Wisconsin Sick Leave Conversion Credit Programs

Three-Year Experience Study

January 1, 2021 – December 31, 2023

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November 18, 2024

The Employee Trust Funds Board
4822 Madison Yards Way
Madison, Wisconsin 53705

Ladies and Gentlemen:

The results of the ***3-year investigation of experience*** of the Wisconsin Sick Leave Conversion Credit Programs are presented in this report. The investigation was made for the purpose of updating the actuarial assumptions used in valuing the actuarial liabilities of the Wisconsin Sick Leave Conversion Credit Programs.

The investigation was based upon the statistical data furnished for the annual actuarial valuations, supplemental information furnished by your Secretary and his staff, concerning State Participant and Health Care experience during the last 3 years and on published historical economic data.

The investigation covered the 3-year period from **January 1, 2021 to December 31, 2023**, and was carried out using generally accepted actuarial principles and techniques.

To the best of our knowledge, this report is complete and accurate and was made in accordance with generally recognized actuarial methods. Mark Buis, James D. Anderson and Richard C. Koch Jr. are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

We believe that the new actuarial assumptions resulting from this investigation represent a reasonable estimate of possible future experience of the Wisconsin Sick Leave Conversion Credit Programs.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Mark Buis, FSA, EA, FCA, MAAA

James D. Anderson, FSA, EA, FCA, MAAA

Richard C. Koch Jr., FSA, EA, MAAA

MB/JDA/RCK:ah

EXECUTIVE SUMMARY

Executive Summary

In this report, we review current actuarial assumptions and methods and compare them to the actual experience of the Sick Leave Conversion Credit Programs – Accumulated Sick Leave Conversion Credit (ASLCC) Program and Supplemental Health Insurance Conversion Credit (SHICC) Program -- for the years 2021-2023. Note that economic and demographic assumptions were developed in the concurrent Wisconsin Retirement System (WRS) Experience study. The results of that study inform certain conclusions herein. Full listings of demographic assumptions pertinent to State employees covered by these programs are displayed in Section A.

The table below lists each of the primary assumptions and methods that we analyzed, including our recommendations for each item, and the overall financial impact of any recommended changes.

Assumption	2023 Recommendation	Financial Impact – Plan Liabilities and Contribution Rates
Withdrawal rates	Varies	Increase
Disability rates	Higher Rates	Increase
Pay increases due to seniority	Higher Rates	Increase
Retirement rates	Higher Rates	Increase
Pre and post-retirement mortality rates	No Change	No Change
Investment return	No Change	No Change
Wage inflation	No Change	No Change
Price inflation	No Change	No Change
Health care trend	Change Rates	Increase
Health care premiums method	No Change	No Change
Participation for future retirees	Decrease	Decrease
Marriage assumption	No Change	No Change
Accumulation of sick leave balances	No Change	No Change
Usage assumption for on-hold/escrowed retirees	Decrease	Decrease
Total	**Various**	**Various**

A common practice is that the actuary recommends a set of demographic assumptions which the Board adopts. The actuary then suggests a range of reasonable alternate economic assumptions. Following discussion involving the actuary, the plan governing body, and other professionals, the plan governing body makes a final choice from the various alternatives.

The overall impact on the contribution rate is shown on page A-6.

New assumptions will be first used in the December 31, 2024 actuarial valuations, at which time experience gains or losses incurred during 2024 will also be recognized. This would first impact rates in 2026. Consequently, no rate changes are recommended for fiscal year 2025 based upon this study.

SECTION A

SUMMARY OF FINDINGS

Introduction

Each year, as of December 31, the liabilities of the Wisconsin Sick Leave Conversion Credit Programs ("SLCC") are valued. In order to perform the valuation, assumptions must be made regarding the future experience of the SLCC with regard to the following risk areas:

- Rates of **withdrawal** of active participants.
- Rates of **disability** among active participants.
- Patterns of **salary increases** to active participants.
- Rates of **retirement** among active participants.
- Rates of **mortality** among active participants, retirees, and beneficiaries.
- Long-term rates of **investment return** to be generated by the assets of the Fund.
- Miscellaneous and Technical Assumptions, including a marriage assumption.

The above assumptions were investigated in detail in a separate experience study for the Wisconsin Retirement System, covering the 3-year period 2021-2023. Certain results from that study are developed and incorporated herein as appropriate.

Assumptions/methods unique to the SLCC include:

- Health care trend
- Health care premiums
- Participation for future retirees
- Accumulation and usage of sick leave credits

Assumptions should be carefully chosen and continually monitored. A poor initial choice of assumptions or continued use of outdated assumptions can lead to:

- Understated costs resulting in either an inability to pay benefits when due, or sharp increases in required contributions at some point in the future.
- Overstated costs resulting in either benefit levels that are kept below the level that could be supported by the computed rate or an unnecessarily large burden on the current generation of employers and taxpayers.

A single set of assumptions will not be suitable indefinitely. Conditions change, and our understanding of conditions also changes.

