



STATE OF WISCONSIN POSTRETIREMENT LIFE INSURANCE PLAN (LOCAL)

GASB 74 and 75 DISCLOSURE
Fiscal Year Ending: December 31, 2021

Prepared by

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Certification

Actuarial computations presented in this report under Statements No. 74 and 75 of the Governmental Accounting Standards Board are for purposes of assisting the Department of Employee Trust Funds (ETF) in fulfilling its financial accounting requirements. No attempt is being made to offer any accounting opinion or advice. This report is for the fiscal year ending December 31, 2021. The reporting date for determining plan assets and obligations is December 31, 2021. The calculations enclosed in this report have been made on a basis consistent with our understanding of the plan provisions. Determinations for purposes other than meeting financial reporting requirements may be significantly different than the results contained in this report. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security or meeting employer funding requirements.

In preparing this report, we relied, without audit, on information as of January 1, 2021 and December 31, 2021 furnished by the ETF and Securian. This information includes, but is not limited to, statutory provisions, member census data, and financial information. The membership as of January 1, 2021 includes 74,407 active participants and 49,267 retirees.

We performed a limited review of the census and financial information used directly in our analysis and have found them to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Code of Professional Conduct, amplifying Opinions and supporting Recommendations of the American Academy of Actuaries.

This valuation report is only an estimate of the plan's financial condition as of a single date. It can neither predict the plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of plan benefits, only the timing of plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurements.

Certification

The valuation results were developed using models intended for valuations that use standard actuarial techniques. In addition to the models described previously, Milliman has developed certain models to estimate the claim costs and trend used in this analysis. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice. The models, including all input, calculations, and output may not be appropriate for any other purpose.

Milliman's work is prepared solely for the internal use and benefit of the Wisconsin Department of Employee Trust Funds. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions: (a) the Plan Sponsor may provide a copy of Milliman's work, in its entirety, to the Plan Sponsor's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Fund; and (b) the Plan Sponsor may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

This report and its use are subject to the terms of our Consulting Services Agreement with the Wisconsin Department of Employee Trust Funds dated October 1, 2014.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and has been prepared in accordance with generally recognized accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.



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Principal and Consulting Actuary



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Executive Summary

Overview of GASB 74 and GASB 75

The Governmental Accounting Standards Board (GASB) released new accounting standards for public postemployment benefit plans other than pension (OPEB) and participating employers in 2015. These standards, GASB Statements No. 74 and 75, have substantially revised the accounting requirements previously mandated under GASB Statements No. 43 and 45. The most notable change is that the Annual Required Contribution (ARC) has been eliminated and the Net OPEB Liability will be an item on the employer's financial statement rather than a footnote entry.

GASB 74 applies to financial reporting for public OPEB plans and is required to be implemented for plan fiscal years beginning after June 15, 2016. Note that a plan's fiscal year might not be the same as the employer's fiscal year. Even if the plan does not issue standalone financial statements, but rather is considered a trust fund of a government, it is subject to GASB 74. Under GASB 74, enhancements to the financial statement disclosures are required, along with certain required supplementary information.

GASB 75 governs the specifics of accounting for public OPEB plan obligations for participating employers and is required to be implemented for employer fiscal years beginning after June 15, 2017. GASB 75 requires a liability for OPEB obligations, known as the Net OPEB Liability (Total OPEB Liability for unfunded plans), to be recognized on the balance sheets of participating employers. Changes in the Net OPEB Liability (Total OPEB Liability for unfunded plans) will be immediately recognized as OPEB Expense on the income statement or reported as deferred inflows/outflows of resources depending on the nature of the change.

Notes to Financial Statements

Statement No. 74 - Notes to Stand-Alone Plan Financial Statements

OPEB Plan description	<ul style="list-style-type: none"> ▪ Plan name, administrator, and classification ▪ Identification of board of trustees ▪ Participating employers and nonemployer contributing entities as applicable ▪ Plan eligibility and coverage, key benefit terms, and membership counts ▪ Contribution requirements, bases, amounts, sources, and authority
Significant assumptions and inputs	<ul style="list-style-type: none"> ▪ Items such as (but not limited to) discount rate basis and derivation, mortality assumptions, benefit levels, cost sharing, cash flows, and healthcare cost trend rates, including discount rate and trend rate sensitivity
OPEB plan investments	<ul style="list-style-type: none"> ▪ Investment policies, authority, and changes during period ▪ Asset allocations of five percent or more in non-U.S. government investments ▪ Money-weighted rates of return
OPEB liabilities	<ul style="list-style-type: none"> ▪ Total OPEB Liability (TOL), Fiduciary Net Position (FNP), Net OPEB Liability (NOL), FNP as a percentage of TOL
Dates and roll forward details	<ul style="list-style-type: none"> ▪ Valuation and measurement dates, and any update procedures used

Statement No. 75 - Notes to Financial Statements for Employers and Nonemployer Contributing Entities

Description of associated OPEB plans	<ul style="list-style-type: none"> ▪ Plan name, administrator, and classification ▪ Plan eligibility and coverage, key benefit terms, and membership counts ▪ Contribution requirements, bases, amounts, sources, and authority ▪ Availability of stand-alone plan financial statements
Significant assumptions and inputs for associated OPEB plans	<ul style="list-style-type: none"> ▪ Items such as (but not limited to) discount rate basis and derivation, mortality assumptions, benefit levels, cost sharing, cash flows, and healthcare cost trend rates, including discount rate and health trend rate sensitivity ▪ Proportionate share of collective NOL or TOL as applicable, including sensitivity to discount rate and health trend rate
Asset information and FNP for associated OPEB plans	<p>Either:</p> <ul style="list-style-type: none"> ▪ included, or ▪ if part of a plan's standalone statements or included in the financial report of another government, provide information as to how to obtain the report, or ▪ disclosure that there are no assets in trust
OPEB liabilities and changes in NOL/TOL for associated OPEB plans (as applicable)	<ul style="list-style-type: none"> ▪ Beginning and ending balances of TOL, FNP, and NOL ▪ OPEB expense and expenditures ▪ Disclosure of special funding situations
Dates and roll forward details	<ul style="list-style-type: none"> ▪ Valuation and measurement dates, and any update procedures used
Other items	<ul style="list-style-type: none"> ▪ Changes in assumptions and benefit terms ▪ Determination basis of proportionate share and changes in the employer's or nonemployer contributing entities' portion ▪ Significant events affecting NOL or TOL ▪ OPEB expense recognized for the period ▪ Balances of deferred outflows and inflows of resources related to OPEB, including a five-year schedule of net amounts to be recognized ▪ Insurance purchases and support by nonemployer contributing entities, if any ▪ Experience studies

Required Supplementary Information (RSI)

The financial statements of employers also include RSI showing a 10-year fiscal history of the following. The first two tables may be built prospectively as the information becomes available. The reader should note that an actuarially determined contribution is not calculated for this plan.

- sources of changes in the net OPEB liability/(asset)
- information about the components of the net OPEB liability/(asset) and related ratios
- comparison of actual employer contributions to the actuarially determined contributions, if an actuarially determined contribution is calculated
- collective amounts, proportions, and proportionate share information as applicable for the above schedules
- the annual money-weighted rate of return on OPEB plan investments

Overview of Postretirement Life Insurance program

After an employee satisfies the Enrollment Eligibility, both the employee and the employer pay premiums for life insurance coverage. These premiums support life insurance coverage for death while an active employee and in retirement after the employee satisfies the Retirement Eligibility.

Both the employee and employer pay the applicable premiums until the employee retires. If an employee retires before age 65, the retired employee must continue to pay the employee premiums until reaching age 65 in order to maintain the life insurance coverage after age 65. This report continues prior practice of identifying retired employees before age 65 as “Pre-65 Annuitants”, and retired employees on or after age 65 as “Post-64 Retirees”.

