



STATE OF WISCONSIN POSTRETIREMENT LIFE INSURANCE PLAN (STATE)

GASB 74 and 75 DISCLOSURE
Fiscal Year Ending: December 31, 2017

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, 2017. The reporting date for determining plan assets and obligations is December 31, 2017. 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, 2017 and December 31, 2017 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, 2017 includes 49,125 active participants and 32,224 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

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.

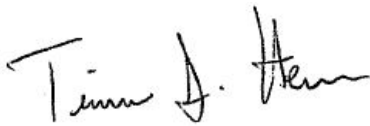
This report and its use are subject to the terms of our Consulting Services Agreement with the Wisconsin Department of Employee Trust Funds dated October 1, 2014.

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.



Timothy J. Herman, FSA, EA, MAAA
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 NCEs 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, FNP, Net OPEB Liability, FNP as a percentage of Total OPEB Liability
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 NCE's 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 NCEs , 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, 2017 for the State of Wisconsin Retiree Life Insurance Programs for State 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 ETF.

The actuarial liability for the Postretirement Life Insurance program for state 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 49,125 active members as of 1/1/2017.
- Disabled Participants: The liability for disabled participants represents the expected present value of future death benefits payable to disabled participants. There were 1,337 disabled members as of 1/1/2017.
- Pre-65 Annuitants: The liability for pre-65 annuitants represents the expected present value of future death benefits payable less the present value of future employee premiums paid before age 65 to pre-65 annuitants who retired on or before 1/1/2017. There were 7,127 pre-65 annuitants reported as of 1/1/2017.
- 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 1/1/2017. There were 23,760 post-64 retirees reported as of 1/1/2017.

Summary of Results

This report presents the results of the actuarial valuation in accordance with GASB 74 as of December 31, 2017 for the State of Wisconsin Retiree Life Insurance Programs for State 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 1/1/2016 GASB 43 results to the 12/31/2017 GASB 74 results.

(\$ in millions)	GASB 43	GASB 74	GASB 74
Valuation Date	01/01/2016	01/01/2016	01/01/2017
Measurement Date	01/01/2016	12/31/2016	12/31/2017
Funded Status			
Total OPEB Liability (TOL)	\$694	\$763	\$846
Fiduciary Net Position (FNP)	(363)	(357)	(352)
Net OPEB Liability (NOL) ⁽²⁾	\$331 ⁽¹⁾	\$406	\$494
FNP as a % of TOL	52%	47%	42%
OPEB Expense	\$56	N/A	\$48
Discount Rate	4.20%	3.94%	3.60%

⁽¹⁾ Net OPEB Liability was called the unfunded actuarial accrued liability under GASB 43.

⁽²⁾ 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 \$406 million as of December 31, 2016 to \$494 million as of December 31, 2017 for the state plan. There are two primary drivers of the increase in the Net OPEB Liability: (1) the level of employer contributions allocated to plan assets and (2) changes in the discount rate. Each of these two drivers is discussed in further detail below.

1. 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”. 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, 2017, the fiduciary net position is projected to be insufficient by December 31, 2034 for the State plan.

The reader should note that 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 postretirement life insurance benefits of plan participants. The 2017 asset activity is reported on pages 8 and 9. The reader should further note that 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 12/31/2017, the total value in the Active Premium Deposit Fund plus the Active Stabilization Reserve was \$53 million.

2. Discount Rate for GASB 74

The discount rate is based on 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.

Because the projections result in a date of depletion, the GASB 74 discount rate is lower than the investment return assumption of 5% as of December 31, 2017. After assets are expected to be depleted, projected benefit payments are discounted using the municipal bond index. The State of Wisconsin chose the Bond Buyer GO 20-Bond Municipal Bond Index. The bond index changed from December 31, 2016 to December 31, 2017. The bond index decreased from 3.78% to 3.44%. The effect of the change to the municipal bond index is a decrease in the single equivalent rate from 3.94% as of December 31, 2016 to 3.60% as of December 31, 2017 for the state plan. The impact of the decrease in the discount rate increased the net OPEB liability by approximately \$49.0 million for the state plan. The Net OPEB Liability is \$494 million resulting in a funded ratio of 41.6% for the state plan as of December 31, 2017.