In recognition of this, assumptions used to compute the liabilities of the SLCC should be periodically studied in depth. The package of assumptions is then adjusted to reflect basic experience trends -- but not random year to year fluctuations.

Summary of Decrement Experience

The Wisconsin Retirement System experience study investigated decrement experience in detail. The following summarizes demographic assumption changes from that study that impact the SLCC – and in particular, the assumptions that were specifically developed for State employees for use in the Sick Leave valuation. As noted in the WRS Experience Study, in most cases, when adjustments are indicated, the proposed assumptions give partial recognition to present assumptions as well as to results from actual experience. Complete recognition is rarely given to actual experience over a limited period. This would cause contribution rates to be unduly sensitive to short-term experience fluctuations. **Please reference the Wisconsin Retirement System 2021-2023 report for the underlying analysis in developing new decrement assumptions for State employees. For the Public Schools and Protective without Social Security groups, only one set of non-State assumptions were developed due to not having enough State employees to develop separate assumptions.**

Recommendations from the WRS Experience Study follow:
Most of the decrement assumptions derived in the WRS Experience Study are based on weighting of pension liability. Since both sick leave and pension liability are driven primarily by pay and service, we believe it is reasonable to use the same assumptions in the Sick Leave valuation.

Withdrawal Rates: We recommend that the withdrawal (termination) rates be modified to move closer to the liability weighted rates. This change had a small downward effect on Sick Leave liabilities.

Disability Rates: We recommend increasing the incidence of disability for most groups. This change had a small upward effect on Sick Leave liabilities.

Pay Increase Rate (Merit and Longevity Portion): We recommend increasing the rates of merit and longevity pay increases to better reflect the actual rates over the study period. This change had an upward effect on Sick Leave liabilities.

Normal and Reduced Retirement Experience: We recommend modifying the normal retirement rates slightly for various groups to move closer to the observed liability weighted rates. This change had a small upward effect on Sick Leave liabilities.

Mortality: We recommend continued use of the 2020 WRS Experience Tables for Employees/Healthy Retirees/Disabled Retirees, amount-weighted and projected with mortality improvements using the fully generational MP-2021 projection scale from a base year of 2010. Further, we recommend that the mortality improvement scale remain unchanged until the next experience study. There are no changes to the mortality tables used in the Sick Leave valuation, so there is no impact on Sick Leave liabilities.

Marriage Assumption: We recommend no change to the current assumption of 75% of males and 55% of females are assumed to be married. We also recommend the continued use of the assumption that male spouses are two years older than female spouses. There are no changes being recommended, so there is no impact on Sick Leave liabilities.

Complete listings of all assumptions begin on page B-1.

Summary of Sick Leave Specific Factors

Health Care Cost Trend

Trend rates are used to project results from the experience period to the rating period. While experience is often the best starting point for future costs, we do not rely on a group's experience in setting trend assumptions since trends vary significantly from year-to-year and are not credible for most groups. Therefore, professional judgment and industry benchmarks are used in conjunction with historical experience in setting the trend assumptions. Various benefit segments of the health care environment are studied including non-Medicare medical, Medicare medical, prescription drug, dental and vision.

The current health care trend assumption begins at 5.50% (as of the December 31, 2023 valuation) and grades down to an ultimate rate of 3.50% in 10 years.

Based on recommendations from GRS health care actuaries and review of the trend assumption used for the State of Wisconsin Retiree Health Program, we recommend a trend assumption beginning at 6.50% for the first year grading down to an ultimate health care trend rate of 4.50% over a 10 year period. The near-term rates reflect expected increases in the current cost of health care goods and services, and the ultimate rate is increased to better reflect long-term expectations. **We propose adopting this trend assumption for valuation purposes.** This change had an upward impact on liabilities.

Health Care Premiums

Unused Sick Leave conversion credits are used to cover the cost of health insurance premiums for the employee and eligible dependents. Health insurance premiums vary among a variety of health plans and health plan designs offered under the State of Wisconsin Group Health Insurance Program.

We recommend no change in the method used in developing the blended net premiums used in the Sick Leave valuation. The associated monthly premiums as of January 1, 2024 follow, but will be updated with the December 31, 2024 valuation:

	Non-Medicare Premium	Medicare Premium
1-Person Coverage	$ 988.10	$428.96
Multiple-Person Coverage	$2,382.55	$790.48
Blended Net Premium*	$1,685.33	$609.72

** Used in the valuation of all current active employees, deferred members and on-hold/escrowed retirees. For retirees currently using sick leave credits, the actual premiums provided in the data are used. Blended net premium is a blend of the 1-person and Multiple-person average premiums based on the 50% 1-person/Multiple-person election percent assumption (see next page).*

Summary of Sick Leave Specific Factors

In conjunction with reflecting 1-person and Multiple-person coverage, an election percentage assumption of 50% will be incorporated into the valuation, based on the following data:

Election Percent Assumption				
Year	Number of 1-person Retiree Contracts	Number of Multiple-person Retiree Contracts	Percent Electing 1-person Coverage	Percent Electing Multiple-Person Coverage
2021	9,403	9,289	50.30%	49.70%
2022	9,687	9,510	50.46%	49.54%
2023	9,744	9,530	50.56%	49.44%

No change in method is being recommended.