This GASB 74 report presents the results of the actuarial valuation in accordance with GASB 74 as of December 31, 2021 for the State of Wisconsin Retiree Life Insurance Programs for Local employees. Under GASB 74, an actuarial valuation is required for post-employment benefits. Consequently, the death benefits provided prior to retirement are excluded from the actuarial valuation. There are several differences in actuarial assumptions and methods specified by GASB 74 compared to those used to determine the financial reporting prepared by Securian. These differences include treatment of assets, actuarial methods, and the discount rate. Reconciliation of these differences is outside the scope of our assignment with the ETF.

The actuarial liability for the Postretirement Life Insurance program for local employees discussed in this report consists of the following components:

- Actives: The liability for actives represents the expected present value of future death benefits payable to active members based upon expected future retirements. There were 74,407 active members as of 1/1/2021.
- Disabled Participants: The liability for disabled participants represents the expected present value of future death benefits payable to disabled participants. There were 1,084 disabled members as of 1/1/2021.
- Pre-65 Annuitants: The liability for pre-65 annuitants represents the expected present value of future death benefits payable less the expected present value of future employee premiums payable before age 65 to pre-65 annuitants who retired on or before 1/1/2021. There were 9,807 pre-65 annuitants reported as of 1/1/2021.
- Post-64 Retirees: The liability for post-64 retirees represents the expected present value of future death benefits payable to post-64 retirees as of 1/1/2021. There were 38,376 post-64 retirees reported as of 1/1/2021.

Summary of Results

This report presents the results of the actuarial valuation in accordance with GASB 74 as of December 31, 2021 for the State of Wisconsin Retiree Life Insurance Programs for Local employees. Under GASB 74, an actuarial valuation is required for post-employment benefits. Consequently, the death benefits provided prior to retirement are excluded from the actuarial valuation. Both the employee and employer pay the applicable premiums until the employee retires. If an employee retires before age 65, the retired employee must continue to pay the employee premiums until reaching age 65 in order to maintain the life insurance coverage after age 65. The table below compares the 12/31/2020 to 12/31/2021 GASB 74 results.

(\$ in millions)		
Valuation Date	01/01/2020	01/01/2021
Measurement Date	12/31/2020	12/31/2021
Funded Status		
Total OPEB Liability (TOL)	\$801	\$839
Fiduciary Net Position (FNP)	(251)	(248)
Net OPEB Liability (NOL) ⁽¹⁾	\$550	\$591
FNP as a % of TOL	31%	30%
OPEB Expense	\$67	\$73
Discount Rate	2.25%	2.17%

⁽¹⁾ May not add due to rounding.

Net OPEB Liability

Under GASB 74, the Net OPEB Liability is equal to the Total OPEB Liability less the fiduciary net position. The Net OPEB Liability increased from \$550 million as of December 31, 2020 to \$591 million as of December 31, 2021 for the local plan. There are three significant factors impacting the change in the Net OPEB Liability:

- (1) Municipal bond rate
- (2) Revised assumptions used in the Wisconsin Retirement System
- (3) Level of employer contributions

Each of these factors is discussed in further detail below.

1. Municipal Bond Rate

At implementation of GASB 74, the State of Wisconsin chose the Bond Buyer GO 20-Bond Municipal Bond Index. The bond index decreased from 2.12% at December 31, 2020 to 2.06% at December 31, 2021. The impact due to the change in the municipal bond index was an increase in the net OPEB liability of approximately \$14.4 million for the local plan.

2. Demographic and salary increase assumptions for Wisconsin Retirement System

The State of Wisconsin Employee Trust Funds Board approved changes to the economic and demographic assumptions for the Wisconsin Retirement System (WRS). These new assumptions are based on the WRS Three-Year Experience Study prepared by the fund actuary for the WRS and are reflected in this December 31, 2021 GASB 74 report. The net impact of these assumption changes is a decrease in the net OPEB liability of approximately \$8.1 million for the local plan.

3. Level of Employer Contributions

Employer contributions to the postretirement life insurance program are a specified percentage of the employer premiums to the life insurance plan. GASB 74 requires depletion date projections using projections of future contributions according to the “funding policy”. The depletion date projections indicate the current level of employer contributions are not large enough to cover the cost of benefits earned by active employees and reduce the Net OPEB Liability. Absent additional monies from other sources, contributions under the current funding policy will not be sufficient to accumulate sufficient money to pay benefits when due under the current actuarial assumptions. As of December 31, 2021, the fiduciary net position is projected to be insufficient by December 31, 2037 for the local plan.

Assets for the postretirement life insurance program are held in the Retiree Premium Deposit Fund and the Contingent Liability Reserve. These assets are held in an irrevocable trust for the exclusive purpose of providing postretirement life insurance benefits to plan participants. The 2021 asset activity is reported on pages 8 and 9. The Active Premium Deposit Fund and Active Stabilization Reserve are two accounts maintained separately by Securian, the plan’s insurance carrier, but are not included in the plan assets in the GASB 74 valuation. It is our understanding that these funds are discretionary funds that the Group Insurance Board may use to (1) hold as a reserve to mitigate current premium fluctuations pertaining to coverage for active employees, retirees or both, (2) use to mitigate future premium fluctuations pertaining to coverage for active employees, retirees or both, or (3) transfer to the postretirement life insurance program assets. As of 12/31/2021, the total value in the Active Premium Deposit Fund plus the Active Stabilization Reserve was \$82 million.

Overall Net OPEB Liability Impact

The discount rate is determined as the single equivalent rate that results in the same actuarial present value as the long-term expected rate of return applied to benefit payments, to the extent that the plan’s fiduciary net position is projected to be sufficient to make projected benefit payments, and the municipal bond rate applied to benefit payments, to the extent that the plan’s fiduciary net position is projected to be insufficient. All three factors above play a key role in the calculation of the single equivalent rate.

Because the projections result in a date of depletion, the GASB 74 discount rate is lower than the investment return assumption of 4.25% as of December 31, 2021. After assets are expected to be depleted, projected benefit payments are discounted using the municipal bond index. The net result of the decrease in the municipal bond rate is a decrease in the single equivalent rate from 2.25% as of December 31, 2020 to 2.17% as of December 31, 2021, which caused an increase in the Net OPEB Liability of \$14.4 million.

The Net OPEB Liability is \$591 million resulting in a funded ratio of 29.6% for the local plan as of December 31, 2021.

Statement of Fiduciary Net Position

December 31, 2021

Assets

Receivables:

Due From Other Benefit Programs	\$13,215
Miscellaneous Receivables	131,601
Total Receivables	144,816

Investments:

Investment Contract	249,052,848
Total Investments	249,052,848

Total Assets	249,197,664
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Liabilities

Benefits Payable	710,274
Unearned Revenue	152,381
Due to Other Benefit Programs	0
Miscellaneous Payables	144,676
Total Liabilities	1,007,331

**Net Position Restricted For Postemployment Benefits
Other Than Pensions**

\$248,190,333

Statement of Changes in Fiduciary Net Position

	<u>December 31, 2021</u>
Additions	
Employer Contributions	\$2,046,761
Total Contributions	2,046,761
Investment Income (loss):	
Other Investment Income	6,586,364
Net Investment Income	6,586,364
Service Reimbursement Income	131,601
Total Additions	8,764,726
Deductions	
Other Benefit Expenses	10,443,856
Carrier Administrative Expenses	1,355,594
Administrative Expenses	131,601
Total Deductions	11,931,051
Transfer from Active Life Insurance Program	0
Net Increase/(Decrease) in Net Position	(3,166,325)
Net Position Restricted For Postemployment Benefits Other Than Pensions	
Beginning of Year (January 1, 2021)	251,356,658
End of Year (December 31, 2021)	\$248,190,333

Money-Weighted Rate of Return

The money-weighted rate of return shown in the table below is calculated by Securian, the plan's insurance carrier.

