7.50%
Florida Ret. System ¹²	7.75%	Municipal Employee Benefit System Ret. Fund ³²	7.75%
Greater Orlando Aviation Auth. Ret. Plan for Empl. ¹	7.50%	Public School Empl. Ret. System ²	7.50%
Halifax Hospital Genl. Empl. Ret. System ²⁰	7.50%	Richmond Co. 1945 Pension Plan ⁴	8.00%
Holley-Navarre Fire Control District Fire Ret. System ¹⁹	7.50%	Roswell City Ret. Plan ²	7.75%
Jackson Memorial Hospital Genl. Empl. Ret. System ¹⁹	8.00%	Savannah City Employees' Ret. Plan ²	7.75%
Kissimmee Utility Authority Genl. Empl. Ret. System ¹⁹	8.00%	Teachers Ret. System ²	7.50%
Miami Shores Village Genl. Empl. Ret. System ²³	8.00%	Thomasville City Public Empl. Ret. Plan ²	7.50%
Miami Shores Village Police Ret. System ²³	8.00%	Valdosta City Ret. Plan ²	7.75%
Midway Fire Control District Fire Ret. System ¹⁹	7.50%		Interest Assumption
Monroe Co. Volunteer FireFighter & Emergency Medical Services Empl. Ret. System ²⁸	2.50%	Hawaii	
North Bay Fire Control District Fire Ret. System ¹⁹	8.00%	Employees' Ret. System ⁷	7.75%
North Brevard Hospital Genl. Empl. Ret. System ¹⁹	8.00%		Interest Assumption
North Broward Hospital Genl. Empl. Ret. System ²⁰	8.50%	Idaho	
North Naples Fire Control District Fire Ret. System ¹⁹	8.00%	Public Employee Ret. System ²	7.50%
North River Fire Control District Fire Ret. System ¹⁹	8.25%		Interest Assumption
Ocean City-Wright Fire Control Dist. Fire Ret. System ¹⁹	8.00%	Illinois	
Okaloosa Island Fire Control District Fire Ret. System ¹⁹	8.00%	Algonquin Village Police Pension Plan ³³	7.00%
Orange Co. Library Genl. Empl. Ret. System ²¹	7.00%	Arlington Heights Village Firefighters' Pension Plan ³³	7.00%
Orlando Aviation Genl. Empl. Ret. System ¹⁹	7.25%	Arlington Heights Village Police Pension Plan ³³	7.00%
Orlando/Central Florida/Amalgamated Transit Union Local #1596 Pension Plan ³	7.50%	Aurora Firefighters' Pension Plan ²	7.00%
Orlando Utility Genl. Empl. Ret. System ²⁰	8.00%	Aurora Police Pension Plan ²	7.00%
Palm Harbor Fire Control District Fire Ret. System ¹⁹	7.50%	Batavia City Firefighters' Pension Plan ²	7.00%
Palm Tran, Inc./ATU-#1577 Empl. Ret. System ²⁸	8.00%	Batavia City Police Pension Plan ²	7.00%
Saint Johns River Power Park Genl. Empl. Ret. System ¹⁹	7.75%	Berkeley Village Police Pension Plan ³³	7.00%
Saint Lucie Co. Fire Control District Fire Ret. System ²⁹	8.00%	Berwyn City Firefighter's Pension Plan ⁴	7.00%
Saint Lucie Co. Fire Control District Genl. Empl. Ret. System ²⁹	8.00%	Berwyn City Police Pension Plan ⁴	7.00%
San Carlos Park Fire Control District Fire Ret. Plan ¹⁹	7.25%	Bloomington City Firemen's Pension Plan ²	7.50%
Sarasota Memorial Health Care Genl. Empl. Ret. System ¹⁹	7.75%	Bloomington City Police Pension Plan ²	7.50%
Sarasota-Manatee Airport Genl. Empl. Ret. System ¹⁹	6.75%	Champaign City Firemen's Pension Plan ²	7.00%
South Broward Hospital Genl. Empl. Ret. System ¹⁹	7.50%	Champaign City Police Pension Plan ²	7.00%
South Walton Fire Control District Fire Ret. Plan ¹⁹	8.00%	Channahon Village Firefighters' Pension Plan ³³	7.00%
So. Manatee Fire Control Dist. Fire Ret. System ¹⁹	7.75%	Cook Co. Employees' and Officers' Annuity and Benefit Fund ³⁴	7.50%
So. Manatee Fire Control Dist. Genl. Empl. Ret. System ¹⁹	7.50%	Decatur City Firefighters' Pension Plan ²	7.50%
Town of Bay Harbor Islands Genl. Empl. Ret. System ¹⁹	6.00%	Decatur City Police Pension Plan ²	7.50%
Town of Bay Harbor Islands Police Ret. System ¹⁹	6.00%	Dekalb City Firefighters' Pension Plan ²	7.50%
Town of Lady Lake Police Officers' Ret. Trust Fund ³⁰	8.00%	Dekalb City Police Pension Plan ²	7.50%
Town of Surfside Genl. Empl. Ret. Plan ¹	7.50%	Des Plaines City Firefighters' Pension Plan ²	7.00%
Tri-Co. Transit/ATU-#1596 Genl. Empl. Ret. System ¹⁹	7.50%	Des Plaines City Police Pension Plan ²	7.00%
Village of North Palm Beach Genl. Empl. Ret. System ¹⁹	7.50%	Downers Grove Village Firefighters' Pension Plan ²	7.50%
Village of N. Palm Beach Police & Fire Ret. System ¹⁹	8.00%	Downers Grove Village Police Pension Plan ²	7.25%
Village Of Palm Springs Genl. Empl. Ret. System ¹⁹	8.00%	Elgin City Firefighters' Pension Plan ²	8.00%
Village Of Palm Springs Police and Fire Ret. System ¹⁹	8.00%	Elgin City Police Pension Plan ²	8.00%
Volusia Co. Volunteer Fire Ret. System ²⁰	5.50%	Elmwood Park Village Firefighters' Pension Plan ³³	7.00%
West Manatee Fire Control District Fire Ret. System ¹⁹	7.75%	Elmwood Park Village Police Pension Plan ³³	7.00%
		Evanston City Firefighters' Pension Plan ²	7.00%
		Evanston City Police Pension Plan ²	7.00%
		Firemen's Annuity and Benefit Fund of Chicago ¹¹	8.00%
		Flora City Police Pension Plan ³³	7.00%
		Freeport City Firefighter's Pension Plan ³³	7.00%
		Freeport City Police Pension Plan ³³	7.00%
		Galesburg City Firemen's Pension Plan ⁴	7.00%

Illinois	Interest Assumption	Illinois	Interest Assumption
Galesburg City Police Pension Plan ⁴	7.00%	Sugar Grove Village Police Pension Plan ³³	7.00%
Genl. Assembly Ret. System ¹²	7.00%	Teachers' Ret. System ²	8.00%
Geneseo City Police Pension Plan ²	7.50%	Tinley Park Village Police Pension Plan ³³	7.00%
Glenview Village Firefighters' Pension Plan ²	7.25%	Urbana City Firemen's Pension Plan ²	7.00%
Glenview Village Police Pension Plan ²	7.25%	Urbana City Police Pension Plan ²	7.00%
Glen Ellyn Village Police Pension Plan ³³	7.50%	Waukegan City Firefighters' Pension Plan ²	7.00%
Hazel Crest Village Firefighters' Pension Plan ³³	7.50%	Waukegan City Police Pension Plan ²	7.00%
Hazel Crest Village Police Pension Plan ³³	7.00%	Wheaton City Firefighters' Pension Plan ³³	7.25%
Highland City Police Pension Plan ³³	7.00%	Wheaton City Police Pension Plan ³³	7.25%
Hillside Village Firefighters' Pension Plan ³³	7.00%	Wilmette Village Firefighters' Pension Plan ⁴	7.35%
Hillside Village Police Pension Plan ³³	7.00%	Wilmette Village Police Pension Plan ⁴	7.35%
Homewood Village Firefighters' Pension Plan ³³	4.00%	Willowbrook Village Police Pension Plan ³³	7.50%
Homewood Village Police Pension Plan ³³	4.00%	Yorkville City Police Pension Plan ³³	7.50%
Illinois Municipal Ret. Fund ⁸	7.5%		
Joliet City Firefighters' Pension Plan ¹⁶	7.00%		Interest Assumption
Joliet City Police Pension Plan ¹⁶	7.00%	Indiana	
Judges' Ret. System ¹²	7.00%	1977 Police Officers' & Firefighters' Pension & Disability Plan ⁷	6.75%
Kankakee City Firefighter's Pension Plan ³³	7.00%	Allen Co. Police Benefit Plan ³⁸	7.25%
Kankakee City Police Pension Plan ³³	7.00%	Allen Co. Police Ret. Plan ³⁸	7.25%
La Grange Village Firefighters' Pension Plan ³³	7.00%	Hamilton Co. Sheriff's Ret. Plan ⁹	7.00%
La Grange Village Police Pension Plan ³³	7.00%	Hamilton Co. Sheriff's Benefit Plan ⁹	7.00%
Laborers' & Ret. Board Empl. Pension Plan of Chicago ²	7.50%	Indianapolis Police and Fire Ret. Plans ¹¹	6.00%
Lake Forest City Firefighters' Pension Plan ³⁵	7.50%	Judges' Ret. System ⁷	6.75%
Lake Forest City Police Pension Plan ³⁵	7.50%	Legislators' Ret. System Defined Benefit Plan ⁷	6.75%
Moline City Firemen's Pension Plan ²	7.50%	Marion Co. Law Enforcement Personnel Ret. Plan ¹⁰	7.50%
Moline City Police Pension Plan ²	7.50%	Marion Co. Law Enforcement Personnel Dependents & Disability Benefits Plan ¹⁰	7.50%
Municipal Employees' Annuity & Benefit Fund of Chicago ¹⁴	7.50%	Prosecuting Attorneys' Ret. Fund ⁷	6.75%
Naperville City Firemen's Pension Plan ³³	7.00%	Public Ret. System ⁷	6.75%
Naperville City Police Pension Plan ³³	7.00%	State Excise Police, Gaming Agent, Gaming Control Officer & Conservation Enforcement Officers' Ret. Plan ⁷	6.75%
Normal City Firemen's Pension Plan ³⁶	7.00%	State Teachers' Ret. Fund ⁷	6.75%
Normal City Police Pension Plan ³⁶	7.00%		
Northbrook Village Firefighters' Pension Plan ³³	8.00%		Interest Assumption
Northbrook Village Police Pension Plan ³³	8.00%	Iowa	
Oak Brook Village Firefighters' Pension Plan ⁹	6.75%	Judicial Ret. Fund ³¹	7.50%
Oak Brook Village Police Pension Plan ⁹	6.75%	Municipal Fire and Police Ret. System ⁴	7.50%
Oak Park Village Firefighters' Pension Plan ²	7.00%	Peace Officers' Ret., Accident & Disability System ³¹	8.00%
Oak Park Village Police Pension Plan ²	7.00%	Public Empl. Ret. System ³⁷	7.5%
Orland Park Village Police Pension Plan ²	7.25%		
Ottawa City Firefighter's Pension Plan ³³	7.00%		Interest Assumption
Ottawa City Police Pension Plan ³³	7.00%	Kansas	
Palatine City Firefighter's Pension Plan ⁹	7.50%	Kansas City Ret. Pension Plan of the Board of Public Utilities ¹¹	8.00%
Palatine City Police Pension Plan ⁹	7.50%	Water Dist. #1 of Johnson Co. Fifth Revised Ret. Plan ⁹	8.5%
Park Ridge City Firefighters' Pension Plan ³³	6.50%	Police and Firemen's Ret. System ³⁷	8.00%
Park Ridge City Police Pension Plan ³³	6.50%	Public Empl. Ret. System ^{8/37}	8.0%
Plainfield Village Police Pension Plan ³³	7.50%	Wichita City Empl. Ret. System ²	7.75%
Policemen's Annuity and Benefit Fund of Chicago ³⁷	8.00%	Wichita City Police and Fire Ret. System ²	7.75%
Prospect Heights City Police Pension Plan ³³	7.00%		
Quincy City Firefighter's Pension Plan ³³	7.50%		Interest Assumption
Quincy City Police Pension Plan ³³	7.50%	Kentucky	
Ret. Plan for Chicago Transit Authority Employees ¹⁶	8.50%	Bowling Green City Policemen & Firemen's Ret. Fund ²	6.00%
Rochelle City Firefighters' Pension Plan ³³	7.50%	City of Louisville Firefighters' Pension Fund ²	7.50%
Rochelle City Police Pension Plan ³³	7.25%	City of Louisville Policemen's Ret. Fund ²	7.50%
Rock Island City Firefighters' Pension Plan ³⁶	7.50%	Co. Empl. Ret. System ⁷	7.75%
Rock Island City Police Pension Plan ³⁶	7.50%	Covington City Employees' Pension Plan ⁴	7.50%
Rockford City Firefighter's Pension Plan ⁴	7.50%	Covington City Police and Firemen's Pension Plan ⁴	7.50%
Rockford City Police Pension Plan ⁴	7.50%	Empl. Ret. System ⁷	7.75%
Rolling Meadows City Firefighters' Pension Plan ⁹	7.00%	Florence City Volunteer Firemen Ret. Fund ⁴	5.00%
Rolling Meadows City Police Pension Plan ⁹	7.00%	Henderson City Civil Service Plan ²	5.00%
Romeoville Village Firefighters' Pension Plan ³³	7.00%	Henderson City Police and Fire Pension Fund Plan ²	4.00%
Romeoville Village Police Pension Plan ³³	7.00%	Lexington City Employees' Pension Fund ²	7.00%
St. Charles City Firemen's Pension Plan ³³	7.00%	Lexington City Policemen's & Firefighters' Pension Fund ²	8.00%
St. Charles City Police Pension Plan ³³	7.00%		
Schaumburg Firefighter's Pension Plan ³³	7.50%	Louisville City Firefighters' Pension Fund ²	7.50%
Schaumburg Police Pension Plan ³³	7.50%	Louisville City Police Pension Fund ²	7.50%
Skokie Village Firefighters' Pension Plan ³³	8.00%	Newport City Policemen's & Firefighters' Ret. Fund ⁴	7.50%
Skokie Village Police Pension Plan ³³	8.00%	Newport City Employees' Ret. Fund ⁴	7.50%
South Chicago Heights Village Firefighters' Pension Plan ²	7.00%	Owensboro City Employees Pension Fund ⁴	7.00%
South Chicago Heights Village Police Pension Plan ²	7.00%	Owensboro City Police and Fire Pension Fund ⁴	6.00%
Springfield City Firefighters' Pension Plan ²	7.50%	Paducah City Appointive Employees Pension Fund ²	6.00%
Springfield City Police Pension Plan ²	7.50%	Paducah City Police and Firefighters' Pension Fund ²	8.00%
State Employees' Ret. System ¹²	7.75%		
State Universities Ret. System ²	7.75%		

Kentucky		Massachusetts	
State Police Ret. System ⁷	7.75%	Franklin Regional Ret. System ¹⁶	7.875%
Teachers' Ret. System ⁷	7.50%	Leominster Ret. System ³⁸	8.00%
		Melrose Ret. System ⁴⁵	8.00%
	Interest	Newton City Contributory Ret. System ¹⁶	7.75%
Louisiana	Assumption	Plymouth Co. Contributory Ret. System ³⁸	8.25%
Assessors' Ret. Fund ³⁹	7.50%	Port Authority Employees' Ret. System ⁹	7.625%
Baton Rouge City-Parish Empl. Ret. System ⁴⁰	7.50%	State-Boston Ret. System: NonTeachers ¹⁶	7.75%
Capitol Area Transit System Pension Plan ⁴¹	7.00%	State-Boston Ret. System: Teachers ¹⁶	8.25%
City of Alexandria Employees' Ret. System ⁴²	7.75%	Taunton City Contributory Ret. System ¹⁶	8.00%
City of New Orleans Employees' Ret. System ¹⁰	7.50%	Teachers Ret. System ⁴⁶	8.25%
Clerks' of Court Ret. and Relief Plan ⁷	7.50%	Water Resources Board Empl. Ret. System ⁴⁷	8.00%
District Attorneys' Ret. System ⁷	7.50%	Weymouth Contributory Ret. System ⁴⁵	8.00%
East Jefferson Genl. Hospital Ret. and Savings Plan ⁹	7.50%	Worcester City Ret. System ¹⁶	8.00%
Employees' Ret. System of Jefferson Parish ¹¹	7.00%		
Empl. Ret. System of the City of Shreveport ⁴¹	8.50%		Interest
Firefighters' Ret. System ⁷	7.50%	Michigan	Assumption
Harbor Police Ret. System ⁵	7.00%	Bay Co. Employees' Ret. System ³⁷	7.50%
Jefferson Parish Empl. Ret. System ⁹	7.00%	Berrien Co. Employees Amended Ret. Plan ¹¹	8.50%
Municipal Employees' Ret. System ⁷	7.75%	City of Alpena Employees' Ret. System ¹¹	7.00%
Municipal Police Employees' Ret. System ⁷	7.50%	City of Ann Arbor Employees' Ret. Plan ⁴	7.00%
New Orleans Firefighters' Pension and Relief Fund ¹⁰	7.50%	City of Birmingham Employees' Ret. System ⁴	7.00%
Parochial Employees' Ret. System ³⁷	7.50%	City of Detroit Genl. Ret. System ²	7.90%
Registrars of Voters Employees' Ret. System ⁷	7.50%	City of Detroit Police and Fire Ret. System ²	8.00%
School Employees' Ret. System ⁷	7.50%	City of Farmington Hills Employees' Ret. System ²	7.50%
Sheriffs Pension and Relief Fund ⁷	7.90%	City of Flint Employees' Ret. System ²	8.00%
Shreveport City Employees' Ret. System ¹¹	7.75%	City of Grosse Pointe Farms Public Safety Ret. System ⁴	7.50%
Shreveport City Firemen's Pension and Relief Fund ¹¹	7.00%	City of Grosse Pointe Woods Empl. Ret. System ⁷	8.00%
Shreveport City Policemen's Pension & Relief Fund ¹¹	7.00%	City of Harper Woods Employees' Ret. System ¹¹	7.75%
State Empl. Ret. System ³⁷	8.25%	City of Kalamazoo Empl. Ret. System ¹¹	7.50%
State Police Ret. System ⁶	7.50%	City of Lansing Employees' Ret. System ⁷	7.80%
Teachers Ret. System ³⁷	8.25%	City of Lansing Police and Fire Ret. System ⁷	7.80%
West Jefferson Parish Empl. Ret. Plan ⁹	8.00%	City of Marquette Fire and Police Ret. System ⁴	7.00%
	Interest	City of Marysville Genl. City Employee Ret. System ⁴	8.00%
Maine	Assumption	City of Marysville Police and Firefighters Ret. System ⁴	8.00%
Consolidated Plan for Participating Local Districts ²	7.25%	City of Pontiac Police and Fire Ret. System ²	7.50%
Judicial Ret. Plan ²	7.25%	City of Pontiac Genl. Employees' Ret. System ²	7.50%
Legislative Ret. Plan ²	7.25%	City of Portage Employees' Ret. System ⁴	7.00%
State Employee Ret. Plan ²	7.25%	City of Roseville Empl. Pension Trust Fund System ¹⁷	7.50%
Teacher Ret. Plan ²	7.25%	City of Royal Oak Ret. System ²	7.75%
	Interest	City of St. Clair Shores Genl. Employees' Ret. System ⁴	8.00%
Maryland	Assumption	City of St. Clair Shores Police and Fire Ret. System ⁴	7.50%
Annapolis City Police and Fire Ret. Plan ²	7.50%	City of Sterling Heights Genl. Empl. Ret. System ⁴	8.00%
Anne Arundel Co. Employees' Ret. Plan ¹⁶	8.00%	City of Sterling Heights Police and Fire Ret. System ⁴	8.00%
Baltimore City Elected Officials' Ret. System ²	7.25%	City of Sturgis Employees' Ret. System ³	7.00%
Baltimore City Employees' Ret. System ²	7.75% pre 6.55% post	City of Warren Employees' Ret. System ²	8.00%
Baltimore City Fire & Police Employees' Ret. System ²	7.75%	City of Wyandotte Employees' Ret. System ³	7.50%
Baltimore Co. Employees' Ret. System ⁴	7.875%	City of Wyoming Employees' Ret. Plan ²	7.75%
Correctional Officers' Ret. System ²	7.75%	Genesee Co. Employees' Ret. System ¹¹	8.00%
Employees' and Teachers' Ret. System ²⁷	7.75%	Gogebic Co. Empl. Ret. System ³⁷	7.50%
Frederick City Thirty Year Ret. Plan ²	7.50%	Judges Ret. System ³	8.00%
Frederick City Twenty Five Year Pension System ²	7.50%	Kalamazoo Co. Employees' Ret. System ⁴¹	7.75%
Frederick Co. Employees' Ret. System ⁴³	7.50%	Lenawee Co. Board of Commissioners Employees' Ret. Income Plan ¹¹	8.00%
Hagerstown City Police & Fire Employees' Ret. Plan ²	7.75%	Macomb Co. Empl. Ret. System ³⁷	7.50%
Howard Co. Police & Fire Employees' Ret. Plan ⁴⁴	8.00%	Marquette Board of Light and Power Ret. System ⁴	8.00%
Judges' Ret. System ²	7.75%	Midland Co. Act 345 Ret. System for Sheriff's Dept. Personnel ⁴¹	7.00%
Law Enforcement Officers' Pension System ²	7.75%	Midland Co. Employees' Ret. System ⁴¹	7.50%
Legislative Ret. Plan ²	7.75%	Military Ret. System ¹	8.00%
Maryland-National Capital Park & Planning Comm. Employees' Ret. System ⁴	7.50%	Monroe Co. Empl. Ret. System ³⁷	7.00%
Montgomery Co. Employees' Ret. System ⁷	7.50%	Municipal Empl. Ret. System ^{8/14}	8.00%
Ocean City Genl. Employees Pension Plan and Trust ²	7.50%	Oakland Co. Empl. Ret. System ³	7.25%
Ocean City Public Safety Empl. Pension Plan & Trust ²	7.50%	Public School Empl. Ret. System ³	8.00%
State Police Ret. System ²	7.75%	St. Clair Co. Empl. Ret. System ³⁷	7.50%
Takoma Park City Police Employees' Ret. Plan ²	8.00%	State Employees Defined Benefit Ret. System ³	8.00%
	Interest	State Police Ret. System ³	8.00%
Massachusetts	Assumption	Washtenaw Co. Empl. Ret. System ¹¹	7.75%
Braintree Ret. System ¹⁶	7.875%	Wayne Co. Employees' Ret. System ⁴⁸	7.75%
Cambridge City Contributory Ret. System ¹⁶	8.00%		
Concord Ret. System ¹⁶	7.50%	Mississippi	Interest
Essex Regional Ret. System ³⁸	8.25%	Public Empl. Ret. System ³⁷	Assumption
		Mississippi Highway Safety Patrol Ret. System ⁷	8.00%
		Mississippi Municipal Ret. Systems ⁷	8.00/6.00%

Mississippi	Interest Assumption	Nebraska	Interest Assumption
Mississippi Supplemental Legislative Ret. Plan ⁷	8.00%	State Empl. Ret. System Cash Balance Benefit Plan ¹⁵	7.75%
		State Patrol Ret. System ¹²	8.00%
Missouri	Interest Assumption		Interest Assumption
Arnold City Police Pension Plan ⁴⁹	6.50%	Nevada	
Bridgeton City Employee Ret. Plan ⁹	7.50%	Judicial Ret. Plan ¹⁷	8.00%
Civilian Empl. Ret. System of the Police Dept. of Kansas City ³⁹	7.75%	Legislators Ret. Plan ¹⁷	8.00%
Columbia City Firefighter Ret. Plan ³	7.50%	Public Empl. Ret. System ^{8/17}	8.0%
Columbia City Police Ret. Plan ³	7.50%		Interest Assumption
Creve Coeur City Empl. Ret. Plan ²	7.50%	New Hampshire	
Employees' Ret. System of the City of Kansas City ⁵⁰	7.75%	Manchester City Empl. Contributory Ret. System ²	7.50%
Employees' Ret. System of the City of St. Louis ²	8.00%	Manchester City Old System Empl. Contributory Ret. System ²	7.25%
Ferguson City Pension Plan ²	7.50%	Ret. System ²	7.75%
Firefighters' Pension System of the City of Kansas City ⁵⁰	7.50%		Interest Assumption
Firemen's Ret. System of St. Louis ²	7.625%	New Jersey	
Highway Patrol Ret. Plan ⁸	8.25%	Consolidated Police and Fire Ret. System ¹²	2.00%
Jefferson City Firemen's Pension Fund ⁵¹	6.00%	Judicial Ret. System ¹²	7.90%
Joplin City Policemen's and Firemen's Pension Plan ⁵²	7.00%	Police and Firemen's Ret. System ¹²	7.90%
Kirkwood City Civilian Plan for Retirees of Previous Plan ³⁶	6.50%	Prison Officers Pension Fund ¹²	5.00%
Kirkwood City Police Officers' & Firefighters' Pension Plan For Retirees of Previous Plan ³⁶	6.50%	Public Employees' Ret. System ¹²	7.90%
Missouri-Illinois Metropolitan District Amalgamated Transit Union 788 Clerical Plan ²	7.25%	State Police Ret. System ¹²	7.90%
Missouri-Illinois Metropolitan District Amalgamated Transit Union 788 O&M Plan ²	7.25%	Teachers' Pension and Annuity Fund ¹²	7.90%
Missouri-Illinois Metropolitan District Intl. Brotherhood of Electrical Workers Empl. Pension Plan ²	7.25%		Interest Assumption
Missouri-Illinois Metropolitan District Pension Plan for Salaried Employees ²	7.50%	New Mexico	
North Kansas City Hospital Pension Plan ³	7.50%	Public Empl. Ret. Assoc. ⁷	7.75%
North Kansas City Police and Fire Ret. Fund ³	6.50%	New Mexico Judicial Ret. Fund ⁷	7.75%
Police Ret. System of Kansas City ³⁹	7.75%	New Mexico Magistrates Ret. Fund ⁷	7.75%
Policemen's Ret. System of St. Louis ²	7.75%	New Mexico Legislative Division ⁷	7.75%
Public School & Education Employee Ret. System ⁸	8.0%	Volunteer Firefighter Ret. Plan ⁷	7.75%
Richmond City Police and Fire Pension Trust Fund ²	7.50%		Interest Assumption
St. Joseph Police Pension Plan ²	7.50%	New York	
St. Louis Co. Employee Ret. Plan ⁹	8.00%	New York City Board of Education Ret. System- Qualified Pension Plan ⁴	8.00%
Springfield City Policemen & Firemen's Ret. System ²	7.50%	New York City Employees' Ret. System ⁴	8.00%
State Empl. Ret. System ⁸	8.5%	New York City Fire Dept. Pension Fund ⁴	8.00%
University City Non-Uniformed Employees' Ret. Fund ²	6.50%	New York City Police Pension Plan ²	7.00%
University City Police and Firemen's Ret. Fund ²	6.50%	New York City Teachers' Ret. System-Qualified Pension Plan ⁴	8.00%
Wyoming City Empl. Ret. System ⁷	7.75%	New York State & Local Ret. System Empl. Ret. Plan ⁵⁴	7.50%
		New York State & Local Ret. System Police & Fire Ret. Plan ⁵⁴	7.50%
Montana	Interest Assumption	New York State Teachers' Ret. System ²	8.00%
Firefighters' Unified Ret. System ⁷	7.75%		Interest Assumption
Game Wardens' and Peace Officers' Ret. System ⁷	7.75%	North Carolina	
Highway Patrol Officers' Ret. System ⁷	7.75%	Asheboro City Law Enforcement Officers' Special Separation Allowance Plan ²	5.00%
Judges' Ret. System ⁷	7.75%	Charlotte Firefighters' Ret. System ²	7.75%
Municipal Police Officers' Ret. System ⁷	7.75%	Charlotte City Law Enforcement Officer Separation Plan ²	5.00%
Public Employees' Ret. System ⁷	7.75%	Consolidated Judicial Ret. System ³⁷	7.25%
Sheriffs' Ret. System ⁷	7.75%	Disability Income Plan ³⁷	5.75%
Volunteer Firefighters' Compensation Act ⁷	7.75%	Durham City Law Enforcement Officers' Special Separation Allowance Plan ²	5.00%
Nebraska	Interest Assumption	Firemen's and Rescue Squad Workers' Pension Fund ²	7.25%
Beatrice City Pre-1984 Firefighter Ret. Plan ¹	8.00% pre/ 5.00% post	Gastonia City Law Enforcement Officers' Special Separation Allowance Plan ²	5.00%
Co. Empl. Ret. System Cash Balance Benefit Plan ¹⁵	7.75%	High Point City Law Enforcement Officers' Special Separation Allowance Plan ²	5.00%
Grand Island City Pre-1984 Police & Firefighters Plan Defined Benefit Plan ³	7.00% pre/ 5.00% post	Legislative Ret. System ³⁷	7.25%
Judges' Ret. System ¹²	8.00%	Lincolnton City Law Enforcement Officers' Special Separation Allowance Plan ²	5.00%
Kearney City Police Officers Pension Plan ³	7.00% pre/ 5.00% post	Local Governmental Employees' Ret. System ³⁷	7.25%
Lincoln City Police and Fire Dept. Pension Plan ⁴⁹	7.50%	National Guard Pension Plan ³⁷	7.25%
Norfolk City Firefighter Ret. System ³	7.00%	Raleigh City Law Enforcement Officers' Special Separation Allowance Plan ²	7.00%
Norfolk City Police Ret. System ³	6.00%	Registers of Deeds' Supplemental Pension Fund ³⁷	5.75%
Omaha City Employees' Ret. System ⁴	8.00%	Teachers' and State Employees' Ret. System ³⁷	7.25%
Omaha City Police and Firefighters Ret. System ⁴	8.00%		
Omaha School Employees' Ret. System ⁵³	7.00%		
School Ret. System ¹²	8.00%		