Participation

The valuation currently assumes that 100% of active and terminated vested members would begin using sick leave credits to cover health care costs immediately upon reaching eligibility to do so. We developed the statistic shown in the table below, based on original member data status of "Escrowed" compared to the total number of retiree records. The resulting participation rates are roughly 89% each year during the last 3 years. We know from analysis related to escrowed/on-hold usage (explored later in this report) that roughly half of this group begins using credits in the future. We recommend reducing the participation assumption to 95%. This change put downward pressure on Sick Leave liabilities.

Participation Assumption				
Year	Number Escrowed Originally	Total Retiree Count (excluding Closed Accounts)	% of People Not Participating Immediately	% of People Participating Immediately
2021	2,760	24,483	11.27%	88.73%
2022	2,838	25,127	11.29%	88.71%
2023	2,827	25,294	11.18%	88.82%

Accumulation While Employed

Current and Recommended Approach: Start with balance accrued to date, and add net sick leave accrual derived from sick leave hours and service provided in the data. For purposes of estimating sick leave balances at retirement, each individual was assumed to continue using sick leave at the same rate as in the past but not more than 75% of the person's annual gross accrual rate based on the person's employer. In other words, the member can accrue at most 100% of their gross accrual rate but not less than 25% of their gross accrual rate. The assumed annual gross accrual rates used are 6.4 days for Beyond Vision, 12 days for University Hospital and Non-Staff University employees and 16.25 days for all other members based on documentation received from the Department of Employee Trust Funds.

There is no impact on Sick Leave liabilities.

Summary of Sick Leave Specific Factors

Assumption for On-Hold/Escrowed Retirees

Payments from the sick leave account may be escrowed indefinitely after retirement for participants who provide evidence of comparable health insurance coverage from another source.

Current and Recommended Approach: Explicitly model those on-hold/escrowed retirees reported in the data. The present value of future benefits will be calculated by drawing down each member's account balance using the same average premiums applicable to active members. We will apply a 50% factor to the present value to account for the assumption that only 50% of these on-hold/escrowed retirees will, at some point, begin using their sick leave balance to pay for health care costs.

In reevaluating the 50% assumption, we reviewed the number of annuitants who were escrowed in the 2014 sick leave data, with an account status of escrowed/on-hold (5,403 records). Of the 5,403 records, we identified 2,280 who, at some point in the last 10 years, began using their sick leave credits. The data suggests that roughly 42% (2,280/5,403) of members who were escrowed or on-hold at first eligibility subsequently began using their sick leave credits. We recommend reducing the current assumption of 50% to assuming 45% of the current escrowed/on-hold annuitants will at some point use their sick leave credits in the future. This has a small downward effect on Sick Leave liabilities.

Summary of Valuation Results

In developing hypothetical valuation results, the numbers below reflect recommended demographic and Sick Leave specific assumptions detailed earlier in this report. In addition, the results below are based on economic assumptions developed in the Wisconsin Retirement System 2021-2023 experience study.

Summary of Economic Assumptions from WRS Experience Study:

Measure	Recommended Assumption
Price Inflation	2.4%
Wage Inflation	3.0%
Investment Return	6.8%

The table below describes hypothetical valuation results at December 31, 2023 with current and proposed actuarial assumptions. The rate changes should be considered illustrative in nature, since contribution rates have already been set based upon the actual December 31, 2023 valuation results.

	12/31/2023	Hypothetical Results as of 12/31/2023
	Actual Results[1]	Recommended Changes[2]
Price Inflation	2.40%	2.40%
Wage Inflation	3.00%	3.00%
Investment Return	6.80%	6.80%
ASLCC Rate	**0.96%**	**0.94%**
SHICC Rate	**0.34%**	**0.46%**
Total Rate	**1.30%**	**1.40%**

1 Note that published valuation results are shown to one decimal place and potentially limited by statute – as such, the December 31, 2023 valuation report shows an actual ASLCC rate of 0.9%. Also, for clarity in presentation of experience study results, the figures above are shown to 2 decimal places.

2 Recommended changes include updated demographic assumptions, health care trend assumption, participation assumption and usage assumption.

New assumptions will be first used in the December 31, 2024 actuarial valuations, at which time experience gains or losses incurred during 2024 will also be recognized. This would first impact rates in 2026. Consequently, no rate changes are recommended for 2025 based upon this study.