Statement of Fiduciary Net Position

December 31, 2017

Assets

Receivables and prepaid items:

Miscellaneous receivables	\$44,789
Total receivables and prepaid items	<u>44,789</u>

Investments:

Investment in Contracts	351,972,292
Total investments	<u>351,972,292</u>

Total assets	<u>352,017,081</u>
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Due to Other Benefit Programs	21,990
Interfund Payables	22,799

Total liabilities	<u>44,789</u>
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**Net position restricted for postemployment benefits
other than pensions**

\$351,972,292

Statement of Changes in Fiduciary Net Position

	<u>December 31, 2017</u>
Additions	
Employer contributions	\$1,376,484
Total contributions	1,376,484
Investment income (loss):	
Other investment income	11,461,982
Net investment income	11,461,982
Service reimbursement income	67,588
Total additions	12,906,054
Deductions	
Other Benefit Expenses	17,669,778
Carrier administrative expenses	630,974
Administrative expenses	67,588
Total deductions	18,368,340
Net increase/(decrease) in net position	(5,462,286)
Net position restricted for postemployment benefits other than pensions	
Beginning of year (December 31, 2016)	357,434,578
End of year (December 31, 2017)	\$351,972,292

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
2008	N/A
2009	N/A
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	N/A
2015	N/A
2016	N/A
2017	3.19%

Long-Term Expected Rate of Return

The assumption for the long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation. The capital market assumptions shown below for a 30-year time horizon are per Milliman's investment consulting practice as of December 31, 2017.

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	Long-Term Expected Geometric Real Rate of Return
US Gvt Bonds	Barclays Gvt	1.00%	1.13%
US Credit Bonds	Barclays Credit	65.00%	2.61%
US Long Credit Bonds	Barclays Long Credit	3.00%	3.08%
US Mortgages	Barclays MBS	31.00%	2.19%
Inflation			2.30%
Long-Term Expected Rate of Return			5.00%

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 used for the January 1, 2017 valuation, 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 5.00%.
- The 20 year tax-exempt municipal bond index rate is 3.44% as of December 31, 2017, 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, 2017 discount rate are shown on pages 13 through 15 and to determine the December 31, 2016 discount rate are shown on pages 34 through 36.

- The 20 year tax-exempt municipal bond index rate is 3.78% as of December 31, 2016, based on the Bond Buyer GO 20-Bond Municipal Bond Index.

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
2018	\$351,972,292	\$1,330,916	\$20,833,778	\$660,000	\$17,094,543	\$348,903,973
2019	348,903,973	1,238,236	22,008,803	675,180	16,909,055	344,367,281
2020	344,367,281	1,151,298	23,255,992	690,709	16,648,479	338,220,357
2021	338,220,357	1,067,524	24,546,555	706,595	16,306,377	330,341,107
2022	330,341,107	987,131	25,949,250	722,847	15,874,931	320,531,072
2023	320,531,072	907,843	27,453,563	739,473	15,344,424	308,590,304
2024	308,590,304	831,705	29,013,799	756,481	14,706,051	294,357,780
2025	294,357,780	762,050	30,661,058	773,880	13,951,067	277,635,960
2026	277,635,960	696,162	32,379,351	791,679	13,069,926	258,231,018
2027	258,231,018	633,928	34,169,368	809,887	12,052,918	235,938,608
2028	235,938,608	576,715	36,023,565	828,515	10,890,046	210,553,290
2029	210,553,290	524,484	37,960,012	847,571	9,570,587	181,840,778
2030	181,840,778	475,549	39,945,742	867,065	8,083,607	149,587,127
2031	149,587,127	431,425	41,980,523	887,007	6,418,454	113,569,476
2032	113,569,476	390,267	44,063,906	907,408	4,563,948	73,552,377
2033	73,552,377	353,150	46,190,675	928,279	2,508,474	29,295,047
2034	29,295,047	319,512	48,330,012	949,629	240,749	0