North Carolina	Interest Assumption	Pennsylvania	Interest Assumption
Wilmington City Law Enforcement Officers' Special Separation Allowance Plan ²	5.00%	Baden Borough Police Pension Plan ⁵⁵	7.50%
		Baldwin Borough Nonuniformed Pension Plan ⁵⁵	7.50%
		Baldwin Borough Police Pension Fund ⁵⁵	6.25%
	Interest Assumption	Baldwin Township Police Pension Plan ⁵⁵	6.25%
North Dakota		Beaver Borough Nonuniformed Pension Plan ⁵⁵	7.25%
City of Bismarck Employees' Pension Plan ⁹	7.50%	Beaver Borough Police Pension Plan ⁵⁵	7.25%
City of Bismarck Firefighters' Pension Plan ⁹	7.50%	Beaver Co. Employees' Pension Plan ⁹	7.50%
City of Bismarck Police Pension Plan ⁹	7.50%	Beaver Falls City Firemen's Pension Plan ⁵⁵	7.00%
City of Fargo Employees' Pension Plan ⁹	7.50%	Beaver Falls City Nonuniformed Pension Plan ⁵⁵	7.00%
City of Fargo Firefighters' Pension Plan ⁹	7.50%	Beaver Falls City Pension Trust Fund ⁵⁵	7.00%
City of Fargo Police Pension Plan ⁹	7.50%	Beaver Falls City Police Pension Plan ⁵⁵	7.00%
City of Grand Forks Ret. Plan ⁹	7.75%	Bedminster Township Nonuniformed Pension Plan ⁵⁵	6.00%
City of Jamestown Ret. Plan ¹¹	7.00%	Bedminster Township Police Pension Plan ⁵⁵	6.00%
City of Minot Employees' Pension Plan ⁹	7.50%	Bell Acres Borough Nonuniformed Pension Plan ⁵⁵	5.00%
Public Empl. Ret. System ²	8.00%	Bell Acres Borough Police Pension Plan ⁵⁵	7.00%
		Bellevue Borough Nonuniformed Pension Plan ⁵⁵	7.50%
	Interest Assumption	Bellevue Borough Police Pension Plan ⁵⁵	7.50%
Ohio		Ben Avon Borough Nonuniformed Pension Plan ⁵⁵	7.25%
Cincinnati City Ret. System ¹¹	7.59%	Ben Avon Borough Police Pension Plan ⁵⁵	7.25%
Highway Patrol Ret. System ²	8.00%	Bensalem Township Nonuniformed Pension Plan ⁵⁵	7.50%
Police and Fire Pension Fund ¹⁶	8.25%	Bensalem Township Police Pension Plan ⁵⁵	7.50%
Public Empl. Ret. System ²	8.00%	Berks Co. Employees' Ret. Plan ⁹	7.50%
School Employees' Ret. System ²	7.75%	Berwick Township Nonuniformed Pension Plan ⁵⁵	6.00%
State Teachers Ret. System ²	7.75%	Bethel Township Nonuniformed Pension Plan ⁵⁵	6.00%
		Bethel Park Municipality Nonuniformed Pension Plan ⁵⁵	7.50%
	Interest Assumption	Bethel Park Municipality Police Pension Plan ⁵⁵	7.50%
Oklahoma		Bethlehem City Aggregate Pension Plan ⁵⁵	7.50%
Edmond City Employees' Ret. System ⁴	7.25%	Bethlehem City Empl. Ret. Fund ⁵⁵	6.00%
Central Oklahoma Transportation & Parking Authority Ret. System ⁴	7.00%	Big Beaver Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Oklahoma City Employee Ret. System ⁴	8.00%	Big Beaver Borough Police Pension Plan ⁵⁵	6.00%
Oklahoma Municipal Ret. Fund ²	7.50%	Biglerville Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Oklahoma Public Empl. Ret. System ⁷	7.50%	Biglerville Borough Police Pension Plan ⁵⁵	6.00%
Oklahoma Uniform Ret. System for Justices & Judges ⁷	7.50%	Blawnox Borough Police Pension Plan ⁵⁵	5.50%
Teachers Ret. System ²	8.00%	Brackenridge Borough Nonuniformed Pension Plan ⁵⁵	6.00%
		Brackenridge Borough Police Pension Plan ⁵⁵	7.00%
	Interest Assumption	Braddock Borough Police Pension Plan ⁵⁵	6.50%
Oregon		Braddock Hills Borough Police Pension Plan ⁵⁵	7.50%
City of Portland Fire & Police Disability & Ret. Plan ⁷	3.50%	Bradford City Police Pension Plan ⁵⁵	7.50%
Public Empl. Ret. System ³⁷	8.00%	Brentwood Borough Nonuniformed Pension Plan ⁵⁵	7.00%
Public School Ret. System ⁸	8.0%	Brentwood Borough Police Pension Plan ⁵⁵	7.00%
		Bridgeville Borough Nonuniformed Pension Plan ⁵⁵	6.00%
	Interest Assumption	Bridgeville Borough Police Pension Plan ⁵⁵	7.25%
Pennsylvania		Brighton Township Nonuniformed Pension Plan ⁵⁵	6.00%
Aleppo Township Police Pension Plan ⁵⁵	7.00%	Brighton Township Police Pension Plan ⁵⁵	6.75%
Aliquippa City Firemen's Pension Plan ⁵⁵	8.00%	Bristol Borough Nonuniformed Pension Plan ⁵⁵	8.00%
Aliquippa City Nonuniformed Pension Plan ⁵⁵	8.00%	Bristol Borough Police Pension Plan ⁵⁵	8.00%
Aliquippa City Police Pension Plan ⁵⁵	8.00%	Buckingham Township Nonuniformed Pension Plan ⁵⁵	6.00%
Allegheny Co. Deputy Sheriffs' Pension Plan ⁵⁵	7.00%	Buckingham Township Police Pension Plan ⁵⁵	6.00%
Allegheny Co. District Attorney Detectives Ret. Fund ⁵⁵	7.50%	Bucks Co. Empl. Ret. Plan ¹¹	7.50%
Allegheny Co. Police Pension Fund ⁵⁵	6.50%	Butler City Firefighters Pension Trust Fund ⁵⁵	7.50%
Allegheny Co. Port Authority Local 29 International Brotherhood of Electrical Workers Plan ⁹	8.00%	Butler City Firemen's Pension Plan ⁵⁵	7.50%
Allegheny Co. Port Authority Local 85 Amalgamated Transit Union Plan ⁹	8.00%	Butler City Nonuniformed Pension Plan ⁵⁵	7.50%
Allegheny Co. Port Authority Nonrepresented Empl. Ret. Plan ⁹	8.00%	Butler City Officers' & Empl. Pension Trust Fund ⁵⁵	7.50%
Allegheny Co. Ret. System ⁹	7.75%	Butler City Police Pension Plan ⁵⁵	7.50%
Allentown City Aggregate Pension Plan ⁵⁵	8.00%	Butler Co. Employees' Ret. System ²	7.50%
Allentown City Officers' & Employees' - PMRS Pension Plan ⁵⁵	6.00%	Carbondale City Aggregate Pension Plan ⁵⁵	8.00%
Altoona City Firemen's Pension Plan ⁵⁵	7.50%	Carnegie Borough Firemen's Pension Plan ⁵⁵	5.00%
Altoona City Nonuniformed Pension Plan ⁵⁵	7.50%	Carnegie Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Altoona City Paid Firemen's Pension Plan ⁵⁵	7.50%	Carnegie Borough Police Pension Plan ⁵⁵	7.50%
Altoona City Police Pension Plan ⁵⁵	8.00%	Carroll Valley Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Ambridge Borough Firemen's Pension Plan ⁵⁵	7.50%	Carroll Valley Borough Police Pension Plan ⁵⁵	6.00%
Ambridge Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Castle Shannon Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Ambridge Borough Police Pension Plan ⁵⁵	7.00%	Castle Shannon Borough Police Pension Plan ⁵⁵	8.00%
Arnold City Aggregate Pension Plan ⁵⁵	7.50%	Center Township Police Pension Plan ⁵⁵	7.50%
Arnold City Aggregate Pension Trust Fund ⁵⁵	7.50%	Central City Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Aspinwall Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Central City Borough Police Pension Plan ⁵⁵	6.00%
Aspinwall Borough Police Pension Fund ⁵⁵	7.50%	Chalfont Borough Police Pension Plan ⁵⁵	7.25%
Avalon Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Chester City Firemen's Pension Plan ⁵⁵	7.50%
Avalon Borough Police Pension Plan ⁵⁵	7.50%	Chester City Nonuniformed Pension Plan ⁵⁵	7.50%
		Chester City Police Pension Plan ⁵⁵	7.50%
		Chester Co. Employee Ret. Trust Fund ⁹	7.50%
		Cheswick Borough Nonuniformed Pension Plan ⁵⁵	8.00%
		Cheswick Borough Police Pension Plan ⁵⁵	8.00%
		Chippewa Township Nonuniformed Pension Plan ⁵⁵	6.50%

Pennsylvania	Interest Assumption	Pennsylvania	Interest Assumption
Chippewa Township Police Pension Plan ⁵⁵	6.50%	Etna Borough Police Pension Plan ⁵⁵	7.50%
Churchill Borough Nonuniformed Pension Plan ⁵⁵	7.00%	Evans City Borough Nonuniformed Pension Plan ⁵⁵	8.00%
Churchill Borough Police Pension Plan ⁵⁵	7.50%	Falls Township Police Pension Plan ⁵⁵	8.00%
Clairton City Firemen's Pension Plan ⁵⁵	6.00%	Farrell City Firemen's Pension Plan ⁵⁵	6.00%
Clairton City Nonuniformed Pension Plan ⁵⁵	6.00%	Farrell City Nonuniformed Pension Plan ⁵⁵	6.00%
Clairton City Police Pension Plan ⁵⁵	6.00%	Farrell City Police Pension Plan ⁵⁵	6.00%
Coatesville City Firefighters' Pension Plan ⁵⁵	7.00%	Fawn Township Nonuniformed Pension Plan ⁵⁵	5.50%
Coatesville City Nonuniformed Pension Plan ⁵⁵	7.00%	Fawn Township Police Pension Plan ⁵⁵	6.00%
Coatesville City Police Pension Plan ⁵⁵	7.00%	Findlay Township Nonuniformed Management Pension Plan ⁵⁵	6.00%
Coatesville City Ret. Income Pension Plan ⁵⁵	7.00%	Findlay Township Police Pension Plan ⁵⁵	7.00%
Collier Township Nonuniformed Pension Plan ⁵⁵	6.00%	Ford City Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Collier Township Police Pension Plan ⁵⁵	7.50%	Ford City Borough Police Pension Plan ⁵⁵	7.00%
Conewago Township Police Pension Plan ⁵⁵	8.00%	Forest City Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Connellsville City Firemen's Pension Plan ⁵⁵	7.50%	Forest City Borough Police Pension Plan ⁵⁵	6.00%
Connellsville City Nonuniformed Pension Plan ⁵⁵	6.00%	Forest Hills Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Connellsville City Police Pension Plan ⁵⁵	7.50%	Forest Hills Borough Police Pension Plan ⁵⁵	7.50%
Conway Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Forward Township Nonuniformed Pension Plan ⁵⁵	6.00%
Conway Borough Police Pension Plan ⁵⁵	7.50%	Forward Township Police Pension Plan ⁵⁵	6.00%
Coraopolis Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Fox Chapel Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Coraopolis Borough Police Pension Plan ⁵⁵	7.50%	Fox Chapel Borough Police Pension Plan ⁵⁵	7.00%
Corry City Firemen's Pension Plan ⁵⁵	7.50%	Franklin City Firemen's Pension Plan ⁵⁵	7.00%
Corry City Nonuniformed Employees Pension Plan ⁵⁵	7.50%	Franklin City Nonuniformed Pension Plan ⁵⁵	7.50%
Corry City Nonuniformed Pension Plan ⁵⁵	7.50%	Franklin City Police Pension Plan ⁵⁵	7.50%
Corry City Police Pension Plan ⁵⁵	7.50%	Franklin Park Borough Nonuniformed Pension Plan ⁵⁵	7.00%
Cowanshannock Twp. Nonuniformed Pension Plan ⁵⁵	6.00%	Franklin Park Borough Police Pension Plan ⁵⁵	7.50%
Crafton Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Franklin Township Nonuniformed Pension Plan ⁵⁵	6.00%
Crafton Borough Police Pension Plan ⁵⁵	7.50%	Franklin Township Police Pension Plan ⁵⁵	6.00%
Crescent Township Nonuniformed Pension Plan ⁵⁵	6.00%	Frazer Township Nonuniformed Pension Plan ⁵⁵	7.50%
Crescent Township Police Pension Plan ⁵⁵	6.00%	Freeport Borough Police Pension Plan ⁵⁵	6.50%
Cumberland Township Nonuniformed Pension Plan ⁵⁵	7.00%	Gettysburg Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Cumberland Township Police Pension Plan ⁵⁵	7.00%	Gettysburg Borough Police Pension Plan ⁵⁵	7.50%
Cumberland Co. Empl. Ret. Plan ⁹	7.50%	Gilpin Township Police Union Pension Plan ⁵⁵	6.00%
Daugherty Township Nonuniformed Pension Plan ⁵⁵	7.50%	Glassport Borough Police Pension Plan ⁵⁵	5.50%
Daugherty Township Police Pension Plan ⁵⁵	6.50%	Green Tree Borough Police Pension Plan ⁵⁵	7.00%
Dauphin Co. Empl. Ret. Plan ¹¹	7.50%	Greene Co. Employee Pension Plan ¹¹	7.50%
Dickson City Borough Nonuniformed Pension Plan ⁵⁵	6.50%	Greensburg City Nonuniformed Pension Plan ⁵⁵	6.00%
Dickson City Borough Police Pension Plan ⁵⁵	7.00%	Greensburg City Police Pension Plan ⁵⁵	8.00%
Dormont Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Grove City Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Dormont Borough Police Pension Plan ⁵⁵	7.50%	Grove City Borough Police Pension Plan ⁵⁵	8.00%
Doylestown Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Hamilton Township Nonuniformed Pension Plan ⁵⁵	6.00%
Doylestown Borough Police Pension Plan ⁵⁵	8.00%	Hamiltonban Township Nonuniformed Pension Plan ⁵⁵	6.00%
Dubois City Nonuniformed Pension Plan ⁵⁵	6.00%	Hamiltonban Township Police Pension Plan ⁵⁵	6.00%
Dubois City Police Pension Plan ⁵⁵	6.75%	Hampton Township Nonuniformed Pension Plan ⁵⁵	7.50%
Duquesne City Police Pension Plan ⁵⁵	8.00%	Hampton Township Police Pension Plan ⁵⁵	7.50%
East Berlin Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Harrisburg City Firefighters' Pension Plan ⁵⁵	6.00%
East Berlin Borough Police Pension Plan ⁵⁵	6.00%	Harrisburg City Nonuniformed Pension Plan ⁵⁵	6.00%
East Deer Township Nonuniformed Pension Plan ⁵⁵	6.00%	Harrisburg City Police Pension Plan ⁵⁵	8.00%
East Deer Township Police Pension Plan ⁵⁵	6.00%	Harmar Township Nonuniformed Pension Plan ⁵⁵	7.50%
East McKeesport Borough Police Pension Plan ⁵⁵	6.50%	Harmar Township Police Pension Plan ⁵⁵	7.50%
East Pittsburgh Borough Nonuniformed Pension Plan ⁵⁵	8.00%	Harmony Township Police Pension Plan ⁵⁵	7.50%
East Pittsburgh Borough Police Pension Plan ⁵⁵	6.50%	Harrison Township Nonuniformed Pension Plan ⁵⁵	6.00%
East Rochester Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Harrison Township Police Pension Plan ⁵⁵	7.50%
East Rockhill Township Nonuniformed Pension Plan ⁵⁵	6.00%	Haycock Township Nonuniformed Pension Plan ⁵⁵	6.00%
Eastern Adams Region Police Pension Plan ⁵⁵	7.00%	Hazleton City Nonuniformed Pension Plan ⁵⁵	7.50%
Eastern Regional Communications Center Nonuniformed Pension Plan ⁵⁵	6.00%	Hazleton City Police Pension Plan ⁵⁵	8.00%
Easton City Aggregate Pension Plan ⁵⁵	8.00%	Heidelberg Borough Police Pension Plan ⁵⁵	6.75%
Easton City Pension Trust Fund ⁵⁵	6.00%	Hermitage City Nonuniformed Pension Plan ⁵⁵	6.00%
Economy Borough Nonuniformed Pension Plan ⁵⁵	7.00%	Hermitage City Police Pension Plan ⁵⁵	7.50%
Economy Borough Police Pension Plan ⁵⁵	7.00%	Hilltown Township Nonuniformed Pension Plan ⁵⁵	6.00%
Edgewood Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Hilltown Township Police Pension Plan ⁵⁵	6.00%
Edgewood Borough Police Pension Plan ⁵⁵	7.00%	Homer City Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Edgeworth Borough Nonuniformed Pension Plan ⁵⁵	7.00%	Homer City Borough Police Pension Plan ⁵⁵	5.75%
Edgeworth Borough Police Pension Plan ⁵⁵	7.00%	Homestead Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Elizabeth Borough Police Pension Plan ⁵⁵	7.00%	Homestead Borough Police Pension Plan ⁵⁵	7.50%
Elizabeth Township Nonuniformed Pension Plan ⁵⁵	6.00%	Hopewell Township Nonuniformed Pension Plan ⁵⁵	6.00%
Elizabeth Township Police Pension Plan ⁵⁵	6.00%	Hopewell Township Police Pension Plan ⁵⁵	7.50%
Elwood City Borough Firemen's Pension Plan ⁵⁵	8.00%	Independence Township Police Union Pension Plan ⁵⁵	6.00%
Elwood City Borough Nonuniformed Pension Plan ⁵⁵	8.00%	Indiana Township Nonuniformed Pension Plan ⁵⁵	7.50%
Elwood City Borough Police Pension Plan ⁵⁵	8.00%	Indiana Township Police Pension Plan ⁵⁵	7.50%
Erie City Aggregate Pension Plan ⁵⁵	8.00%	Indiana Co. Empl. Ret. Plan ¹¹	7.50%
Erie Co. Employees' Ret. System ⁹	7.50%	Ingram Borough Police Pension Plan ⁵⁵	7.50%
Erie Co. Pleasant Ridge Manor Ret. Plan ⁹	6.34%	Jeannette City Firemen's Pension Plan ⁵⁵	7.00%
Etna Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Jeannette City Nonuniformed Pension Plan ⁵⁵	6.00%
		Jeannette City Police Pension Plan ⁵⁵	7.00%

Pennsylvania	Interest Assumption	Pennsylvania	Interest Assumption
Jefferson Hills Borough Nonuniformed Management Pension Plan ⁵⁵	7.50%	Monroeville Municipality Nonuniformed Pension Plan ⁵⁵	6.00%
Jefferson Hills Borough Police Pension Plan ⁵⁵	7.25%	Monroeville Municipality Police Pension Plan ⁵⁵	6.00%
Johnstown City Police Pension Plan ⁵⁵	8.00%	Montgomery Co. Employees' Ret. System ⁹	7.50%
Kennedy Township Police Pension Plan ⁵⁵	6.75%	Moon Township Police Pension Plan ⁵⁵	7.50%
Kennett Square Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Morrisville Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Kennett Square Borough Police Pension Plan ⁵⁵	7.50%	Morrisville Borough Police Pension Plan ⁵⁵	6.00%
Kilbuck Township Police Pension Plan ⁵⁵	7.50%	Mount Oliver Borough Police Pension Plan ⁵⁵	7.00%
Kittanning Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Munhall Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Kittanning Borough Police Pension Plan ⁵⁵	7.50%	Munhall Borough Police Pension Plan ⁵⁵	7.50%
Lake City Borough Police Pension Plan ⁵⁵	7.50%	Nanticoke City Firemen's Pension Plan ⁵⁵	8.00%
Lancaster City Firemen's Pension Plan ⁵⁵	8.00%	Nanticoke City Nonuniformed Pension Plan ⁵⁵	6.00%
Lancaster City Nonuniformed Pension Plan ⁵⁵	7.50%	Nanticoke City Police Pension Plan ⁵⁵	7.00%
Lancaster City Police Pension Plan ⁵⁵	8.00%	Neville Township Nonuniformed Pension Plan ⁵⁵	7.00%
Lancaster Co. Ret. Plan ¹¹	7.50%	Neville Township Police Pension Plan ⁵⁵	7.00%
Latimore Township Police Pension Plan ⁵⁵	6.25%	New Brighton Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Latimore Township-York Springs Borough Regional Police Pension Plan ⁵⁵	6.25%	New Brighton Borough Police Pension Plan ⁵⁵	7.50%
Latrobe City Nonuniformed Pension Plan ⁵⁵	6.00%	New Castle City Comprehensive Municipal Pension Trust Fund ⁵⁵	8.00%
Latrobe City Pension Plan ⁵⁵	7.00%	New Castle City Police Pension Plan ⁵⁵	8.25%
Lebanon City Firemen's Pension Plan ⁵⁵	8.00%	New Kensington City Nonuniformed Pension Plan ⁵⁵	6.00%
Lebanon City Nonuniformed Pension Plan ⁵⁵	6.00%	New Kensington City Police Pension Plan ⁵⁵	6.50%
Lebanon City Police Pension Plan ⁵⁵	8.00%	Newtown Borough Police Pension Plan ⁵⁵	6.00%
Leechburg Borough Police Pension Plan ⁵⁵	8.00%	Newtown Township Firemen's Pension Plan ⁵⁵	7.50%
Leet Township Nonuniformed Pension Plan ⁵⁵	8.00%	Newtown Township Nonuniformed Pension Plan ⁵⁵	7.50%
Leetsdale Borough Nonuniformed Pension Plan ⁵⁵	7.00%	Newtown Township Police Pension Plan ⁵⁵	7.50%
Leetsdale Borough Police Pension Plan ⁵⁵	7.00%	Nockamixon Township Nonuniformed Pension Plan ⁵⁵	6.00%
Lehigh Co. Authority Ret. Plan ¹¹	6.00%	Nockamixon Township Police Pension Plan ⁵⁵	6.00%
Liberty Township Police Pension Plan ⁵⁵	6.50%	North Apollo Borough Nonuniformed Pension Plan ⁵⁵	5.00%
Littlestown Borough Nonuniformed Pension Plan ⁵⁵	7.25%	North Apollo Borough Police Pension Plan ⁵⁵	8.00%
Littlestown Borough Police Pension Plan ⁵⁵	7.50%	North Braddock Borough Nonuniformed Pension Plan ⁵⁵	7.00%
Lock Haven City Empl. Ret. Fund ⁵⁵	7.00%	North Braddock Borough Police Pension Plan ⁵⁵	6.75%
Lock Haven City Nonuniformed Pension Plan ⁵⁵	7.00%	North Fayette Township Police Pension Plan ⁵⁵	7.00%
Lock Haven City Police Pension Plan ⁵⁵	7.00%	North Sewickley Township Police Pension Plan ⁵⁵	6.00%
Lower Burrell City Nonuniformed Pension Plan ⁵⁵	6.00%	North Versailles Twp. Nonuniformed Pension Plan ⁵⁵	6.00%
Lower Burrell City Police Pension Plan ⁵⁵	8.00%	North Versailles Township Police Pension Plan ⁵⁵	7.00%
Lower Makefield Twp. Nonuniformed Pension Plan ⁵⁵	8.00%	Northern Regional Police Pension Plan ⁵⁵	7.50%
Lower Makefield Township Police Pension Plan ⁵⁵	8.00%	Northampton Co. Empl. Ret. Plan ⁹	7.50%
Lower Southampton Township Police Pension Plan ⁵⁵	7.50%	Northampton Township Nonuniformed Pension Plan ⁵⁵	7.50%
Luzerne Co. Empl. Ret. Plan ⁴¹	7.50%	Northampton Township Police Pension Plan ⁵⁵	7.50%
Lycoming Co. Employees' Ret. System ⁹	7.00%	Oakdale Borough Nonuniformed Pension Plan ⁵⁵	7.75%
Madison Township Nonuniformed Pension Plan ⁵⁵	4.50%	Oakdale Borough Police Pension Plan ⁵⁵	7.25%
Mahanoy City Borough Police Pension Plan ⁵⁵	7.50%	Oakmont Borough Nonuniformed Pension Plan ⁵⁵	7.00%
Malvern Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Oakmont Borough Police Pension Plan ⁵⁵	7.00%
Malvern Borough Police Pension Plan ⁵⁵	7.00%	O'Hara Township Nonuniformed Pension Plan ⁵⁵	7.50%
Marshall Township Nonuniformed Pension Plan ⁵⁵	7.50%	O'Hara Township Police Pension Plan ⁵⁵	7.50%
McCandless Town Police Pension Plan ⁵⁵	7.50%	Ohio Township Nonuniformed Pension Plan ⁵⁵	8.00%
McCandless Town Retired Nonuniformed Pension Plan ⁵⁵	7.50%	Ohio Township Police Pension Plan ⁵⁵	6.00%
McKees Rocks Borough Police Pension Plan ⁵⁵	7.50%	Oil City Empl. Ret. Fund ⁵⁵	7.50%
McKeesport City Combined Pension Plan ⁵⁵	8.00%	Oil City Firemen's Pension Plan ⁵⁵	7.50%
McKeesport City Firemen's Pension Plan ⁵⁵	8.00%	Oil City Nonuniformed Pension Plan ⁵⁵	7.50%
McKeesport City Officers & Employees Pension Trust Fund ⁵⁵	8.00%	Oil City Police Pension Plan ⁵⁵	7.50%
McKeesport City Police Pension Plan ⁵⁵	8.00%	Parks Township Police Pension Plan ⁵⁵	5.50%
McSherrystown Borough Nonuniformed Employees' Pension Plan ⁵⁵	6.75%	Patterson Township Nonuniformed Pension Plan ⁵⁵	7.00%
McSherrystown Borough Police Pension Plan ⁵⁵	7.75%	Patterson Township Police Pension Plan ⁵⁵	7.00%
Meadville City Firemen's Pension Plan ⁵⁵	7.75%	Penn Hills Municipality Nonuniformed Pension Plan ⁵⁵	8.00%
Meadville City Nonuniformed Pension Plan ⁵⁵	7.75%	Penn Hills Municipality Police Pension Plan ⁵⁵	8.00%
Meadville City Police Pension Plan ⁵⁵	7.75%	Penndel Borough Nonuniformed Pension Plan ⁵⁵	7.00%
Menallen Township Nonuniformed Pension Plan ⁵⁵	6.00%	Penndel Borough Police Pension Plan ⁵⁵	8.00%
Midland Borough Nonuniformed Pension Plan ⁵⁵	5.50%	Penndel Borough Police Pension Plan ⁵⁵	8.00%
Midland Borough Police Pension Plan ⁵⁵	7.00%	Pennridge Regional Police Dept. Nonuniformed Pension Plan ⁵⁵	6.00%
Middletown Township Nonuniformed Pension Plan ⁵⁵	7.50%	Pennridge Regional Police Dept. Police Pension Plan ⁵⁵	6.00%
Middletown Township Police Pension Plan ⁵⁵	8.00%	Perkasie Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Milford Township Nonuniformed Pension Plan ⁵⁵	6.00%	Perkasie Borough Police Pension Plan ⁵⁵	6.00%
Millvale Borough Nonuniformed Pension Plan ⁵⁵	8.00%	Philadelphia City Pension Trust Fund ⁵⁵	8.25%
Millvale Borough Police Pension Plan ⁵⁵	8.00%	Pitcairn Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Monaca Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Pitcairn Borough Police Pension Plan ⁵⁵	7.50%
Monaca Borough Police Pension Plan ⁵⁵	7.00%	Pittsburgh City Comprehensive Municipal Pension Trust Fund ⁵⁵	8.00%
Monessen City Firemen's Pension Plan ⁵⁵	7.50%	Pittston City Firemen's Pension Plan ⁵⁵	7.00%
Monessen City Police Pension Plan ⁵⁵	7.50%	Pittston City Nonuniformed Pension Plan ⁵⁵	7.00%
Monongahela City Police Pension Plan ⁵⁵	7.00%	Pittston City Police Pension Plan ⁵⁵	7.00%
		Pleasant Hills Borough Nonuniformed Pension Plan ⁵⁵	7.25%
		Pleasant Hills Borough Police Pension Plan ⁵⁵	7.25%
		Plum Borough Police Pension Plan ⁵⁵	7.75%