Fiscal Year Ending December 31	Net Money-Weighted Rate of Return
2012	N/A
2013	N/A
2014	N/A
2015	N/A
2016	N/A
2017	3.13%
2018	3.10%
2019	3.05%
2020	2.84%
2021	2.65%

Long-Term Expected Rate of Return

Milliman's capital market assumptions underlie the "building block" method used in our estimate of expected return. The building block method in our model considers asset allocation, expected return and variance of each class, and correlation between asset classes. We then analyze the output ranges and Securian's assumption in order to arrive at our recommended investment return assumption.

Generally speaking, we recommend the expected return be set using a geometric return reasonably close to the 50th percentile over an appropriate time horizon. Due to the long-term nature of the retiree life insurance obligation, we looked at results compounded over a 30 year time period*. Based on Milliman's capital market assumptions as of December 31, 2021 and the target asset allocation for the retiree life insurance program, the 50th percentile return over this time period is 4.18%.

The discount rate assumption Securian uses in the post-retirement funding analysis is determined by the following process:

- Securian projects a discount rate for each year in the projection based on a projection of new money rates blended with returns on current assets.
- The new money rates are projected based on a method agreed upon between Securian and ETF.
- The current projection assumption is that new money crediting rates grade from the current new money rate to an ultimate rate of 5.0% over 10 years.
- The projected new money rates are blended with the existing asset returns using the 10-year IYM method used to credit interest on plan assets.
- Securian's 30-year geometric average projected crediting rate as of December 31, 2021 is 4.20%.

Investments for the Retiree Life Insurance Funds are held with the insurance carrier. Interest is calculated and credited to the Retiree Life Insurance Funds based on the rate of return for a segment of the insurance carrier's general fund, specifically 10 Year A- Bonds (as a proxy, and not tied to any specific investments). The funds invested during the year earn interest based on that year's rate of return for 10 Year A- Bonds. The overall aggregate interest rate is calculated using a tiered approach based on the year the funds were invested and the rate of return for that year. Investment interest is credited based on the aggregate rate of return and assets are not adjusted to fair market value.

Asset Class	Index	Target Allocation	Expected Geometric Real Rate of Return
US Intermediate Credit Bonds	Bloomberg US Interm Credit	45.00%	1.68%
US Long Credit Bonds	Bloomberg US Long Credit	5.00%	1.82%
US Mortgages	Bloomberg US MBS	50.00%	1.94%
Inflation			2.30%
Long-Term Expected Rate of Return			4.25%

* Milliman's internal model no longer calculates the geometric return over a 40 or 50 year time period.

Depletion Date Projection

In order to determine if the plan's fiduciary net position is projected to be sufficient to make projected benefit payments, we have prepared a depletion date projection using the following techniques and assumptions:

- The employer and pre-65 annuitants contribute according to the premium schedule on page 30 of this report.
- Benefit payments are projected based on the actuarial assumptions and the current plan provisions.
- Members are assumed to terminate, retire, become disabled, die, and so forth according to the actuarial assumptions as listed in the Actuarial Assumptions section beginning on page 22 of this report.
- Terminating and retiring members will not be replaced with new employees, as mandated by the GASB 74/75 standards.
- All cash flows are assumed to occur on average halfway through the year.
- The long-term expected rate of return on plan investments is 4.25%.
- The 20 year tax-exempt municipal bond index rate is 2.06% as of December 31, 2021, based on the Bond Buyer GO 20-Bond Municipal Bond Index.
- The actuarial assumptions do not change.
- The plan provisions do not change except if any material future changes have been agreed upon as of the measurement date.

Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

The projection results to determine the December 31, 2021 discount rate are shown on pages 13 through 15.

Projection of Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position	Projected Employer Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2022	\$248,190,333	\$2,076,997	\$13,835,700	\$1,350,000	\$10,269,529	\$245,351,159
2023	245,351,159	1,932,382	14,687,718	1,381,050	10,127,026	241,341,799
2024	241,341,799	1,789,835	15,597,281	1,412,814	9,933,596	236,055,135
2025	236,055,135	1,649,919	16,525,967	1,445,309	9,685,514	229,419,292
2026	229,419,292	1,513,189	17,541,666	1,478,551	9,378,296	221,290,560
2027	221,290,560	1,381,485	18,628,477	1,512,558	9,006,208	211,537,218
2028	211,537,218	1,257,121	19,773,404	1,547,346	8,563,980	200,037,569
2029	200,037,569	1,141,777	20,976,606	1,582,935	8,046,469	186,666,273
2030	186,666,273	1,036,021	22,253,818	1,619,343	7,448,027	171,277,160
2031	171,277,160	939,248	23,607,021	1,656,588	6,762,387	153,715,187
2032	153,715,187	851,317	24,968,105	1,694,689	5,984,402	133,888,111
2033	133,888,111	772,542	26,343,555	1,733,667	5,110,020	111,693,451
2034	111,693,451	702,290	27,738,847	1,773,542	4,134,757	87,018,109
2035	87,018,109	639,391	29,206,099	1,814,333	3,052,673	59,689,741
2036	59,689,741	582,158	30,677,962	1,856,063	1,857,837	29,595,712
2037	29,595,712	529,846	32,022,994	1,898,752	548,240	(3,247,948)

Actuarial Present Value of Projected Benefit Payments

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments at 4.25%*	Present Value of "Unfunded" Benefit Payments at 2.06%**	Present Value of Total Benefit Payments at 2.17%***
2022	\$248,190,333	\$13,835,700	\$13,835,700	\$0	\$13,550,743	\$0	\$13,687,721
2023	245,351,159	14,687,718	14,687,718	0	13,798,765	0	14,221,466
2024	241,341,799	15,597,281	15,597,281	0	14,055,903	0	14,780,835
2025	236,055,135	16,525,967	16,525,967	0	14,285,671	0	15,327,700
2026	229,419,292	17,541,666	17,541,666	0	14,545,497	0	15,923,590
2027	221,290,560	18,628,477	18,628,477	0	14,816,956	0	16,550,363
2028	211,537,218	19,773,404	19,773,404	0	15,086,449	0	17,193,791
2029	200,037,569	20,976,606	20,976,606	0	15,351,992	0	17,851,941
2030	186,666,273	22,253,818	22,253,818	0	15,622,768	0	18,535,947
2031	171,277,160	23,607,021	23,607,021	0	15,897,125	0	19,244,715
2032	153,715,187	24,968,105	24,968,105	0	16,128,238	0	19,921,219
2033	133,888,111	26,343,555	26,343,555	0	16,322,988	0	20,571,442
2034	111,693,451	27,738,847	27,738,847	0	16,486,847	0	21,200,143
2035	87,018,109	29,206,099	29,206,099	0	16,651,244	0	21,846,605
2036	59,689,741	30,677,962	30,677,962	0	16,777,358	0	22,459,338
2037	29,595,712	32,022,994	0	32,022,994	0	23,345,366	22,945,229
2038	0	33,327,031	0	33,327,031	0	23,805,638	23,371,529
2039	0	34,658,735	0	34,658,735	0	24,257,181	23,788,291
2040	0	35,940,122	0	35,940,122	0	24,646,293	24,142,937
2041	0	37,138,086	0	37,138,086	0	24,953,761	24,416,877
2042	0	38,321,715	0	38,321,715	0	25,229,339	24,659,006
2043	0	39,454,343	0	39,454,343	0	25,450,727	24,847,658
2044	0	40,504,304	0	40,504,304	0	25,600,650	24,966,166
2045	0	41,479,670	0	41,479,670	0	25,687,955	25,023,382
2046	0	42,362,134	0	42,362,134	0	25,704,935	25,012,009
2047	0	43,157,502	0	43,157,502	0	25,658,982	24,939,462
2048	0	43,908,437	0	43,908,437	0	25,578,527	24,833,549
2049	0	44,582,580	0	44,582,580	0	25,447,035	24,678,345
2050	0	45,236,502	0	45,236,502	0	25,299,122	24,507,549
2051	0	45,833,442	0	45,833,442	0	25,115,587	24,302,635
2052	0	46,430,693	0	46,430,693	0	24,929,322	24,095,508
2053	0	47,081,429	0	47,081,429	0	24,768,481	23,913,360
2054	0	47,661,874	0	47,661,874	0	24,567,744	23,693,112
2055	0	48,238,448	0	48,238,448	0	24,363,065	23,469,527
2056	0	48,772,920	0	48,772,920	0	24,135,806	23,224,684
2057	0	49,241,476	0	49,241,476	0	23,875,833	22,948,914
2058	0	49,646,942	0	49,646,942	0	23,586,550	22,645,589
2059	0	49,970,141	0	49,970,141	0	23,260,922	22,308,055
2060	0	50,185,543	0	50,185,543	0	22,889,664	21,927,534
2061	0	50,270,857	0	50,270,857	0	22,465,780	21,497,477
2062	0	50,188,853	0	50,188,853	0	21,976,419	21,005,765
2063	0	49,933,109	0	49,933,109	0	21,423,119	20,454,076
2064	0	49,536,844	0	49,536,844	0	20,824,130	19,860,017
2065	0	49,059,205	0	49,059,205	0	20,207,076	19,250,049
2066	0	48,507,782	0	48,507,782	0	19,576,670	18,628,709
2067	0	47,890,475	0	47,890,475	0	18,937,427	18,000,333
2068	0	47,210,342	0	47,210,342	0	18,291,673	17,367,150
2069	0	46,472,569	0	46,472,569	0	17,642,389	16,732,010
2070	0	45,676,250	0	45,676,250	0	16,990,086	16,095,405
2071	0	44,819,085	0	44,819,085	0	16,334,753	15,457,330
2072	0	43,898,283	0	43,898,283	0	15,676,227	14,817,641
2073	0	42,906,204	0	42,906,204	0	15,012,691	14,174,628
2074	0	41,835,093	0	41,835,093	0	14,342,459	13,526,715