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*	Present Value of "Unfunded" Benefit Payments**	Present Value of Total Benefit Payments***
2018	\$351,972,292	\$20,833,778	\$20,833,778	\$0	\$19,841,693	\$0	\$20,109,242
2019	348,903,973	22,008,803	22,008,803	0	19,962,633	0	20,504,621
2020	344,367,281	23,255,992	23,255,992	0	20,089,400	0	20,913,073
2021	338,220,357	24,546,555	24,546,555	0	20,194,512	0	21,305,964
2022	330,341,107	25,949,250	25,949,250	0	20,331,916	0	21,740,179
2023	320,531,072	27,453,563	27,453,563	0	20,486,271	0	22,200,598
2024	308,590,304	29,013,799	29,013,799	0	20,619,565	0	22,646,350
2025	294,357,780	30,661,058	30,661,058	0	20,752,611	0	23,099,810
2026	277,635,960	32,379,351	32,379,351	0	20,872,018	0	23,545,996
2027	258,231,018	34,169,368	34,169,368	0	20,977,028	0	23,983,554
2028	235,938,608	36,023,565	36,023,565	0	21,062,232	0	24,405,682
2029	210,553,290	37,960,012	37,960,012	0	21,137,555	0	24,823,228
2030	181,840,778	39,945,742	39,945,742	0	21,184,080	0	25,213,322
2031	149,587,127	41,980,523	41,980,523	0	21,203,017	0	25,576,144
2032	113,569,476	44,063,906	44,063,906	0	21,195,492	0	25,911,818
2033	73,552,377	46,190,675	46,190,675	0	21,160,480	0	26,217,837
2034	29,295,047	48,330,012	0	48,330,012	0	27,196,449	26,478,118
2035	0	50,453,086	0	50,453,086	0	27,446,977	26,679,986
2036	0	52,515,035	0	52,515,035	0	27,618,617	26,804,591
2037	0	54,445,068	0	54,445,068	0	27,681,416	26,823,271
2038	0	56,312,490	0	56,312,490	0	27,678,719	26,778,459
2039	0	58,067,914	0	58,067,914	0	27,592,367	26,652,916
2040	0	59,693,666	0	59,693,666	0	27,421,580	26,446,269
2041	0	61,200,688	0	61,200,688	0	27,178,909	26,170,989
2042	0	62,577,941	0	62,577,941	0	26,866,338	25,829,307
2043	0	63,779,270	0	63,779,270	0	26,471,481	25,409,650
2044	0	64,815,485	0	64,815,485	0	26,006,922	24,924,450
2045	0	65,656,152	0	65,656,152	0	25,468,132	24,369,683
2046	0	66,293,690	0	66,293,690	0	24,860,242	23,750,585
2047	0	66,757,919	0	66,757,919	0	24,201,787	23,085,143
2048	0	67,044,429	0	67,044,429	0	23,497,347	22,377,942
2049	0	67,161,360	0	67,161,360	0	22,755,538	21,637,375
2050	0	67,147,869	0	67,147,869	0	21,994,361	20,880,697
2051	0	67,018,298	0	67,018,298	0	21,221,887	20,115,638
2052	0	66,769,744	0	66,769,744	0	20,440,043	19,344,067
2053	0	66,428,083	0	66,428,083	0	19,659,175	18,575,797
2054	0	66,001,817	0	66,001,817	0	18,883,433	17,814,732
2055	0	65,478,901	0	65,478,901	0	18,110,812	17,058,956
2056	0	64,854,932	0	64,854,932	0	17,341,675	16,308,789
2057	0	64,130,564	0	64,130,564	0	16,577,712	15,565,800
2058	0	63,305,814	0	63,305,814	0	15,820,296	14,831,246
2059	0	62,380,346	0	62,380,346	0	15,070,591	14,106,182
2060	0	61,394,837	0	61,394,837	0	14,339,230	13,400,506
2061	0	60,368,845	0	60,368,845	0	13,630,706	12,718,324
2062	0	59,303,026	0	59,303,026	0	12,944,755	12,059,284
2063	0	58,186,716	0	58,186,716	0	12,278,698	11,420,791
2064	0	57,024,758	0	57,024,758	0	11,633,312	10,803,474
2065	0	55,786,794	0	55,786,794	0	11,002,284	10,201,383
2066	0	54,472,404	0	54,472,404	0	10,385,788	9,614,614
2067	0	53,059,277	0	53,059,277	0	9,779,930	9,039,498
2068	0	51,532,282	0	51,532,282	0	9,182,592	8,474,030
2069	0	49,911,597	0	49,911,597	0	8,598,028	7,922,090
2070	0	48,205,575	0	48,205,575	0	8,027,977	7,385,216

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*	Present Value of "Unfunded" Benefit Payments**	Present Value of Total Benefit Payments***
2071	\$0	\$46,413,480	\$0	\$46,413,480	\$0	\$7,472,475	\$6,863,375
2072	0	44,527,888	0	44,527,888	0	6,930,490	6,355,553
2073	0	42,551,585	0	42,551,585	0	6,402,640	5,862,254
2074	0	40,466,936	0	40,466,936	0	5,886,473	5,381,172
2075	0	38,273,506	0	38,273,506	0	5,382,259	4,912,499
2076	0	35,985,759	0	35,985,759	0	4,892,248	4,458,231
2077	0	33,610,749	0	33,610,749	0	4,417,408	4,019,183
2078	0	31,176,954	0	31,176,954	0	3,961,270	3,598,495
2079	0	28,700,827	0	28,700,827	0	3,525,386	3,197,491
2080	0	26,208,660	0	26,208,660	0	3,112,208	2,818,301
2081	0	23,721,762	0	23,721,762	0	2,723,217	2,462,165
2082	0	21,280,335	0	21,280,335	0	2,361,702	2,131,947
2083	0	18,904,804	0	18,904,804	0	2,028,292	1,828,091
2084	0	16,617,690	0	16,617,690	0	1,723,615	1,551,043
2085	0	14,444,977	0	14,444,977	0	1,448,432	1,301,361
2086	0	12,403,609	0	12,403,609	0	1,202,377	1,078,590
2087	0	10,508,229	0	10,508,229	0	984,767	881,994
2088	0	8,771,998	0	8,771,998	0	794,720	710,661
2089	0	7,209,624	0	7,209,624	0	631,451	563,773
2090	0	5,827,570	0	5,827,570	0	493,431	439,852
2091	0	4,634,548	0	4,634,548	0	379,365	337,640
2092	0	3,630,536	0	3,630,536	0	287,298	255,297
2093	0	2,803,494	0	2,803,494	0	214,473	190,284
2094	0	2,137,805	0	2,137,805	0	158,108	140,055
2095	0	1,610,884	0	1,610,884	0	115,176	101,864
2096	0	1,199,731	0	1,199,731	0	82,926	73,227
2097	0	884,007	0	884,007	0	59,071	52,080
2098	0	644,604	0	644,604	0	41,641	36,655
2099	0	464,269	0	464,269	0	28,994	25,482
2100	0	330,850	0	330,850	0	19,975	17,528
2101	0	232,749	0	232,749	0	13,585	11,902
2102	0	161,199	0	161,199	0	9,096	7,956
2103	0	110,094	0	110,094	0	6,006	5,245
2104	0	73,298	0	73,298	0	3,865	3,371
2105	0	48,373	0	48,373	0	2,466	2,147
2106	0	31,331	0	31,331	0	1,544	1,342
2107	0	19,936	0	19,936	0	950	824
2108	0	12,420	0	12,420	0	572	496
2109	0	7,654	0	7,654	0	341	295
2110	0	4,599	0	4,599	0	198	171
2111	0	2,733	0	2,733	0	114	98
2112	0	1,582	0	1,582	0	64	55
2113	0	859	0	859	0	33	29
2114	0	426	0	426	0	16	14
2115	0	165	0	165	0	6	5
2116	0	72	0	72	0	3	2
Total					331,070,503	+ 794,666,853	= 1,125,737,356