Pennsylvania	Interest Assumption	Pennsylvania	Interest Assumption
Plumcreek Township Nonuniformed Pension Plan ⁵⁵	6.00%	Tarentum Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Plumstead Township Nonuniformed Pension Plan ⁵⁵	6.00%	Tarentum Borough Police Pension Plan ⁵⁵	7.00%
Plumstead Township Police Pension Plan ⁵⁵	7.00%	Turtle Creek Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Port Vue Borough Police Pension Plan ⁵⁵	6.75%	Turtle Creek Borough Police Pension Plan ⁵⁵	7.50%
Pottsville City Nonuniformed Pension Plan ⁵⁵	7.30%	Titusville City Firemen's Pension Plan ⁵⁵	8.00%
Pottsville City Police Pension Plan ⁵⁵	7.50%	Titusville City Police Pension Plan ⁵⁵	8.00%
Pulaski Township Nonuniformed Pension Plan ⁵⁵	6.00%	Tyrone Township Nonuniformed Pension Plan ⁵⁵	6.00%
Quakertown Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Upper St. Clair Township Empl. Ret. Fund ⁵⁵	8.00%
Quakertown Borough Police Pension Plan ⁵⁵	7.50%	Upper St. Clair Township Police Pension Plan ⁵⁵	8.00%
Raccoon Township Nonuniformed Pension Plan ⁵⁵	6.00%	Union City Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Raccoon Township Police Pension Plan ⁵⁵	8.00%	Union City Borough Police Pension Plan ⁵⁵	7.50%
Radnor Township Nonuniformed Pension Plan ⁵⁵	7.50%	Uniontown City Firemen's Pension Plan ⁵⁵	7.00%
Radnor Township Police Pension Plan ⁵⁵	7.50%	Uniontown City Nonuniformed Pension Plan ⁵⁵	6.00%
Rankin Borough Nonuniformed Pension Plan ⁵⁵	7.50%	Uniontown City Police Pension Plan ⁵⁵	7.00%
Rankin Borough Police Pension Plan ⁵⁵	7.50%	Valley Township Nonuniformed Pension Plan ⁵⁵	4.50%
Reading City Firemen's Pension Plan ⁵⁵	8.00%	Vanport Township Police Pension Plan ⁵⁵	6.00%
Reading City Nonuniformed Pension Plan ⁵⁵	8.00%	Verona Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Reading City Police Pension Plan ⁵⁵	7.50%	Verona Borough Police Pension Plan ⁵⁵	7.50%
Reading Township Nonuniformed Pension Plan ⁵⁵	4.50%	Versailles Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Reading Township Police Pension Plan ⁵⁵	4.50%	Versailles Borough Police Pension Plan ⁵⁵	6.00%
Reserve Township Nonuniformed Pension Plan ⁵⁵	7.50%	Warren City Employees' Pension Plan ⁵⁵	7.50%
Reserve Township Police Pension Plan ⁵⁵	7.75%	Warren City Firefighters' Pension Plan ⁵⁵	5.25%
Richland Twp. (Allegheny Co.) Police Pension Plan ⁵⁵	7.50%	Warren City Firemen's Pension Plan ⁵⁵	5.50%
Richland Twp. (Bucks Co.) Nonuniformed Pension Plan ⁵⁵	6.00%	Warren City Nonuniformed Pension Plan ⁵⁵	7.50%
Richland Twp. (Bucks Co.) Police Pension Plan ⁵⁵	6.00%	Warren City Police Pension Plan ⁵⁵	7.50%
Robinson Township Police Pension Plan ⁵⁵	7.50%	Washington City Police Pension Plan ⁵⁵	8.00%
Rochester Borough Police Pension Plan ⁵⁵	8.00%	Washington Township Nonuniformed Pension Plan ⁵⁵	5.50%
Rochester Township Nonuniformed Pension Plan ⁵⁵	6.00%	West Deer Township Nonuniformed Pension Plan ⁵⁵	7.50%
Rochester Township Police Pension Plan ⁵⁵	6.00%	West Deer Township Police Pension Plan ⁵⁵	7.50%
Ross Township Nonuniformed Pension Plan ⁵⁵	7.50%	West Homestead Borough Nonuniformed Pension Plan ⁵⁵	7.00%
Rural Valley Borough Nonuniformed Pension Plan ⁵⁵	6.00%	West Homestead Borough Police Pension Plan ⁵⁵	7.00%
St. Marys City Nonuniformed Pension Plan ⁵⁵	7.50%	West Mifflin Borough Nonuniformed Pension Plan ⁵⁵	7.50%
St. Marys City Police Pension Plan ⁵⁵	7.50%	West Mifflin Borough Police Pension Plan ⁵⁵	7.50%
Schuylkill Co. Empl. Ret. System ¹¹	7.50%	West View Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Scott Township Nonuniformed Pension Plan ⁵⁵	7.50%	West View Borough Police Pension Plan ⁵⁵	7.50%
Scott Township Police Pension Plan ⁵⁵	7.50%	Westmoreland Co. Empl. Ret. Plan ⁹	7.50%
Scranton City Pension Trust Fund ⁵⁵	8.00%	White Oak Borough Nonuniformed Pension Plan ⁵⁵	6.50%
Sewickley Borough Nonuniformed Pension Plan ⁵⁵	7.00%	White Oak Borough Police Pension Plan ⁵⁵	6.50%
Sewickley Borough Police Pension Plan ⁵⁵	7.00%	White Township Police Pension Plan ⁵⁵	6.00%
Sewickley Heights Borough Nonuniformed Pension Plan ⁵⁵	7.00%	Whitehall Borough Nonuniformed Pension Plan ⁵⁵	7.50%
Sewickley Heights Borough Police Pension Plan ⁵⁵	7.00%	Whitehall Borough Police Pension Plan ⁵⁵	7.50%
Shaler Township Nonuniformed Pension Plan ⁵⁵	7.50%	Wilkes-Barre City Firemen's Pension Plan ⁵⁵	8.50%
Shaler Township Nonuniformed Union Pension Plan ⁵⁵	7.50%	Wilkes-Barre City Firemen's Relief Pension Plan ⁵⁵	8.50%
Shaler Township Police Pension Plan ⁵⁵	7.50%	Wilkes-Barre City Nonuniformed Pension Plan ⁵⁵	8.50%
Shamokin City Officers' & Employees' Pension Plan ⁵⁵	8.00%	Wilkes-Barre City Police Pension Plan ⁵⁵	8.50%
Shamokin City Police Pension Plan ⁵⁵	8.00%	Wilkes-Barre City Policemen's Relief Pension Plan ⁵⁵	8.50%
Sharon City Firemen's Pension Plan ⁵⁵	7.00%	Wilkins Township Nonuniformed Pension Plan ⁵⁵	6.00%
Sharon City Nonuniformed Pension Plan ⁵⁵	6.00%	Wilkins Township Police Pension Plan ⁵⁵	7.50%
Sharon City Police Pension Plan ⁵⁵	7.50%	Wilkinsburg Borough Firemen's Pension Plan ⁵⁵	8.00%
Sharpsburg Borough Nonuniformed Pension Plan ⁵⁵	6.00%	Wilkinsburg Borough Nonuniformed Pension Plan ⁵⁵	8.00%
Sharpsburg Borough Police Pension Plan ⁵⁵	7.00%	Wilkinsburg Borough Police Pension Plan ⁵⁵	8.00%
Shippingport Borough Police Pension Plan ⁵⁵	6.00%	Williamsport City Firemen's Pension Plan ⁵⁵	7.50%
South Beaver Township Nonuniformed Pension Plan ⁵⁵	6.00%	Williamsport City Officers' & Empl. Pension Plan ⁵⁵	8.00%
South Beaver Township Police Pension Plan ⁵⁵	6.00%	Williamsport City Police Pension Plan ⁵⁵	8.00%
South Buffalo Township Nonuniformed Pension Plan ⁵⁵	7.50%	Wilmerding Borough Nonuniformed Pension Plan ⁵⁵	6.00%
South Buffalo Township Police Pension Plan ⁵⁵	7.50%	Wilmerding Borough Police Pension Plan ⁵⁵	5.00%
South Fayette Township Police Pension Plan ⁵⁵	7.50%	York City Pension Trust Fund ⁵⁵	8.00%
South Park Township Police Pension Plan ⁵⁵	7.00%	York Co. Employee Ret. Plan ¹¹	7.50%
Spring City Borough Nonuniformed Pension Plan ⁵⁵	5.00%	York Co. Planning Commission Ret. Plan ¹¹	6.00%
Spring City Borough Police Pension Plan ⁵⁵	5.00%	York Springs Borough Nonuniformed Pension Plan ⁵⁵	6.00%
Springdale Borough Nonuniformed Pension Plan ⁵⁵	6.00%		Interest Assumption
Springdale Borough Police Pension Plan ⁵⁵	5.50%	Puerto Rico	
Springdale Township Nonuniformed Pension Plan ⁵⁵	6.00%	Electric Power Authority Employees' Ret. System	
Springdale Township Police Pension Plan ⁵⁵	6.00%		Interest Assumption
Stowe Township Nonuniformed Pension Plan ⁵⁵	6.50%	Rhode Island	
Stowe Township Police Pension Plan ⁵⁵	6.50%	City of Central Falls Police & Fire Pension Plan ⁴	7.50%
Sugarcreek Township Nonuniformed Pension Plan ⁵⁵	5.00%	City of Central Falls Police & Fire Private Pension Plan ⁴	7.75%
Sunbury City Nonuniformed Pension Plan ⁵⁵	6.00%	City of Cranston Fire Dept. & Police Dept. Pension Plan ¹²	7.50%
Sunbury City Police Pension Plan ⁵⁵	7.50%	City of Newport Firemen's Pension Plan ²	7.50%
Swissvale Borough Firemen's Pension Plan ⁵⁵	7.50%	City of Newport Police Pension Plan ²	7.50%
Swissvale Borough Nonuniformed Management Pension Plan ⁵⁵	7.50%		
Swissvale Borough Police Pension Plan ⁵⁵	7.50%		

Rhode Island	Interest Assumption	Texas	Interest Assumption
City of Providence Empl. Ret. System ⁴	8.25%	Cleburne Firemen's Relief & Ret. Fund ⁵⁶	7.50%
City of Warwick Employees' Pension Plan ²	8.00%	Colorado River Municipal Water District Defined Benefit Ret. Plan & Trust ⁵⁶	7.50%
City of Warwick Fire Pension II Plan ²	7.50%	Conroe Fire Fighters' Ret. Fund ⁵⁶	7.80%
City of Warwick Police Pension II Plan ²	7.50%	Corpus Christi Fire Fighters' Ret. System ⁵⁶	8.00%
City of Warwick Police Pension I & Fire Pension Plan ²	7.50%	Corpus Christi Regional Transportation Authority ⁵⁶	7.50%
City of Warwick Public Schools Empl. Pension Plan ²	7.00%	Corsicana Firemen's Relief & Ret. Fund ⁵⁶	7.50%
City of Woonsocket Police & Fire Empl. Pension Plan ²	7.25%	Co. and District Ret. System ³	8.00%
Judicial Ret. Benefits Trust ⁵	7.50%	Cypress-Fairbanks ISD Pension Plan for Non-TRS Employees ⁵⁶	4.30%
Municipal Employees' Ret. System ⁵	7.50%	Dallas/Fort Worth International Airport Dept. of Public Safety Ret. Plan ³	7.25%
Narragansett Bay Commission Non-union Empl. Defined Benefit Pension Plan ²	6.00%	Dallas Co. Hospital District Ret. Income Plan ⁵⁶	8.30%
State Employees' Ret. System ⁵	7.50%	Dallas Employees' Ret. Fund ⁵⁶	8.30%
State Police Ret. Benefits Trust ⁵	7.50%	Dallas/Fort Worth Intl. Airport Employees' Ret. Plan ³	7.25%
Town of Burrillville Municipal Police Pension Plan ²	7.50%	Dallas/Fort Worth Airport Board DPS Ret. Plan ⁵⁶	7.30%
Town of Coventry Municipal Empl. Ret. Plan ²	8.00%	Dallas Police and Fire Pension System ¹⁶	8.50%
Town of Coventry Police Pension Plan ²	8.00%	DART Employees' Defined Benefit Ret. Plan & Trust ⁵⁶	8.00%
	Interest Assumption	Denison Firemen's Relief & Ret. Fund ⁵⁶	7.80%
South Carolina		Denton Firemen's Relief & Ret. Fund ⁵⁶	7.00%
Judges and Solicitors Ret. System ²	7.50%	El Paso City Employees' Pension Fund ⁵⁶	7.50%
Genl. Assembly Ret. System ²	7.50%	El Paso City Firemen's Pension Fund ¹⁶	7.75%
National Guard Ret. System ²	7.50%	El Paso City Policemen's Pension Fund ¹⁶	7.75%
Police Officers Ret. System ²	7.50%	Emergency Services Ret. System ⁵⁶	7.80%
South Carolina Ret. System ²	7.50%	Empl. Ret. System ⁵⁷	8.00%
	Interest Assumption	Fort Worth Employees' Ret. Fund ⁵⁶	8.30%
South Dakota		Galveston Employees' Ret. Fund ⁵⁶	8.00%
Cement Plant Ret. Fund ²	6.75%	Galveston Employees' Ret. Plan for Police ⁵⁶	7.50%
Dept. of Labor Employment Security Ret. Plan ²	7.50%	Galveston Firefighter's Relief & Ret. Fund ⁵⁶	8.00%
State Ret. System ²	7.25/7.75%	Galveston Wharves Pension Plan ⁵⁶	7.50%
Sioux Falls City Employee's Ret. System ⁹	7.75%	Greenville Firemen's Relief & Ret. Fund ⁵⁶	8.30%
Sioux Falls City Firefighters' Pension Fund ⁹	7.75%	Guadalupe-Blanco River Authority ⁵⁶	7.80%
	Interest Assumption	Harlingen Firemen's Relief & Ret. Fund ⁵⁶	8.00%
Tennessee		Harris Co. Hospital District Pension Plan ⁵⁶	8.00%
Chattanooga City Genl. Pension Plan ²	7.75%	Houston Firefighter's Relief & Ret. Fund ⁵⁶	8.50%
Chattanooga City Fire and Police Pension Fund ²	7.75%	Houston MTA Non-Union Pension Plan ⁵⁶	8.00%
Consolidated Ret. System ^{8/31}	7.5%	Houston MTA Workers Union Pension Plan ⁵⁶	8.00%
Davidson Co. Employees' Ret. Plan ²	8.00%	Houston Municipal Employees Pension System ⁵⁶	8.50%
Franklin City Employees' Pension Plan and Trust ²	7.50%	Houston Police Officers Pension System ⁵⁶	8.50%
Knoxville City Pension System ¹¹	8.00%	Irving Firemen's Relief & Ret. Fund ⁵⁶	8.30%
Knoxville Utilities Board Pension Plan ¹¹	8.00%	Irving Supplemental Benefit Plan ⁵⁶	7.00%
Memphis City Ret. System ²	7.50%	Judicial Ret. System Plan ¹ 57	8.00%
Memphis City-Shelby Co. Public Library & Information System Ret. System ²	7.50%	Judicial Ret. System Plan ² 57	8.00%
Murfreesboro City Electric Dept. Empl. Pension Plan ²	7.00%	Killeen Firemen's Relief & Ret. Fund ⁵⁶	7.80%
Murfreesboro City Employees' Pension Plan ²	7.30%	Laredo Firefighters Ret. System ⁵⁶	8.00%
Nashville City-Davidson Co. Metropolitan Empl. Benefit Trust ²	8.00%	Law Enforcement & Custodial Officer Suppl. Ret. Plan ⁵⁷	8.00%
Nashville City-Davidson Co. Employees' Pension & Insurance Plan ²	8.00%	Longview Firemen's Relief & Ret. Fund ⁵⁶	8.00%
Nashville City Ret. Plan ²	8.00%	Lower Colorado River Authority Ret. Plan ⁵⁶	7.50%
Nashville Teachers' Civil Service and Pension Plan ²	8.00%	Lubbock Fire Pension Fund ⁵⁶	8.00%
Nashville Teachers' Ret. Plan ²	8.00%	Lufkin Firemen's Relief & Ret. Fund ⁵⁶	7.50%
Political Subdivision Pension Plan ²	7.50%	Marshall Firemen's Relief & Ret. Fund ⁵⁶	8.00%
Shelby Co. Ret. System ²	8.00%	McAllen Firemen's Relief & Ret. Fund ⁵⁶	8.00%
State Employees, Teachers and Higher Education Employees Pension Plan ³¹	7.50%	Midland Firemen's Relief & Ret. Fund ⁵⁶	8.00%
	Interest Assumption	Municipal Ret. System ³⁷	7.00%
Texas		Nacogdoches Co. Hospital District Ret. Plan ⁵⁶	8.00%
Abilene Firemen's Relief & Ret. Fund ⁵⁶	8.00%	Odessa Firemen's Relief & Ret. Fund ⁵⁶	8.50%
Amarillo Firemen's Relief & Ret. Fund ⁵⁶	8.30%	Orange Firemen's Relief & Ret. Fund ⁵⁶	8.00%
Atlanta Firemen's Relief & Ret. Fund ⁵⁶	7.30%	Paris Firefighters' Relief & Ret. Fund ⁵⁶	8.00%
Austin Employees' Ret. System ⁹	7.75%	Physicians Referral Service Ret. Benefit Plan ⁵⁶	8.00%
Austin Fire Fighters Relief & Ret. Fund ⁵⁶	7.80%	Plainview Firemen's Relief & Ret. Fund ⁵⁶	7.80%
Austin Police Ret. System ⁵⁶	7.80%	Plano Ret. Security Plan ⁵⁶	7.80%
Beaumont Firemen's Relief & Ret. Fund ⁵⁶	8.00%	Port Arthur Firemen's Relief & Ret. Fund ⁵⁶	8.00%
Big Spring Firemen's Relief & Ret. Fund ⁵⁶	8.00%	Port of Houston Authority Ret. Plan ⁵⁶	7.30%
Brazos River Authority Ret. Plan ⁵⁶	6.50%	Refugio Co. Memorial Hospital District Ret. Plan ⁵⁶	6.50%
Brownwood Firemen's Relief & Ret. Fund ⁵⁶	7.30%	San Angelo Firemen's Relief & Ret. Fund ⁵⁶	7.90%
Capital MTA Ret. Plan for Administrative Employees ⁵⁶	7.50%	San Antonio Fire and Police Pension Plan ⁵⁸	7.50%
Capital MTA Ret. Plan for Bargaining Unit Empl. ⁵⁶	7.50%	San Antonio Metropolitan Transit Ret. Plan ⁵⁶	8.00%
City Public Service of San Antonio Pension Plan ⁵⁶	7.80%	San Benito Firemen's Pension Fund ⁵⁶	7.00%
		Sweetwater Firemen's Relief & Ret. Fund ⁵⁶	8.00%
		Teachers Ret. System ⁵⁷	8.00%
		Temple Firemen's Relief & Ret. Fund ⁵⁶	8.00%
		Texarkana Firemen's Relief & Ret. Fund ⁵⁶	7.80%
		Texas City Firemen's Relief & Ret. Fund ⁵⁶	7.80%
		Travis Co. ESD # 6 Firefighter's Relief & Ret. Fund ⁵⁶	7.00%
		Tyler Firemen's Relief & Ret. Fund ⁵⁶	7.80%

Texas	Interest Assumption	Washington	Interest Assumption
University Health System Pension Plan ⁵⁶	7.50%	Tacoma City Fire Relief and Pension Fund ¹¹	4.00%
University Park Firemen's Relief & Ret. Fund ⁵⁶	8.00%	Tacoma City Police Relief and Pension Fund ¹¹	4.00%
Waxahachie Firemen's Relief & Ret. Fund ⁵⁶	7.00%	Teachers' Ret. System ²	7.90%
Weslaco Firemen's Relief & Ret. Fund ⁵⁶	7.30%		
Wichita Falls Firemen's Relief & Ret. Fund ⁵⁶	8.00%		Interest Assumption
		West Virginia	
Utah	Interest Assumption	Charleston City Firemen's Pension & Relief Fund ²	5.00%
Firefighters Ret. System ¹⁶	7.50%	Charleston City Policemen's Pension & Relief Fund ²	5.00%
Judges Ret. System ¹⁶	7.50%	Deputy Sheriffs' Ret. System ²	7.50%
Legislative Pension Plan ¹⁶	7.50%	Emergency Medical Services Ret. System ²	7.50%
Public Empl. Ret. System ¹⁶	7.50%	Judges' Ret. System ²	7.50%
Public Safety Empl. Ret. System ¹⁶	7.50%	Morgantown City Empl. Pension & Relief Fund ²	7.50%
		Morgantown City Firemen's Pension & Relief Fund ²	5.00%
	Interest Assumption	Morgantown City Policemen's Pension & Relief Fund ²	5.00%
Vermont		Municipal Police and Firefighters Ret. System ²	7.50%
Burlington Employees' Ret. System ⁷	8.00%	Public Empl. Ret. System ²	7.50%
Municipal Employees' Ret. System ⁷	6.25-9.00%	State Police Death, Disability and Ret. Fund ²	7.50%
Rutland City-Rutland School Board Ret. Plan ²	8.00%	State Police Ret. System ²	7.50%
St. Albans City Pension Plan ²	7.5%	Teachers' Ret. System ²	7.50%
Saint Johnsbury Town Pension Plan ¹⁰	7.00%	Wheeling City Employee's Ret. and Benefit Fund ⁵⁹	8.00%
State Employees' Ret. System ⁷	6.25-9.00%	Wheeling City Firemen's Pension and Relief Fund ⁵⁹	8.00%
State Teachers' Ret. System ⁷	6.25%-9.00	Wheeling City Policemen's Pension & Relief Fund ⁵⁹	8.00%
			Interest Assumption
Virginia	Interest Assumption	Wisconsin	
Alexandria City Firefighters & Police Officers Pension Plan-Disability ²	7.50%	Employees' Ret. System of the Co. of Milwaukee ¹¹	8.00%
Alexandria City Firefighters & Police Officers Pension Plan-Ret. ²	7.50%	Employees' Ret. System of the City of Milwaukee ¹⁵	8.25/8.50%
Alexandria City Pension for Fire & Police Plan ²	5.50%	OBRA 1990 Ret. System of the Co. of Milwaukee ¹¹	8.00%
Alexandria City Supplemental Ret. Plan ²	7.50%	Policemen's Annuity and Benefit Fund of Milwaukee ¹⁵	8.25/8.50%
Charlottesville City's Pension Plan ²	7.50%	Wisconsin Ret. System ¹⁴	7.20/5.00%
Chesterfield Co. School Board Suppl. Ret. Plan ²	7.50%		Interest Assumption
Chesterfield Co. Supplemental Ret. Plan ²	6.50%	Wyoming	
Danville City Employees' Ret. System ²	7.00%	State of Wyoming Ret. System ¹⁵	8.00%
Fairfax Co. Employees' Ret. Plan ²	7.50%	Wyoming Law Enforcement Ret. Fund ¹⁵	8.00%
Fairfax Co. Police Officers' Ret. Plan ²	7.50%	Wyoming Paid Firemen's Ret. Fund Plan A ¹⁵	8.00%
Fairfax Co. Uniformed Ret. Plan ²	7.50%	Wyoming Paid Firemen's Ret. Fund Plan B ¹⁵	8.00%
Falls Church City Basic Pension Plan ²	7.50%	Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Ret. Plan ¹⁵	8.00%
Falls Church City Police Pension Plan ²	7.50%	Wyoming Volunteer Firemen's Pension Plan ¹⁵	8.00%
Loudon Co. Volunteer Firefighter Length of Service Ret. Plan ²	5.50%	Wyoming Judicial Ret. System ¹⁵	8.00%
Newport News Employees' Ret. Fund ²	7.75%	Wyoming Volunteer Emergency Medical Technician Pension Plan ¹⁵	8.00%
Portsmouth Supplemental Ret. System ²	8.00%		
Portsmouth Fire and Police Ret. System ²	8.00%		
Prince William Co. Supplemental Ret. Plan ²	7.00%		
Richmond City Ret. System ²	7.50%		
Roanoke City Pension Plan ²	7.750%		
Virginia Judicial Ret. System ²	7.00%		
Virginia Law Officers' Ret. System ²	7.00%		
Virginia Political Subdivisions Ret. System ²	7.00%		
Virginia State Employees' Ret. System ²	7.00%		
Virginia State Police Ret. System ²	7.00%		
Virginia Teachers' Ret. System ²	7.00%		
	Interest Assumption		
Washington			
Bellingham City Firefighters' Pension Plan ⁹	4.50%		
Bellingham City Police Pension Plan ⁹	4.50%		
Judges' Ret. Fund ²	4.00%		
Judicial Ret. System ²	7.90%		
Law Enforcement Officers' & Fire Fighters' Ret. System ²	7.50%		
Public Employees' Ret. System ²	7.90%		
Public Safety Employees' Ret. System ²	7.90%		
School Employees' Ret. System ²	7.90%		
Seattle City Employees' Ret. System ¹¹	7.75%		
Seattle City Firemen's Pension Fund ¹¹	4.00%		
Seattle City Police Relief and Pension Fund ¹¹	4.00%		
Spokane City Employees' Ret. System ¹¹	7.50%		
Spokane City Firefighters' Pension Fund ¹¹	5.00%		
Spokane City Police Relief and Pension Fund ¹¹	4.00%		
State Patrol Ret. System ²	7.90%		
Tacoma City Employees' Ret. System ¹¹	7.75%		

¹ 09/30/2011 Annual Financial Report
² 06/30/2012 Annual Financial Report
³ 09/30/2012 Annual Financial Report
⁴ 06/30/2011 Annual Financial Report
⁵ 06/30/2010 Actuarial Valuation
⁶ 06/30/2011 Actuarial Valuation
⁷ 06/30/2012 Actuarial Valuation
⁸ 12/2010-1/2011 NASRA Survey on prior service credit purchase interest rates
⁹ 12/31/2012 Annual Financial Report
¹⁰ 12/31/2011 Audit Report
¹¹ 12/31/2011 Annual Financial Report
¹² 07/1/2012 Actuarial Valuation
¹³ 2012 SDCERA Facts at a Glance publication
¹⁴ 12/31/2012 Actuarial Valuation
¹⁵ 01/1/2013 Actuarial Valuation
¹⁶ 01/1/2012 Actuarial Valuation
¹⁷ 06/30/2010 Annual Financial Report
¹⁸ 10/1/2012 Actuarial Valuation
¹⁹ 10/1/2011 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
²⁰ 10/1/2010 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
²¹ 01/1/2012 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
²² 09/30/2011 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
²³ 10/1/2009 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
²⁴ 09/30/2012 Actuarial Valuation
²⁵ 12/1/2008 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
²⁶ 05/28/2013 Milliman actuarial analysis of revised mediation settlement proposal
²⁷ 10/1/2009 Annual Financial Report
²⁸ 01/1/2011 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
²⁹ 09/30/2010 Florida Dept. of Management Services Division of Retirement Actuarial Summary Fact Sheet
³⁰ 09/30/2010 Annual Financial Report
³¹ 07/1/2011 Actuarial Valuation
³² FY2012 Georgia Municipal Assoc. RMEBS Annual Report
³³ 04/30/2012 Annual Financial Report
³⁴ 11/31/2012 Annual Financial Report
³⁵ 04/30/2010 Annual Financial Report
³⁶ 03/31/2012 Annual Financial Report
³⁷ 12/31/2011 Actuarial Valuation
³⁸ 01/1/2011 Actuarial Valuation
³⁹ 04/30/2012 Actuarial Valuation
⁴⁰ 01/1/2011 Annual Financial Report
⁴¹ 12/31/2010 Annual Financial Report
⁴² 12/31/2012 Audit Report
⁴³ 04/4/2013 Press release
⁴⁴ 06/30/2012 Audit Report
⁴⁵ 01/1/2010 Actuarial Valuation
⁴⁶ 12/31/2012 Annual Statement
⁴⁷ 2011 Annual Report
⁴⁸ 09/30/2011 Actuarial Valuation
⁴⁹ 08/31/2012 Annual Financial Report
⁵⁰ 04/30/2011 Annual Financial Report
⁵¹ 10/31/2012 Annual Financial Report
⁵² 10/31/2011 Annual Financial Report
⁵³ 09/1/2012 Actuarial Valuation
⁵⁴ 08/2012 Actuarial Assumption Report
⁵⁵ 2009-2013 Pennsylvania Auditor Genl. Municipal Pension Plan Compliance Audit Report
⁵⁶ 04/12/2013 Texas Pension Review Board Actuarial Result Compilation
⁵⁷ 08/31/2012 Actuarial Valuation
⁵⁸ 10/1/2012 Annual Financial Report
⁵⁹ 06/30/2009 Annual Financial Report

Background Information on the Actuarial Funding of Defined Benefit Retirement Plans and Actuarial Reporting

1. Purpose of Defined Benefit Retirement Plan Actuarial Funding. With the creation of defined benefit public pension plan liabilities, there arises a need to provide financing to match the liabilities and to create a trust fund for the accumulated assets. Since the obligation undertaken with a defined benefit plan is to provide a benefit of a predetermined amount at and after the time of retirement, the financing method will be more complex and will allow more variations. There are a number of possible financing budget estimation methods which have been developed by actuaries which can be utilized.

The actual or ultimate cost of a pension plan is the total amount of any retirement annuities, disability benefits and survivor benefits eventually paid plus the total amount of any administrative costs eventually paid. The actual or ultimate cost will result no matter what method of financing is employed to fund pension benefits. The financing or actuarial funding method merely separates out the portion of the actual or ultimate cost that will be paid from investment returns from the portion to be funded from periodic contributions and affects the timing of the financing and the amount of the financing burden which will be borne by the pension plan employer or employers.