SECTION B

COMPLETE LISTS OF PROPOSED DECREMENT ASSUMPTIONS

Actuarial Assumptions
Based on 2021-2023 Experience Study

Select and Ultimate Withdrawal*

Age	Service	% of Active Participants Withdrawing								
		General		Public Schools		University		Protective		Executive
		Male	Female	Male	Female	Male	Female	With SS	Without SS	& Elected
	0-1	17.2%	19.5%	12.6%	12.0%	14.0%	14.1%	21.0%	5.5%	19.0%
	1-2	12.9%	15.5%	11.6%	10.0%	13.8%	14.0%	17.0%	4.2%	16.0%
	2-3	9.5%	12.5%	8.5%	8.5%	12.6%	12.7%	11.0%	2.4%	13.0%
	3-4	7.4%	10.0%	6.0%	6.2%	11.0%	10.0%	7.0%	2.2%	12.5%
	4-5	7.3%	8.7%	5.6%	5.8%	8.6%	9.3%	6.0%	1.6%	12.0%
	5-6	6.1%	7.8%	4.5%	4.8%	8.5%	8.1%	5.5%	1.4%	6.0%
	6-7	5.2%	6.9%	3.7%	4.1%	7.0%	7.0%	4.9%	1.3%	6.0%
	7-8	5.1%	6.0%	2.9%	3.5%	5.6%	5.6%	4.1%	1.2%	6.0%
	8-9	4.5%	5.6%	2.6%	3.4%	4.6%	4.9%	3.5%	1.1%	6.0%
	9-10	3.6%	5.5%	2.5%	3.0%	4.3%	4.3%	3.4%	1.0%	6.0%
Under 30	10 & Up	3.4%	4.8%	2.0%	2.2%	3.9%	4.0%	2.9%	0.7%	4.5%
31		3.4%	4.8%	1.9%	2.1%	3.7%	4.0%	2.8%	0.7%	4.5%
32		3.4%	4.7%	1.7%	2.0%	3.6%	4.0%	2.8%	0.7%	4.5%
33		3.3%	4.4%	1.7%	2.0%	3.6%	4.0%	2.7%	0.6%	4.5%
34		3.3%	4.2%	1.6%	1.9%	3.5%	4.0%	2.6%	0.6%	4.5%
35		3.3%	3.9%	1.6%	1.9%	3.5%	4.0%	2.4%	0.6%	4.5%
36		3.2%	3.7%	1.5%	1.8%	3.4%	4.0%	2.3%	0.6%	4.5%
37		3.2%	3.4%	1.5%	1.8%	3.4%	4.0%	2.2%	0.6%	4.5%
38		3.1%	3.3%	1.5%	1.7%	3.3%	3.9%	2.1%	0.6%	4.5%
39		3.0%	3.2%	1.5%	1.7%	3.2%	3.8%	2.0%	0.6%	4.5%
40		3.0%	3.0%	1.4%	1.6%	3.1%	3.7%	1.8%	0.6%	4.5%
41		2.9%	2.9%	1.4%	1.5%	3.0%	3.6%	1.7%	0.6%	4.5%
42		2.8%	2.8%	1.4%	1.5%	2.9%	3.5%	1.6%	0.6%	4.5%
43		2.7%	2.8%	1.4%	1.4%	2.8%	3.4%	1.5%	0.5%	4.4%
44		2.6%	2.7%	1.4%	1.4%	2.7%	3.3%	1.5%	0.5%	4.3%
45		2.5%	2.7%	1.4%	1.4%	2.6%	3.2%	1.4%	0.5%	4.2%
46		2.4%	2.6%	1.4%	1.3%	2.5%	3.1%	1.4%	0.5%	4.1%
47		2.3%	2.6%	1.4%	1.3%	2.4%	3.0%	1.3%	0.5%	4.0%
48		2.2%	2.4%	1.3%	1.3%	2.3%	2.9%	1.3%	0.5%	3.9%
49		2.1%	2.3%	1.3%	1.2%	2.2%	2.8%	1.3%	0.5%	3.8%
50		2.0%	2.1%	1.3%	1.2%	2.2%	2.7%	1.2%	0.5%	3.7%
51		1.9%	2.0%	1.3%	1.2%	2.1%	2.6%	1.2%	0.5%	3.6%
52		1.9%	1.8%	1.3%	1.2%	2.0%	2.5%	1.2%	0.5%	3.5%
53		1.9%	1.8%	1.3%	1.2%	2.0%	2.5%	1.2%	0.5%	3.5%
54		1.9%	1.8%	1.3%	1.2%	2.0%	2.5%	1.2%	0.5%	3.5%

* *Rates shown are based on the proposed State assumptions developed in the Retirement System experience study with the exception of Public Schools and Protective without Social Security. For these groups, the rates shown are based on the non-State assumptions.*