* Discounted at the long-term expected rate of return, 5.00%

** Discounted at the municipal bond rate, 3.44%

*** 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, 3.60%

Net OPEB Liability

Net OPEB Liability	December 31, 2016	December 31, 2017
Total OPEB liability	\$762,569,573	\$845,518,804
Fiduciary net position	357,434,578	351,972,292
Net OPEB liability	405,134,995	493,546,512
Fiduciary net position as a % of total OPEB liability	46.87%	41.63%
Covered payroll	3,037,726,000	3,183,993,839
Net OPEB liability as a % of covered payroll	13.34%	15.50%

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	3.94%	3.60%
Long-term expected rate of return, net of investment expense	5.00%	5.00%
20 Year Tax-Exempt Municipal Bond Yield	3.78%	3.44%

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, 2016	January 1, 2017
Measurement date	December 31, 2016	December 31, 2017
Inflation	2.30%	2.30%
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, 2016	\$762,569,573	\$357,434,578	\$405,134,995
Changes for the year:			
Service cost	26,145,800		26,145,800
Interest on total OPEB liability	30,730,654		30,730,654
Effect of plan changes	0		0
Effect of economic/demographic gains or losses	(5,265,765)		(5,265,765)
Effect of assumptions changes or inputs	49,008,320		49,008,320
Benefit payments	(17,669,778)	(17,669,778)	0
Employer contributions		1,376,484	(1,376,484)
Net investment income		11,529,570	(11,529,570)
Administrative expenses		(698,562)	698,562
Balances as of December 31, 2017	845,518,804	351,972,292	493,546,512

Sensitivity Analysis

The following presents the net OPEB liability, calculated using the discount rate of 3.60%, as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1 percentage point lower (2.60%) or 1 percentage point higher (4.60%) than the current rate.

	Current		
	1% Decrease 2.60%	Discount Rate 3.60%	1% Increase 4.60%
Total OPEB liability	\$1,023,926,792	\$845,518,804	\$707,043,801
Fiduciary net position	351,972,292	351,972,292	351,972,292
Net OPEB liability	671,954,500	493,546,512	355,071,509

The following presents the net OPEB liability, calculated using the current healthcare cost trend rates as well as what the net OPEB liability would be if it were calculated using trend rates that are 1 percentage point lower or 1 percentage point higher than the current trend rates. The reader should note that healthcare trend rates do not affect the retiree life insurance liabilities.

	Current		
	1% Decrease	Trend Rate	1% Increase
Total OPEB liability	\$845,518,804	\$845,518,804	\$845,518,804
Fiduciary net position	351,972,292	351,972,292	351,972,292
Net OPEB liability	493,546,512	493,546,512	493,546,512

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

	Fiscal Year Ending December 31									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total OPEB Liability										
Service cost	\$26,146	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Interest on total OPEB liability	30,731	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Changes of benefit terms	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Effect of economic/demographic (gains) or losses	(5,266)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Effect of assumption changes or inputs	49,008	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benefit payments	(17,670)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net change in total OPEB liability	82,949	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total OPEB liability, beginning	762,570	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total OPEB liability, ending (a)	845,519	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary Net Position										
Employer contributions	\$1,376	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net Investment income	11,530	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benefit payments	(17,670)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Administrative expenses	(699)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net change in plan fiduciary net position	(5,462)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary net position, beginning	357,435	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary net position, ending (b)	351,972	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net OPEB liability, ending = (a) - (b)	\$493,547	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary net position as a % of total OPEB liability	41.63%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Covered payroll	\$3,183,994	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Net OPEB liability as a % of covered payroll	15.50%	N/A	N/A	N/A	N/A	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 Outflows and Deferred Inflows of Resourced Related to OPEB