2. Minnesota Defined Benefit Retirement Plan Actuarial Reporting Requirement. Virtually every public pension plan is required to make annual financial and actuarial reports under Minnesota Statutes, Sections 356.20 and 356.215. The Standards for Actuarial Work, issued by the Commission, specify the detailed contents and format requirements for both the actuarial valuation reports and the experience studies. The public pension plans which are included in this requirement are the General State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-General), the Correctional State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-Correctional), the General Employee Retirement Plan of the Public Employees Retirement Association (PERA-General), the Public Employees Police and Fire Retirement Plan (PERA-P&F), the Teachers Retirement Association (TRA), the State Patrol Retirement Plan, the St. Paul Teachers Retirement Fund Association (SPTRFA), the Duluth Teachers Retirement Fund Association (DTRFA), the Minneapolis Employees Retirement Fund (MERF), the University of Minnesota Faculty Retirement Plan and Supplemental Retirement Plan, the Judges Retirement Plan, and the various local police and firefighters relief associations.

The annual actuarial valuation is required to include the determination of normal cost as a percentage of salary and accrued liability of the fund calculated according to the entry age normal cost method, with a prescribed pre- and post-retirement interest assumption, a prescribed salary assumption, and other assumptions as to mortality, disability, retirement, and withdrawal which are appropriate to the experience of the plan. A statement of administrative cost of the fund as a gross amount and as a percent of payroll is required. The actuary must also present an actuarial balance sheet, setting forth the accrued assets, the accrued liabilities (reserves for active members, deferred annuitants, inactive members without vested rights, and annuitants) and the unfunded actuarial accrued liability. The valuation is also to include a calculation of the additional rate of support required to amortize the unfunded accrued liability by the end of the applicable target full funding year. The actuary is required to provide an analysis of the increase or decrease in the unfunded accrued liability from changes in benefits, changes in actuarial assumptions, gains and losses from actual deviations from actuarial assumptions, amortization contribution, and changes in membership. An exhibit setting forth total active membership, additions and separations from active service during the year, total benefit recipients, additions to and separations from the annuity payroll, and a breakdown of benefit recipients into service annuitants, disabilitants, surviving spouses and children, and deferred annuitants is also required.

The quadrennial experience study periodically prepared for MSRS-General, PERA-General, and TRA is required to furnish experience data and an actuarial analysis which substantiates the actuarial assumptions upon which the annual valuations are based. The quadrennial experience study is required to contain an actuarial analysis of the experience of the largest retirement plans and a comparison of that plan experience with the actuarial assumptions in force for the most recent annual actuarial experience.

The purpose of the quadrennial experience studies is to provide the Commission and the retirement plan administrations with a periodic opportunity to review the accuracy of the current actuarial assumptions of the three largest retirement plans, compared to the experience for the most recent period and to revise those actuarial assumptions based on the recommendation of the retained consulting actuary and on input from plan administrators, their actuarial consultants, and others. The actuarial valuation process, as corrected or refined by the quadrennial experience process, is intended to provide policymakers and others with an accurate picture of the funded condition and financial

requirements of a public pension plan and the process is not aided if it relies on incorrect or inadequate assumptions. If a trend line is established in recent experience, that trend line should be reflected in a plan's actuarial assumptions, even if those assumptions make the financing position of the plan appear worse than it would under different assumptions.

3. Minnesota Public Retirement Plan Actuarial Assumptions, In General. Minnesota public pension plan actuarial assumptions are specified in part in statute (the economic assumptions of interest/investment return, individual salary increase, and payroll growth) and are determined in part by other parties, with Commission approval (the balance of all actuarial assumptions, generally, the demographic assumptions). Economic assumptions are required to project the amount of benefits that will be payable. Demographic assumptions are required to project when benefits will be payable. Demographic assumptions are used to project the development of the population covered by the pension plan and hence when the benefits to be provided will be paid. The demographic assumptions project when a member is likely to progress between the various categories of membership (active, deferred, or retired) and how long the person stays in each category. The types of economic assumptions used to measure obligations under a defined benefit pension plan include the following:
 - 1) inflation;
 - 2) investment return (sometimes referred to as the valuation interest rate);
 - 3) compensation progression schedule; and
 - 4) other economic factors (e.g., Social Security, cost-of-living adjustments, growth of individual account balances, and variable conversion factors).

The types of demographic assumptions used to measure pension obligations include, but are not necessarily limited to, the following:

- 1) retirement;
- 2) mortality;
- 3) termination of employment;
- 4) disability and disability recovery;
- 5) election of optional forms of benefits; and
- 6) other assumptions, such as administrative expenses; household composition; marriage, divorce, and remarriage; open group assumptions; transfers; hours worked; and assumptions regarding missing or incomplete data.

The actuarial assumption selection process should result in actuarial assumptions that are reasonable in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. A reasonable actuarial assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period. For any given measurement, two or more reasonable actuarial assumptions may be identified for the same contingency.

2. Economic Assumptions, Generally.

- a. Interest/Investment Rate Actuarial Assumption. Because Minnesota public pension plan benefits are paid out over time and are paid from retirement funds that are invested to obtain investment returns, future obligations are discounted for those future interest or investment earnings. In selecting the interest/investment rate actuarial assumption, the appropriate investment data should be reviewed, including the current yields to maturity of fixed income securities such as government securities and corporate bonds; any forecasts of inflation and of total returns for each asset class; historical investment data, including real risk-free returns, the inflation component of the return, and the real return or risk premium for each asset class; and the historical plan performance.

The interest/investment rate actuarial assumptions can be arrived at using one of two methods, either the building block method or the cash-flow matching method.

Under the building-block method, the expected future investment return of each asset class is assembled as a combination of the components of investment return. These components are factors such as inflation and the real rate of return for the class. The best-estimate investment return range is determined by identifying a best-estimate range of expected future real returns for each broad asset class applicable to the plan, such as cash and cash equivalents, fixed income securities and equities, an average weighted real-return range reflecting the plan's expected asset class mix is computed and that range is combined with the expected inflation range.

Under the cash flow matching method, the expected future investment return range is a combination of the internal rate of return on a bond portfolio with interest and principal payment approximately matching the plan's expected disbursements, and a risk adjustment range. The best-estimate investment return range is determined:

- by projecting the plan's benefit and expense disbursements to be valued in the measurement;
- by identifying a highly diversified portfolio available as of the measurement date of non-callable, high-quality corporate or U.S. government bonds with interest and principal payments approximately matching the projected disbursements;
- by computing the bond portfolio's internal rate of return;
- by establishing a risk adjustment range for the plan that reflects the uncertainties in the projected benefits and expenses, the expected returns on future contributions, the reinvestment of interest and principal payments not fully needed to pay current benefits, any mismatches between the benefit disbursement stream and the high-quality bond portfolio's interest and principal payment stream, and the current and expected future plan investments in equities or other asset classes besides high-quality bonds; and
- then by combining these figures.

- b. Compensation/Salary Scale Actuarial Assumption. Compensation is a factor in determining participants' benefits in Minnesota public pension plans other than volunteer firefighter relief associations. Generally, a participant's compensation will change over the long term in accordance with inflation, productivity growth, and merit scale increases. The assumption used to measure the anticipated year-to-year change in compensation is referred to as the compensation or salary scale. It may be a single rate assumption, or, alternatively, it may be a select and ultimate rate assumption and vary by age and/or service, consistent with the merit scale component; or vary over future years, consistent with the inflation component.

In selecting the compensation or salary scale assumption, the appropriate compensation data should be reviewed, including the plan sponsor's current compensation practice and any anticipated changes in this practice; the current compensation distributions by age and/or service; historical compensation increases and the practices of the plan sponsor/sponsors; and historical national wage and productivity increases.

The compensation or salary scale assumption is generally constructed using a building-block method, which combines the best-estimate ranges for the components of compensation scale. These components include inflation, productivity growth, and merit scale.

- c. Payroll Increase Assumption. Except for the Legislators Retirement Plan, the Elected State Officers Retirement Plan, and the Minneapolis Employees Retirement Fund Division of the Public Employees Retirement Association, the various statewide and major local retirement plans amortize their unfunded actuarial accrued liabilities on the basis of a level percentage of an increasing covered payroll rather than on the basis of a level dollar amount. The covered payroll increase actuarial assumption specifies the level of the annual increase in the total covered payroll from the valuation date until the amortization target date for the calculation of that level percentage of covered payroll contribution requirement. In selecting the assumption, the inflation assumption is a primary determinant, adjusted for known or expected changes in active plan membership numbers.

3. Demographic Assumptions, Generally.

- a. Retirement Age Assumption. With only a few exceptions, where length of service is the determining factor, Minnesota public pension plan members are required to attain a specified minimum age at which retirement benefits are payable if the member also terminates active employment. The retirement age assumptions relate to the specific age at which retirement benefits are likely to begin or the ages with a specific probability of retirement benefit commencement. In selecting the retirement age assumptions, in addition to data on the past experience of the plan membership, consideration should be given to the factors of the plan design, where specific incentives may influence when participants retire; the design of and the date of anticipated payment from Social Security and Medicare; and the availability of other employer-sponsored post-retirement benefit programs.
- b. Turnover/Termination of Employment Assumptions. The termination of public employment by a Minnesota public pension plan member determines the amount of the person's accrued service credit. Minnesota public pension plans utilize service credit in determining retirement benefit amounts. The termination/withdrawal/turnover assumption predicts the amount of service credit to be acquired by plan members and also predicts the extent of any gain expected to be accrued from plan members who terminate without vesting. In selecting the termination assumption, in addition to data on the past experience of the plan, consideration should be given to the factors of employer-specific or job-related factors such as occupation, employment policies, work environment, unionization, hazardous conditions, and location of employment; and applicable plan provisions, such as any early retirement benefits, the vesting schedule, or the payout options.

- c. Mortality Assumptions. Generally, Minnesota public retirement plan benefits terminate upon the death of the recipient, or if a joint and survivor optional annuity form was chosen, upon the death of the survivor. The mortality assumption is the measure of the expected lifetimes of active members, retired members, deferred retirees, disabilitants, and survivors. In addition to data on the past experience of the plan, in selecting the mortality assumptions, consideration should be given to the likelihood and extent of mortality improvement in the future.
 - d. Disability Assumption. Except for the Legislators Retirement Plan, the Elected State Officers Retirement Plan, and some volunteer firefighter relief associations, Minnesota public pension plans pay disability benefits. The disability assumption is a prediction of the occurrence of disabilities, which constitute a premature commencement of benefits. In selecting the disability assumption, in addition to analyzing the data on the past experience of the plan, consideration should be given to the plan's definition of disability and the potential for recovery.
 - e. Optional Annuity Form Election Assumption. Most statewide and major local Minnesota public pension plans provide optional annuity forms, whereby the number adjusts the timeframe over which the benefit will be paid in return for a modification in the amount of the benefit. Many of these plans have a subsidized bounce-back joint and survivor optional annuity form, the selection of which will increase the liability of the plan. The optional annuity form election assumption implements expectations about the future selections of optional annuity forms. In addition to analyzing the data on the past experience of the plan, in selecting the optional annuity form election assumption, consideration should be given to the benefit forms and benefit commencement dates available under the plan and the degree to which particular benefit forms may be subsidized.
4. Time Horizon for Setting Actuarial Assumptions. The actuarial assumption selection or revision process should result in assumptions that are reasonable in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period. For any given measurement, two or more reasonable assumptions may be identified for the same contingency. At a minimum, when a revision of an actuarial assumption is considered, the new actuarial assumption should be consistent with the recent experience in that area unless experience is in flux, and then the new actuarial assumption should attempt to reasonably anticipate the progression of any identifiable trend.

In particular with respect to mortality, in addition to data on the past experience of the plan, in selecting the mortality assumptions, consideration should be given to the likelihood and extent of mortality improvement in the future.

Where a retirement plan is closed to new members, such as the Minneapolis Employees Retirement Fund (MERF), the Minneapolis Firefighters Relief Association (MFRA), or the Minneapolis Police Relief Association (MPRA), the consideration of an appropriate mortality table may be different because of that fact. The consideration is shaped by the fact that the total covered population is known, that the population is somewhat less susceptible to developments in longevity compared to plans with open active memberships due to a likely greater average age, and that any mortality losses will be required to be funded relatively quickly due to relatively short remaining amortization periods.

5. Context in Which Actuarial Assumptions are Set; Complications. Changing actuarial assumptions, when the quadrennial experience study indicates a need to do so, is not always an easy proposition. In the 1993-1995 round of experience studies, several assumptions that were identified for modification by the Commission actuary ultimately were not modified because of opposition from pension plan actuaries and administrators and several assumption changes were subject to dispute because of apparent stylistic disagreements among actuaries and because of the actuarial cost impact of the change on the potential for additional future benefit increases.

Frequently in the past, actuarial assumptions have been changed in combination with benefit improvements (principally 1973 and 1989 for the statewide plans) or in combination with contribution restructurings (1984 for the statewide and major local plans; 1991 for the Minneapolis Employees Retirement Fund (MERF)).

6. Historical Development of Minnesota Defined Benefit Retirement Plan Actuarial Reporting Requirements. Since the creation of the Legislative Commission on Pensions and Retirement as an interim commission in 1955, retirement funding and actuarial data has been required to be provided to the state by or relating to the various public pension plans in the state, as follows:
- Laws 1957, Special Session, Chapter 11, was the initial actuarial reporting law enacted by the Minnesota Legislature. The 1957 actuarial reporting law was an uncoded temporary law that was applicable only to actuarial valuations prepared as of January 1, 1958. No prior generally applicable law required specific actuarial reporting to the Legislature or to any other public office

or official. The 1957 actuarial reporting law required census tabulations of active members and benefit recipients, an actuarial balance sheet disclosing assets, liabilities and the actuarial full funding deficit, a statement of actuarial assumptions, an indication of the normal support rate for currently accruing liabilities and an indication of the 1997 target date amortization requirement. The 1957 actuarial reporting law was unspecific on the manner in which the actuarial calculation was to be prepared, leading to disputes when some funds prepared valuations on a basis other than the entry age normal actuarial method. The 1957 actuarial reporting law was broadly applicable to all statewide general and public safety pension plans, all local general employee plans, all local police relief associations and all local salaried firefighter relief associations. Problems with the 1957 actuarial reporting law led the Commission to refine the actuarial reporting requirements and procedures and to recommend a general ongoing actuarial reporting law in the years between 1958 and 1965. The actuarial reporting under the 1957 special law was due by January 6, 1959.

- Laws 1965, Chapters 359 and 751. Laws 1965, Chapter 359, was the initial codification of the general employee pension plan actuarial reporting law. Laws 1965, Chapter 751, was an uncoded temporary law applicable to local police and paid firefighters relief association actuarial valuations prepared as of December 31, 1964. The general employee pension plan actuarial reporting law required an indication of the level normal cost, an actuarial balance sheet disclosing assets, accrued liabilities and unfunded accrued liability as well as specific required reserve figures and an indication of the 1997 target date amortization requirement. The general employee pension plan actuarial reporting law required that the actuarial valuation normal cost and accrued liabilities to be prepared using the Entry Age Normal Cost (Level Normal Cost) Method, that the actuarial method be used to value all aspects of the benefit plan and known future benefit changes, that the actuarial valuation be prepared on the basis of a 3% interest assumption and other appropriate assumptions and that assets not include any present value of future amortization contributions. The general employee pension plan actuarial reporting law required annual actuarial valuations for the State Employees Retirement Fund, the Public Employees Retirement Fund, and the State Police Officers Retirement Fund. The general employee pension plan actuarial reporting law also required the preparation of an experience study validating the actuarial assumptions used in the valuation. The local police and paid fire actuarial reporting law was based on the 1957 actuarial reporting law with the additional clarification of a 3% interest rate assumption, the requirement of normal cost and accrued liabilities calculated on the basis of the entry age normal cost method and the reporting of the amount for the amortization of the unfunded accrued liability by the 1997 target date. The local police and paid fire actuarial reporting law was applicable to all police and paid firefighters relief associations. The actuarial reporting under the 1965 general law was due five months after the close of the fiscal year covered by the valuation. No experience studies were required by the 1965 general law.
- Laws 1967, Chapter 729, was a revision in the 1965 local police and paid fire actuarial reporting law. The 1967 local police and paid fire actuarial reporting law was a coded general statute requiring actuarial valuations as of December 31, 1967, and each four years thereafter. It was also made applicable volunteer firefighters relief associations and very small active membership police and paid firefighters relief associations. A 3% salary rate assumption was added. A 2007 target date amortization requirement replaced the prior 1997 target date amortization requirement for police and paid fire plans, leaving the 1997 requirement for volunteer and smaller active membership police and paid fire relief associations. An addition of a requirement to the calculated normal cost for amortizing net actuarial experience gains or losses was also added.
- Laws 1969, Chapter 289, revised the 1965 general employee pension plan actuarial reporting law by making the requirement applicable to the Minneapolis Employees Retirement Fund (MERF) and to the three first class city teacher retirement fund associations. It also provided for an interest rate assumption to 3.5% as well as 3.0% for comparison purposes and added a salary assumption of 3.5% for funds with a final salary based benefit plan.
- Laws 1973, Chapter 653, Section 45, modified the general employee pension plan actuarial reporting law by increasing the interest assumptions from 3.5% to 5%.
- Laws 1975, Chapter 192, recodified the general employee pension plan actuarial reporting law, previously coded as Minnesota Statutes 1974, Sections 356.21, 356.211, and 356.212, as Minnesota Statutes, Section 356.215. The actuarial valuation reports under the 1975 general law were due five months after the close of the fiscal year covered by the valuation. The experience studies under the 1975 general law were also due five months after the period covered by the experience study.
- Laws 1978, Chapter 563, Sections 9-11, and 31, repealed the separate local police and fire relief association actuarial reporting law, Minnesota Statutes 1976, Sections 69.71 to 69.76, and required the local police and fire relief associations to report under the general employee pension plan actuarial reporting law with specific adaptations, coded as Minnesota Statutes, Section 356.216. It

also amended the actuarial reporting law by requiring specific reporting of entry age and retirement age assumptions and the provision of a summary of the benefit plan provisions on which the actuarial valuation is based.

- Laws 1979, Chapter 184, modified the actuarial reporting law by replacing the 1997 amortization target date with a 2009 amortization target date and establishing a procedure for extending that target date in the event of substantial unfunded actuarial accrued liabilities resulting from benefit increases, actuarial cost method changes or actuarial assumption changes.
- Laws 1981, Chapter 224, Sections 169-170. Laws 1981, Chapter 224, Section 169, largely revised the language usage and style of the actuarial reporting law. The 1981 general law also clarified that actuarial valuation reports and experience studies were due on the first day of the sixth month occurring after the end of the previous fiscal year. It also provided that actuarial valuations and experience studies were to be filed with the Legislative Reference Library rather than with the Secretary of the Minnesota Senate and with the Chief Clerk of the Minnesota House of Representatives. Additionally, the 1981 law clarified that amortization contribution requirements were required to be calculated on a level dollar basis.
- Laws 1984, Chapter 564, Section 43, substantially modified the actuarial reporting law. Actuarial valuations are required to comply with the Standards for Actuarial Work adopted by the Commission. The interest rate assumption was modified, with a post-retirement interest rate of 5% and a pre-retirement interest rate of 8% for the major, statewide plans. The actuarial balance sheet requirement was also substantially modified, and was expanded to include reporting of current and expected future benefit obligations, current and expected future assets and current and expected future unfunded liabilities. The amortization contribution requirement was also modified, with a change from a level dollar annual amortization procedure to a level percentage of future covered payroll amortization procedure for the major, statewide and local general employee plans other than MERF.
- Laws 1987, Chapter 259, Section 55, revised the language and style of the actuarial reporting provision, specified the particular interest and salary increase actuarial assumptions for the legislators retirement plan and elected state officers retirement plan, set the amortization target date for MERF at 2017 and exempted MERF from the process for automatically revising the target date upon benefit increases or assumption changes, required approval by the Legislative Commission on Pensions and Retirement for any demographic actuarial assumption changes, and reset the deadline date for experience studies from December 1 to June 1.
- Laws 1989, Chapter 319, Article 13, Sections 90-91, increased the interest rate actuarial assumption from 8.0% to 8.5% for all statewide and major local retirement plans other than MERF and extended the amortization full funding target date from 2009 to 2020 for all statewide and major local retirement plans other than MERF.
- Laws 1991, Chapter 269, Article 3, Sections 3-19, updated the actuarial valuation reporting requirements to accommodate governmental pension plan generally accepted accounting changes, required actuarial valuations or experience studies prepared by an actuary other than the actuary retained by the Legislative Commission on Pensions and Retirement to submit the document to the Commission, and modified some of the services performed by the Commission-retained actuary to reduce the cost of retirement plan-reimbursed actuarial services compensation.
- Laws 1991, Chapter 345, Article 4, Sections 3-4, reset the interest and salary actuarial assumptions for the MERF at 6% and 4% respectively and extended the MERF amortization target date from 2017 to 2020.
- Laws 1993, Chapter 336, Article 4, Section 1, defines administrative expenses for purposes of inclusion of administrative expenses as part of actuarial cost calculations.
- Laws 1993, Chapter 352, Section 7, provided, for the Public Employees Police and Fire Plan (PERA-P&F), for the reverse amortization of the amount of assets in excess of the plan's actuarial accrued liability.
- Laws 1995, Chapter 141, Article 3, Sections 14-15, implemented an age-related salary increase assumption 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), and set fund-specific payroll growth actuarial assumption rates for MSRS-General, PERA-General, and TRA.
- Laws 1997, Chapter 233, Article 1, Sections 2 and 57, required, two years after the quadrennial experience studies, that the actuary retained by the Legislative Commission on Pensions and Retirement conduct quadrennial projection valuations for MSRS-General, PERA-General, TRA, and for any other plans for which the Commission determines a study of this type would be

beneficial. These quadrennial projection valuations were required to be conducted in consultation with the Commission's executive director, the retirement fund directors, the state economist, the state demographer, the Commissioner of Finance, and the Commissioner of Employee Relations. The results were required to be reported in the same manner as the quadrennial experience studies. The quadrennial projection valuation cost was required to be paid by retirement plans, with the costs allocated among all plans for which the actuary retained by the Commission performs annual actuarial valuations.

- Laws 1997, Chapter 241, Article 4, Section 1, revised the salary increase assumption for the State Patrol Retirement Plan, the Correctional Employees Retirement Plan of the Minnesota State Retirement System (MSRS-Correctional), PERA-P&F, and the first class city teacher retirement plans, and added a payroll growth assumption to the MSRS-General, MSRS-Correctional, State Patrol, Legislators, Elected State Officers, and Judges Plans; to PERA-General and PERA-P&F; to TRA; and to the first class city teacher retirement plans.
- Laws 1998, Chapter 390, Article 8, Section 2, changed the requirement for a quadrennial projection valuation from the three major statewide retirement plans to one of the statewide or major local retirement plans.
- Laws 1999, Chapter 222, Article 4, Section 14, set the calculated overfunding credit for PERA-P&F if the plan has assets in excess of its actuarial accrued liability at the 30-year level percentage of covered pay amortization requirement applicable if the excess assets were an unfunded liability and reset as a new 30-year period for each valuation year.
- Laws 2000, Chapter 461, Article 1, again substantially modified the actuarial reporting law. Salary assumptions and post-retirement interest rate assumptions were reset, and the actuarial value of assets also was changed to an approach that approaches, but smoothes, market values.
- First Special Session Laws 2001, Chapter 10, Article 11, Section 18, exempted PERA-General from the automatic amortization target date resetting provisions of Minnesota Statutes, Section 356.215, and set a 2031 amortization target date for PERA-General.
- Laws 2003, Chapter 392, Articles 9 and 11, the select and ultimate salary increase assumptions (i.e., rates varying based on both age and length of service) for MSRS-General, PERA-General, TRA, the Duluth Teachers Retirement Fund Association (DTRFA), the Minneapolis Teachers Retirement Fund Association (MTRFA) and the St. Paul Teachers Retirement Fund Association (SPTRFA) were revised based on the 2000 experience studies. The structure of Minnesota Statutes, Section 356.215, also was reorganized and revised as part of a recodification of Minnesota Statutes, Chapter 356.
- Laws 2004, Chapter 223, Section 7, replaced a single contracting consulting actuary retained by the Legislative Commission on Pensions and Retirement to prepare the annual actuarial valuations of the various statewide and major local retirement plans with a single contracting consulting actuary retained jointly by the administrators of the seven retirement systems with Commission ratification.
- First Special Session Laws 2005, Chapter 8, Article 11, Section 2, set the interest and salary actuarial assumptions for the Bloomington Fire Department Relief Association at 6% and 4%, respectively.
- Laws 2008, Chapter 349, Article 10, Sections 7-15.
 - The requirement that the pension funds to jointly retain an actuary to provide actuarial reports for the pension plans was revised by removing the requirement of having a joint actuary and the governing board of each pension plan system was authorized to retain its own actuary.
 - The Commission was authorized to contract with an actuarial firm to audit or review the actuarial valuations, experience studies, and actuarial cost analysis prepared by the actuaries retained by the various pension plan governing boards, with a \$140,000 initial appropriation provided to cover the cost of the contract.
 - The definition of approved actuary, for purposes of retaining and providing actuarial valuations, was revised by removing authority to be retained if the individual had 15 years of experience serving major public retirement plans in lieu of being a fellow in the Society of Actuaries. Obsolete language in the actuarial value of assets provision was removed.
 - The provision which had required actuarial valuations to be filed with the Legislative Commission on Pensions and Retirement, Commissioner of Finance, and Legislative Reference Library no later than six months after the end of the fiscal year was revised by removing valuation reporting deadlines.

- The salary assumption and payroll growth assumption for the Elective State Officers Retirement Plan was removed (because the plan is closed and has no active members).
- The salary growth assumptions for other plans were revised by reducing the MSRS-General select period to five years rather than ten; by revising the select calculation for DTRFA to 8% per year in years one to seven, 7.25% per year for years seven and eight, and 6.5% for years eight and nine; by increasing the percentage rate from 0.3% to 0.6% for MSRS-General and PERA-General; and by reducing the ultimate salary increase assumptions for the plans, at least in some age ranges, except for the State Patrol Retirement Plan, the Local Government Correctional Service Retirement Plan (PERA-Correctional), and SPTRFA.
- The payroll growth assumptions were decreased from 5.0% to 4.5% for MSRS-General, MSRS-Correctional, the State Patrol Retirement Plan, the Legislators Retirement Plan, TRA, and DTRFA; and from 5.0% to 4.0% for the Judges Retirement Plan; and from 6.0% to 4.5% for PERA-General, PERA-P&F, and PERA-Correctional.
- After July 1, 2010, the salary and payroll growth assumptions were permitted to be revised by the governing boards of the applicable plan and become effective if the Commission does not take action to overrule the plan proposed change within one year.
- The full funding dates for MSRS-Correctional, the Judges Retirement Plan, and PERA-P&F were reset to June 30, 2038. The full funding date for SPTRFA was reset as a rolling period 25 years from the year of the valuation, and the annual actuarial valuation was required to contain an exhibit indicating the SPTRFA funding ratio and contribution deficiency/sufficiency based on market value.
- The MERF actuarial valuation, with respect to its Retirement Benefit Fund, and MSRS, PERA, and TRA plan actuarial valuations with respect to the Minnesota Post Retirement Investment Fund (Post Fund), must include an exhibit indicating the contribution necessary to amortize the unfunded liability of the Retirement Benefit Fund or the Post Fund, as applicable.
- Laws 2009, Chapter 169, Article 1, Sections 70-71.
 - The actuarial value of assets computation provision is revised by redefining the actuarial value of assets to use a consistently applied 8.5% investment earnings assumptions and by incorporating a five-year phase in of market value asset recognition for the dissolved former Minnesota Post Retirement Investment Fund.
 - The provision specifying how amortization contributions are to be determined for most plans is revised by eliminating an obsolete requirement relating to the Minnesota Post Retirement Investment Fund.
- Laws 2010, Chapter 359, Article 1, Sections 68-69, and 82; Article 9, Section 1; Article 11, Sections 19-20; and Article 12, Sections 23-24.
 - A service-related future salary increase assumption replaced the select and ultimate future salary increase assumption for PERA-General.
 - The amortization target date of MSRS-General was reset to 2040 and of the MERF Division of PERA was reset to 2031.
 - The deadline date for the filing actuarial valuation reports was re-imposed as the last day of the sixth month occurring after the end of the previous fiscal year.
 - The modified single rate future salary increase assumption applicable to MERF was eliminated as part of the administrative consolidation of the retirement plan with PERA.
 - MERF was removed from the requirement for filing a separate annual financial report and the PERA-General actuarial valuation was required to include a valuation of the MERF Division.
 - For as long as the applicable plan provides a reduced post-retirement adjustment, the actuary must use a post-retirement interest rate assumption equal to the difference between the pre-retirement interest rate assumption and the stated post-retirement adjustment rate.
- Laws 2012, Chapter 286, Article 1, Sections 1-4.
 - Minnesota Statutes, Section 356.215, Subdivision 1, the actuarial reporting definitions, was amended to eliminate obsolete pre-2012 definition language.
 - Minnesota Statutes, Section 356.215, Subdivision 8, the interest and salary assumption provision applicable to MSRS, PERA, TRA, and first class city teacher plans, was revised by clarifying the provision and removing obsolete language. Substantive changes were also made, as follows:
 - In recognition that there is no pension fund for the Legislators Retirement Plan and the Elective State Officers Retirement Plan, the pre-retirement interest rate for those plans was

revised from 8.5% to zero, and the post-retirement assumption is changed from 6.0% to -2.0% until June 30, 2040 (because of presumed 2.0% annual post-retirement increases), and -2.5% thereafter;

- For all other MSRS, PERA, and TRA plans, the interest rate assumptions were temporarily reduced. The pre-retirement interest assumption will be 8.0% rather than 8.5% through June 30, 2017, and the post-retirement interest assumption will be 5.5% rather than 6.0% through that date;
 - The Duluth Teachers Retirement Fund Association (DTRFA) and St. Paul Teachers Retirement Fund Association (SPTRF A) pre-retirement and post-retirement interest rate assumptions were temporarily reduced from 8.5% to 8.0% through June 30, 2017;
 - The Judges Plan salary increase assumption was reduced from 4.0% per year to 3.0%;
 - The Local Government Correctional Service Retirement Plan (PERA-Correctional) plan ultimate future age related salary increase assumption was revised by increasing the assumption for ages prior to age 27 and decreasing the assumption for those age 29 and older;
 - The State Patrol Retirement Plan and MSRS-Correctional were required to use service related ultimate salary increase assumptions rather than age related assumptions;
 - MSRS-General and PERA-General service-related ultimate salary increase assumptions were reduced for all years of service, and
 - Payroll growth assumptions for the MSRS-Correctional, the State Patrol Retirement Plan, and PERA-Correctional were reduced from 4.5% to 3.75%; and the Judges Retirement Plan payroll growth assumption is reduced from 4.0 to 3.0%.
- Minnesota Statutes, Section 356.215, Subdivision 11, the amortization contribution provision, was clarified to provide that the Legislators Retirement Plan amortization contribution rate was to be calculated on a level dollar basis.
 - An uncoded provision was added delaying the reporting date for MSRS-General, PERA-General and TRA experience studies for the period beginning July 1, 2008, to June 30, 2015.
- Laws 2013, Chapter 111, Article 2, Sections 26-27, and Article 13, Section 17.
 - Minnesota Statutes, Section 356.215, Subdivision 1, the actuarial reporting definitions, was amended by the elimination of 2012- and 2013-specific portions of the “actuarial value of assets” definition.
 - Minnesota Statutes, Section 356.215, Subdivision 8, the interest, salary, and payroll growth actuarial assumptions provision, was amended to recognize the merging of the Elected State Officers Retirement Plan with the Legislators Retirement Plan principally for actuarial reporting purposes, the interest rate actuarial assumption for the Legislators Retirement Plan was specified as zero, the select salary increase actuarial assumption periods for the Duluth Teachers Retirement Fund Association (DTRFA), the St. Paul Teachers Retirement Fund Association, and the Local Government Correctional Service Retirement Plan (PERA-Correctional) were clarified, and the ultimate future salary increase rate actuarial assumptions were reduced for DTRFA and SPTRFA, and the future payroll growth actuarial assumptions for DTRFA and SPTRFA were reduced by 1%.
 - Laws 2014, Chapter 296, Article 6, Section 34, and Article 10, Sections 1-2.
 - Minnesota Statutes, Section 356.215, Subdivision 8, the interest, salary, and payroll growth actuarial assumptions provision, was amended to make conforming changes related to the Duluth Teachers Retirement Fund Association (DTRFA)/Teachers Retirement Association (TRA) consolidation and replaced the implicit post-retirement adjustment assumption rates with a procedure for determining explicit post-retirement adjustment rates for the statewide and major local retirement plans.
 - Minnesota Statutes, Section 356.215, Subdivision 10, the unfunded actuarial accrued liability amortization target date provision, was amended to specify a 2042 amortization target date for the St. Paul Teachers Retirement Fund Association and included the General Employee Retirement Plan of the Public Employees Retirement Association (PERA-General) in the 1975 automatic amortization target date redetermination procedure in the event of unfunded actuarial accrued liability changes due to actuarial method, actuarial assumption, or benefit provision changes.