Actuarial Assumptions
Based on 2021-2023 Experience Study

Disability Rates*

Age	% of Active Participants Becoming Disabled								
	General		Public Schools		University		Protective		Executive
	Male	Female	Male	Female	Male	Female	With SS	Without SS	& Elected
20	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
21	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
22	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
23	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
24	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
25	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
26	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
27	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
28	0.01%	0.03%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
29	0.01%	0.03%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
30	0.01%	0.04%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
31	0.01%	0.04%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
32	0.01%	0.04%	0.01%	0.01%	0.00%	0.01%	0.02%	0.04%	0.00%
33	0.01%	0.04%	0.01%	0.01%	0.00%	0.02%	0.02%	0.04%	0.00%
34	0.01%	0.05%	0.01%	0.01%	0.00%	0.02%	0.03%	0.04%	0.00%
35	0.01%	0.05%	0.01%	0.01%	0.00%	0.03%	0.03%	0.04%	0.01%
36	0.01%	0.05%	0.01%	0.01%	0.00%	0.03%	0.04%	0.04%	0.01%
37	0.02%	0.05%	0.01%	0.01%	0.00%	0.04%	0.04%	0.04%	0.01%
38	0.02%	0.06%	0.01%	0.01%	0.00%	0.04%	0.04%	0.05%	0.01%
39	0.03%	0.07%	0.01%	0.02%	0.00%	0.04%	0.04%	0.05%	0.01%
40	0.03%	0.07%	0.01%	0.02%	0.01%	0.04%	0.05%	0.06%	0.01%
41	0.04%	0.08%	0.02%	0.02%	0.01%	0.04%	0.05%	0.06%	0.01%
42	0.05%	0.08%	0.02%	0.02%	0.01%	0.05%	0.05%	0.07%	0.01%
43	0.05%	0.09%	0.02%	0.04%	0.01%	0.04%	0.06%	0.08%	0.01%
44	0.06%	0.11%	0.03%	0.05%	0.01%	0.04%	0.06%	0.10%	0.01%
45	0.06%	0.11%	0.03%	0.06%	0.02%	0.04%	0.07%	0.11%	0.01%
46	0.06%	0.12%	0.03%	0.07%	0.02%	0.04%	0.07%	0.13%	0.02%
47	0.06%	0.12%	0.03%	0.09%	0.02%	0.04%	0.08%	0.14%	0.02%
48	0.09%	0.14%	0.04%	0.09%	0.02%	0.05%	0.09%	0.31%	0.02%
49	0.11%	0.15%	0.06%	0.10%	0.02%	0.06%	0.10%	0.48%	0.02%
50	0.13%	0.17%	0.08%	0.10%	0.03%	0.07%	0.11%	0.64%	0.02%
51	0.15%	0.18%	0.10%	0.11%	0.03%	0.08%	0.12%	0.81%	0.03%
52	0.17%	0.20%	0.12%	0.12%	0.04%	0.09%	0.13%	0.98%	0.03%
53	0.20%	0.23%	0.13%	0.13%	0.05%	0.10%	0.66%	0.81%	0.05%
54	0.22%	0.27%	0.13%	0.14%	0.07%	0.10%	1.20%	0.64%	0.08%
55	0.25%	0.30%	0.14%	0.15%	0.08%	0.11%	1.73%	0.48%	0.09%
56	0.29%	0.34%	0.15%	0.17%	0.10%	0.12%	2.27%	0.31%	0.11%
57	0.31%	0.38%	0.16%	0.18%	0.12%	0.13%	2.80%	0.14%	0.12%
58	0.34%	0.40%	0.19%	0.20%	0.12%	0.14%	2.84%	0.14%	0.12%
59	0.38%	0.41%	0.21%	0.22%	0.11%	0.15%	2.88%	0.14%	0.11%
60	0.45%	0.43%	0.24%	0.22%	0.11%	0.17%	2.92%	0.14%	0.11%

* *Rates shown are based on the proposed State assumptions developed in the Retirement System experience study with the exception of Public Schools and Protective without Social Security. For these groups, the rates shown are based on the non-State assumptions.*