Actuarial Present Value of Projected Benefit Payments (Continued)

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments at 4.25%*	Present Value of "Unfunded" Benefit Payments at 2.06%**	Present Value of Total Benefit Payments at 2.17%***
2075	\$0	\$40,679,109	\$0	\$40,679,109	\$0	\$13,664,658	\$12,873,097
2076	0	39,431,160	0	39,431,160	0	12,978,106	12,212,687
2077	0	38,090,141	0	38,090,141	0	12,283,688	11,546,338
2078	0	36,653,661	0	36,653,661	0	11,581,852	10,874,494
2079	0	35,119,820	0	35,119,820	0	10,873,199	10,197,742
2080	0	33,492,597	0	33,492,597	0	10,160,108	9,518,327
2081	0	31,772,619	0	31,772,619	0	9,443,804	8,837,406
2082	0	29,965,135	0	29,965,135	0	8,726,792	8,157,331
2083	0	28,078,037	0	28,078,037	0	8,012,159	7,480,982
2084	0	26,116,624	0	26,116,624	0	7,302,041	6,810,342
2085	0	24,094,805	0	24,094,805	0	6,600,778	6,149,437
2086	0	22,026,778	0	22,026,778	0	5,912,445	5,502,030
2087	0	19,930,422	0	19,930,422	0	5,241,759	4,872,462
2088	0	17,827,555	0	17,827,555	0	4,594,061	4,265,636
2089	0	15,743,558	0	15,743,558	0	3,975,139	3,686,846
2090	0	13,706,083	0	13,706,083	0	3,390,839	3,141,416
2091	0	11,745,182	0	11,745,182	0	2,847,069	2,634,704
2092	0	9,892,079	0	9,892,079	0	2,349,472	2,171,799
2093	0	8,177,199	0	8,177,199	0	1,902,969	1,757,101
2094	0	6,626,260	0	6,626,260	0	1,510,915	1,393,544
2095	0	5,258,065	0	5,258,065	0	1,174,741	1,082,276
2096	0	4,080,661	0	4,080,661	0	893,287	822,059
2097	0	3,093,248	0	3,093,248	0	663,468	609,884
2098	0	2,286,996	0	2,286,996	0	480,634	441,324
2099	0	1,646,835	0	1,646,835	0	339,113	311,030
2100	0	1,153,161	0	1,153,161	0	232,663	213,158
2101	0	783,946	0	783,946	0	154,978	141,827
2102	0	516,598	0	516,598	0	100,064	91,471
2103	0	329,456	0	329,456	0	62,527	57,094
2104	0	203,028	0	203,028	0	37,755	34,436
2105	0	120,725	0	120,725	0	21,997	20,041
2106	0	69,172	0	69,172	0	12,349	11,238
2107	0	38,140	0	38,140	0	6,672	6,065
2108	0	20,224	0	20,224	0	3,466	3,147
2109	0	10,316	0	10,316	0	1,732	1,571
2110	0	5,070	0	5,070	0	834	756
2111	0	2,411	0	2,411	0	389	352
2112	0	1,115	0	1,115	0	176	159
2113	0	502	0	502	0	78	70
2114	0	222	0	222	0	34	30
2115	0	96	0	96	0	14	13
2116	0	41	0	41	0	6	5
2117	0	16	0	16	0	2	2
2118	0	6	0	6	0	1	1
2119	0	2	0	2	0	0	0
2120	0	1	0	1	0	0	0
Total					229,378,544	+ 999,398,217	= 1,228,776,761

* Discounted at the long-term expected rate of return, 4.25%

** Discounted at the municipal bond rate, 2.06%

*** Discounted at the single interest rate that produces a total actuarial present value equal to the sum of the actuarial present values of "funded" and "unfunded" benefit payments, 2.17%

Net OPEB Liability

Net OPEB Liability	December 31, 2020	December 31, 2021
Total OPEB liability	\$801,428,865	\$839,227,293
Fiduciary net position	251,356,658	248,190,333
Net OPEB liability	550,072,207	591,036,960
Fiduciary net position as a % of total OPEB liability	31.36%	29.57%
Covered payroll	4,307,440,000	4,418,463,000
Net OPEB liability as a % of covered payroll	12.77%	13.38%

The total OPEB liability was determined by an actuarial valuation as of the valuation date, calculated based on the discount rate and actuarial assumptions below, and was then projected forward to the measurement date. Any significant changes during this period have been reflected as prescribed by GASB 74 and 75.

Discount Rate

Discount rate	2.25%	2.17%
Long-term expected rate of return, net of investment expense	4.25%	4.25%
20 Year Tax-Exempt Municipal Bond Yield	2.12%	2.06%

The plan's fiduciary net position was projected to be insufficient to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate for calculating the total OPEB liability is equal to the single equivalent rate that results in the same actuarial present value as the long-term expected rate of return applied to benefit payments, to the extent that the plan's fiduciary net position is projected to be sufficient to make projected benefit payments, and the municipal bond rate applied to benefit payments, to the extent that the plan's fiduciary net position is projected to be insufficient.