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**Background Information on
Select and Ultimate Interest Rate Actuarial Assumptions**

1. Concept of Select and Ultimate Actuarial Assumptions. An assumption is an expectation, presupposition, or guess about future experience and an actuarial assumption is an expectation, supposition, or guess that has an actuary as its source.

Actuarial assumptions are the basis for benefit payout and financial requirement projections used in valuing the financial position and ongoing funding requirements of a defined benefit retirement plan. Actuarial assumptions are optimal to the extent that they are informed by recent past experience trends and are actually accurate in assessing future experience.

Actuarial assumptions can be uniform long-term single-value assumptions, can be a single assumption set or table of values distributed over time, age, or length of service, or can be select and ultimate actuarial assumptions, which attempt to capture experience that is shaped by two different forces or factor, one representing the dominant, long-term, force, which is the ultimate assumption, and one representing another shaping, shorter-term, force, which is the select assumption.
2. Select and Ultimate Interest Rate Actuarial Assumptions. Investment performance, the basis for the interest rate actuarial assumption, typically varies with the phenomenon identified as the business cycle, as do salary increase and inflation. The variability in investment performance associated with the business cycle potentially can be the justification for the use of select and ultimate interest rate actuarial assumptions. The conventional view of business cycles has been that they last five to seven years. The National Bureau of Economic Research has identified 11 business cycles during the period 1945 to 2009, with an average length of about six years. During the period 1990 to 2009, there were three business cycles with an average length just under nine years, with most of each cycle consisting of an expansion period. While volatility in investment returns is an undeniable truth, attempting to predict these volatility periods, even in the short-run, is difficult or impossible.

While some private sector defined benefit retirement plans have utilized select and ultimate interest rate actuarial assumptions, likely a function of Internal Revenue Service or other federal agency regulations or of Financial Accounting Standards Board (FASB) promulgations, it appears that only Vermont and Minnesota defined benefit retirement plans have employed select and ultimate interest rate actuarial assumptions. The Vermont select and ultimate interest rate actuarial assumption has a 16-year select period that resets each year, with an ultimate period that begins 17 years after the valuation date, as follows:

Year	Interest Rate	Year	Interest Rate	Year	Interest Rate	Year	Interest Rate
1	6.25%	6	8.25%	11	8.50%	16	8.75%
2	6.75%	7	8.25%	12	8.50%	17	9.00%
3	7.00%	8	8.25%	13	8.50%		
4	7.50%	9	8.50%	14	8.50%		
5	7.75%	10	8.50%	15	8.50%		

The Minnesota select and ultimate interest rate actuarial assumption has a five-year select period (Fiscal Years 2013 to 2017) with an interest rate of 8.00% and an ultimate period (Fiscal Year 2018 and thereafter) with an interest rate of 8.50%.

3. Minnesota Interest rate Actuarial Assumption and Investment Performance. The following compares the applicable interest rate actuarial assumption and the investment performance of the Minnesota State Board of Investment for the past 25 years:

Interest Rate Actuarial				Interest Rate Actuarial			
Fiscal Year	% Return	Assumption	Difference	Fiscal Year	% Return	Assumption	Difference
2014	18.6%	8.0%	+10.6	2000	10.5	8.5	+2.0
2013	14.2	8.0	+6.2	1999	11.3	8.5	+2.8
2012	2.4	8.5	-6.1	1998	22.2	8.5	+13.7
2011	23.3	8.5	+14.8	1997	21.8	8.5	+13.3
2010	15.2	8.5	+6.7	1996	18.8	8.5	+10.3
2009	-19.6	8.5	-28.1	1995	15.8	8.5	+7.3
2008	-4.8	8.5	-13.3	1994	2.1	8.5	-6.4
2007	18.5	8.5	+10.0	1993	14.4	8.5	+5.9
2006	12.6	8.5	+4.1	1992	14.5	8.5	+6.0
2005	11.0	8.5	+2.5	1991	6.7	8.5	-1.9
2004	16.6	8.5	+8.1	1990	10.8	8.5	+2.4
2003	1.9	8.5	-6.6				
2002	-8.2	8.5	-16.7				
2001	-7.4	8.5	-15.9				

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1.1 moves to amend H.F. No. 660; S.F. No. 613, as follows:

1.2 Page 5, strike lines 43 and 44

1.3 Page 6, lines 1 to 14, delete the new language and strike the old language

1.4 Page 6, line 15, strike "(e)" and insert "(d)"

1.5 Page 6, after line 23, insert:

1.6 "Sec. 2. Minnesota Statutes 2014, section 356.215, subdivision 11, is amended to read:

1.7 Subd. 11. **Amortization contributions.** (a) In addition to the exhibit indicating

1.8 the level normal cost, the actuarial valuation of the retirement plan must contain an

1.9 exhibit for financial reporting purposes indicating the additional annual contribution

1.10 sufficient to amortize the unfunded actuarial accrued liability and must contain an exhibit

1.11 for contribution determination purposes indicating the additional contribution sufficient

1.12 to amortize the unfunded actuarial accrued liability. For the retirement plans listed in

1.13 subdivision 8, paragraph (e), ~~but excluding the MERF division of the Public Employees~~

1.14 ~~Retirement Association and the legislators retirement plan, the additional contribution~~

1.15 ~~must be calculated on a level percentage of covered payroll basis by the established~~

1.16 ~~date for full funding in effect when the valuation is prepared, assuming annual payroll~~

1.17 ~~growth at the applicable percentage rate set forth in subdivision 8, paragraph (d). For all~~

1.18 ~~other retirement plans and for the MERF division of the Public Employees Retirement~~

1.19 ~~Association and the legislators retirement plan (a), the additional annual contribution must~~

1.20 be calculated on a level annual dollar amount basis.

1.21 (b) For any retirement plan other than a retirement plan governed by paragraph (d),

1.22 (e), (f), (g), (h), (i), (j), or (k), if there has not been a change in the actuarial assumptions

1.23 used for calculating the actuarial accrued liability of the fund, a change in the benefit

1.24 plan governing annuities and benefits payable from the fund, a change in the actuarial

1.25 cost method used in calculating the actuarial accrued liability of all or a portion of the

1.26 fund, or a combination of the three, which change or changes by itself or by themselves

1.27 without inclusion of any other items of increase or decrease produce a net increase in the

unfunded actuarial accrued liability of the fund, the established date for full funding is the first actuarial valuation date occurring after June 1, 2020.

(c) For any retirement plan, if there has been a change in any or all of the actuarial assumptions used for calculating the actuarial accrued liability of the fund, a change in the benefit plan governing annuities and benefits payable from the fund, a change in the actuarial cost method used in calculating the actuarial accrued liability of all or a portion of the fund, or a combination of the three, and the change or changes, by itself or by themselves and without inclusion of any other items of increase or decrease, produce a net increase in the unfunded actuarial accrued liability in the fund, the established date for full funding must be determined using the following procedure:

(i) the unfunded actuarial accrued liability of the fund must be determined in accordance with the plan provisions governing annuities and retirement benefits and the actuarial assumptions in effect before an applicable change;

(ii) the level annual dollar contribution or level percentage, whichever is applicable, needed to amortize the unfunded actuarial accrued liability amount determined under item (i) by the established date for full funding in effect before the change must be calculated using the interest assumption specified in subdivision 8 in effect before the change;

(iii) the unfunded actuarial accrued liability of the fund must be determined in accordance with any new plan provisions governing annuities and benefits payable from the fund and any new actuarial assumptions and the remaining plan provisions governing annuities and benefits payable from the fund and actuarial assumptions in effect before the change;

(iv) the level annual dollar contribution or level percentage, whichever is applicable, needed to amortize the difference between the unfunded actuarial accrued liability amount calculated under item (i) and the unfunded actuarial accrued liability amount calculated under item (iii) over a period of 30 years from the end of the plan year in which the applicable change is effective must be calculated using the applicable interest assumption specified in subdivision 8 in effect after any applicable change;

(v) the level annual dollar or level percentage amortization contribution under item (iv) must be added to the level annual dollar amortization contribution or level percentage calculated under item (ii);

(vi) the period in which the unfunded actuarial accrued liability amount determined in item (iii) is amortized by the total level annual dollar or level percentage amortization contribution computed under item (v) must be calculated using the interest assumption specified in subdivision 8 in effect after any applicable change, rounded to the nearest integral number of years, but not to exceed 30 years from the end of the plan year in which

the determination of the established date for full funding using the procedure set forth in this clause is made and not to be less than the period of years beginning in the plan year in which the determination of the established date for full funding using the procedure set forth in this clause is made and ending by the date for full funding in effect before the change; and

(vii) the period determined under item (vi) must be added to the date as of which the actuarial valuation was prepared and the date obtained is the new established date for full funding.

(d) For the MERF division of the Public Employees Retirement Association, the established date for full funding is June 30, 2031.

(e) For the general employees retirement plan of the Public Employees Retirement Association, the established date for full funding is June 30, 2031.

(f) For the Teachers Retirement Association, the established date for full funding is June 30, 2037.

(g) For the correctional state employees retirement plan of the Minnesota State Retirement System, the established date for full funding is June 30, 2038.

(h) For the judges retirement plan, the established date for full funding is June 30, 2038.

(i) For the public employees police and fire retirement plan, the established date for full funding is June 30, 2038.

(j) For the St. Paul Teachers Retirement Fund Association, the established date for full funding is June 30, 2042. In addition to other requirements of this chapter, the annual actuarial valuation must contain an exhibit indicating the funded ratio and the deficiency or sufficiency in annual contributions when comparing liabilities to the market value of the assets of the fund as of the close of the most recent fiscal year.

(k) For the general state employees retirement plan of the Minnesota State Retirement System, the established date for full funding is June 30, 2040.

(l) For the retirement plans for which the annual actuarial valuation indicates an excess of valuation assets over the actuarial accrued liability, the valuation assets in excess of the actuarial accrued liability must be recognized as a reduction in the current contribution requirements by an amount equal to the amortization of the excess expressed as a level percentage of pay over a 30-year period beginning anew with each annual actuarial valuation of the plan.

EFFECTIVE DATE. This section is effective June 29, 2015, and applies to actuarial valuations prepared after that date."

Amend the title accordingly

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1.1 moves to amend H.F. No. 660; S.F. No. 613, as follows:

1.2 Page 1, strike line 9

1.3 Page 1, strike lines 10, 11, 27, and 28

1.4 Page 1, line 24, strike the old language and delete the new language

1.5 Page 2, strike line 1

1.6 Page 2, after line 15, insert:

1.7 "teachers retirement plan" 8"

1.8 Page 5, line 12, strike "12%" and insert "11.75%"

1.9 Page 5, line 14, strike "9" and insert "8.75"

1.10 Page 5, line 15, strike "8" and insert "7.75"

1.11 Page 5, line 16, strike "7.5" and insert "7.25"

1.12 Page 5, line 17, strike "7.25" and insert "7"

1.13 Page 5, line 18, strike "7" and insert "6.75"

1.14 Page 5, line 19, strike "6.85" and insert "6.6"

1.15 Page 5, line 20, strike "6.7" and insert "6.45"

1.16 Page 5, line 21, strike "6.55" and insert "6.3"

1.17 Page 5, line 22, strike "6.4" and insert "6.15"

1.18 Page 5, line 23, strike "6.25" and insert "6"

1.19 Page 5, line 24, strike "6" and insert "5.75"

1.20 Page 5, line 25, strike "5.75" and insert "5.5"

1.21 Page 5, line 26, strike "5.5" and insert "5.25"

1.22 Page 5, line 27, strike "5.25" and insert "5"

1.23 Page 5, line 28, strike "5" and insert "4.75"

1.24 Page 5, line 29, strike "4.75" and insert "4.5"

1.25 Page 5, line 30, strike "4.5" and insert "4.25"

1.26 Page 5, line 31, strike "4.25" and insert "4"

1.27 Page 5, line 32, strike "4" and insert "3.75"

- 2.1 Page 5, line 33, strike "3.9" and insert "3.65"
- 2.2 Page 5, line 34, strike "3.8" and insert "3.55"
- 2.3 Page 5, line 35, strike "3.7" and insert "3.45"
- 2.4 Page 5, line 36, strike "3.6" and insert "3.35"
- 2.5 Page 5, lines 37 to 42, strike "3.5" and insert "3.25"
- 2.6 Page 6, line 13, strike "3.75" and insert "3.5"

1.1 moves to amend H.F. No. 660; S.F. No. 613, as follows:

1.2 Page 3, line 25, strike "5.9%" and insert "5.65%"

1.3 Page 3, lines 26, 27, 28, 29, 30, and 31, strike "5.9" and insert "5.65"

1.4 Page 3, line 32, strike "5.85" and insert "5.6"

1.5 Page 3, line 33, strike "5.8" and insert "5.55"

1.6 Page 3, line 34, strike "5.75" and insert "5.5"

1.7 Page 3, line 35, strike "5.7" and insert "5.45"

1.8 Page 3, line 36, strike "5.65" and insert "5.4"

1.9 Page 3, line 37, strike "5.6" and insert "5.35"

1.10 Page 3, line 38, strike "5.55" and insert "5.3"

1.11 Page 4, line 1, strike "5.5" and insert "5.25"

1.12 Page 4, line 2, strike "5.45" and insert "5.2"

1.13 Page 4, line 3, strike "5.4" and insert "5.15"

1.14 Page 4, line 4, strike "5.35" and insert "5.10"

1.15 Page 4, line 5, strike "5.3" and insert "5.05"

1.16 Page 4, line 6, strike "5.25" and insert "5"

1.17 Page 4, line 7, strike "5.2" and insert "4.95"

1.18 Page 4, line 8, strike "5.15" and insert "4.9"

1.19 Page 4, line 9, strike "5.1" and insert "4.85"

1.20 Page 4, line 10, strike "5.05" and insert "4.8"

1.21 Page 4, line 11, strike "5" and insert "4.75"

1.22 Page 4, line 12, strike "4.95" and insert "4.7"

1.23 Page 4, line 13, strike "4.9" and insert "4.65"

1.24 Page 4, line 14, strike "4.85" and insert "4.6"

1.25 Page 4, line 15, strike "4.8" and insert "4.55"

1.26 Page 4, line 16, strike "4.75" and insert "4.5"

1.27 Page 4, line 17, strike "4.7" and insert "4.45"

- 2.1 Page 4, line 18, strike "4.65" and insert "4.4"
- 2.2 Page 4, line 19, strike "4.6" and insert "4.35"
- 2.3 Page 4, line 20, strike "4.55" and insert "4.30"
- 2.4 Page 4, line 21, strike "4.5" and insert "4.25"
- 2.5 Page 4, line 22, strike "4.45" and insert "4.2"
- 2.6 Page 4, line 23, strike "4.4" and insert "4.15"
- 2.7 Page 4, line 24, strike "4.35" and insert "4.1"
- 2.8 Page 4, line 25, strike "4.3" and insert "4.05"
- 2.9 Page 4, line 26, strike "4.25" and insert "4"
- 2.10 Page 4, line 27, strike "4.2" and insert "3.95"
- 2.11 Page 4, line 28, strike "4.15" and insert "3.9"
- 2.12 Page 4, line 29, strike "4.1" and insert "3.85"
- 2.13 Page 4, line 30, strike "4.05" and insert "3.8"
- 2.14 Page 4, lines 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, and 41, strike "4" and insert "3.75"

- 1.1 moves to amend H.F. No. 660; S.F. No. 613, as follows:
- 1.2 Page 2, line 38, strike "3" and insert "2.75"

This page left blank intentionally.

1.1 moves to amend H.F. No. 660; S.F. No. 613, as follows:

1.2 Page 1, after line 6, insert:

1.3 **"ARTICLE 1**

1.4 **INTEREST, SALARY INCREASE, AND PAYROLL GROWTH**
1.5 **ACTUARIAL ASSUMPTION CHANGES"**

1.6 Page 6, after line 23, insert

1.7 **"ARTICLE 2**

1.8 **CONFORMING CHANGES IN REFUND REPAYMENT PROVISIONS**
1.9 **RELATED TO INTEREST ASSUMPTION CHANGE**

1.10 Section 1. Minnesota Statutes 2014, section 3A.03, subdivision 2, is amended to read:

1.11 Subd. 2. **Refund.** (a) A former member who has made contributions under
1.12 subdivision 1 and who is no longer a member of the legislature is entitled to receive, upon
1.13 written application to the executive director on a form prescribed by the executive director,
1.14 a refund from the general fund of all contributions credited to the member's account with
1.15 interest computed as provided in section 352.22, subdivision 2.

1.16 (b) The refund of contributions as provided in paragraph (a) terminates all rights of a
1.17 former member of the legislature and the survivors of the former member under this chapter.

1.18 (c) If the former member of the legislature again becomes a member of the legislature
1.19 after having taken a refund as provided in paragraph (a), the member is a member of the
1.20 unclassified employees retirement program of the Minnesota State Retirement System.

1.21 (d) However, the member may reinstate the rights and credit for service previously
1.22 forfeited under this chapter if the member repays all refunds taken, plus interest at ~~an~~ the
1.23 applicable annual rate of ~~8.5 percent~~ compounded annually from the date on which the
1.24 refund was taken to the date on which the refund is repaid.

(e) No person may be required to apply for or to accept a refund. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

Sec. 2. Minnesota Statutes 2014, section 352.01, subdivision 13a, is amended to read:

Subd. 13a. **Reduced salary during period of workers' compensation.** An employee on leave of absence receiving temporary workers' compensation payments and a reduced salary or no salary from the employer who is entitled to allowable service credit for the period of absence, may make payment to the fund for the difference between salary received, if any, and the salary the employee would normally receive if not on leave of absence during the period. The employee shall pay an amount equal to the employee and employer contribution rate under section 352.04, subdivisions 2 and 3, on the differential salary amount for the period of the leave of absence.

The employing department, at its option, may pay the employer amount on behalf of its employees. Payment made under this subdivision must include interest at the applicable rate of 8.5 percent per year, and must be completed within one year of the return from leave of absence. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

Sec. 3. Minnesota Statutes 2014, section 352.04, subdivision 8, is amended to read:

Subd. 8. **Department required to pay omitted salary deductions.** (a) If a department fails to take deductions past due for a period of 60 days or less from an employee's salary as provided in this section, those deductions must be taken on later payroll abstracts.

(b) If a department fails to take deductions past due for a period in excess of 60 days from an employee's salary as provided in this section, the department, and not the employee, must pay on later payroll abstracts the employee and employer contributions and an amount equivalent to ~~8.5 percent~~ the applicable rate of the total amount due in lieu of interest, or if the delay in payment exceeds one year, ~~8.5 percent~~ the applicable rate compound annual interest. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

(c) If a department fails to take deductions past due for a period of 60 days or less and the employee is no longer in state service so that the required deductions cannot be taken from the salary of the employee, the department must nevertheless pay the required employer contributions. If any department fails to take deductions past due for a period in

excess of 60 days and the employee is no longer in state service, the omitted contributions must be recovered under paragraph (b).

(d) If an employee from whose salary required deductions were past due for a period of 60 days or less leaves state service before the payment of the omitted deductions and subsequently returns to state service, the unpaid amount is considered the equivalent of a refund. The employee accrues no right by reason of the unpaid amount, except that the employee may pay the amount of omitted deductions as provided in section 352.23.

Sec. 4. Minnesota Statutes 2014, section 352.04, subdivision 9, is amended to read:

Subd. 9. **Erroneous deductions, canceled warrants.** (a) Deductions taken from the salary of an employee for the retirement fund in excess of required amounts must, upon discovery and verification by the department making the deduction, be refunded to the employee.

(b) If a deduction for the retirement fund is taken from a salary warrant or check, and the check is canceled or the amount of the warrant or check returned to the funds of the department making the payment, the sum deducted, or the part of it required to adjust the deductions, must be refunded to the department or institution if the department applies for the refund on a form furnished by the director. The department's payments must likewise be refunded to the department.

(c) If erroneous employee deductions and employer contributions are caused by an error in plan coverage involving the plan and any other plans specified in section 356.99, that section applies. If the employee should have been covered by the plan governed by chapter 352D, 353D, 354B, or 354D, the employee deductions and employer contributions taken in error must be directly transferred to the applicable employee's account in the correct retirement plan, with interest at the applicable rate of 0.71 percent per month, compounded annually, from the first day of the month following the month in which coverage should have commenced in the correct defined contribution plan until the end of the month in which the transfer occurs. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015.

Sec. 5. Minnesota Statutes 2014, section 352.23, is amended to read:

352.23 TERMINATION OF RIGHTS.

When any employee accepts a refund as provided in section 352.22, all existing service credits and all rights and benefits to which the employee was entitled before accepting the refund terminate. They must not again be restored until the former employee acquires at least six months of allowable service credit after taking the last refund. In that

event, the employee may repay all refunds previously taken from the retirement fund. Repayment of refunds entitles the employee only to credit for service covered by (1) salary deductions; (2) payments made in lieu of salary deductions; (3) payments made to obtain credit for service as permitted by laws in effect when payment was made; and (4) allowable service once credited while receiving temporary workers' compensation as provided in section 352.01, subdivision 11, clause (5). Payments under this section for repayment of refunds are to be paid with interest at ~~an annual~~ the applicable rate of 8.5 percent compounded annually. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. They may be paid in a lump sum or by payroll deduction in the manner provided in section 352.04. Payment may be made in a lump sum up to six months after termination from service.

Sec. 6. Minnesota Statutes 2014, section 352.271, is amended to read:

**352.271 METROPOLITAN TRANSIT COMMISSION-TRANSIT
OPERATING DIVISION EMPLOYEES; CREDIT FOR MILITARY SERVICE.**

Any employee of the Metropolitan Transit Commission Operating Division who was on a leave of absence to enter military service on July 1, 1978, who has not taken a refund of employee contributions as authorized by article 12 of the Metropolitan Transit Commission-Transit Operating Division employees retirement fund document or section 352.22, subdivision 2a, and who returns to service as an employee of the Metropolitan Transit Commission-Transit Operating Division upon discharge from military service as provided in section 192.262 is entitled to allowable service credit for the period of military service. If an employee has taken a refund of employee contributions, and would otherwise be entitled to allowable service credit under this section, the employee is entitled to allowable service credit for the period of military service upon repayment to the executive director of the system of the amount refunded plus interest at ~~an annual~~ the applicable rate of 8.5 percent compounded annually from the date on which the refund was taken to the date of repayment. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. No employee is entitled to allowable service credit for any voluntary extensions of military service at the instance of the employee beyond any initial period of enlistment, induction, or call to active duty.

Sec. 7. Minnesota Statutes 2014, section 352B.11, subdivision 4, is amended to read:

Subd. 4. **Reentry into state service.** When a former member, who has become separated from state service that entitled the member to membership and has received a refund of retirement payments, reenters the state service in a position that entitles the

member to membership, that member shall receive credit for the period of prior allowable state service if the member repays into the fund the amount of the refund, plus interest on it at ~~an annual~~ the applicable rate of 8.5 percent compounded annually, at any time before subsequent retirement. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. Repayment may be made in installments or in a lump sum.

Sec. 8. Minnesota Statutes 2014, section 352D.05, subdivision 4, is amended to read:

Subd. 4. **Repayment of refund.** (a) A participant in the unclassified program may repay regular refunds taken under section 352.22, as provided in section 352.23.

(b) A participant in the unclassified program or an employee covered by the general employees retirement plan who has withdrawn the value of the total shares may repay the refund taken and thereupon restore the service credit, rights and benefits forfeited by paying into the fund the amount refunded plus interest at ~~an annual~~ the applicable rate of 8.5 percent compounded annually from the date that the refund was taken until the date that the refund is repaid. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. If the participant had withdrawn only the employee shares as permitted under prior laws, repayment must be pro rata.

(c) Except as provided in section 356.441, the repayment of a refund under this section must be made in a lump sum.

Sec. 9. Minnesota Statutes 2014, section 352D.12, is amended to read:

352D.12 TRANSFER OF PRIOR SERVICE CONTRIBUTIONS.

(a) An employee who is a participant in the unclassified program and who has prior service credit in a covered plan under chapter 352, 353, 354, 354A, or 422A may, within the time limits specified in this section, elect to transfer to the unclassified program prior service contributions to one or more of those plans.

(b) For participants with prior service credit in a plan governed by chapter 352, 353, 354, 354A, or 422A, "prior service contributions" means the accumulated employee and equal employer contributions with interest at ~~an annual~~ the applicable rate of 8.5 percent compounded annually, based on fiscal year balances. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

(c) If a participant has taken a refund from a retirement plan listed in this section, the participant may repay the refund to that plan, notwithstanding any restrictions on repayment to that plan, plus ~~8.5 percent~~ the applicable interest compounded annually and have the accumulated employee and equal employer contributions transferred to

the unclassified program with interest at ~~an annual~~ the applicable rate of ~~8.5 percent~~ compounded annually based on fiscal year balances. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. If a person repays a refund and subsequently elects to have the money transferred to the unclassified program, the repayment amount, including interest, is added to the fiscal year balance in the year which the repayment was made.

(d) A participant electing to transfer prior service contributions credited to a retirement plan governed by chapter 352, 353, 354, 354A, or 422A as provided under this section must complete a written application for the transfer and repay any refund within one year of the commencement of the employee's participation in the unclassified program.

Sec. 10. Minnesota Statutes 2014, section 353.27, subdivision 7a, is amended to read:

Subd. 7a. **Deductions or contributions transmitted by error.** (a) If employee deductions and employer contributions under this section, section 353.50, 353.65, or 353E.03 were erroneously transmitted to the association, but should have been transmitted to a plan covered by chapter 352D, 353D, 354B, or 354D, the executive director shall transfer the erroneous employee deductions and employer contributions to the appropriate retirement fund or individual account, as applicable. The time limitations specified in subdivisions 7 and 12 do not apply. The transfer to the applicable defined contribution plan account must include interest at the applicable rate of ~~0.71 percent~~ per month, compounded annually, from the first day of the month following the month in which coverage should have commenced in the defined contribution plan until the end of the month in which the transfer occurs. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015.