Actuarial Assumptions
Based on 2021-2023 Experience Study

Salary Scale – Service Based Rates*

Service	% Merit Increases in Salaries Next Year					
	General (Not Including Schools)	University Teachers	Public School Teachers	Protective With SS	Protective Without SS	Executive & Elected
1	3.6%	3.1%	5.7%	4.9%	5.5%	2.6%
2	3.6%	3.1%	5.7%	4.9%	5.5%	2.6%
3	3.2%	3.0%	5.3%	4.2%	4.7%	2.1%
4	2.9%	2.9%	4.8%	3.6%	3.8%	1.7%
5	2.6%	2.8%	4.4%	2.9%	3.0%	1.2%
6	2.3%	2.7%	3.9%	2.3%	2.1%	0.8%
7	2.0%	2.6%	3.5%	1.6%	1.3%	0.3%
8	1.9%	2.5%	3.2%	1.5%	1.2%	0.3%
9	1.7%	2.4%	3.0%	1.4%	1.0%	0.3%
10	1.6%	2.3%	2.7%	1.2%	0.9%	0.3%
11	1.5%	2.2%	2.5%	1.1%	0.7%	0.3%
12	1.4%	2.1%	2.2%	1.0%	0.6%	0.3%
13	1.3%	2.0%	2.0%	1.0%	0.6%	0.3%
14	1.3%	1.9%	1.8%	1.0%	0.6%	0.3%
15	1.2%	1.8%	1.5%	0.9%	0.5%	0.3%
16	1.2%	1.7%	1.3%	0.9%	0.5%	0.3%
17	1.1%	1.6%	1.1%	0.9%	0.5%	0.3%
18	1.1%	1.5%	1.0%	0.9%	0.5%	0.3%
19	1.0%	1.4%	0.8%	0.9%	0.5%	0.3%
20	1.0%	1.3%	0.7%	0.8%	0.4%	0.3%
21	0.9%	1.2%	0.6%	0.8%	0.4%	0.3%
22	0.9%	1.1%	0.5%	0.8%	0.4%	0.3%
23	0.8%	1.0%	0.4%	0.8%	0.4%	0.3%
24	0.8%	1.0%	0.4%	0.8%	0.4%	0.3%
25	0.7%	1.0%	0.4%	0.7%	0.3%	0.3%
26	0.7%	0.9%	0.3%	0.7%	0.3%	0.3%
27	0.6%	0.9%	0.3%	0.7%	0.3%	0.3%
28	0.6%	0.9%	0.3%	0.7%	0.3%	0.3%
29	0.5%	0.8%	0.3%	0.7%	0.3%	0.3%
30	0.5%	0.8%	0.3%	0.6%	0.2%	0.3%
31	0.4%	0.7%	0.3%	0.6%	0.2%	0.3%
32	0.4%	0.7%	0.3%	0.6%	0.2%	0.3%
33	0.4%	0.6%	0.2%	0.6%	0.2%	0.3%
34	0.4%	0.5%	0.2%	0.6%	0.2%	0.3%
35	0.3%	0.5%	0.2%	0.5%	0.1%	0.3%
36	0.3%	0.4%	0.2%	0.5%	0.1%	0.3%
37	0.3%	0.3%	0.2%	0.5%	0.1%	0.3%
38	0.3%	0.3%	0.2%	0.5%	0.1%	0.3%
39	0.3%	0.3%	0.2%	0.4%	0.1%	0.3%
40	0.2%	0.2%	0.2%	0.4%	0.1%	0.3%

* *Rates shown are based on the proposed State assumptions developed in the Retirement System experience study with the exception of Public Schools and Protective without Social Security. For these groups, the rates shown are based on the non-State assumptions.*

Actuarial Assumptions
Based on 2021-2023 Experience Study

Normal Retirement Pattern^

	% of Active Participants Retiring								
	General		Public Schools		University		Protective		Executive
Age	Male	Female	Male	Female	Male	Female	With SS*	Without SS*	& Elected
50							8%	3%	
51							9%	4%	
52							11%	5%	
53							25%	20%	
54							20%	28%	
55							20%	30%	
56							20%	32%	
57	19%	19%	32%	28%	12%	10%	20%	26%	12%
58	19%	19%	30%	28%	16%	20%	20%	30%	12%
59	19%	19%	29%	26%	9%	12%	20%	40%	12%
60	19%	21%	29%	29%	15%	14%	20%	30%	12%
61	19%	25%	28%	27%	9%	13%	20%	33%	12%
62	28%	29%	38%	36%	10%	15%	25%	33%	18%
63	30%	28%	34%	31%	11%	19%	25%	33%	18%
64	25%	31%	30%	30%	16%	17%	36%	40%	18%
65	27%	31%	34%	39%	16%	21%	38%	40%	18%
66	35%	36%	36%	44%	21%	25%	38%	100%	18%
67	32%	33%	30%	31%	18%	25%	38%	100%	18%
68	21%	25%	29%	30%	19%	18%	38%	100%	18%
69	21%	27%	22%	30%	14%	17%	38%	100%	18%
70	21%	29%	29%	32%	21%	22%	100%	100%	18%
71	21%	34%	23%	25%	24%	17%	100%	100%	15%
72	21%	33%	23%	25%	24%	17%	100%	100%	15%
73	30%	24%	24%	25%	24%	21%	100%	100%	15%
74	30%	18%	25%	25%	24%	14%	100%	100%	15%
75	100%	100%	100%	100%	100%	100%	100%	100%	100%

* *Includes Reduced Retirement*

^ *Rates shown are based on the proposed State assumptions developed in the Retirement System experience study with the exception of Public Schools and Protective without Social Security. For these groups, the rates shown are based on the non-State assumptions.*

Actuarial Assumptions
Based on 2021-2023 Experience Study

Reduced Retirement Pattern*

Age	% of Active Participants Retiring						
	General		Public Schools		University		Executive
	Male	Female	Male	Female	Male	Female	& Elected
55	5%	6%	12%	11%	3%	5%	6%
56	7%	8%	13%	13%	3%	5%	6%
57	6%	6%	13%	12%	4%	5%	6%
58	6%	9%	12%	13%	4%	6%	6%
59	7%	8%	14%	14%	4%	6%	6%
60	9%	10%	16%	17%	5%	8%	6%
61	13%	11%	16%	17%	5%	9%	6%
62	15%	18%	23%	24%	7%	11%	6%
63	17%	20%	21%	24%	8%	12%	3%
64	20%	19%	21%	24%	12%	15%	3%

* *Rates shown are based on the proposed State assumptions developed in the Retirement System experience study with the exception of Public Schools. For this group, the rates shown are based on the non-State assumptions.*