OPEB Expense	January 1, 2016 to December 31, 2016	January 1, 2017 to December 31, 2017
Service cost	N/A	\$26,145,800
Interest on total OPEB liability	N/A	30,730,654
Effect of plan changes	N/A	0
Administrative expenses	N/A	698,562
Expected investment return net of investment expenses	N/A	(17,452,114)
Recognition of Deferred Inflows/Outflows of Resources		
Recognition of economic/demographic gains or losses	N/A	(750,109)
Recognition of assumption changes or inputs	N/A	6,981,242
Recognition of investment gains or losses	N/A	1,184,509
OPEB Expense	N/A	47,538,544

As of December 31, 2017, 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	(\$4,515,656)	\$0
Changes of assumptions	0	42,027,078
Net difference between projected and actual earnings	0	4,738,035
Total	(4,515,656)	46,765,113
Total net deferrals		42,249,457

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:	
2018	\$7,415,642
2019	7,415,642
2020	7,415,642
2021	7,415,641
2022	6,231,133
Thereafter*	6,355,757
Total net deferrals	\$42,249,457

* 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*	Amount Recognized in 12/31/2017 Expense	Balance of Deferred Inflows 12/31/2017	Balance of Deferred Outflows 12/31/2017
Investment (gains) or losses	\$5,922,544	12/31/2017 Total	5.00	<u>\$1,184,509</u> 1,184,509	<u>\$0</u> 0	<u>\$4,738,035</u> 4,738,035
Differences between expected and actual experience	(5,265,765)	12/31/2017 Total	7.02	<u>(750,109)</u> (750,109)	<u>(4,515,656)</u> (4,515,656)	<u>0</u> 0
Assumption changes or inputs	49,008,320	12/31/2017 Total	7.02	<u>6,981,242</u> 6,981,242	<u>0</u> 0	<u>42,027,078</u> 42,027,078
 Subtotal of Deferred Inflows/Outflows					 (4,515,656)	 46,765,113
Total net deferrals						42,249,457

* 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, 2016	(\$762,569,573)	\$357,434,578	(\$405,134,995)	\$0	\$0	\$0	(\$405,134,995)	
Service cost	(26,145,800)		(26,145,800)					26,145,800
Interest on total OPEB liability	(30,730,654)		(30,730,654)					30,730,654
Effect of plan changes	0		0					0
Effect of liability gains or losses	5,265,765		5,265,765	(5,265,765)		(5,265,765)		
Effect of assumption changes or inputs	(49,008,320)		(49,008,320)		49,008,320	49,008,320		
Benefit payments	17,669,778	(17,669,778)	0					
Administrative expenses		(698,562)	(698,562)					698,562
Expected investment income (net of inv expenses)		17,452,114	17,452,114					(17,452,114)
Investment gains or losses		(5,922,544)	(5,922,544)		5,922,544	5,922,544		
Employer contributions		1,376,484	1,376,484				1,376,484	
Recognition of liability gains or losses				750,109		750,109		(750,109)
Recognition of assumption changes or inputs					(6,981,242)	(6,981,242)		6,981,242
Recognition of investment gains or losses					(1,184,509)	(1,184,509)		1,184,509
Annual expense							(47,538,544)	47,538,544
Balances as of December 31, 2017	(845,518,804)	351,972,292	(493,546,512)	(4,515,656)	46,765,113	42,249,457	(451,297,055)	

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 reported in the December 31, 2016 Actuarial Valuation Report for the Wisconsin Retirement System. All assumptions are based on estimates of future experience.

Valuation Date:	January 1, 2017
Census Date:	January 1, 2017
Discount Rate:	3.60% (net of expenses)
Salary Increases:	Salary increase assumptions used in the December 31, 2016 Actuarial Valuation Report 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 3.20% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces.

% of Merit & Longevity Increase Next Year

Service	Protective with Social Security	Protective w/o Social Security	Executive & Elected	General	Public Schools
1	4.80%	5.50%	2.5%	3.5%	5.6%
2	4.80	5.50	2.5	3.5	5.6
3	4.10	4.70	2.0	3.1	5.2
4	3.50	3.80	1.6	2.8	4.7
5	2.80	3.00	1.1	2.5	4.3
10	1.10	0.90	0.2	1.5	2.6
15	0.80	0.50	0.2	1.1	1.4
20	0.70	0.40	0.2	0.9	0.6
25	0.60	0.30	0.2	0.6	0.3
30	0.50	0.20	0.2	0.4	0.2

Payroll Growth:	3.20% annually (same assumption used in the December 31, 2016 Actuarial Valuation Report for the Wisconsin Retirement System).
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Pre-Retirement Mortality:

This assumption applies to death while in service. These rates are the same assumptions as used in the December 31, 2016 Actuarial Valuation Report for the Wisconsin Retirement System. Rates are based on the Wisconsin 2012 Mortality table (multiplied by 50% for males and females) as the base table and project future improvements with MP-2015 generational improvement scale (multiplied by 50%). Sample rates of the mortality with attained ages in 2016 are as follows:

Age	Males	Females
20	0.0135%	0.0078%
25	0.0162	0.0086
30	0.0203	0.0117
35	0.0356	0.0210
40	0.0480	0.0297
45	0.0632	0.0462
50	0.0854	0.0685
55	0.1997	0.1219
60	0.2845	0.1750
65	0.4333	0.2664
70	0.7145	0.4510
75	1.2149	0.8194
80	2.2343	1.5345

Post-Retirement Mortality:

This assumption applies to death while retired. These rates are the same assumptions as used in the December 31, 2016 Actuarial Valuation Report for the Wisconsin Retirement System. Rates are based on the Wisconsin 2012 Mortality table and project future improvements with MP-2015 generational improvement scale (multiplied by 50%). Sample rates of the mortality with attained ages in 2016 are as follows:

Age	Males	Females
40	0.0959%	0.0593%
45	0.1264	0.0923
50	0.1707	0.1369
55	0.3993	0.2437
60	0.5689	0.3500
65	0.8666	0.5328
70	1.4290	0.9031
75	2.4297	1.6387
80	4.4686	3.0689
85	8.3445	6.1433

Post-Disability Mortality:

This assumption applies to death after disablement. These rates are the same assumptions as used in the January 1, 2016 Actuarial Valuation Report under GASB 43 for the State of Wisconsin Duty Disability Program. Sample rates of mortality are as follows:

Age	Males	Females
45	0.1256%	0.0788%
55	0.3327	0.2011
65	0.9540	0.5484
75	3.1651	1.8772
85	9.3893	6.5865

Disability:

Percent of employees expected to become disabled each year. These rates are the same assumptions as used in the January 1, 2016 Actuarial Valuation Report under GASB 43 for the State of Wisconsin Duty Disability Program for Protective members and the same assumptions as used in the December 31, 2016 Actuarial Valuation Report for the Wisconsin Retirement System for all other members. Sample rates are as follows:

Age	Protective	Executive & Elected	General		Public Schools	
			Male	Female	Male	Female
20	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%
25	0.02	0.00	0.01	0.01	0.01	0.01
30	0.09	0.00	0.01	0.02	0.01	0.01
35	0.13	0.01	0.01	0.03	0.01	0.01
40	0.18	0.01	0.03	0.04	0.01	0.02
45	0.24	0.01	0.06	0.06	0.03	0.05
50	0.35	0.02	0.13	0.09	0.08	0.10
55	0.20	0.09	0.24	0.16	0.16	0.14
60	0.20	0.11	0.43	0.23	0.26	0.21

Withdrawal:

Percent of employees expected to terminate each year within the first 10 years of employment. These rates are the same assumptions as used in the December 31, 2016 Actuarial Valuation Report 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	
				Male	Female	Male	Female
0	17.0%	4.0%	18.0%	16.8%	20.0%	18.3%	16.0%
1	8.0	3.5	14.0	12.7	14.1	11.0	10.8
2	5.0	1.5	12.0	9.0	11.0	7.8	7.7
3	4.3	1.3	10.0	7.3	8.9	5.9	5.8
4	3.8	1.2	10.0	7.0	8.5	4.9	5.0
5	3.1	1.1	8.0	4.8	6.7	3.6	4.3
6	3.0	1.0	7.0	4.3	5.6	3.2	3.8
7	2.9	0.9	6.0	4.2	5.0	2.6	3.4
8	2.5	0.8	6.0	3.4	4.7	2.6	2.8
9	2.2	0.7	6.0	3.1	4.5	2.4	2.5

Percent of employees expected to terminate each year after the first 10 years of employment. These rates are the same assumptions as used in the December 31, 2016 Actuarial Valuation Report 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	
				Male	Female	Male	Female
25	2.0%	0.7%	6.0%	2.5%	4.5%	1.3%	2.2%
30	1.8	0.7	5.1	2.5	4.3	1.3	1.9
35	1.6	0.7	4.3	2.4	3.5	1.3	1.6
40	1.3	0.6	4.1	2.1	2.7	1.3	1.3
45	1.1	0.6	3.2	1.8	2.2	1.3	1.1
50	1.0	0.5	2.5	1.5	1.9	1.3	1.0
55+	1.0	0.5	2.4	1.5	1.8	1.3	1.0

Normal Retirement:

Percent of employees expected to retire each year. These rates are the same assumptions as used in the December 31, 2016 Actuarial Valuation Report 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	
				Male	Female	Male	Female
50	6.0%	4.0%					
51	7.0	4.0					
52	9.0	5.0					
53	23.0	17.0					
54	19.0	25.0					
55	19.0	21.0					
56	19.0	27.0					
57	19.0	30.0	12.0%	18.0%	15.0%	36.0%	28.0%
58	18.0	30.0	12.0	18.0	15.0	31.0	28.0
59	16.0	30.0	12.0	18.0	15.0	24.0	28.0
60	20.0	26.0	12.0	18.0	15.0	30.0	28.0
61	20.0	15.0	12.0	18.0	15.0	28.0	28.0
62	22.0	20.0	12.0	25.0	25.0	37.0	36.0
63	26.0	40.0	12.0	30.0	25.0	32.0	30.0
64	17.0	40.0	12.0	25.0	25.0	27.0	27.0
65	30.0	40.0	12.0	25.0	28.0	29.0	35.0
66	25.0	40.0	20.0	32.0	32.0	33.0	35.0
67	30.0	40.0	15.0	26.0	26.0	27.0	30.0
68	30.0	40.0	15.0	19.0	22.0	24.0	30.0
69	30.0	40.0	10.0	19.0	20.0	24.0	30.0
70	100.0	100.0	10.0	19.0	20.0	20.0	35.0
71	100.0	100.0	10.0	19.0	20.0	20.0	30.0
72	100.0	100.0	15.0	19.0	20.0	20.0	22.0
73	100.0	100.0	15.0	19.0	20.0	20.0	22.0
74	100.0	100.0	15.0	19.0	20.0	20.0	22.0
75	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Reduced Retirement:

These rates are the same assumptions as used in the December 31, 2016 Actuarial Valuation Report for the Wisconsin Retirement System.

Age	Executive & Elected*	General		Public Schools	
		Male	Female	Male	Female
55	3.0%	9.0%	7.0%	13.0%	12.0%
56	3.0	9.0	7.0	13.0	12.0
57	3.0	4.8	5.0	12.0	12.0
58	3.0	5.8	6.0	13.0	12.0
59	3.0	6.5	6.0	14.0	13.0
60	5.0	8.5	8.5	14.0	17.0
61	5.0	8.5	8.5	15.0	17.0
62	N/A	16.0	16.0	21.0	23.0
63	N/A	17.0	16.0	21.0	23.0
64	N/A	17.0	16.0	21.0	23.0

* For participants hired on or before December 31, 2016, the normal retirement eligibility is age 62 and any years of service or age 57 with 30 years of service. For participants hired after December 31, 2016, the normal retirement eligibility is age 65 and any years of service or age 57 with 30 years of service. There are no participants hired after December 31, 2016 in this valuation report.

Expenses:

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

Administrative expense: \$660,000. 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 to 3.60%. A decrease in the discount rate increases the liabilities.

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 3.60%. 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.

Expected Return on Plan Assets:

The expected return on plan assets, 5%, 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, except as noted above, are based upon the December 31, 2016 Actuarial Valuation Report performed by the actuary for the Wisconsin Retirement System.

Expenses:

Based on recent history of the plan.

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.

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.

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 and later	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	\$0.04	\$0.04
30-34	0.04	0.04
35-39	0.04	0.04
40-44	0.06	0.06
45-49	0.10	0.10
50-54	0.16	0.16
55-59	0.22	0.22
60-64	0.30	0.30
65-69	0.39	0.39

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

Employer Premiums:

The employer must pay these premiums until the member's retirement:

- 63% of the Employee Premiums for Basic coverage
 - 35% is paid to fund pre-retirement coverage
 - 28% is paid to fund retiree coverage
- 35% of the Employee Premiums for Supplemental coverage

Summary of Participant Data

The participant data used in the valuation was provided by Securian and the State of Wisconsin as of January 1, 2017. 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.

A. Active Participants	
Count	49,125
Average Age	45.8
Average Service	10.7
Average Projected Salary	\$64,814
B. Disabled Participants	
Count	1,337
Average Age	57.0
Average Current Insurance	\$44,847
C. Pre-65 Annuitants	
Count	7,127
Average Age	61.3
Average Current Insurance	\$65,518
D. Post-64 Annuitants	
Count	23,760
Average Age	74.3
Average Current Insurance	\$28,843

Summary of Participant Demographic Information

Active Members as of January 1, 2017											
Years of Service											
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	ALL
<25	620	471	2	0	0	0	0	0	0	0	1,093
25-29	1,008	2,512	320	2	0	0	0	0	0	0	3,842
30-34	772	2,747	1,473	409	20	0	0	0	0	0	5,421
35-39	618	2,212	1,520	1,233	524	3	0	0	0	0	6,110
40-44	454	1,694	1,173	1,213	1,339	229	2	0	0	0	6,104
45-49	397	1,473	1,127	1,207	1,627	1,014	195	2	0	0	7,042
50-54	310	1,339	1,014	1,094	1,555	1,021	706	143	3	0	7,185
55-59	243	1,113	848	907	1,398	942	809	451	203	10	6,924
60-64	95	532	512	569	770	614	485	331	230	42	4,180
65-69	14	147	153	143	233	154	111	119	102	48	1,224
70+	0	0	0	0	0	0	0	0	0	0	0
ALL	4,531	14,240	8,142	6,777	7,466	3,977	2,308	1,046	538	100	49,125