(b) A potential transfer under paragraph (a) that is reasonably determined to cause the plan to fail to be a qualified plan under section 401(a) of the federal Internal Revenue Code, as amended, must not be made by the executive director of the association. Within 30 days after being notified by the Public Employees Retirement Association of an unmade potential transfer under this paragraph, the employer of the affected person must transmit an amount representing the applicable salary deductions and employer contributions, without interest, to the retirement fund of the appropriate Minnesota public pension plan, or to the applicable individual account if the proper coverage is by a defined contribution plan. The association must provide the employing unit a credit for the amount of the erroneous salary deductions and employer contributions against future contributions from the employer. If the employing unit receives a credit under this paragraph, the

employing unit is responsible for refunding to the applicable employee any amount that had been erroneously deducted from the person's salary.

(c) If erroneous employee deductions and employer contributions reflect a plan coverage error involving any Public Employees Retirement Association plan specified in section 356.99 and any other plan specified in that section, section 356.99 applies.

Sec. 11. Minnesota Statutes 2014, section 353.27, subdivision 12, is amended to read:

Subd. 12. **Omitted salary deductions; obligations.** (a) In the case of omission of required deductions for the general employees retirement plan, the public employees police and fire retirement plan, or the local government correctional employees retirement plan from the salary of an employee, the department head or designee shall immediately, upon discovery, report the employee for membership and deduct the employee deductions under subdivision 4 during the current pay period or during the pay period immediately following the discovery of the omission. Payment for the omitted obligations may only be made in accordance with reporting procedures and methods established by the executive director.

(b) When the entire omission period of an employee does not exceed 60 days, the governmental subdivision may report and submit payment of the omitted employee deductions and the omitted employer contributions through the reporting processes under subdivision 4.

(c) When the omission period of an employee exceeds 60 days, the governmental subdivision shall furnish to the association sufficient data and documentation upon which the obligation for omitted employee and employer contributions can be calculated. The omitted employee deductions must be deducted from the employee's subsequent salary payment or payments and remitted to the association for deposit in the applicable retirement fund. The employee shall pay omitted employee deductions due for the 60 days prior to the end of the last pay period in the omission period during which salary was earned. The employer shall pay any remaining omitted employee deductions and any omitted employer contributions, plus cumulative interest at ~~an~~ the applicable annual rate of ~~8.5 percent~~ compounded annually, from the date or dates each omitted employee contribution was first payable. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

(d) An employer shall not hold an employee liable for omitted employee deductions beyond the pay period dates under paragraph (c), nor attempt to recover from the employee those employee deductions paid by the employer on behalf of the employee. Omitted deductions due under paragraph (c) which are not paid by the employee constitute a liability of the employer that failed to deduct the omitted deductions from the employee's

salary. The employer shall make payment with interest at ~~an~~ the applicable annual rate ~~of 8.5 percent~~ compounded annually. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. Omitted employee deductions are no longer due if an employee terminates public service before making payment of omitted employee deductions to the association, but the employer remains liable to pay omitted employer contributions plus interest at ~~an~~ the applicable annual rate ~~of 8.5 percent~~ compounded annually from the date the contributions were first payable. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

(e) The association may not commence action for the recovery of omitted employee deductions and employer contributions after the expiration of three calendar years after the calendar year in which the contributions and deductions were omitted. Except as provided under paragraph (b), no payment may be made or accepted unless the association has already commenced action for recovery of omitted deductions. An action for recovery commences on the date of the mailing of any written correspondence from the association requesting information from the governmental subdivision upon which to determine whether or not omitted deductions occurred.

Sec. 12. Minnesota Statutes 2014, section 353.27, subdivision 12a, is amended to read:

Subd. 12a. **Terminated employees: omitted deductions.** A terminated employee who was a member of the general employees retirement plan of the Public Employees Retirement Association, the public employees police and fire retirement plan, or the local government correctional employees retirement plan and who has a period of employment in which previously omitted employer contributions were made under subdivision 12 but for whom no, or only partial, omitted employee contributions have been made, or a member who had prior coverage in the association for which previously omitted employer contributions were made under subdivision 12 but who terminated service before required omitted employee deductions could be withheld from salary, may pay the omitted employee deductions for the period on which omitted employer contributions were previously paid plus interest at ~~an~~ the applicable annual rate ~~of 8.5 percent~~ compounded annually. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. A terminated employee may pay the omitted employee deductions plus interest within six months of an initial notification from the association of eligibility to pay those omitted deductions. If a terminated employee is reemployed in a position covered under a public pension fund under section 356.30,

9.1 subdivision 3, and elects to pay omitted employee deductions, payment must be made no
9.2 later than six months after a subsequent termination of public service.

9.3 Sec. 13. Minnesota Statutes 2014, section 353.28, subdivision 5, is amended to read:

9.4 Subd. 5. **Interest chargeable on amounts due.** Any amount due under this section
9.5 or section 353.27, subdivision 4, is payable with interest at ~~an~~ the applicable annual
9.6 compound rate of ~~8.5 percent~~ from the date due until the date payment is received by the
9.7 association, with a minimum interest charge of \$10. The applicable rate is 8.5 percent for
9.8 the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

9.9 Sec. 14. Minnesota Statutes 2014, section 353.35, subdivision 1, is amended to read:

9.10 Subdivision 1. **Refund rights.** (a) Except as provided in paragraph (b), when any
9.11 former member accepts a refund, all existing service credits and all rights and benefits to
9.12 which the person was entitled prior to the acceptance of the refund must terminate.

9.13 (b) A refund under section 353.651, subdivision 3, paragraph (c), does not result in a
9.14 forfeiture of salary credit for the allowable service credit covered by the refund.

9.15 (c) The rights and benefits of a former member must not be restored until the person
9.16 returns to active service and acquires at least six months of allowable service credit after
9.17 taking the last refund and repays the refund or refunds taken and interest received under
9.18 section 353.34, subdivisions 1 and 2, plus interest at ~~an~~ the applicable annual rate of ~~8.5~~
9.19 ~~percent~~ compounded annually. The applicable rate is 8.5 percent for the period before July
9.20 1, 2015, and 8 percent for the period after June 30, 2015. If the person elects to restore
9.21 service credit in a particular fund from which the person has taken more than one refund,
9.22 the person must repay all refunds to that fund. All refunds must be repaid within six
9.23 months of the last date of termination of public service.

9.24 Sec. 15. Minnesota Statutes 2014, section 354.42, subdivision 7, is amended to read:

9.25 Subd. 7. **Erroneous salary deductions or direct payments.** (a) Any deductions
9.26 taken from the salary of an employee for the retirement fund in excess of amounts required
9.27 must be refunded to the employee upon the discovery of the error and after the verification
9.28 of the error by the employing unit making the deduction. The corresponding excess
9.29 employer contribution and excess additional employer contribution amounts attributable
9.30 to the erroneous salary deduction must be refunded to the employing unit.

9.31 (b) If salary deductions and employer contributions were erroneously transmitted to
9.32 the retirement fund and should have been transmitted to the plan covered by chapter 352D,
9.33 353D, 354B, or 354D, the executive director must transfer these salary deductions and

employer contributions to the account of the appropriate person under the applicable plan. The transfer to the applicable defined contribution plan account must include interest at the applicable rate of 0.71 percent per month, compounded annually, from the first day of the month following the month in which coverage should have commenced in the defined contribution plan until the end of the month in which the transfer occurs. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015.

(c) A potential transfer under paragraph (b) that would cause the plan to fail to be a qualified plan under section 401(a) of the Internal Revenue Code, as amended, must not be made by the executive director. Within 30 days after being notified by the Teachers Retirement Association of an unmade potential transfer under this paragraph, the employer of the affected person must transmit an amount representing the applicable salary deductions and employer contributions, without interest, to the account of the applicable person under the appropriate plan. The retirement association must provide a credit for the amount of the erroneous salary deductions and employer contributions against future contributions from the employer.

(d) If a salary warrant or check from which a deduction for the retirement fund was taken has been canceled or the amount of the warrant or if a check has been returned to the funds of the employing unit making the payment, a refund of the amount deducted, or any portion of it that is required to adjust the salary deductions, must be made to the employing unit.

(e) Erroneous direct payments of member-paid contributions or erroneous salary deductions that were not refunded during the regular payroll cycle processing must be refunded to the member, plus interest computed using the rate and method specified in section 354.49, subdivision 2.

(f) Any refund under this subdivision that would cause the plan to fail to be a qualified plan under section 401(a) of the Internal Revenue Code, as amended, may not be refunded and instead must be credited against future contributions payable by the employer. The employer is responsible for refunding to the applicable employee any amount that was erroneously deducted from the salary of the employee, with interest as specified in paragraph (e).

(g) If erroneous employee deductions and employer contributions are caused by an error in plan coverage involving the plan and any other plan specified in section 356.99, that section applies.

Sec. 16. Minnesota Statutes 2014, section 354.50, subdivision 2, is amended to read:

11.1 Subd. 2. **Interest charge.** If a member desires to repay the refunds, payment shall
11.2 include interest at ~~an~~ the applicable annual rate ~~of 8.5 percent~~ compounded annually
11.3 from date of withdrawal to the date payment is made and shall be credited to the fund.
11.4 The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for
11.5 the period after June 30, 2015.

11.6 Sec. 17. Minnesota Statutes 2014, section 354.51, subdivision 5, is amended to read:

11.7 Subd. 5. **Payment of shortages.** (a) Except as provided in paragraph (b), in the
11.8 event that full required member contributions are not deducted from the salary of a
11.9 teacher, payment must be made as follows:

11.10 (1) Payment of shortages in member deductions on salary earned after June 30,
11.11 1957, and before July 1, 1981, may be made any time before retirement. Payment must
11.12 include interest at ~~an~~ the applicable annual rate ~~of 8.5 percent~~ compounded annually from
11.13 the end of the fiscal year in which the shortage occurred to the end of the month in which
11.14 payment is made and the interest must be credited to the fund. The applicable rate is 8.5
11.15 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.
11.16 If payment of a shortage in deductions is not made, the formula service credit of the
11.17 member must be prorated under section 354.05, subdivision 25, clause (3).

11.18 (2) Payment of shortages in member deductions on salary earned after June 30,
11.19 1981, are the sole obligation of the employing unit and are payable by the employing
11.20 unit upon notification by the executive director of the shortage with interest at ~~an~~ the
11.21 applicable annual rate ~~of 8.5 percent~~ compounded annually from the end of the fiscal year
11.22 in which the shortage occurred to the end of the month in which payment is made and
11.23 the interest must be credited to the fund. The applicable rate is 8.5 percent for the period
11.24 before July 1, 2015, and 8 percent for the period after June 30, 2015. Effective July 1,
11.25 1986, the employing unit shall also pay the employer contributions as specified in section
11.26 354.42, subdivisions 3 and 5 for the shortages. If the shortage payment is not paid by the
11.27 employing unit within 60 days of notification, and if the executive director does not use
11.28 the recovery procedure in section 354.512, the executive director shall certify the amount
11.29 of the shortage to the applicable county auditor, who shall spread a levy in the amount
11.30 of the shortage payment over the taxable property of the taxing district of the employing
11.31 unit if the employing unit is supported by property taxes.

11.32 (3) Payment may not be made for shortages in member deductions on salary earned
11.33 before July 1, 1957, for shortages in member deductions on salary paid or payable under
11.34 paragraph (b), or for shortages in member deductions for persons employed by the
11.35 Minnesota State Colleges and Universities system in a faculty position or in an eligible

12.1 unclassified administrative position and whose employment was less than 25 percent
12.2 of a full academic year, exclusive of the summer session, for the applicable institution
12.3 that exceeds the most recent 36 months.

12.4 (b) For a person who is employed by the Minnesota State Colleges and Universities
12.5 system in a faculty position or in an eligible unclassified administrative position and whose
12.6 employment was less than 25 percent of a full academic year, exclusive of the summer
12.7 session, for the applicable institution, upon the person's election under section 354B.21 of
12.8 retirement coverage under this chapter, the shortage in member deductions on the salary
12.9 for employment by the Minnesota State Colleges and Universities system institution of less
12.10 than 25 percent of a full academic year, exclusive of the summer session, for the applicable
12.11 institution for the most recent 36 months and the associated employer contributions must
12.12 be paid by the Minnesota State Colleges and Universities system institution, plus annual
12.13 compound interest at the applicable rate of ~~8.5 percent~~ from the end of the fiscal year in
12.14 which the shortage occurred to the end of the month in which the Teachers Retirement
12.15 Association coverage election is made. The applicable rate is 8.5 percent for the period
12.16 before July 1, 2015, and 8 percent for the period after June 30, 2015. An individual
12.17 electing coverage under this paragraph shall repay the amount of the shortage in member
12.18 deductions, plus interest, through deduction from salary or compensation payments within
12.19 the first year of employment after the election under section 354B.21, subject to the
12.20 limitations in section 16D.16. The Minnesota State Colleges and Universities system may
12.21 use any means available to recover amounts which were not recovered through deductions
12.22 from salary or compensation payments. No payment of the shortage in member deductions
12.23 under this paragraph may be made for a period longer than the most recent 36 months.

12.24 Sec. 18. Minnesota Statutes 2014, section 354.52, subdivision 4, is amended to read:

12.25 Subd. 4. **Reporting and remittance requirements.** An employer shall remit all
12.26 amounts due to the association and furnish a statement indicating the amount due and
12.27 transmitted with any other information required by the executive director. If an amount
12.28 due is not received by the association within 14 calendar days of the payroll warrant,
12.29 the amount accrues interest at ~~an~~ the applicable annual rate of ~~8.5 percent~~ compounded
12.30 annually from the due date until the amount is received by the association. The applicable
12.31 rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June
12.32 30, 2015. All amounts due and other employer obligations not remitted within 60 days
12.33 of notification by the association must be certified to the commissioner of management
12.34 and budget who shall deduct the amount from any state aid or appropriation amount
12.35 applicable to the employing unit.

13.1 Sec. 19. Minnesota Statutes 2014, section 354A.093, subdivision 6, is amended to read:

13.2 Subd. 6. **Interest requirements.** The employer shall pay interest on all equivalent
13.3 employee and employer contribution amounts payable under this section. Interest must be
13.4 computed at a the applicable rate of 8.5 percent compounded annually from the end of
13.5 each fiscal year of the leave or break in service to the end of the month in which payment
13.6 is received. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8
13.7 percent for the period after June 30, 2015.

13.8 Sec. 20. Minnesota Statutes 2014, section 354A.38, subdivision 3, is amended to read:

13.9 Subd. 3. **Computation of refund repayment amount.** If the coordinated member
13.10 elects to repay a refund under subdivision 2, the repayment to the fund must be in an
13.11 amount equal to refunds the member has accepted plus interest at the applicable rate of 8.5
13.12 percent compounded annually from the date that the refund was accepted to the date that
13.13 the refund is repaid. The applicable rate is 8.5 percent for the period before July 1, 2015,
13.14 and 8 percent for the period after June 30, 2015.

13.15 Sec. 21. Minnesota Statutes 2014, section 354B.23, subdivision 5, is amended to read:

13.16 Subd. 5. **Omitted member deductions.** (a) If the employing unit that employs a
13.17 plan participant fails to deduct the member contribution from the participant's salary and a
13.18 period of less than 60 days from the date on which the deduction should have been made
13.19 has elapsed, the employing unit must obtain the omitted member deduction by an additional
13.20 payroll deduction during the pay period next following the discovery of the omission.

13.21 (b) If the employing unit of a plan participant fails to deduct the member contribution
13.22 from the participant's salary and that omission continues for at least 60 days from the
13.23 date on which the deduction should have been made, the employing unit must pay the
13.24 amount representing the omitted member contribution, and the full required employer
13.25 contribution, plus compound interest at an the applicable annual rate of 8.5 percent. The
13.26 applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the
13.27 period after June 30, 2015. The contributions and any interest must be made within one
13.28 year of the date on which the omission was discovered.

13.29 Sec. 22. Minnesota Statutes 2014, section 354C.12, subdivision 2, is amended to read:

13.30 Subd. 2. **Omitted deductions.** If the employer of personnel covered by the
13.31 supplemental retirement plan as provided in section 354C.11 fails to deduct the member
13.32 basic contribution from the covered employee's salary and a period of less than 60 days
13.33 from the date on which the deduction should have been made has elapsed, the employer

14.1 must obtain the omitted member deduction by an additional payroll deduction during the
14.2 pay period next following the discovery of the omission. If the employer fails to deduct
14.3 the member basic contribution from the covered employee's salary and that omission
14.4 continues for at least 60 days from the date on which the member basic contribution
14.5 deduction should have been made, the employer must pay the amount representing
14.6 the omitted member basic contribution, and the full required omitted employer basic
14.7 contribution, plus compound interest at ~~an~~ the applicable annual rate of 8.5 percent. The
14.8 applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the
14.9 period after June 30, 2015. The contributions must be made within one year of the date on
14.10 which the omission was discovered.

14.11 Sec. 23. Minnesota Statutes 2014, section 356.44, is amended to read:

14.12 **356.44 PARTIAL PAYMENT OF PENSION PLAN REFUND.**

14.13 (a) Notwithstanding any provision of law to the contrary, a member of a pension
14.14 plan listed in section 356.30, subdivision 3, with at least two years of forfeited service
14.15 taken from a single pension plan, may repay a portion of all refunds. A partial refund
14.16 repayment must comply with this section.

14.17 (b) The minimum portion of a refund repayment is one-third of the total service
14.18 credit period of all refunds taken from a single plan.

14.19 (c) The cost of the partial refund repayment is the product of the cost of the total
14.20 repayment multiplied by the ratio of the restored service credit to the total forfeited service
14.21 credit. The total repayment amount includes interest at the applicable annual rate of 8.5
14.22 percent, compounded annually, from the refund date to the date repayment is received.
14.23 The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for
14.24 the period after June 30, 2015.

14.25 (d) The restored service credit must be allocated based on the relationship the
14.26 restored service bears to the total service credit period for all refunds taken from a single
14.27 pension plan.

14.28 (e) This section does not authorize a public pension plan member to repay a refund
14.29 if the law governing the plan does not authorize the repayment of a refund of member
14.30 contributions.

14.31 Sec. 24. Minnesota Statutes 2014, section 490.124, subdivision 12, is amended to read:

14.32 Subd. 12. **Refund.** (a) A person who ceases to be a judge is entitled to a refund
14.33 in an amount that is equal to all of the member's employee contributions to the judges'
14.34 retirement fund plus interest computed under section 352.22, subdivision 2.

15.1 (b) A refund of contributions under paragraph (a) terminates all service credits and
15.2 all rights and benefits of the judge and the judge's survivors under this chapter.

15.3 (c) A person who becomes a judge again after taking a refund under paragraph (a)
15.4 may reinstate the previously terminated allowable service credit, rights, and benefits by
15.5 repaying the total amount of the previously received refund. The refund repayment must
15.6 include interest on the total amount previously received at ~~an~~ the applicable annual rate ~~of~~
15.7 ~~8.5 percent~~, compounded annually, from the date on which the refund was received until
15.8 the date on which the refund is repaid. The applicable rate is 8.5 percent for the period
15.9 before July 1, 2015, and 8 percent for the period after June 30, 2015.

15.10 Sec. 25. **EFFECTIVE DATE.**

15.11 Sections 1 to 24 are effective July 1, 2015."

15.12 Amend the title accordingly

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1.1 moves to amend H.F. No. 660; S.F. No. 613, as follows:

1.2 Page 1, after line 6, insert:

1.3 **"ARTICLE 1**

1.4 **INTEREST, SALARY INCREASE, AND PAYROLL GROWTH**
1.5 **ACTUARIAL ASSUMPTION CHANGES"**

1.6 Page 6, after line 23, insert

1.7 **"ARTICLE 2**

1.8 **CONFORMING CHANGES IN LEAVE AND PRIOR SERVICE CREDIT**
1.9 **PURCHASE PROVISIONS RELATED TO INTEREST ASSUMPTION CHANGE**

1.10 Section 1. Minnesota Statutes 2014, section 352.017, subdivision 2, is amended to read:

1.11 Subd. 2. **Purchase procedure.** (a) An employee covered by a plan specified in
1.12 this chapter may purchase credit for allowable service in that plan for a period specified
1.13 in subdivision 1 if the employee makes a payment as specified in paragraph (b) or (c),
1.14 whichever applies. The employing unit, at its option, may pay the employer portion of the
1.15 amount specified in paragraph (b) on behalf of its employees.

1.16 (b) If payment is received by the executive director within one year from the date the
1.17 employee returned to work following the authorized leave, the payment amount is equal to
1.18 the employee and employer contribution rates specified in law for the applicable plan at
1.19 the end of the leave period multiplied by the employee's hourly rate of salary on the date
1.20 of return from the leave of absence and by the days and months of the leave of absence for
1.21 which the employee is eligible for allowable service credit. The payment must include
1.22 compound interest at a the applicable monthly rate of 0.71 percent from the last day of the
1.23 leave period until the last day of the month in which payment is received. The applicable
1.24 rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30,
1.25 2015. If payment is received by the executive director after one year, the payment amount

is the amount determined under section 356.551. Payment under this paragraph must be made before the date of termination from public employment covered under this chapter.

(c) If the employee terminates employment covered by this chapter during the leave or following the leave rather than returning to covered employment, payment must be received by the executive director within 30 days after the termination date. The payment amount is equal to the employee and employer contribution rates specified in law for the applicable plan on the day prior to the termination date, multiplied by the employee's hourly rate of salary on that date and by the days and months of the leave of absence prior to termination.

Sec. 2. Minnesota Statutes 2014, section 352.27, is amended to read:

352.27 CREDIT FOR BREAK IN SERVICE TO PROVIDE UNIFORMED SERVICE.

(a) An employee who is absent from employment by reason of service in the uniformed services, as defined in United States Code, title 38, section 4303(13), and who returns to state service upon discharge from service in the uniformed service within the time frames required in United States Code, title 38, section 4312(e), may obtain service credit for the period of the uniformed service as further specified in this section, provided that the employee did not separate from uniformed service with a dishonorable or bad conduct discharge or under other than honorable conditions.

(b) The employee may obtain credit by paying into the fund an equivalent employee contribution based upon the contribution rate or rates in effect at the time that the uniformed service was performed multiplied by the full and fractional years being purchased and applied to the annual salary rate. The annual salary rate is the average annual salary during the purchase period that the employee would have received if the employee had continued to be employed in covered employment rather than to provide uniformed service, or, if the determination of that rate is not reasonably certain, the annual salary rate is the employee's average salary rate during the 12-month period of covered employment rendered immediately preceding the period of the uniformed service.

(c) The equivalent employer contribution and, if applicable, the equivalent additional employer contribution provided in this chapter must be paid by the department employing the employee from funds available to the department at the time and in the manner provided in this chapter, using the employer and additional employer contribution rate or rates in effect at the time that the uniformed service was performed, applied to the same annual salary rate or rates used to compute the equivalent employee contribution.

(d) If the employee equivalent contributions provided in this section are not paid in full, the employee's allowable service credit must be prorated by multiplying the full and fractional number of years of uniformed service eligible for purchase by the ratio obtained by dividing the total employee contribution received by the total employee contribution otherwise required under this section.

(e) To receive service credit under this section, the contributions specified in this section must be transmitted to the Minnesota State Retirement System during the period which begins with the date on which the individual returns to state service and which has a duration of three times the length of the uniformed service period, but not to exceed five years. If the determined payment period is less than one year, the contributions required under this section to receive service credit may be made within one year of the discharge date.

(f) The amount of service credit obtainable under this section may not exceed five years unless a longer purchase period is required under United States Code, title 38, section 4312.

(g) The employing unit shall pay interest on all equivalent employee and employer contribution amounts payable under this section. Interest must be computed at a the applicable rate of 8.5 percent compounded annually from the end of each fiscal year of the leave or the break in service to the end of the month in which the payment is received. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

Sec. 3. Minnesota Statutes 2014, section 352.955, subdivision 3, is amended to read:

Subd. 3. Payment of additional equivalent contributions. (a) An eligible employee who is transferred to plan coverage and who elects to transfer past service credit under this section must pay an additional member contribution for that prior service period. The additional member contribution is the amount computed under paragraph (b), plus the greater of the amount computed under paragraph (c), or 40 percent of the unfunded actuarial accrued liability attributable to the past service credit transfer.

(b) The executive director shall compute, for the most recent 12 months of service credit eligible for transfer, or for the entire period eligible for transfer if less than 12 months, the difference between the employee contribution rate or rates for the general state employees retirement plan and the employee contribution rate or rates for the correctional state employees retirement plan applied to the eligible employee's salary during that transfer period, plus compound interest at a the applicable monthly rate of 0.71

percent. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015.

(c) The executive director shall compute, for any service credit being transferred on behalf of the eligible employee and not included under paragraph (b), the difference between the employee contribution rate or rates for the general state employees retirement plan and the employee contribution rate or rates for the correctional state employees retirement plan applied to the eligible employee's salary during that transfer period, plus compound interest at ~~a the applicable monthly rate of 0.71 percent.~~ The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015.

(d) The executive director shall compute an amount using the process specified in paragraph (b), but based on differences in employer contribution rates between the general state employees retirement plan and the correctional state employees retirement plan rather than employee contribution rates.

(e) The executive director shall compute an amount using the process specified in paragraph (c), but based on differences in employer contribution rates between the general state employees retirement plan and the correctional state employees retirement plan rather than employee contribution rates.

(f) The additional equivalent member contribution under this subdivision must be paid in a lump sum. Payment must accompany the election to transfer the prior service credit. No transfer election or additional equivalent member contribution payment may be made by a person or accepted by the executive director after the one year anniversary date of the effective date of the retirement coverage transfer, or the date on which the eligible employee terminates state employment, whichever is earlier.

(g) If an eligible employee elects to transfer past service credit under this section and pays the additional equivalent member contribution amount under paragraph (a), the applicable department shall pay an additional equivalent employer contribution amount. The additional employer contribution is the amount computed under paragraph (d), plus the greater of the amount computed under paragraph (e), or 60 percent of the unfunded actuarial accrued liability attributable to the past service credit transfer.

(h) The unfunded actuarial accrued liability attributable to the past service credit transfer is the present value of the benefit obtained by the transfer of the service credit to the correctional state employees retirement plan reduced by the amount of the asset transfer under subdivision 4, by the amount of the member contribution equivalent payment computed under paragraph (b), and by the amount of the employer contribution equivalent payment computed under paragraph (d).

(i) The additional equivalent employer contribution under this subdivision must be paid in a lump sum and must be paid within 30 days of the date on which the executive director of the Minnesota State Retirement System certifies to the applicable department that the employee paid the additional equivalent member contribution.

Sec. 4. Minnesota Statutes 2014, section 352B.013, subdivision 2, is amended to read:

Subd. 2. **Purchase procedure.** (a) An employee covered by the plan specified in this chapter may purchase credit for allowable service in the plan for a period specified in subdivision 1 if the employee makes a payment as specified in paragraph (b) or (c), whichever applies. The employing unit, at its option, may pay the employer portion of the amount specified in paragraph (b) on behalf of its employees.

(b) If payment is received by the executive director within one year from the date the employee returned to work following the authorized leave, the payment amount is equal to the employee and employer contribution rates specified in section 352B.02 at the end of the leave period multiplied by the employee's hourly rate of salary on the date of return from the leave of absence and by the days and months of the leave of absence for which the employee is eligible for allowable service credit. The payment must include compound interest at a the applicable monthly rate of 0.71 percent from the last day of the leave period until the last day of the month in which payment is received. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015. If payment is received by the executive director after one year from the date the employee returned to work following the authorized leave, the payment amount is the amount determined under section 356.551. Payment under this paragraph must be made before the date of termination from public employment covered under this chapter.

(c) If the employee terminates employment covered by this chapter during the leave or following the leave rather than returning to covered employment, payment must be received by the executive director within 30 days after the termination date. The payment amount is equal to the employee and employer contribution rates specified in section 352B.02 on the day prior to the termination date, multiplied by the employee's hourly rate of salary on that date and by the days and months of the leave of absence prior to termination.

Sec. 5. Minnesota Statutes 2014, section 352B.085, is amended to read:

352B.085 SERVICE CREDIT FOR CERTAIN DISABILITY LEAVES OF ABSENCE.

A member on leave of absence receiving temporary workers' compensation payments and a reduced salary or no salary from the employer who is entitled to allowable service

credit for the period of absence under section 352B.011, subdivision 3, paragraph (b), may make payment to the fund for the difference between salary received, if any, and the salary that the member would normally receive if the member was not on leave of absence during the period. The member shall pay an amount equal to the member and employer contribution rate under section 352B.02, subdivisions 1b and 1c, on the differential salary amount for the period of the leave of absence. The employing department, at its option, may pay the employer amount on behalf of the member. Payment made under this subdivision must include interest at the applicable rate of 8.5 percent per year, and must be completed within one year of the member's return from the leave of absence. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

Sec. 6. Minnesota Statutes 2014, section 352B.086, is amended to read:

352B.086 SERVICE CREDIT FOR UNIFORMED SERVICE.

(a) A member who is absent from employment by reason of service in the uniformed services, as defined in United States Code, title 38, section 4303(13), and who returns to state employment in a position covered by the plan upon discharge from service in the uniformed services within the time frame required in United States Code, title 38, section 4312(e), may obtain service credit for the period of the uniformed service, provided that the member did not separate from uniformed service with a dishonorable or bad conduct discharge or under other than honorable conditions.