Actuarial Assumptions
Based on 2021-2023 Experience Study

Post-Retirement
Mortality Rates* – Healthy Lives

Age	% Dying Next Year	
	Male	Female
20	0.0400%	0.0166%
21	0.0359%	0.0156%
22	0.0306%	0.0133%
23	0.0264%	0.0123%
24	0.0234%	0.0126%
25	0.0215%	0.0130%
26	0.0237%	0.0147%
27	0.0261%	0.0152%
28	0.0286%	0.0171%
29	0.0327%	0.0191%
30	0.0353%	0.0227%
31	0.0397%	0.0248%
32	0.0422%	0.0267%
33	0.0463%	0.0284%
34	0.0484%	0.0317%
35	0.0521%	0.0330%
36	0.0552%	0.0356%
37	0.0578%	0.0377%
38	0.0614%	0.0394%
39	0.0628%	0.0424%
40	0.0652%	0.0433%
41	0.0684%	0.0454%
42	0.0711%	0.0473%
43	0.0747%	0.0502%
44	0.0777%	0.0518%
45	0.0831%	0.0546%
46	0.0882%	0.0586%
47	0.0943%	0.0628%
48	0.1017%	0.0674%
49	0.1092%	0.0723%
50	0.1224%	0.0862%
51	0.1384%	0.1030%
52	0.1580%	0.1239%
53	0.1808%	0.1503%
54	0.2080%	0.1828%
55	0.2419%	0.2222%
56	0.2697%	0.2452%
57	0.3011%	0.2693%
58	0.3366%	0.2952%
59	0.3749%	0.3210%
60	0.4164%	0.3473%
61	0.4614%	0.3746%
62	0.5103%	0.4017%
63	0.5610%	0.4306%
64	0.6175%	0.4611%
65	0.6785%	0.4964%
66	0.7467%	0.5352%
67	0.8234%	0.5815%
68	0.9107%	0.6369%
69	1.0105%	0.7041%
70	1.1257%	0.7859%
71	1.2597%	0.8834%
72	1.4144%	0.9996%
73	1.5952%	1.1381%
74	1.8039%	1.3012%
75	2.0453%	1.4926%
76	2.3250%	1.7157%
77	2.6448%	1.9726%
78	3.0097%	2.2683%
79	3.4270%	2.6076%
80	3.9021%	2.9941%
81	4.4477%	3.4376%
82	5.0731%	3.9422%
83	5.7871%	4.5164%
84	6.6039%	5.1701%
85	7.5327%	5.9093%
86	8.5790%	6.7424%
87	9.7489%	7.6808%
88	11.0552%	8.7359%
89	12.5068%	9.9179%
90	14.1056%	11.2373%
91	15.8479%	12.7184%
92	17.7121%	14.3508%
93	19.6779%	16.1323%
94	21.7216%	18.0313%
95	23.8018%	20.0357%
96	26.0363%	22.2153%
97	28.3087%	24.4779%
98	30.6022%	26.8047%
99	32.9205%	29.1785%
100	35.2338%	31.5929%
101	37.5405%	34.0365%
102	39.8444%	36.5161%
103	42.1321%	39.0031%
104	44.3701%	41.4751%
105	46.5390%	43.9200%
106	48.6446%	46.2964%
107	50.6821%	48.6102%
108	52.6026%	50.8407%
109	54.4412%	52.9627%
110	55.9376%	54.9771%
111	56.1284%	56.8828%
112	56.3198%	57.9583%
113	56.5230%	58.1267%
114	56.7270%	58.2781%
115	56.9202%	58.4415%
116	56.9544%	58.4708%
117	56.9772%	58.4824%
118	56.9943%	58.5000%
119	57.0000%	58.5000%
120	100.0000%	100.0000%

* *Mortality rates for 2023. Future years will reflect improvements in mortality.*