Other Key Actuarial Assumptions

Valuation date	January 1, 2020	January 1, 2021
Measurement date	December 31, 2020	December 31, 2021
Salary increases including inflation	WRS; see "Actuarial Assumptions" for details	WRS; see "Actuarial Assumptions" for details
Mortality	WRS; see "Actuarial Assumptions" for details	WRS; see "Actuarial Assumptions" for details
Actuarial cost method	Entry Age Normal	Entry Age Normal

Changes in Net OPEB Liability

Changes in Net OPEB Liability	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances as of December 31, 2020	\$801,428,865	\$251,356,658	\$550,072,207
Changes for the year:			
Service cost	33,939,169		33,939,169
Interest on total OPEB liability	18,678,940		18,678,940
Effect of plan changes	0		0
Effect of economic/demographic gains or losses	(10,656,535)		(10,656,535)
Effect of assumptions changes or inputs	6,280,710		6,280,710
Benefit payments	(10,443,856)	(10,443,856)	0
Employer contributions		2,046,761	(2,046,761)
Transfer from active life insurance program		0	0
Net investment income		6,717,965	(6,717,965)
Administrative expenses		(1,487,195)	1,487,195
Balances as of December 31, 2021	839,227,293	248,190,333	591,036,960

Sensitivity Analysis

The following presents the net OPEB liability, calculated using the discount rate of 2.17%, as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1 percentage point lower (1.17%) or 1 percentage point higher (3.17%) than the current rate.

	Current		
	1% Decrease 1.17%	Discount Rate 2.17%	1% Increase 3.17%
Total OPEB liability	\$1,050,014,429	\$839,227,293	\$680,618,685
Fiduciary net position	248,190,333	248,190,333	248,190,333
Net OPEB liability	801,824,096	591,036,960	432,428,352

Healthcare trend rates do not affect the retiree life insurance liabilities. Thus, sensitivity analysis of healthcare trend rates is not included.

Schedule of Changes in Net OPEB Liability and Related Ratios
(in 1,000s)

	Fiscal Year Ending December 31									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Total OPEB Liability										
Service cost	\$33,939	\$26,704	\$17,024	\$21,103	\$18,064	N/A	N/A	N/A	N/A	N/A
Interest on total OPEB liability	18,679	20,163	21,747	20,416	19,813	N/A	N/A	N/A	N/A	N/A
Changes of benefit terms	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
Effect of economic/demographic (gains) or losses	(10,657)	(12,478)	(9,523)	(11,045)	(4,888)	N/A	N/A	N/A	N/A	N/A
Effect of assumption changes or inputs	6,281	97,691	159,401	(65,026)	33,525	N/A	N/A	N/A	N/A	N/A
Net Benefit payments	(10,444)	(12,873)	(9,358)	(7,605)	(7,323)	N/A	N/A	N/A	N/A	N/A
Net change in total OPEB liability	37,798	119,207	179,290	(42,157)	59,190	N/A	N/A	N/A	N/A	N/A
Total OPEB liability, beginning	801,429	682,222	502,932	545,089	485,899	N/A	N/A	N/A	N/A	N/A
Total OPEB liability, ending (a)	839,227	801,429	682,222	502,932	545,089	N/A	N/A	N/A	N/A	N/A
Fiduciary Net Position										
Employer contributions	\$2,047	\$1,994	\$1,808	\$1,927	\$2,063	N/A	N/A	N/A	N/A	N/A
Transfer from active life insurance program	0	0	12,945	0	0	N/A	N/A	N/A	N/A	N/A
Net Investment income	6,718	7,336	7,494	7,580	7,664	N/A	N/A	N/A	N/A	N/A
Net Benefit payments	(10,444)	(12,873)	(9,358)	(7,605)	(7,323)	N/A	N/A	N/A	N/A	N/A
Administrative expenses	(1,487)	(1,504)	(1,384)	(1,235)	(1,284)	N/A	N/A	N/A	N/A	N/A
Net change in plan fiduciary net position	(3,166)	(5,046)	11,505	667	1,119	N/A	N/A	N/A	N/A	N/A
Fiduciary net position, beginning	251,357	256,403	244,898	244,231	243,112	N/A	N/A	N/A	N/A	N/A
Fiduciary net position, ending (b)	248,190	251,357	256,403	244,898	244,231	N/A	N/A	N/A	N/A	N/A
Net OPEB liability, ending = (a) - (b)	\$591,037	\$550,072	\$425,819	\$258,034	\$300,858	N/A	N/A	N/A	N/A	N/A
Fiduciary net position as a % of total OPEB liability	29.57%	31.36%	37.58%	48.69%	44.81%	N/A	N/A	N/A	N/A	N/A
Covered payroll	\$4,418,463	\$4,307,440	\$4,228,196	\$4,115,018	\$4,205,286	N/A	N/A	N/A	N/A	N/A
Net OPEB liability as a % of covered payroll	13.38%	12.77%	10.07%	6.27%	7.15%	N/A	N/A	N/A	N/A	N/A

This schedule is presented to illustrate the requirement to show information for 10 years. However, recalculations of prior years are not required, and if prior years are not reported in accordance with the current GASB standards, they should not be reported.

Notes to Schedule:

* May not add due to rounding

OPEB Expense and Deferred Inflows/Outflows of Resources

OPEB Expense	January 1, 2020 to December 31, 2020	January 1, 2021 to December 31, 2021
Service cost	\$26,704,409	\$33,939,169
Interest on total OPEB liability	20,162,780	18,678,940
Effect of plan changes	0	0
Administrative expenses	1,503,715	1,487,195
Expected investment return net of investment expenses	(10,636,731)	(10,474,802)
Recognition of Deferred Inflows/Outflows of Resources		
Recognition of economic/demographic gains or losses	(5,307,073)	(6,838,184)
Recognition of assumption changes or inputs	31,696,928	32,599,329
Recognition of investment gains or losses	3,324,250	4,075,617
OPEB Expense	<u>67,448,278</u>	<u>73,467,264</u>

As of December 31, 2021, the deferred inflows and outflows of resources to be recognized in future OPEB expense are as follows:

Deferred Inflows / Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources
Differences between expected and actual experience	(\$30,065,820)	\$0
Changes of assumptions	(28,647,838)	178,572,654
Net difference between projected and actual earnings	<u>0</u>	<u>7,689,832</u>
Total	(58,713,658)	186,262,486
Total net deferrals		127,548,828

Amounts currently reported as deferred outflows of resources and deferred inflows of resources related to other postemployment benefits will be recognized in OPEB expense as follows:

Year ended December 31:	
2022	\$28,970,697
2023	28,078,608
2024	25,385,188
2025	31,752,891
2026	13,360,665
Thereafter*	779

Total net deferrals **\$127,548,828**

* Note that additional future deferred inflows and outflows of resources may impact these numbers.

Schedule of Deferred Inflows and Outflows of Resources

	Original Amount	Date Established	Original Recognition Period*	Remaining Recognition Period	Amount Recognized in 12/31/2021 Expense	Balance of Deferred Inflows 12/31/2021	Balance of Deferred Outflows 12/31/2021
Investment	\$3,756,837	12/31/2021	5.00	5.00	\$751,367	\$0	\$3,005,470
(gains) or losses	3,300,409	12/31/2020	5.00	4.00	660,082	0	1,980,245
	4,530,070	12/31/2019	5.00	3.00	906,014	0	1,812,028
	4,460,445	12/31/2018	5.00	2.00	892,089	0	892,089
	4,330,325	12/31/2017	5.00	1.00	<u>866,065</u>	<u>0</u>	<u>0</u>
		Total			4,075,617	0	7,689,832
Differences							
between expected	(10,656,535)	12/31/2021	6.96	6.96	(1,531,111)	(9,125,424)	0
and actual	(12,478,388)	12/31/2020	7.05	6.05	(1,769,984)	(8,938,420)	0
experience	(9,523,423)	12/31/2019	7.09	5.09	(1,343,219)	(5,493,766)	0
	(11,044,672)	12/31/2018	7.15	4.15	(1,544,709)	(4,865,836)	0
	(4,888,179)	12/31/2017	7.53	3.53	<u>(649,161)</u>	<u>(1,642,374)</u>	<u>0</u>
		Total			(6,838,184)	(30,065,820)	0
Assumption	6,280,710	12/31/2021	6.96	6.96	902,401	0	5,378,309
changes or inputs	97,690,598	12/31/2020	7.05	6.05	13,856,822	0	69,976,954
	159,400,955	12/31/2019	7.09	5.09	22,482,504	0	91,953,443
	(65,026,046)	12/31/2018	7.15	4.15	(9,094,552)	(28,647,838)	0
	33,524,718	12/31/2017	7.53	3.53	<u>4,452,154</u>	<u>0</u>	<u>11,263,948</u>
		Total			32,599,329	(28,647,838)	178,572,654
Subtotal of Deferred Inflows/Outflows						(58,713,658)	186,262,486
Total net deferrals							127,548,828

* Investment (gains)/losses are recognized in OPEB expense over a period of five years; differences between expected and actual experience and assumption changes or inputs are recognized over the average remaining service life for all active and inactive members.