(b) The member may obtain credit by paying into the fund an equivalent member contribution based on the member contribution rate or rates in effect at the time that the uniformed service was performed multiplied by the full and fractional years being purchased and applied to the annual salary rate. The annual salary rate is the average annual salary during the purchase period that the member would have received if the member had continued to provide employment services to the state rather than to provide uniformed service, or if the determination of that rate is not reasonably certain, the annual salary rate is the member's average salary rate during the 12-month period of covered employment rendered immediately preceding the purchase period.

(c) The equivalent employer contribution and, if applicable, the equivalent employer additional contribution, must be paid by the employing unit, using the employer and employer additional contribution rate or rates in effect at the time that the uniformed service was performed, applied to the same annual salary rate or rates used to compute the equivalent member contribution.

(d) If the member equivalent contributions provided for in this section are not paid in full, the member's allowable service credit must be prorated by multiplying the full and

fractional number of years of uniformed service eligible for purchase by the ratio obtained by dividing the total member contributions received by the total member contributions otherwise required under this section.

(e) To receive allowable service credit under this section, the contributions specified in this section must be transmitted to the fund during the period which begins with the date on which the individual returns to state employment covered by the plan and which has a duration of three times the length of the uniformed service period, but not to exceed five years. If the determined payment period is calculated to be less than one year, the contributions required under this section to receive service credit must be transmitted to the fund within one year from the discharge date.

(f) The amount of allowable service credit obtainable under this section may not exceed five years, unless a longer purchase period is required under United States Code, title 38, section 4312.

(g) The employing unit shall pay interest on all equivalent member and employer contribution amounts payable under this section. Interest must be computed at a the applicable rate of 8.5 percent compounded annually from the end of each fiscal year of the leave or break in service to the end of the month in which payment is received. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

Sec. 7. Minnesota Statutes 2014, section 352D.11, subdivision 2, is amended to read:

Subd. 2. **Payments by employee.** An employee entitled to purchase service credit may make the purchase by paying to the state retirement system an amount equal to the current employee contribution rate in effect for the state retirement system applied to the current or final salary rate multiplied by the months and days of prior temporary, intermittent, or contract legislative service. Payment shall be made in one lump sum unless the executive director of the state retirement system agrees to accept payment in installments over a period of not more than three years from the date of the agreement. Installment payments shall be charged interest at ~~an annual~~ the applicable rate of 8.5 percent compounded annually. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

Sec. 8. Minnesota Statutes 2014, section 353.01, subdivision 16, is amended to read:

Subd. 16. **Allowable service; limits and computation.** (a) "Allowable service" means:

(1) service during years of actual membership in the course of which employee deductions were withheld from salary and contributions were made at the applicable rates under section 353.27, 353.65, or 353E.03;

(2) periods of service covered by payments in lieu of salary deductions under sections 353.27, subdivision 12, and 353.35;

(3) service in years during which the public employee was not a member but for which the member later elected, while a member, to obtain credit by making payments to the fund as permitted by any law then in effect;

(4) a period of authorized leave of absence with pay from which deductions for employee contributions are made, deposited, and credited to the fund;

(5) a period of authorized personal, parental, or medical leave of absence without pay, including a leave of absence covered under the federal Family Medical Leave Act, that does not exceed one year, and for which a member obtained service credit for each month in the leave period by payment under section 353.0161 to the fund made in place of salary deductions. An employee must return to public service and render a minimum of three months of allowable service in order to be eligible to make payment under section 353.0161 for a subsequent authorized leave of absence without pay. Upon payment, the employee must be granted allowable service credit for the purchased period;

(6) a periodic, repetitive leave that is offered to all employees of a governmental subdivision. The leave program may not exceed 208 hours per annual normal work cycle as certified to the association by the employer. A participating member obtains service credit by making employee contributions in an amount or amounts based on the member's average salary, excluding overtime pay, that would have been paid if the leave had not been taken. The employer shall pay the employer and additional employer contributions on behalf of the participating member. The employee and the employer are responsible to pay interest on their respective shares at the applicable rate of 8.5 percent a year, compounded annually, from the end of the normal cycle until full payment is made. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. An employer shall also make the employer and additional employer contributions, plus ~~8.5 percent~~ the applicable interest rate, compounded annually, on behalf of an employee who makes employee contributions but terminates public service. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. The employee contributions must be made within one year after the end of the annual normal working cycle or within 30 days after termination of public service, whichever is sooner. The executive director shall prescribe the manner and forms to be

used by a governmental subdivision in administering a periodic, repetitive leave. Upon payment, the member must be granted allowable service credit for the purchased period;

(7) an authorized temporary or seasonal layoff under subdivision 12, limited to three months allowable service per authorized temporary or seasonal layoff in one calendar year.

An employee who has received the maximum service credit allowed for an authorized temporary or seasonal layoff must return to public service and must obtain a minimum of three months of allowable service subsequent to the layoff in order to receive allowable service for a subsequent authorized temporary or seasonal layoff;

(8) a period during which a member is absent from employment by a governmental subdivision by reason of service in the uniformed services, as defined in United States Code, title 38, section 4303(13), if the member returns to public service with the same governmental subdivision upon discharge from service in the uniformed service within the time frames required under United States Code, title 38, section 4312(e), provided that the member did not separate from uniformed service with a dishonorable or bad conduct discharge or under other than honorable conditions. The service must be credited if the member pays into the fund equivalent employee contributions based upon the contribution rate or rates in effect at the time that the uniformed service was performed multiplied by the full and fractional years being purchased and applied to the annual salary rate. The annual salary rate is the average annual salary during the purchase period that the member would have received if the member had continued to be employed in covered employment rather than to provide uniformed service, or, if the determination of that rate is not reasonably certain, the annual salary rate is the member's average salary rate during the 12-month period of covered employment rendered immediately preceding the period of the uniformed service. Payment of the member equivalent contributions must be made during a period that begins with the date on which the individual returns to public employment and that is three times the length of the military leave period, or within five years of the date of discharge from the military service, whichever is less. If the determined payment period is less than one year, the contributions required under this clause to receive service credit may be made within one year of the discharge date. Payment may not be accepted following 30 days after termination of public service under subdivision 11a. If the member equivalent contributions provided for in this clause are not paid in full, the member's allowable service credit must be prorated by multiplying the full and fractional number of years of uniformed service eligible for purchase by the ratio obtained by dividing the total member contributions received by the total member contributions otherwise required under this clause. The equivalent employer contribution, and, if applicable, the equivalent additional employer contribution must be paid by the governmental subdivision

employing the member if the member makes the equivalent employee contributions. The employer payments must be made from funds available to the employing unit, using the employer and additional employer contribution rate or rates in effect at the time that the uniformed service was performed, applied to the same annual salary rate or rates used to compute the equivalent member contribution. The governmental subdivision involved may appropriate money for those payments. The amount of service credit obtainable under this section may not exceed five years unless a longer purchase period is required under United States Code, title 38, section 4312. The employing unit shall pay interest on all equivalent member and employer contribution amounts payable under this clause. Interest must be computed at a the applicable rate of 8.5 percent compounded annually from the end of each fiscal year of the leave or the break in service to the end of the month in which the payment is received. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. Upon payment, the employee must be granted allowable service credit for the purchased period; or

(9) a period specified under section 353.0162.

(b) For calculating benefits under sections 353.30, 353.31, 353.32, and 353.33 for state officers and employees displaced by the Community Corrections Act, chapter 401, and transferred into county service under section 401.04, "allowable service" means the combined years of allowable service as defined in paragraph (a), clauses (1) to (6), and section 352.01, subdivision 11.

(c) No member may receive more than 12 months of allowable service credit in a year either for vesting purposes or for benefit calculation purposes. For an active member who was an active member of the former Minneapolis Firefighters Relief Association on December 29, 2011, "allowable service" is the period of service credited by the Minneapolis Firefighters Relief Association as reflected in the transferred records of the association up to December 30, 2011, and the period of service credited under paragraph (a), clause (1), after December 30, 2011. For an active member who was an active member of the former Minneapolis Police Relief Association on December 29, 2011, "allowable service" is the period of service credited by the Minneapolis Police Relief Association as reflected in the transferred records of the association up to December 30, 2011, and the period of service credited under paragraph (a), clause (1), after December 30, 2011.

(d) MS 2002 [Expired]

Sec. 9. Minnesota Statutes 2014, section 353.0161, subdivision 2, is amended to read:

Subd. 2. Purchase procedure. (a) An employee covered by a plan specified in subdivision 1 may purchase credit for allowable service in that plan for a period specified

in subdivision 1 if the employee makes a payment as specified in paragraph (b) or (c), whichever applies. The employing unit, at its option, may pay the employer portion of the amount specified in paragraph (b) on behalf of its employees.

(b) If payment is received by the executive director within one year from the date the member returned to work following the authorized leave, or within 30 days after the date of termination of public service if the member did not return to work, the payment amount is equal to the employee and employer contribution rates specified in law for the applicable plan at the end of the leave period, or at termination of public service, whichever is earlier, multiplied by the employee's average monthly salary, excluding overtime, upon which deductions were paid during the six months, or portion thereof, before the commencement of the leave of absence and by the number of months of the leave of absence for which the employee wants allowable service credit. Payments made under this paragraph must include compound interest at a the applicable monthly rate of 0.71 percent from the last day of the leave period until the last day of the month in which payment is received. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015.

(c) If payment is received by the executive director after one year, the payment amount is the amount determined under section 356.551. Payment under this paragraph must be made before the date the person terminates public service under section 353.01, subdivision 11a.

Sec. 10. Minnesota Statutes 2014, section 353.0162, is amended to read:

353.0162 REDUCED SALARY PERIODS SALARY CREDIT PURCHASE.

(a) A member may purchase additional salary credit for a period specified in this section.

(b) The applicable period is a period during which the member is receiving a reduced salary from the employer while the member is:

(1) receiving temporary workers' compensation payments related to the member's service to the public employer;

(2) on an authorized medical leave of absence; or

(3) on an authorized partial paid leave of absence as a result of a budgetary or salary savings program offered or mandated by a governmental subdivision.

(c) The differential salary amount is the difference between the average monthly salary received by the member during the period of reduced salary under this section and the average monthly salary of the member, excluding overtime, on which contributions to the applicable plan were made during the period of the last six months of covered

12.1 employment occurring immediately before the period of reduced salary, applied to the
12.2 member's normal employment period, measured in hours or otherwise, as applicable.

12.3 (d) To receive eligible salary credit, the member shall pay an amount equal to:

12.4 (1) the applicable employee contribution rate under section 353.27, subdivision
12.5 2; 353.65, subdivision 2; or 353E.03, subdivision 1, as applicable, multiplied by the
12.6 differential salary amount;

12.7 (2) plus an employer equivalent payment equal to the applicable employer
12.8 contribution rate in section 353.27, subdivision 3; 353.65, subdivision 3; or 353E.03,
12.9 subdivision 2, as applicable, multiplied by the differential salary amount;

12.10 (3) plus, if applicable, an equivalent employer additional amount equal to the
12.11 additional employer contribution rate in section 353.27, subdivision 3a, multiplied by the
12.12 differential salary amount.

12.13 (e) The employer, by appropriate action of its governing body and documented in its
12.14 official records, may pay the employer equivalent contributions and, as applicable, the
12.15 equivalent employer additional contributions on behalf of the member.

12.16 (f) Payment under this section must include interest on the contribution amount or
12.17 amounts, whichever applies, at ~~an 8.5 percent~~ the applicable annual rate, prorated for
12.18 applicable months from the date on which the period of reduced salary specified under
12.19 this section terminates to the date on which the payment or payments are received by
12.20 the executive director. The applicable rate is 8.5 percent for the period before July 1,
12.21 2015, and 8 percent for the period after June 30, 2015. Payment under this section must
12.22 be completed within the earlier of 30 days from termination of public service by the
12.23 employee under section 353.01, subdivision 11a, or one year after the termination of the
12.24 period specified in paragraph (b), as further restricted under this section.

12.25 (g) The period for which additional allowable salary credit may be purchased is
12.26 limited to the period during which the person receives temporary workers' compensation
12.27 payments or for those business years in which the governmental subdivision offers or
12.28 mandates a budget or salary savings program, as certified to the executive director by a
12.29 resolution of the governing body of the governmental subdivision. For an authorized
12.30 medical leave of absence, the period for which allowable salary credit may be purchased
12.31 may not exceed 12 consecutive months of authorized medical leave.

12.32 (h) To purchase salary credit for a subsequent period of temporary workers'
12.33 compensation benefits or subsequent authorized medical leave of absence, the member
12.34 must return to public service and render a minimum of three months of allowable service.

12.35 Sec. 11. Minnesota Statutes 2014, section 354.72, subdivision 2, is amended to read:

Subd. 2. **Purchase procedure.** (a) A teacher may purchase credit for allowable and formula service in the plan for a period specified in subdivision 1 if the teacher makes a payment as specified in paragraph (b), (c), or (d), whichever applies. The employing unit, at its option, may pay the employer portion of the amount on behalf of its employees.

(b) If payment is received by the executive director by June 30 of the fiscal year of the strike period or authorized leave included under section 354.093, 354.095, or 354.096, payment must equal the total employee and employer contribution rates, including amortization contribution rates if applicable, multiplied by the member's average monthly salary rate on the date the leave or strike period commenced, or for an extended leave under section 354.094, on the salary received during the year immediately preceding the initial year of the leave, multiplied by the months and portions of a month of the leave or strike period for which the teacher seeks allowable service credit.

(c) If payment is made after June 30 and before the following June 30 for a strike period or for leaves of absence under section 354.093, 354.095, or 354.096, or for an extended leave of absence under section 354.094, the payment must include the amount determined in paragraph (b) plus compound interest at a the applicable monthly rate of ~~0.71 percent~~ from June 30 until the last day of the month in which payment is received. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for the period after June 30, 2015.

(d) If payment is received by the executive director after the applicable last permitted date under paragraph (c), the payment amount is the amount determined under section 356.551. Notwithstanding payment deadlines specified in section 356.551, payment under this section may be made anytime before the effective date of retirement.

Sec. 12. Minnesota Statutes 2014, section 354A.096, is amended to read:

354A.096 MEDICAL LEAVE.

Any teacher in the coordinated program of the St. Paul Teachers Retirement Fund Association who is on an authorized medical leave of absence and subsequently returns to teaching service is entitled to receive allowable service credit, not to exceed one year, for the period of leave, upon making the prescribed payment to the fund. This payment must include the required employee and employer contributions at the rates specified in section 354A.12, subdivisions 1 and 2a, as applied to the member's average full-time monthly salary rate on the date the leave of absence commenced plus annual interest at the applicable rate of ~~8.5 percent~~ per year from the end of the fiscal year during which the leave terminates to the end of the month during which payment is made. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after

14.1 June 30, 2015. The member must pay the total amount required unless the employing unit,
14.2 at its option, pays the employer contributions. The total amount required must be paid by
14.3 the end of the fiscal year following the fiscal year in which the leave of absence terminated
14.4 or before the member retires, whichever is earlier. Payment must be accompanied by a
14.5 copy of the resolution or action of the employing authority granting the leave and the
14.6 employing authority, upon granting the leave, must certify the leave to the association in a
14.7 manner specified by the executive director. A member may not receive more than one year
14.8 of allowable service credit during any fiscal year by making payment under this section. A
14.9 member may not receive disability benefits under section 354A.36 and receive allowable
14.10 service credit under this section for the same period of time.

14.11 Sec. 13. Minnesota Statutes 2014, section 354A.108, is amended to read:

14.12 **354A.108 PAYMENT BY TEACHERS COLLECTING WORKERS'**
14.13 **COMPENSATION.**

14.14 (a) A member of the Duluth Teachers Retirement Fund Association who is receiving
14.15 temporary workers' compensation payments related to the member's teaching service
14.16 and who either is receiving a reduced salary from the employer or is receiving no salary
14.17 from the employer is entitled to receive allowable service credit for the period of time
14.18 that the member is receiving the workers' compensation payments upon making the
14.19 required payment amount.

14.20 (b) The required amount payable by the member must be calculated first by
14.21 determining the differential salary amount, which is the difference between the salary
14.22 received, if any, during the period of time that the member is collecting workers'
14.23 compensation payments, and the salary that the member received for an identical length
14.24 period immediately before collecting the workers' compensation payments. The member
14.25 shall pay an amount equal to the employee contribution rate under section 354A.12,
14.26 subdivision 1, multiplied by the differential salary amount.

14.27 (c) If the member makes the employee payment under this section, the employing
14.28 unit shall make an employer payment to the Duluth Teachers Retirement Fund Association
14.29 equal to the employer contribution rate under section 354A.12, subdivision 2a, multiplied
14.30 by the differential salary amount.

14.31 (d) Payments made under this subdivision are payable without interest if paid by
14.32 June 30 of the year during which the workers' compensation payments are received by
14.33 the member. If paid after June 30, payments made under this subdivision must include
14.34 interest at the applicable rate of ~~8.5 percent~~ per year. The applicable rate is 8.5 percent for
14.35 the period before July 1, 2015, and 8 percent for the period after June 30, 2015. Payment

15.1 under this section must be completed within one year of the termination of the workers'
15.2 compensation payments to the member.

15.3 Sec. 14. Minnesota Statutes 2014, section 356.195, subdivision 2, is amended to read:

15.4 Subd. 2. **Purchase procedure for strike periods.** (a) An employee covered by a
15.5 plan specified in subdivision 1 may purchase allowable service credit in the applicable
15.6 plan for any period of time during which the employee was on a public employee strike
15.7 without pay, not to exceed a period of one year, if the employee makes a payment in
15.8 lieu of salary deductions as specified in paragraph (b) or (c), whichever applies. The
15.9 employing unit, at its option, may pay the employer portion of the amount specified in
15.10 paragraph (b) on behalf of its employees.

15.11 (b) If payment is received by the applicable pension plan executive director within
15.12 one year from the end of the strike, the payment amount is equal to the applicable
15.13 employee and employer contribution rates specified in law for the applicable plan during
15.14 the strike period, applied to the employee's rate of salary in effect at the conclusion of the
15.15 strike for the period of the strike without pay, plus compound interest at a the applicable
15.16 monthly rate of 0.71 percent from the last day of the strike period until the date payment is
15.17 received. The applicable rate is 0.71 percent before July 1, 2015, and is 0.667 percent for
15.18 the period after June 30, 2015.

15.19 (c) If payment is received by the applicable pension fund director after one year and
15.20 before five years from the end of the strike, the payment amount is the amount determined
15.21 under section 356.551.

15.22 (d) Payments may not be made more than five years after the end of the strike.

15.23 Sec. 15. Minnesota Statutes 2014, section 356.50, subdivision 2, is amended to read:

15.24 Subd. 2. **Service credit procedure.** (a) To obtain the public pension plan
15.25 allowable service credit, the eligible person under subdivision 1 shall pay the required
15.26 member contribution amount. The required member contribution amount is the member
15.27 contribution rate or rates in effect for the pension plan during the period of service covered
15.28 by the back pay award, applied to the unpaid gross salary amounts of the back pay award
15.29 including unemployment insurance, workers' compensation, or wages from other sources
15.30 which reduced the back award. No contributions may be made under this clause for
15.31 compensation covered by a public pension plan listed in section 356.30, subdivision 3,
15.32 for employment during the removal period. The person shall pay the required member
15.33 contribution amount within 60 days of the date of receipt of the back pay award or within
15.34 60 days of a billing from the retirement fund, whichever is later.

(b) The public employer who wrongfully discharged the public employee must pay an employer contribution on the back pay award. The employer contribution must be based on the employer contribution rate or rates in effect for the pension plan during the period of service covered by the back pay award, applied to the salary amount on which the member contribution amount was determined under paragraph (a). Interest on both the required member and employer contribution amount must be paid by the employer at the applicable annual compound rate of ~~8.5 percent~~ per year, expressed monthly, between the date the contribution amount would have been paid to the date of actual payment. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015. The employer payment must be made within 30 days of the payment under paragraph (a).

Sec. 16. Minnesota Statutes 2014, section 356.551, subdivision 2, is amended to read:

Subd. 2. **Determination.** (a) Unless the minimum purchase amount set forth in paragraph (c) applies, the prior service credit purchase amount is an amount equal to the actuarial present value, on the date of payment, as calculated by the chief administrative officer of the pension plan and reviewed by the actuary retained under section 356.214, of the amount of the additional retirement annuity obtained by the acquisition of the additional service credit in this section.

(b) Calculation of this amount must be made using the preretirement interest rate applicable to the public pension plan specified in section 356.215, subdivision 8, and the mortality table adopted for the public pension plan. The calculation must assume continuous future service in the public pension plan until, and retirement at, the age at which the minimum requirements of the fund for normal retirement or retirement with an annuity unreduced for retirement at an early age, including section 356.30, are met with the additional service credit purchased. The calculation must also assume a full-time equivalent salary, or actual salary, whichever is greater, and a future salary history that includes annual salary increases at the applicable salary increase rate for the plan specified in section 356.215, subdivision 4d.

(c) The prior service credit purchase amount may not be less than the amount determined by applying, for each year or fraction of a year being purchased, the sum of the employee contribution rate, the employer contribution rate, and the additional employer contribution rate, if any, applicable during that period, to the person's annual salary during that period, or fractional portion of a year's salary, if applicable, plus interest at the applicable annual rate of ~~8.5 percent~~ compounded annually from the end of the year in which contributions would otherwise have been made to the date on which the payment

is received. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for the period after June 30, 2015.

(d) Unless otherwise provided by statutes governing a specific plan, payment must be made in one lump sum within one year of the prior service credit authorization or prior to the member's effective date of retirement, whichever is earlier. Payment of the amount calculated under this section must be made by the applicable eligible person.

(e) However, the current employer or the prior employer may, at its discretion, pay all or any portion of the payment amount that exceeds an amount equal to the employee contribution rates in effect during the period or periods of prior service applied to the actual salary rates in effect during the period or periods of prior service, plus interest at the rate of 8.5 percent a year compounded annually from the date on which the contributions would otherwise have been made to the date on which the payment is made. If the employer agrees to payments under this subdivision, the purchaser must make the employee payments required under this subdivision within 90 days of the prior service credit authorization. If that employee payment is made, the employer payment under this subdivision must be remitted to the chief administrative officer of the public pension plan within 60 days of receipt by the chief administrative officer of the employee payments specified under this subdivision.

Sec. 17. Minnesota Statutes 2014, section 490.121, subdivision 4, is amended to read:

Subd. 4. **Allowable service.** (a) "Allowable service" means any calendar month, subject to the service credit limit in subdivision 22, served as a judge at any time, during which the judge received compensation for that service from the state, municipality, or county, whichever applies, and for which the judge made any required member contribution. It also includes any month served as a referee in probate for all referees in probate who were in office before January 1, 1974.

(b) "Allowable service" also means a period of authorized leave of absence for which the judge has made a payment in lieu of contributions, not in an amount in excess of the service credit limit under subdivision 22. To obtain the service credit, the judge shall pay an amount equal to the normal cost of the judges retirement plan on the date of return from the leave of absence, as determined in the most recent actuarial report for the plan filed with the Legislative Commission on Pensions and Retirement, multiplied by the judge's average monthly salary rate during the authorized leave of absence and multiplied by the number of months of the authorized leave of absence, plus annual compound interest at the applicable rate of 8.5 percent from the date of the termination of the leave to the date on which payment is made. The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent

18.1 for the period after June 30, 2015. The payment must be made within one year of the date
18.2 on which the authorized leave of absence terminated. Service credit for an authorized
18.3 leave of absence is in addition to a uniformed service leave under section 490.1211.

18.4 (c) "Allowable service" does not mean service as a retired judge.

18.5 Sec. 18. Minnesota Statutes 2014, section 490.1211, is amended to read:

18.6 **490.1211 UNIFORMED SERVICE.**

18.7 (a) A judge who is absent from employment by reason of service in the uniformed
18.8 services, as defined in United States Code, title 38, section 4303(13), and who returns
18.9 to state employment as a judge upon discharge from service in the uniformed service
18.10 within the time frame required in United States Code, title 38, section 4312(e), may obtain
18.11 service credit for the period of the uniformed service, provided that the judge did not
18.12 separate from uniformed service with a dishonorable or bad conduct discharge or under
18.13 other than honorable conditions.

18.14 (b) The judge may obtain credit by paying into the fund equivalent member
18.15 contribution based on the contribution rate or rates in effect at the time that the uniformed
18.16 service was performed multiplied by the full and fractional years being purchased and
18.17 applied to the annual salary rate. The annual salary rate is the average annual salary
18.18 during the purchase period that the judge would have received if the judge had continued
18.19 to provide employment services to the state rather than to provide uniformed service, or
18.20 if the determination of that rate is not reasonably certain, the annual salary rate is the
18.21 judge's average salary rate during the 12-month period of judicial employment rendered
18.22 immediately preceding the purchase period.

18.23 (c) The equivalent employer contribution and, if applicable, the equivalent employer
18.24 additional contribution, must be paid by the employing unit, using the employer and
18.25 employer additional contribution rate or rates in effect at the time that the uniformed
18.26 service was performed, applied to the same annual salary rate or rates used to compute the
18.27 equivalent member contribution.

18.28 (d) If the member equivalent contributions provided for in this section are not paid
18.29 in full, the judge's allowable service credit must be prorated by multiplying the full and
18.30 fractional number of years of uniformed service eligible for purchase by the ratio obtained
18.31 by dividing the total member contributions received by the total member contributions
18.32 otherwise required under this section.

18.33 (e) To receive allowable service credit under this section, the contributions specified
18.34 in this section and section 490.121 must be transmitted to the fund during the period
18.35 which begins with the date on which the individual returns to judicial employment and

19.1 which has a duration of three times the length of the uniformed service period, but not
19.2 to exceed five years. If the determined payment period is calculated to be less than one
19.3 year, the contributions required under this section to receive service credit may be within
19.4 one year from the discharge date.

19.5 (f) The amount of allowable service credit obtainable under this section and section
19.6 490.121 may not exceed five years, unless a longer purchase period is required under
19.7 United States Code, title 38, section 4312.

19.8 (g) The state court administrator shall pay interest on all equivalent member and
19.9 employer contribution amounts payable under this section. Interest must be computed
19.10 at a the applicable rate of 8.5 percent compounded annually from the end of each fiscal
19.11 year of the leave or break in service to the end of the month in which payment is received.
19.12 The applicable rate is 8.5 percent for the period before July 1, 2015, and 8 percent for
19.13 the period after June 30, 2015.

19.14 Sec. 19. **EFFECTIVE DATE.**

19.15 Sections 1 to 18 are effective July 1, 2015."

19.16 Amend the title accordingly

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..... moves to amend H.F. No. 660; S.F. No. 613, as follows:

Page 6, after line 23, insert:

"Sec. 2. **TEMPORARY PROVISION; REVISION OF ANNUITY RESERVE, OPTIONAL ANNUITY FORM, AND EARLY RETIREMENT FACTORS.**

On or before January 1, 2016, the governing boards of the Minnesota State Retirement System, the Public Employees Retirement Association, the Teachers Retirement Association, and the St. Paul Teachers Retirement Fund Association shall revise, for the retirement plan or plans administered, the annuity reserve factors, optional annuity form factors, and early retirement annuity factors, if the annuity is required to be the actuarial equivalent of the normal retirement annuity form. The revision must be undertaken with the recommendation of the approved actuary retained by the retirement system, which recommendation must be retained in the permanent records of the governing board. The revised reserve factors also must be submitted for review by the auditing and reviewing actuary retained by the Legislative Commission on Pensions and Retirement. The applicable retirement fund shall reimburse the Legislative Commission on Pensions and Retirement for the cost of the reserve review at the applicable compensation rates specified in the actuarial services contract between the commission and its contract actuarial consultant.

EFFECTIVE DATE. This section is effective the day following final enactment."

Amend the title accordingly

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..... moves to amend H.F. No. 660; S.F. No. 613, as follows:

Page 1, after line 6, insert:

"ARTICLE 1

INTEREST, SALARY INCREASE, AND PAYROLL GROWTH

ACTUARIAL ASSUMPTION CHANGES"

Page 6, after line 23, insert

"ARTICLE 2

MEMBER AND EMPLOYER CONTRIBUTION RATE INCREASES

Section 1. Minnesota Statutes 2014, section 352.04, subdivision 2, is amended to read:

Subd. 2. **Employee contributions.** (a) The employee contribution to the fund must be equal to the following percent of salary:

from July 1, 2010, to June 30, 2014	5
from July 1, 2014, and thereafter <u>until June 30, 2015</u>	5.5
<u>from July 1, 2015, and thereafter</u>	<u>...</u>

(b) These contributions must be made by deduction from salary as provided in subdivision 4.

Sec. 2. Minnesota Statutes 2014, section 352.04, subdivision 3, is amended to read:

Subd. 3. **Employer contributions.** The employer contribution to the fund must be equal to the following percent of salary:

from July 1, 2010, to June 30, 2014	5
from July 1, 2014, and thereafter <u>until June 30, 2015</u>	5.5
<u>from July 1, 2015, and thereafter</u>	<u>...</u>

Sec. 3. Minnesota Statutes 2014, section 352.92, subdivision 1, is amended to read:

Subdivision 1. **Employee contributions.** (a) Employee contributions of covered correctional employees must be in an amount equal to the following percent of salary:

from July 1, 2010, to June 30, 2014	8.6
from July 1, 2014, and thereafter <u>until June 30, 2015</u>	9.1
<u>from July 1, 2015, and thereafter</u>	...

(b) These contributions must be made by deduction from salary as provided in section 352.04, subdivision 4.