Actuarial Assumptions
Based on 2021-2023 Experience Study

Mortality Rates* – Disabled Lives

Age	% Dying Next Year	
	Male	Female
20	0.4851%	0.2967%
21	0.4622%	0.2797%
22	0.4309%	0.2583%
23	0.3976%	0.2402%
24	0.3755%	0.2296%
25	0.3740%	0.2356%
26	0.4078%	0.2642%
27	0.4437%	0.2971%
28	0.4829%	0.3344%
29	0.5250%	0.3742%
30	0.5690%	0.4176%
31	0.6143%	0.4639%
32	0.6601%	0.5120%
33	0.7051%	0.5623%
34	0.7516%	0.6117%
35	0.7946%	0.6605%
36	0.8378%	0.7070%
37	0.8800%	0.7522%
38	0.9215%	0.7952%
39	0.9615%	0.8377%
40	1.0009%	0.8791%
41	1.0415%	0.9207%
42	1.0849%	0.9636%
43	1.1319%	1.0099%
44	1.1870%	1.0620%
45	1.2486%	1.1210%
46	1.3216%	1.1878%
47	1.4046%	1.2648%
48	1.4991%	1.3547%
49	1.6051%	1.4596%
50	1.7241%	1.5782%
51	1.8219%	1.6461%
52	1.9285%	1.7241%
53	2.0436%	1.8134%
54	2.1660%	1.9083%
55	2.2935%	2.0053%
56	2.4235%	2.0986%
57	2.5515%	2.1844%
58	2.6788%	2.2582%
59	2.8010%	2.3186%
60	2.9197%	2.3669%
61	3.0338%	2.4018%
62	3.1471%	2.4297%
63	3.2618%	2.4551%
64	3.3757%	2.4798%
65	3.4886%	2.5111%
66	3.6013%	2.5518%
67	3.7161%	2.6092%
68	3.8345%	2.6871%
69	3.9628%	2.7896%
70	4.1042%	2.9211%
71	4.2677%	3.0821%
72	4.4555%	3.2771%
73	4.6758%	3.5072%
74	4.9316%	3.7765%
75	5.2285%	4.0895%
76	5.5681%	4.4454%
77	5.9566%	4.8492%
78	6.3975%	5.3049%
79	6.8964%	5.8148%
80	7.4551%	6.3825%
81	8.0829%	7.0144%
82	8.7763%	7.7118%
83	9.5344%	8.4783%
84	10.3628%	9.3185%
85	11.2584%	10.2376%
86	12.2207%	11.1965%
87	13.2519%	12.1792%
88	14.3646%	13.1782%
89	15.7579%	14.1889%
90	17.2895%	15.2202%
91	18.8578%	16.3002%
92	20.4319%	17.4407%
93	22.0070%	18.6696%
94	23.5926%	19.9946%
95	25.1917%	21.4472%
96	26.9731%	23.1382%
97	28.8553%	25.0289%
98	30.8546%	27.0650%
99	32.9927%	29.2535%
100	35.2338%	31.5929%
101	37.5405%	34.0365%
102	39.8444%	36.5161%
103	42.1321%	39.0031%
104	44.3701%	41.4751%
105	46.5390%	43.9200%
106	48.6446%	46.2964%
107	50.6821%	48.6102%
108	52.6026%	50.8407%
109	54.4412%	52.9627%
110	55.9376%	54.9771%
111	56.1284%	56.8828%
112	56.3198%	57.9583%
113	56.5230%	58.1267%
114	56.7270%	58.2781%
115	56.9202%	58.4415%
116	56.9544%	58.4708%
117	56.9772%	58.4824%
118	56.9943%	58.5000%
119	57.0000%	58.5000%
120	100.0000%	100.0000%

* *Mortality rates for 2023. Future years will reflect improvements in mortality.*

Actuarial Assumptions
Based on 2021-2023 Experience Study

Mortality Rates* – Death-in-Service

Age	% Dying Next Year	
	Male	Female
20	0.0400%	0.0166%
21	0.0359%	0.0156%
22	0.0306%	0.0133%
23	0.0264%	0.0123%
24	0.0234%	0.0126%
25	0.0215%	0.0130%
26	0.0237%	0.0147%
27	0.0261%	0.0152%
28	0.0286%	0.0171%
29	0.0327%	0.0191%
30	0.0353%	0.0227%
31	0.0397%	0.0248%
32	0.0422%	0.0267%
33	0.0463%	0.0284%
34	0.0484%	0.0317%
35	0.0521%	0.0330%
36	0.0552%	0.0356%
37	0.0578%	0.0377%
38	0.0614%	0.0394%
39	0.0628%	0.0424%
40	0.0652%	0.0433%
41	0.0684%	0.0454%
42	0.0711%	0.0473%
43	0.0747%	0.0502%
44	0.0777%	0.0518%
45	0.0831%	0.0546%
46	0.0882%	0.0586%
47	0.0943%	0.0628%
48	0.1017%	0.0674%
49	0.1092%	0.0723%
50	0.1192%	0.0777%
51	0.1298%	0.0847%
52	0.1411%	0.0935%
53	0.1553%	0.1017%
54	0.1705%	0.1116%
55	0.1866%	0.1232%
56	0.2059%	0.1349%
57	0.2272%	0.1478%
58	0.2514%	0.1626%
59	0.2780%	0.1781%

Age	% Dying Next Year	
	Male	Female
60	0.3079%	0.1948%
61	0.3417%	0.2126%
62	0.3773%	0.2322%
63	0.4146%	0.2525%
64	0.4551%	0.2755%
65	0.4985%	0.3006%
66	0.5425%	0.3285%
67	0.5896%	0.3600%
68	0.6387%	0.3974%
69	0.6919%	0.4423%
70	0.7459%	0.4950%
71	0.8031%	0.5579%
72	0.8646%	0.6324%
73	0.9313%	0.7188%
74	1.0035%	0.8217%
75	1.0846%	0.9409%
76	1.2409%	1.0861%
77	1.4225%	1.2553%
78	1.6338%	1.4520%
79	1.8783%	1.6779%
80	2.1611%	1.9401%
81	2.7178%	2.3924%
82	3.4193%	2.9477%
83	4.3012%	3.6286%
84	5.4133%	4.4650%
85	6.8144%	5.4892%

* *Mortality rates for 2023. Future years will reflect improvements in mortality.*