OPEB Liability and Expense Summary

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability	Deferred Inflows	Deferred Outflows	Net Deferrals	Net OPEB Liability plus Net Deferrals	Annual Expense
Balances as of December 31, 2020	(\$801,428,865)	\$251,356,658	(\$550,072,207)	(\$63,989,859)	\$221,994,437	\$158,004,578	(\$392,067,629)	
Service cost	(33,939,169)		(33,939,169)					33,939,169
Interest on total OPEB liability	(18,678,940)		(18,678,940)					18,678,940
Effect of plan changes	0		0					0
Effect of liability gains or losses	10,656,535		10,656,535	(10,656,535)		(10,656,535)		
Effect of assumption changes or inputs	(6,280,710)		(6,280,710)		6,280,710	6,280,710		
Benefit payments	10,443,856	(10,443,856)	0					
Transfer from active life insurance program		0	0				0	
Administrative expenses		(1,487,195)	(1,487,195)					1,487,195
Expected investment income (net of inv expenses)		10,474,802	10,474,802					(10,474,802)
Investment gains or losses		(3,756,837)	(3,756,837)		3,756,837	3,756,837		
Employer contributions		2,046,761	2,046,761				2,046,761	
Recognition of liability gains or losses				6,838,184		6,838,184		(6,838,184)
Recognition of assumption changes or inputs				9,094,552	(41,693,881)	(32,599,329)		32,599,329
Recognition of investment gains or losses					(4,075,617)	(4,075,617)		4,075,617
Annual expense							(73,467,264)	73,467,264
Balances as of December 31, 2021	(839,227,293)	248,190,333	(591,036,960)	(58,713,658)	186,262,486	127,548,828	(463,488,132)	

Actuarial Assumptions

The following assumptions were used in the actuarial valuation of the State of Wisconsin Postretirement Life Insurance Plan. Where consistent with the terms of the plan, we have utilized the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. All assumptions are based on estimates of future experience.

Valuation Date:	January 1, 2021
Census Date:	January 1, 2021
Discount Rate:	2.17% (net of expenses)
Expected Return on Plan Assets:	4.25%
Inflation Rate:	2.30%
Salary Increases:	Salary increase assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Assumed rates for individual active members are shown below. Part of the assumption for each age is for merit and longevity increase, and another 3.00% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces. Given that the price inflation assumption of 2.4% and the current wage inflation of 3.0% results in a spread of 60 basis points, GRS recommended no change in the wage inflation with the most recent experience study.

% of Merit & Longevity Increase Next Year

Service	Protective with Social Security	Protective w/o Social Security	Executive & Elected	General	Public Schools	University
1	4.8%	5.5%	2.5%	3.5%	5.6%	3.0%
2	4.8	5.5	2.5	3.5	5.6	3.0
3	4.1	4.7	2.0	3.1	5.2	2.9
4	3.5	3.8	1.6	2.8	4.7	2.8
5	2.8	3.0	1.1	2.5	4.3	2.7
10	1.1	0.9	0.2	1.5	2.6	2.2
15	0.8	0.5	0.2	1.1	1.4	1.7
20	0.7	0.4	0.2	0.9	0.6	1.2
25	0.6	0.3	0.2	0.6	0.3	0.9
30	0.5	0.2	0.2	0.4	0.2	0.7

Trend Rate: 0.00% increase in life insurance premium rates shown on page 30.

Pre-Retirement Mortality:

This assumption applies to death while in service. These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Rates are based on the 2018-2020 experience study as the base table and project future improvements with MP-2021 generational improvement scale from a base year of 2010. This assumption includes a margin for improvements in longevity beyond the valuation date. Sample rates of the mortality with attained ages in 2020 are as follows:

Age	Males	Females
20	0.0396%	0.0163%
25	0.0211	0.0126
30	0.0339	0.0218
35	0.0484	0.0311
40	0.0604	0.0414
45	0.0792	0.0542
50	0.1188	0.0796
55	0.1905	0.1269
60	0.3127	0.1974
65	0.5010	0.3023
70	0.7534	0.5060
75	1.1093	0.9717
80	2.2172	1.9931

Post-Retirement Mortality:

This assumption applies to death while retired. These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Rates are based on the 2018-2020 experience study as the base table and project future improvements with MP-2021 generational improvement scale from a base year of 2010. This assumption includes a margin for improvements in longevity beyond the valuation date. Sample rates of the mortality with attained ages in 2020 are as follows:

Age	Males	Females
40	0.0604%	0.0414%
45	0.0792	0.0542
50	0.1220	0.0883
55	0.2469	0.2291
60	0.4228	0.3519
65	0.6818	0.4995
70	1.1370	0.8033
75	2.0920	1.5414
80	4.0033	3.0758
85	7.6830	6.0133

Post-Disability Mortality:

This assumption applies to death after disablement. These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Rates are based on the 2018-2020 experience study as the base table and project future improvements with MP-2021 generational improvement scale from a base year of 2010. This assumption includes a margin for improvements in longevity beyond the valuation date. Sample rates of the mortality with attained ages in 2020 are as follows:

Age	Males	Females
45	1.1907%	1.1104%
55	2.3406	2.0673
65	3.5058	2.5264
75	5.3480	4.2232
85	11.4832	10.4179

Disability:

Percent of employees expected to become disabled each year. These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Sample rates are as follows:

Age	Protective with Social Security	Protective w/o Social Security	Executive & Elected	General		Public Schools		University	
				Male	Female	Male	Female	Male	Female
20	0.02%	0.03%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%
25	0.02	0.03	0.00	0.01	0.00	0.01	0.01	0.00	0.01
30	0.02	0.03	0.00	0.01	0.02	0.01	0.01	0.00	0.01
35	0.03	0.03	0.01	0.01	0.02	0.01	0.01	0.00	0.03
40	0.04	0.05	0.01	0.03	0.03	0.01	0.02	0.01	0.04
45	0.05	0.10	0.01	0.06	0.05	0.03	0.05	0.02	0.04
50	0.09	0.55	0.02	0.13	0.07	0.08	0.10	0.03	0.07
55	1.39	0.41	0.09	0.24	0.13	0.14	0.14	0.08	0.11
60	2.34	0.12	0.11	0.43	0.18	0.24	0.21	0.11	0.17

Withdrawal:

Percent of employees expected to terminate each year within the first 10 years of employment. These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Sample rates are as follows:

Service	Protective with Social Security	Protective w/o Social Security	Executive & Elected	General		Public Schools		University	
				Male	Female	Male	Female	Male	Female
0	15.6%	4.5%	25.0%	17.7%	20.0%	12.6%	12.0%	14.0%	14.1%
1	9.4	4.0	20.0	12.5	15.0	11.6	10.0	13.8	14.0
2	5.3	2.0	17.0	9.0	11.5	8.5	8.5	12.6	12.7
3	4.4	1.8	16.0	7.1	9.6	6.0	6.2	11.0	10.0
4	4.2	1.7	13.0	6.6	9.0	5.6	5.8	8.6	9.3
5	3.3	1.3	4.0	5.3	7.4	4.5	4.8	8.5	8.1
6	3.2	1.2	4.0	4.8	6.3	3.7	4.1	7.0	7.0
7	3.0	0.9	4.0	4.6	6.0	2.9	3.5	5.6	5.6
8	2.7	0.8	4.0	4.1	5.7	2.6	3.4	4.6	4.9
9	2.3	0.7	4.0	4.0	5.0	2.5	3.0	4.3	4.3