Sec. 4. Minnesota Statutes 2014, section 352.92, subdivision 2, is amended to read:

Subd. 2. **Employer contributions.** The employer shall contribute for covered correctional employees an amount equal to the following percent of salary:

from July 1, 2010, to June 30, 2014	12.1
from July 1, 2014, and thereafter	12.85
<u>from July 1, 2015, and thereafter</u>	...

Sec. 5. Minnesota Statutes 2014, section 352B.02, subdivision 1a, is amended to read:

Subd. 1a. **Member contributions.** (a) The member contribution is the following percentage of the member's salary:

(1) before the first day of the first pay period beginning after July 1, 2014	12.4 percent
(2) (1) on or after the first day of the first pay period beginning after July 1, 2014, to June 30, 2016	13.4 percent
(3) (2) after June 30, 2016, <u>until June 30, 2017</u>	14.4 percent
<u>(3) after June 30, 2017</u>	...

(b) These contributions must be made by deduction from salary as provided in section 352.04, subdivision 4.

Sec. 6. Minnesota Statutes 2014, section 352B.02, subdivision 1c, is amended to read:

Subd. 1c. **Employer contributions.** (a) In addition to member contributions, department heads shall pay a sum equal to the specified percentage of the salary upon which deductions were made, which constitutes the employer contribution to the fund as follows:

(1) before the first day of the first pay period beginning after July 1, 2014	18.6 percent
(2) (1) on or after the first day of the first pay period beginning after July 1, 2014, to June 30, 2016	20.1 percent
(3) (2) after June 30, 2016, <u>until June 30, 2017</u>	21.6 percent
<u>(3) after June 30, 2017</u>	...

3.1 (b) Department contributions must be paid out of money appropriated to departments
3.2 for this purpose.

3.3 Sec. 7. Minnesota Statutes 2014, section 353.27, subdivision 2, is amended to read:

3.4 Subd. 2. **General employees retirement plan; employee contribution.** (a) For
3.5 a basic member of the general employees retirement plan of the Public Employees
3.6 Retirement Association, the employee contribution is 9.10 percent of salary. For a
3.7 coordinated member of the general employees retirement plan of the Public Employees
3.8 Retirement Association, the employee contribution is the following percentage of salary
3.9 plus any contribution rate adjustment under subdivision 3b:

3.10	Effective after December 31, 2010	6.25
3.11	Effective January 1, 2015	6.5
3.12	<u>Effective January 1, 2016</u>	...

3.13 (b) These contributions must be made by deduction from salary as defined in section
3.14 353.01, subdivision 10, in the manner provided in subdivision 4. If any portion of a
3.15 member's salary is paid from other than public funds, the member's employee contribution
3.16 must be based on the total salary received by the member from all sources.

3.17 Sec. 8. Minnesota Statutes 2014, section 353.27, subdivision 3, is amended to read:

3.18 Subd. 3. **General employees retirement plan; employer contribution.** (a) For
3.19 a basic member of the general employees retirement plan of the Public Employees
3.20 Retirement Association, the employer contribution is 9.10 percent of salary. For a
3.21 coordinated member of the general employees retirement plan of the Public Employees
3.22 Retirement Association, the employer contribution is the following percentage of salary
3.23 plus any contribution rate adjustment under subdivision 3b:

3.24	Effective after December 31, 2010	6.25
3.25	Effective January 1, 2015	6.5
3.26	<u>Effective January 1, 2016</u>	...

3.27 (b) This contribution must be made from funds available to the employing
3.28 subdivision by the means and in the manner provided in section 353.28.

3.29 Sec. 9. Minnesota Statutes 2014, section 353.27, subdivision 3a, is amended to read:

3.30 Subd. 3a. **Additional employer contribution.** (a) An additional employer
3.31 contribution to the general employees retirement fund of the Public Employees Retirement
3.32 Association must be made equal to the following applicable percentage of the total salary
3.33 amount for "basic members" and for "coordinated members":

4.1		Basic Program	Coordinated Program
4.2	Effective before January 1, 2006	2.68	.43
4.3	Effective January 1, 2006	2.68	.5
4.4	Effective January 1, 2009	2.68	.75
4.5	Effective January 1, 2010	2.68	1
4.6	<u>Effective January 1, 2016</u>

4.7 These contributions must be made from funds available to the employing subdivision
4.8 by the means and in the manner provided in section 353.28.

4.9 (b) The coordinated program contribution rates set forth in paragraph (a) effective
4.10 for January 1, 2010, must not be implemented if, following receipt of the July 1, 2009,
4.11 annual actuarial valuation report under section 356.215, respectively, the actuarially
4.12 required contributions are equal to or less than the total rates under this section in effect as
4.13 of January 1, 2008.

4.14 (c) This subdivision is repealed once the actuarial value of the assets of the general
4.15 employees retirement plan of the Public Employees Retirement Association equal or
4.16 exceed the actuarial accrued liability of the plan as determined by the actuary retained
4.17 under sections 356.214 and 356.215. The repeal is effective on the first day of the first full
4.18 pay period occurring after March 31 of the calendar year following the issuance of the
4.19 actuarial valuation upon which the repeal is based.

4.20 Sec. 10. Minnesota Statutes 2014, section 353.65, subdivision 2, is amended to read:

4.21 Subd. 2. **Employee contribution.** (a) For members other than members who were
4.22 active members of the former Minneapolis Firefighters Relief Association on December
4.23 29, 2011, or for members other than members who were active members of the former
4.24 Minneapolis Police Relief Association on December 29, 2011, the employee contribution
4.25 is an amount equal to the following percentage of the total salary of each member, as
4.26 follows: 9.6 percent before calendar year 2014; 10.2 percent in calendar year 2014; ~~and~~
4.27 10.8 percent in calendar year 2015; and ... percent in calendar year 2016 and thereafter.

4.28 (b) For members who were active members of the former Minneapolis Firefighters
4.29 Relief Association on December 29, 2011, the employee contribution is an amount
4.30 equal to eight percent of the monthly unit value under section 353.01, subdivision 10a,
4.31 multiplied by 80 and expressed as a biweekly amount for each member. The employee
4.32 contribution made by a member with at least 25 years of service credit as an active
4.33 member of the former Minneapolis Firefighters Relief Association must be deposited in
4.34 the postretirement health care savings account established under section 352.98.

4.35 (c) For members who were active members of the former Minneapolis Police Relief
4.36 Association on December 29, 2011, the employee contribution is an amount equal to eight

percent of the monthly unit value under section 353.01, subdivision 10b, multiplied by 80 and expressed as a biweekly amount for each member. The employee contribution made by a member with at least 25 years of service credit as an active member of the former Minneapolis Police Relief Association must be deposited in the postretirement health care savings account established under section 352.98.

(d) Contributions under this section must be made by deduction from salary in the manner provided in subdivision 4. Where any portion of a member's salary is paid from other than public funds, the member's employee contribution is based on the total salary received from all sources.

Sec. 11. Minnesota Statutes 2014, section 353.65, subdivision 3, is amended to read:

Subd. 3. **Employer contribution.** (a) With respect to members other than members who were active members of the former Minneapolis Firefighters Relief Association on December 29, 2011, or for members other than members who were active members of the former Minneapolis Police Relief Association on December 29, 2011, the employer contribution is an amount equal to the following percentage of the total salary of each member, as follows: 14.4 percent before calendar year 2014; 15.3 percent in calendar year 2014; ~~and~~ 16.2 percent in calendar year 2015; and ... percent in calendar year 2016 and thereafter.

(b) With respect to members who were active members of the former Minneapolis Firefighters Relief Association on December 29, 2011, the employer contribution is an amount equal to the amount of the member contributions under subdivision 2, paragraph (b).

(c) With respect to members who were active members of the former Minneapolis Police Relief Association on December 29, 2011, the employer contribution is an amount equal to the amount of the member contributions under subdivision 2, paragraph (c).

(d) Contributions under this subdivision must be made from funds available to the employing subdivision by the means and in the manner provided in section 353.28.

Sec. 12. Minnesota Statutes 2014, section 353E.03, is amended to read:

353E.03 CORRECTIONAL SERVICE PLAN CONTRIBUTIONS.

Subdivision 1. **Member contributions.** A member of the local government correctional service retirement plan shall make an employee contribution in an amount equal to 5.83 percent of salary before January 1, 2016, and ... percent of salary after December 31, 2015.

Subd. 2. **Employer contributions.** The employer shall contribute for a member of the local government correctional service retirement plan an amount equal to 8.75 percent of salary before January 1, 2016, and ... percent of salary after December 31, 2015.

Sec. 13. Minnesota Statutes 2014, section 354.42, subdivision 2, is amended to read:

Subd. 2. **Employee contribution.** (a) The employee contribution to the fund is the following percentage of the member's salary:

Period	Basic Program	Coordinated Program
from July 1, 2013, until June 30, 2014	10.5 percent	7 percent
after June 30, 2014	11 percent	7.5 percent
<u>after June 30, 2015</u>	<u>... percent</u>	<u>... percent</u>

(b) When an employee contribution rate changes for a fiscal year, the new contribution rate is effective for the entire salary paid for each employer unit with the first payroll cycle reported.

(c) ~~After June 30, 2015,~~ If a contribution rate revision is required under subdivisions 4a, 4b, and 4c, the employee contributions under paragraphs (a) and (b) must be adjusted accordingly.

(d) This contribution must be made by deduction from salary. Where any portion of a member's salary is paid from other than public funds, the member's employee contribution must be based on the entire salary received.

Sec. 14. Minnesota Statutes 2014, section 354.42, subdivision 3, is amended to read:

Subd. 3. **Employer.** (a) The regular employer contribution to the fund by Special School District No. 1, Minneapolis, is an amount equal to the applicable following percentage of salary of each coordinated member and the applicable percentage of salary of each basic member specified in paragraph (c).

The additional employer contribution to the fund by Special School District No. 1, Minneapolis, is an amount equal to 3.64 percent of the salary of each teacher who is a coordinated member or who is a basic member.

(b) The regular employer contribution to the fund by Independent School District No. 709, Duluth, is an amount equal to the applicable percentage of salary of each old law or new law coordinated member specified for the coordinated program in paragraph (c).

(c) The employer contribution to the fund for every other employer is an amount equal to the applicable following percentage of the salary of each coordinated member and the applicable following percentage of the salary of each basic member:

7.1	Period	Coordinated Member	Basic Member
7.2	from July 1, 2013, until June 30, 2014	7 percent	11 percent
7.3	after June 30, 2014	7.5 percent	11.5 percent
7.4	<u>after June 30, 2015</u>	<u>... percent</u>	<u>... percent</u>

7.5 (d) When an employer contribution rate changes for a fiscal year, the new
7.6 contribution rate is effective for the entire salary paid for each employer unit with the
7.7 first payroll cycle reported.

7.8 (e) ~~After June 30, 2015,~~ If a contribution rate revision is made under subdivisions
7.9 4a, 4b, and 4c, the employer contributions under paragraphs (a), (b), and (c) must be
7.10 adjusted accordingly.

7.11 Sec. 15. Minnesota Statutes 2014, section 354A.12, subdivision 1, is amended to read:

7.12 Subdivision 1. **Employee contributions.** (a) The contribution required to be paid
7.13 by each member of the St. Paul Teachers Retirement Fund Association is the percentage
7.14 of total salary specified below for the applicable association and program:

7.15	Program	Percentage of Total Salary
7.16	St. Paul Teachers Retirement Fund Association	
7.17	basic program after June 30, 2014	9 percent
7.18	basic program after June 30, 2015	9.5 percent
7.19	basic program after June 30, 2016	10 percent
7.20	<u>basic program after June 30, 2017</u>	<u>... percent</u>
7.21	coordinated program after June 30, 2014	6.5 percent
7.22	coordinated program after June 30, 2015	7 percent
7.23	coordinated program after June 30, 2016	7.5 percent
7.24	<u>coordinated program after June 30, 2017</u>	<u>... percent</u>

7.25 (b) Contributions must be made by deduction from salary and must be remitted
7.26 directly to the St. Paul Teachers Retirement Fund Association at least once each month.

7.27 (c) When an employee contribution rate changes for a fiscal year, the new
7.28 contribution rate is effective for the entire salary paid by the employer with the first
7.29 payroll cycle reported.

7.30 Sec. 16. Minnesota Statutes 2014, section 354A.12, subdivision 2a, is amended to read:

7.31 Subd. 2a. **Employer regular and additional contributions.** (a) The employing
7.32 units shall make the following employer contributions to the teachers retirement fund
7.33 association:

7.34 (1) for any coordinated member of the St. Paul Teachers Retirement Fund
7.35 Association, the employing unit shall make a regular employer contribution to the

8.1 retirement fund association in an amount equal to the designated percentage of the salary
8.2 of the coordinated member as provided below:

8.3	after June 30, 2014	5.5 percent
8.4	after June 30, 2015	6 percent
8.5	after June 30, 2016	6.25 percent
8.6	after June 30, 2017	6.5 percent
8.7	<u>after June 30, 2018</u>	<u>... percent</u>

8.8 (2) for any basic member of the St. Paul Teachers Retirement Fund Association, the
8.9 employing unit shall make a regular employer contribution to the respective retirement
8.10 fund in an amount according to the schedule below:

8.11	after June 30, 2014	9 percent of salary
8.12	after June 30, 2015	9.5 percent of salary
8.13	after June 30, 2016	9.75 percent of salary
8.14	after June 30, 2017	10 percent of salary
8.15	<u>after June 30, 2018</u>	<u>... percent of salary</u>

8.16 (3) for a basic member of the St. Paul Teachers Retirement Fund Association, the
8.17 employing unit shall make an additional employer contribution to the respective fund in
8.18 an amount equal to 3.64 percent of the salary of the basic member;

8.19 (4) for a coordinated member of the St. Paul Teachers Retirement Fund Association,
8.20 the employing unit shall make an additional employer contribution to the respective fund
8.21 in an amount equal to 3.84 percent of the coordinated member's salary.

8.22 (b) The regular and additional employer contributions must be remitted directly to
8.23 the St. Paul Teachers Retirement Fund Association at least once each month. Delinquent
8.24 amounts are payable with interest under the procedure in subdivision 1a.

8.25 (c) Payments of regular and additional employer contributions for school district
8.26 or technical college employees who are paid from normal operating funds must be made
8.27 from the appropriate fund of the district or technical college.

8.28 (d) When an employer contribution rate changes for a fiscal year, the new
8.29 contribution rate is effective for the entire salary paid by the employer with the first
8.30 payroll cycle reported.

8.31 Sec. 17. Minnesota Statutes 2014, section 490.123, subdivision 1a, is amended to read:

8.32 Subd. 1a. **Member contribution rates.** (a) A judge in the tier I program whose
8.33 service does not exceed the service credit limit in section 490.121, subdivision 22, shall
8.34 contribute to the fund from each salary payment a sum equal to 9.00 percent of salary until
8.35 the first day of the first payroll period beginning after a salary increase occurs after May
8.36 30, 2015, and ... percent of salary on and after that date.

9.1 (b) A judge in the tier II program in office before June 1, 2015, shall contribute to
9.2 the fund from each salary payment a sum equal to 7.00 percent of salary until the first day
9.3 of the first payroll period beginning after a salary increase occurs after May 30, 2015, and
9.4 ... percent of salary on and after that date .

9.5 (c) Contributions under this subdivision are payable by salary deduction. The
9.6 deduction must be made by the state court administrator under section 352.04, subdivisions
9.7 4, 5, and 8.

9.8 Sec. 18. Minnesota Statutes 2014, section 490.123, subdivision 1b, is amended to read:

9.9 Subd. 1b. **Employer contribution rate.** (a) The employer contribution rate to the
9.10 fund on behalf of a judge is 22.5 percent of salary until June 30, 2015, and ... percent of
9.11 salary after June 30, 2015. The employer obligation continues after a judge exceeds the
9.12 service credit limit in section 490.121, subdivision 22.

9.13 (b) The employer contribution must be paid by the state court administrator. The
9.14 employer contribution is payable at the same time as member contributions are made
9.15 under subdivision 1a or as employee contributions are made to the unclassified program
9.16 governed by chapter 352D for judges whose service exceeds the limit in section 490.121,
9.17 subdivision 22, are remitted.

9.18 Sec. **EFFECTIVE DATE.**

9.19 Sections 1 to 18 are effective the day following final enactment."

9.20 Amend the title accordingly

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- 1.1 moves to amend H.F. No. 660; S.F. No. 613, as follows:
- 1.2 Page 5, line 27, delete "4.65" and insert "4.55"

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State of Minnesota

HOUSE OF REPRESENTATIVES

EIGHTY-NINTH SESSION

H. F. No. 660

02/05/2015

Authored by O'Driscoll

The bill was read for the first time and referred to the Committee on Government Operations and Elections Policy

1.1

A bill for an act

1.2

relating to retirement; Minnesota State Retirement System and Public Employees

1.3

Retirement Association; St. Paul teachers retirement plan; modifying various

1.4

economic actuarial assumptions; amending Minnesota Statutes 2014, section

1.5

356.215, subdivision 8.

1.6

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

1.7

Section 1. Minnesota Statutes 2014, section 356.215, subdivision 8, is amended to read:

1.8

Subd. 8. **Interest and salary assumptions.** (a) The actuarial valuation must use the

1.9

applicable following interest assumption:

1.10

(1) select and ultimate interest rate assumption

1.11

ultimate interest

1.12

planrate assumption

1.13

~~general state employees retirement plan~~8.5%

1.14

~~correctional state employees retirement plan~~8.5

1.15

~~State Patrol retirement plan~~8.5

1.16

~~legislators retirement plan, and for the~~0

1.17

~~constitutional officers calculation of total plan~~

1.18

~~liabilities~~

1.19

~~judges retirement plan~~8.5

1.20

~~general public employees retirement plan~~8.5

1.21

~~public employees police and fire retirement plan~~8.5

1.22

~~local government correctional service~~8.5

1.23

~~retirement plan~~

1.24

~~teachers retirement plan~~8.5%

1.25

~~St. Paul teachers retirement plan~~8.5

1.26

~~Except for the legislators retirement plan and the constitutional officers calculation~~

1.27

~~of total plan liabilities,~~ The select preretirement interest rate assumption for the period

1.28

~~after June 30, 2012,~~ through June 30, 2017, is 8 percent.

2.1 (2) single rate interest rate assumption

2.2		interest rate
2.3	plan	assumption
2.4	<u>general state employees retirement plan</u>	<u>8%</u>
2.5	<u>correctional state employees retirement plan</u>	<u>8</u>
2.6	<u>State Patrol retirement plan</u>	<u>8</u>
2.7	<u>legislators retirement plan, and for the</u>	<u>0</u>
2.8	<u>constitutional officers calculation of total plan</u>	
2.9	<u>liabilities</u>	
2.10	<u>judges retirement plan</u>	<u>8</u>
2.11	<u>general public employees retirement plan</u>	<u>8</u>
2.12	<u>public employees police and fire retirement plan</u>	<u>8</u>
2.13	<u>local government correctional service retirement</u>	<u>8</u>
2.14	<u>plan</u>	
2.15	<u>St. Paul teachers retirement plan</u>	<u>8</u>
2.16	Bloomington Fire Department Relief Association	6
2.17	local monthly benefit volunteer firefighters relief	5
2.18	associations	

2.19 (b)(1) If funding stability has been attained, the valuation must use a postretirement
 2.20 adjustment rate actuarial assumption equal to the postretirement adjustment rate specified
 2.21 in section 354A.27, subdivision 7; 354A.29, subdivision 9; or 356.415, subdivision 1,
 2.22 whichever applies.

2.23 (2) If funding stability has not been attained, the valuation must use a select
 2.24 postretirement adjustment rate actuarial assumption equal to the postretirement adjustment
 2.25 rate specified in section 354A.27, subdivision 6a; 354A.29, subdivision 8; or 356.415,
 2.26 subdivision 1a, 1b, 1c, 1d, 1e, or 1f, whichever applies, for a period ending when the
 2.27 approved actuary estimates that the plan will attain the defined funding stability measure,
 2.28 and thereafter an ultimate postretirement adjustment rate actuarial assumption equal
 2.29 to the postretirement adjustment rate under section 354A.27, subdivision 7; 354A.29,
 2.30 subdivision 9; or 356.415, subdivision 1, for the applicable period or periods beginning
 2.31 when funding stability is projected to be attained.

2.32 (c) The actuarial valuation must use the applicable following single rate future salary
 2.33 increase assumption, the applicable following modified single rate future salary increase
 2.34 assumption, or the applicable following graded rate future salary increase assumption:

2.35 (1) single rate future salary increase assumption

2.36	plan	future salary increase assumption
2.37	legislators retirement plan	5%
2.38	judges retirement plan	3
2.39	Bloomington Fire Department Relief	4
2.40	Association	

3.1(2) age-related future salary increase age-related select and ultimate future salary

3.2increase assumption or graded rate future salary increase assumption

3.3planfuture salary increase assumption

3.4local government correctional service retirement planassumption B

3.5St. Paul teachers retirement planassumption A

3.6For plans other than the St. Paul teachers

3.7retirement plan and the local government

3.8correctional service retirement plan, the

3.9select calculation is: during the designated

3.10select period, a designated percentage rate

3.11is multiplied by the result of the designated

3.12integer minus T, where T is the number of

3.13completed years of service, and is added

3.14to the applicable future salary increase

3.15assumption. The designated select period

3.16is ten years and the designated integer is

3.17ten for the local government correctional

3.18service retirement plan and 15 for the St.

3.19Paul Teachers Retirement Fund Association.

3.20The designated percentage rate is 0.2 percent

3.21for the St. Paul Teachers Retirement Fund

3.22Association.

3.23The ultimate future salary increase assumption is:

3.24	age	A	B
3.25	16	5.9%	9% <u>8.75%</u>
3.26	17	5.9	<u>98.75</u>
3.27	18	5.9	<u>98.75</u>
3.28	19	5.9	<u>98.75</u>
3.29	20	5.9	<u>98.75</u>
3.30	21	5.9	8.75 <u>8.5</u>
3.31	22	5.9	8.5 <u>8.25</u>
3.32	23	5.85	8.25 <u>8</u>
3.33	24	5.8	<u>87.75</u>
3.34	25	5.75	7.75 <u>7.5</u>
3.35	26	5.7	7.5 <u>7.25</u>
3.36	27	5.65	<u>7.25</u> <u>7</u>
3.37	28	5.6	<u>76.75</u>
3.38	29	5.55	6.75 <u>6.5</u>

4.1	30	5.5	6.75 <u>6.5</u>
4.2	31	5.45	6.5 <u>6.25</u>
4.3	32	5.4	6.5 <u>6.25</u>
4.4	33	5.35	6.5 <u>6.25</u>
4.5	34	5.3	6.25 <u>6</u>
4.6	35	5.25	6.25 <u>6</u>
4.7	36	5.2	6 <u>5.75</u>
4.8	37	5.15	6 <u>5.75</u>
4.9	38	5.1	6 <u>5.75</u>
4.10	39	5.05	5.75 <u>5.5</u>
4.11	40	5	5.75 <u>5.5</u>
4.12	41	4.95	5.75 <u>5.5</u>
4.13	42	4.9	5.5 <u>5.25</u>
4.14	43	4.85	5.25 <u>5</u>
4.15	44	4.8	5.25 <u>5</u>
4.16	45	4.75	5 <u>4.75</u>
4.17	46	4.7	5 <u>4.75</u>
4.18	47	4.65	5 <u>4.75</u>
4.19	48	4.6	5 <u>4.75</u>
4.20	49	4.55	5 <u>4.75</u>
4.21	50	4.5	5 <u>4.75</u>
4.22	51	4.45	5 <u>4.75</u>
4.23	52	4.4	5 <u>4.75</u>
4.24	53	4.35	5 <u>4.75</u>
4.25	54	4.3	5 <u>4.75</u>
4.26	55	4.25	4.75 <u>4.5</u>
4.27	56	4.2	4.75 <u>4.5</u>
4.28	57	4.15	4.5 <u>4.25</u>
4.29	58	4.1	4.25 <u>4</u>
4.30	59	4.05	4.25 <u>4</u>
4.31	60	4	4.25 <u>4</u>
4.32	61	4	4.25 <u>4</u>
4.33	62	4	4.25 <u>4</u>
4.34	63	4	4.25 <u>4</u>
4.35	64	4	4.25 <u>4</u>
4.36	65	4	4 <u>3.75</u>
4.37	66	4	4 <u>3.75</u>
4.38	67	4	4 <u>3.75</u>
4.39	68	4	4 <u>3.75</u>
4.40	69	4	4 <u>3.75</u>
4.41	70	4	4 <u>3.75</u>

4.42 (3) service-related ultimate future salary increase assumption

5.1	general state employees retirement plan of the						assumption A
5.2	Minnesota State Retirement System						
5.3	general employees retirement plan of the Public						assumption B
5.4	Employees Retirement Association						
5.5	Teachers Retirement Association						assumption C
5.6	public employees police and fire retirement plan						assumption D
5.7	State Patrol retirement plan						assumption E
5.8	correctional state employees retirement plan of the						assumption F
5.9	Minnesota State Retirement System						
5.10	service						
5.11	length	A	B	C	D	E	F
5.12	1	10.5%	12.03%	12%	13%	8%7.75%	6%5.75%
5.13		<u>10.25%</u>	<u>11.78%</u>		<u>12.75%</u>		
5.14	2	8.17.85	8.98.65	9	1110.75	7.57.25	5.855.6
5.15	3	6.96.65	7.467.21	8	98.75	76.75	5.75.45
5.16	4	6.25.95	6.586.33	7.5	87.75	6.756.5	5.555.3
5.17	5	5.75.45	5.975.72	7.25	6.56.25	6.56.25	5.45.15
5.18	6	5.35.05	5.525.27	7	6.15.85	6.256	5.255
5.19	7	54.75	5.164.91	6.85	5.85.55	65.75	5.14.85
5.20	8	4.74.45	4.874.62	6.7	5.65.35	5.855.6	4.954.7
5.21	9	4.54.25	4.634.38	6.55	5.45.15	5.75.45	4.84.55
5.22	10	4.44.15	4.424.17	6.4	5.35.05	5.555.3	4.654.4
5.23	11	4.23.95	4.243.99	6.25	5.24.95	5.45.15	4.554.3
5.24	12	4.13.85	4.083.83	6	5.14.85	5.255	4.454.2
5.25	13	43.75	3.943.69	5.75	54.75	5.14.85	4.354.1
5.26	14	3.83.55	3.823.57	5.5	4.94.65	4.954.7	4.254
5.27	15	3.73.45	3.73.45	5.25	4.84.55	4.84.65	4.153.9
5.28	16	3.63.35	3.63.35	5	4.84.55	4.654.4	4.053.8
5.29	17	3.53.25	3.513.26	4.75	4.84.55	4.54.25	3.953.7
5.30	18	3.53.25	3.53.25	4.5	4.84.55	4.354.1	3.853.6
5.31	19	3.53.25	3.53.25	4.25	4.84.55	4.23.95	3.753.5
5.32	20	3.53.25	3.53.25	4	4.84.55	4.053.8	3.753.5
5.33	21	3.53.25	3.53.25	3.9	4.74.45	43.75	3.753.5
5.34	22	3.53.25	3.53.25	3.8	4.64.35	43.75	3.753.5
5.35	23	3.53.25	3.53.25	3.7	4.54.25	43.75	3.753.5
5.36	24	3.53.25	3.53.25	3.6	4.54.25	43.75	3.753.5
5.37	25	3.53.25	3.53.25	3.5	4.54.25	43.75	3.753.5
5.38	26	3.53.25	3.53.25	3.5	4.54.25	43.75	3.753.5
5.39	27	3.53.25	3.53.25	3.5	4.54.25	43.75	3.753.5
5.40	28	3.53.25	3.53.25	3.5	4.54.25	43.75	3.753.5
5.41	29	3.53.25	3.53.25	3.5	4.54.25	43.75	3.753.5
5.42	30 or more	3.53.25	3.53.25	3.5	4.54.25	43.75	3.753.5

5.43 (d) The actuarial valuation must use the applicable following payroll growth
5.44 assumption for calculating the amortization requirement for the unfunded actuarial

6.1 accrued liability where the amortization retirement is calculated as a level percentage
 6.2 of an increasing payroll:

6.3	plan	payroll growth assumption
6.4	general state employees retirement plan of the	3.75% <u>3.5%</u>
6.5	Minnesota State Retirement System	
6.6	correctional state employees retirement plan	3.75 <u>3.5</u>
6.7	State Patrol retirement plan	3.75 <u>3.5</u>
6.8	judges retirement plan	3.2 <u>2.75</u>
6.9	general employees retirement plan of the Public	3.75 <u>3.5</u>
6.10	Employees Retirement Association	
6.11	public employees police and fire retirement plan	3.75 <u>3.5</u>
6.12	local government correctional service retirement plan	3.75 <u>3.5</u>
6.13	teachers retirement plan	3.75
6.14	St. Paul teachers retirement plan	4

6.15 (e) The assumptions set forth in paragraphs (c) and (d) continue to apply, unless a
 6.16 different salary assumption or a different payroll increase assumption:

6.17 (1) has been proposed by the governing board of the applicable retirement plan;

6.18 (2) is accompanied by the concurring recommendation of the actuary retained under
 6.19 section 356.214, subdivision 1, if applicable, or by the approved actuary preparing the
 6.20 most recent actuarial valuation report if section 356.214 does not apply; and

6.21 (3) has been approved or deemed approved under subdivision 18.

6.22 **EFFECTIVE DATE.** This section is effective June 30, 2015, and applies to
 6.23 actuarial valuations prepared for an actuarial valuation date after that date.