Percent of employees expected to terminate each year after the first 10 years of employment. These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Sample rates are as follows:

Age	Protective with Social Security	Protective w/o Social Security	Executive & Elected	General		Public Schools		University	
				Male	Female	Male	Female	Male	Female
25	2.1%	0.7%	4.5%	3.2%	4.9%	2.0%	2.2%	4.2%	4.0%
30	2.1	0.7	4.5	3.2	4.9	2.0	2.2	4.2	4.0
35	1.8	0.6	4.5	2.8	4.1	1.6	1.9	4.0	4.0
40	1.5	0.6	4.2	2.4	3.2	1.4	1.6	3.4	3.7
45	1.4	0.5	3.7	2.0	2.9	1.4	1.4	2.8	3.2
50	1.3	0.5	3.2	1.7	2.5	1.3	1.2	2.3	2.7
54+	1.3	0.5	3.0	1.6	2.2	1.3	1.2	2.2	2.5

Normal Retirement:

Percent of employees expected to retire each year. These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System. Sample rates are as follows:

Age	Protective with Social Security	Protective w/o Social Security	Executive & Elected	General		Public Schools		University	
				Male	Female	Male	Female	Male	Female
50	6.0%	3.0%							
51	8.0	4.0							
52	11.0	5.0							
53	34.0	17.0							
54	32.0	24.0							
55	26.0	29.0							
56	23.0	32.0							
57	27.0	23.0	10.0%	20.0%	17.0%	31.0%	28.0%	12.0%	10.0%
58	21.0	27.0	10.0	20.0	18.0	29.0	28.0	16.0	20.0
59	23.0	40.0	10.0	20.0	14.0	28.0	26.0	9.0	12.0
60	22.0	25.0	10.0	20.0	20.0	27.0	29.0	15.0	14.0
61	30.0	25.0	10.0	20.0	18.0	26.0	27.0	9.0	13.0
62	35.0	31.0	10.0	30.0	24.0	39.0	36.0	10.0	15.0
63	27.0	40.0	10.0	30.0	29.0	33.0	31.0	11.0	19.0
64	30.0	40.0	15.0	30.0	23.0	30.0	30.0	16.0	17.0
65	34.0	40.0	15.0	30.0	35.0	32.0	39.0	16.0	21.0
66	35.0	100.0	15.0	40.0	39.0	35.0	44.0	21.0	25.0
67	35.0	100.0	15.0	32.0	33.0	31.0	31.0	18.0	25.0
68	35.0	100.0	10.0	32.0	30.0	28.0	30.0	19.0	18.0
69	35.0	100.0	10.0	28.0	22.0	20.0	30.0	14.0	17.0
70	100.0	100.0	10.0	28.0	26.0	30.0	32.0	21.0	22.0
71	100.0	100.0	10.0	28.0	28.0	25.0	25.0	24.0	17.0
72	100.0	100.0	10.0	28.0	30.0	25.0	25.0	24.0	17.0
73	100.0	100.0	20.0	18.0	30.0	25.0	25.0	24.0	21.0
74	100.0	100.0	20.0	18.0	16.0	25.0	25.0	24.0	14.0
75	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WRS Pension Benefit Normal Retirement Eligibility:

General, Public School, and University		Protective		Executive & Elected [#]	
Age	Service	Age	Service	Age	Service
65	Any*	54	Any*	62	Any*
57	30	53	25	57	30

* Participants first employed after 1989 and terminated before April 24, 1998 must have creditable service in five calendar years.

These conditions apply to those people hired on or before December 31, 2016. For others, the General eligibility conditions apply.

Reduced Retirement: These rates are the assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System.

Age	Executive & Elected	General		Public Schools		University	
		Male	Female	Male	Female	Male	Female
55	3.0%	7.0%	7.0%	12.0%	11.0%	3.0%	5.0%
56	3.0	6.0	7.0	13.0	13.0	3.0	5.0
57	3.0	5.0	6.0	13.0	12.0	4.0	5.0
58	3.0	6.0	7.0	12.0	13.0	4.0	6.0
59	3.0	6.0	7.0	14.0	14.0	4.0	6.0
60	5.0	9.0	10.0	16.0	17.0	5.0	8.0
61	5.0	8.0	10.0	16.0	17.0	5.0	9.0
62	1.0	19.0	16.0	23.0	24.0	7.0	11.0
63	1.0	20.0	18.0	21.0	24.0	8.0	12.0
64	1.0	18.0	18.0	21.0	24.0	12.0	15.0

Any participant who has attained age 55 and any Protective occupation participant who has attained age 50 may apply for a reduced pension retirement benefit.

Expenses: *Benefit payment expense:* 2.1% of benefits paid after age 65

Administrative expense: \$1,350,000. This is equal to the average of the actual administrative expenses paid in the prior two years. For depletion date projection purposes, we assume that this figure will increase with price inflation.

Missing Data Assumptions: The following assumptions were used for any missing data.

1. Gender – 50% male; 50% female
2. Employment code – 100% General

Changes Since Prior Valuation: The discount rate has changed from 2.25% to 2.17%. A decrease in the discount rate increases the liabilities.

The administrative expense assumption was updated from \$1,300,000 to \$1,350,000 as part of the annual review of administrative expenses. This change had no impact on the determination of the discount rate because assets were projected to deplete in the same future date under either assumption.

The demographic and salary increase assumptions have been updated as a result of the WRS Three-Year Experience Study for 2018-2020.

The inflation assumption was updated from 2.20% to 2.30%.

Rationale for Significant Assumptions: With any valuation of future benefits, assumptions of anticipated future events are required. If actual events differ from the assumptions made, the actual cost of the plan will vary as well. The following assumptions should be reviewed for appropriateness.

Discount Rate:	We have discounted future benefit payments back to the present using an interest rate of 2.17%. This rate is the single equivalent rate that results in the same actuarial present value as the long-term expected rate of return while funded and the municipal bond rate while unfunded.
Trend Rate:	We have assumed no future increases in life insurance premium rates. There have been no premium rate increases since the inception of the plan.
Expected Return on Plan Assets:	The expected return on plan assets, 4.25%, has been selected by the plan sponsor to reflect the plan's investment policy, including target asset allocations, and capital market expectations.
Demographic Assumptions:	All demographic assumptions are based upon assumptions adopted by the Employee Trust Funds Board in connection with a study of experience during 2018-2020 for the Wisconsin Retirement System.
Expenses:	<p>Based on recent history of the plan.</p> <p>For the post-65 portion of the plan, employer contributions to premium deposit fund are not treated as premiums; therefore, no state premium tax is applied. However, when benefits are paid from the premium deposit fund, they are cleared as premiums, and the state premium tax is applied. Furthermore, other administrative expenses including state premium taxes are also cleared as premiums and subject to state premium tax.</p> <p>The Department of Employee Trust Funds classifies the state premium tax for the post-65 portion of the plan as a benefit payment expense and all other expenses as administrative expenses. The expense assumptions used in this report follow this classification.</p>

Summary of Plan Provisions

This summary of plan provisions is intended only to describe the essential features of the plan used in the actuarial valuation. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself.

Enrollment Eligibility:

Generally, members may enroll during a 30-day enrollment period. They may enroll after the initial 30-day enrollment period with evidence of insurability. Members under evidence of insurability enrollment must enroll in group life insurance coverage before age 55 to be eligible for Basic or Supplemental coverage.

Retirement Eligibility:

At retirement, the member must satisfy one of the following –

- WRS coverage prior to January 1, 1990, or
- at least one month of group life insurance coverage in each of 5 calendar years after 1989

and one of the following –

- eligible for an immediate WRS benefit, or
- at least 20 years from their WRS creditable service as of 1/1/1990 plus their years of group life insurance coverage after 1989, or
- at least 20 years on the payroll of their last employer.

In addition, terminating members and retirees must continue to pay Employee Premiums until age 65 (age 70 if active).

Basic Coverage Benefits:

After retirement, Basic coverage is continued for life in these amounts of the insurance in force before retirement (one times WRS earnings):

<u>Age</u>	<u>Percent of Basic Coverage Continuing</u>
Before age 65	100%
While age 65	75
While age 66	50
While 67 and later	25*

* Local employers may elect to increase this to 50%

Supplemental Coverage Benefits:

After retirement, Supplemental coverage may be continued until age 65 at 100% of the amount of the insurance in force before retirement at the employee's expense (this benefit is not included in the valuation as it is entirely employee paid).

Additional Coverage:

After retirement, Additional coverage may be continued until age 65 at 100% of the amount of the insurance in force before retirement at the employee's expense (this benefit is not included in the valuation as it is entirely employee paid).

Spouse & Dependent Coverage:

After retirement, the coverage is terminated and not included in the Postretirement Life Insurance Plan.

Employee Premiums:

The employee must pay these monthly premiums per \$1,000 of insurance until age 65 (age 70 if active):

Attained Age	Basic	Supplemental
Under 30	\$0.05	\$0.05
30-34	0.06	0.06
35-39	0.07	0.07
40-44	0.08	0.08
45-49	0.12	0.12
50-54	0.22	0.22
55-59	0.39	0.39
60-64	0.49	0.49
65-69	0.57	0.57

Disabled members under age 70 receive a waiver-of-premium benefit.

Employer Premiums:

The employer must pay these premiums while actively employed:

- 40% of Employee Premiums if 50% post-66 retiree Basic coverage
- 20% of Employee Premiums if 25% post-66 retiree Basic coverage

100% of Employer Premiums are paid to fund retiree coverage.

No Employer contribution required for Supplemental Coverage.

Summary of Participant Data

The participant data used in the valuation was provided by Securian and the State of Wisconsin. While the participant data was checked for reasonableness, the data was not audited, and the valuation results presented in this report are dependent upon the accuracy of the participant data provided. The table below presents a summary of the basic participant information for the active and inactive participants covered under the terms of the Plan.

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
A. Active Participants										
Count	74,407	75,143	74,557	74,481	74,447	N/A	N/A	N/A	N/A	N/A
Average Age	44.9	45.0	45.1	45.2	45.4	N/A	N/A	N/A	N/A	N/A
Average Service	10.1	10.1	10.3	10.3	10.5	N/A	N/A	N/A	N/A	N/A
Average Projected Salary	\$60,971	\$59,271	\$58,130	\$57,161	\$56,488	N/A	N/A	N/A	N/A	N/A
B. Disabled Participants										
Count	1,084	1,162	1,205	1,238	1,234	N/A	N/A	N/A	N/A	N/A
Average Age	57.9	57.8	57.6	57.4	57.3	N/A	N/A	N/A	N/A	N/A
Average Current Insurance	\$50,317	\$48,784	\$47,680	\$46,842	\$46,307	N/A	N/A	N/A	N/A	N/A
C. Pre-65 Annuitants										
Count	9,807	9,918	10,076	10,195	10,571	N/A	N/A	N/A	N/A	N/A
Average Age	61.1	61.1	61.2	61.2	61.2	N/A	N/A	N/A	N/A	N/A
Average Current Insurance	\$67,052	\$65,883	\$64,538	\$63,470	\$62,285	N/A	N/A	N/A	N/A	N/A
D. Post-64 Annuitants										
Count	38,376	37,032	35,522	34,068	31,924	N/A	N/A	N/A	N/A	N/A
Average Age	74.8	74.7	74.5	74.4	74.3	N/A	N/A	N/A	N/A	N/A
Average Current Insurance	\$13,443	\$13,103	\$12,774	\$12,455	\$14,787	N/A	N/A	N/A	N/A	N/A

Summary of Demographic Information

Active Members as of January 1, 2021											
Years of Service											
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	ALL
<25	1,050	1,005	5	-	-	-	-	-	-	-	2,060
25-29	1,286	4,399	781	3	-	-	-	-	-	-	6,469
30-34	987	3,898	3,190	324	3	-	-	-	-	-	8,402
35-39	806	3,363	2,906	2,000	376	7	-	-	-	-	9,458
40-44	636	2,861	2,428	1,674	2,013	424	4	-	-	-	10,040
45-49	531	2,371	2,085	1,449	1,720	2,026	287	6	-	-	10,475
50-54	488	1,981	2,019	1,462	1,669	1,877	1,609	278	4	-	11,387
55-59	316	1,514	1,568	1,258	1,357	1,475	1,115	692	130	13	9,438
60-64	114	717	898	767	894	898	583	358	159	65	5,453
65-69	30	168	225	186	186	174	132	78	18	28	1,225
70+	-	-	-	-	-	-	-	-	-	-	-
ALL	6,244	22,277	16,105	9,123	8,218	6,881	3,730	1,412	311	106	74,407

Projected Salary											
Years of Service											
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	ALL
<25	\$44,039	\$45,934	*	-	-	-	-	-	-	-	44,986
25-29	47,291	52,047	61,430	*	-	-	-	-	-	-	52,224
30-34	49,788	53,393	61,758	69,507	*	-	-	-	-	-	56,759
35-39	50,292	54,274	63,322	70,281	71,595	*	-	-	-	-	60,794
40-44	51,222	53,859	64,244	71,065	73,969	72,769	*	-	-	-	63,903
45-49	53,292	54,609	63,660	70,352	75,219	78,307	75,436	*	-	-	67,058
50-54	50,511	54,741	61,188	64,293	70,385	75,383	79,217	74,103	*	-	66,566
55-59	47,425	50,552	58,380	58,647	63,169	65,899	72,754	72,109	64,904	*	61,458
60-64	42,859	46,282	54,583	56,204	58,784	56,998	62,292	64,962	68,774	65,815	56,614
65-69	31,831	43,916	45,168	52,373	52,380	56,387	58,771	61,253	*	72,550	51,888
70+	-	-	-	-	-	-	-	-	-	-	-
ALL	48,540	52,739	61,610	66,283	69,455	71,156	73,599	70,002	67,213	67,246	60,971

* Compensation shown for groups of 20 or more.

Glossary

Actuarially Determined Contribution	A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined based on the funding policy and most recent measurement available when the contribution for the reporting period was adopted.
Deferred Inflows/Outflows of Resources	Portion of changes in net OPEB liability that is not immediately recognized in OPEB Expense. These changes include differences between expected and actual experience, changes in assumptions, and differences between expected and actual earnings on plan investments.
Discount Rate	Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of: <ol style="list-style-type: none">1. The actuarial present value of benefit payments projected to be made in future periods where the plan assets are projected to be sufficient to meet benefit payments, calculated using the Long-Term Expected Rate of Return.2. The actuarial present value of projected benefit payments not included in (1), calculated using the Municipal Bond Rate.
Fiduciary Net Position	Equal to market value of assets.
Long-Term Expected Rate of Return	Long-term expected rate of return on plan investments expected to be used to finance the payment of benefits, net of investment expenses.
Money-Weighted Rate of Return	The internal rate of return on plan investments, net of investment expenses.
Municipal Bond Rate	Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.
Net OPEB Liability	Total OPEB Liability minus the Plan's Fiduciary Net Position.
Projected Benefit Payments	All benefits estimated to be payable through the OPEB plan to current active and inactive employees as a result of their past service and expected future service.
Service Cost	The portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
Total OPEB Liability	The portion of actuarial present value of projected benefit payments that is attributable to past periods of member service using the Entry Age Normal cost method based on the requirements of GASB 74 and 75.