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	\$41,569	\$41,430	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$41,503
25-29	47,644	50,259	54,425	*	0	0	0	0	0	0	49,921
30-34	53,050	56,351	58,858	57,139	55,121	0	0	0	0	0	56,617
35-39	53,825	60,382	65,111	63,739	60,516	*	0	0	0	0	61,583
40-44	52,811	62,790	67,959	71,881	65,716	64,263	*	0	0	0	65,542
45-49	55,188	62,853	68,706	74,834	72,500	71,543	68,571	*	0	0	69,054
50-54	55,623	61,822	66,446	70,936	74,405	74,596	73,782	66,632	*	0	69,400
55-59	57,706	60,544	63,844	67,305	72,604	75,899	79,170	71,992	61,622	*	69,217
60-64	60,212	60,132	66,754	66,296	66,379	77,014	85,112	89,689	76,683	66,302	71,626
65-69	*	64,969	68,872	67,324	75,781	84,967	95,459	102,131	113,856	85,504	81,702
70+	0	0	0	0	0	0	0	0	0	0	0
ALL	51,196	57,920	64,669	68,700	70,283	74,293	78,636	80,300	77,914	75,304	64,814

* 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.

Projection of Fiduciary Net Position for 12/31/2016

Year	Projected Beginning Fiduciary Net Position	Projected Employer Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2017	\$357,435,000	\$1,315,854	\$19,524,904	\$660,000	\$17,400,024	\$355,965,974
2018	348,903,973	1,224,893	20,648,568	675,180	17,295,827	353,162,946
2019	348,903,973	1,140,413	21,844,619	690,709	17,123,274	348,891,305
2020	344,367,281	1,060,151	23,107,086	706,595	16,875,727	343,013,501
2021	338,220,357	981,760	24,421,530	722,847	16,546,610	335,397,494
2022	330,341,107	904,962	25,857,121	739,473	16,127,584	325,833,447
2023	320,531,072	829,588	27,367,819	756,481	15,609,305	314,148,040
2024	308,590,304	759,694	28,934,236	773,880	14,983,691	300,183,310
2025	294,357,780	695,430	30,584,630	791,679	14,242,144	283,744,575
2026	277,635,960	634,318	32,308,384	809,887	13,375,130	264,635,751
2027	258,231,018	576,735	34,103,411	828,515	12,372,908	242,653,469
2028	235,938,608	524,071	35,965,286	847,571	11,225,454	217,590,137
2029	210,553,290	475,698	37,909,193	867,065	9,921,993	189,211,570
2030	181,840,778	430,279	39,902,370	887,007	8,451,601	157,304,073
2031	149,587,127	388,785	41,941,368	907,408	6,803,704	121,647,786
2032	113,569,476	350,698	44,026,599	928,279	4,967,285	82,010,891
2033	73,552,377	316,687	46,149,418	949,629	2,930,986	38,159,516
2034	29,295,047	285,323	48,276,462	971,471	683,911	0

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Actuarial Present Value of Projected Benefit Payments for 12/31/2016

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*	Present Value of "Unfunded" Benefit Payments**	Present Value of Total Benefit Payments***
2017	\$357,435,000	\$19,524,904	\$19,524,904	\$0	\$18,595,147	\$0	\$18,784,636
2018	348,903,973	20,648,568	20,648,568	0	18,728,860	0	19,112,508
2019	348,903,973	21,844,619	21,844,619	0	18,870,203	0	19,452,977
2020	344,367,281	23,107,086	23,107,086	0	19,010,257	0	19,797,058
2021	338,220,357	24,421,530	24,421,530	0	19,134,908	0	20,129,928
2022	330,341,107	25,857,121	25,857,121	0	19,294,982	0	20,505,171
2023	320,531,072	27,367,819	27,367,819	0	19,449,798	0	20,880,326
2024	308,590,304	28,934,236	28,934,236	0	19,583,830	0	21,238,458
2025	294,357,780	30,584,630	30,584,630	0	19,715,125	0	21,598,722
2026	277,635,960	32,308,384	32,308,384	0	19,834,545	0	21,950,981
2027	258,231,018	34,103,411	34,103,411	0	19,939,558	0	22,292,069
2028	235,938,608	35,965,286	35,965,286	0	20,026,817	0	22,617,779
2029	210,553,290	37,909,193	37,909,193	0	20,104,054	0	22,936,378
2030	181,840,778	39,902,370	39,902,370	0	20,153,408	0	23,226,987
2031	149,587,127	41,941,368	41,941,368	0	20,174,515	0	23,488,249
2032	113,569,476	44,026,599	44,026,599	0	20,169,092	0	23,721,222
2033	73,552,377	46,149,418	46,149,418	0	20,134,838	0	23,922,249
2034	0	48,276,462	0	48,276,462	0	24,756,511	24,076,042
2035	0	50,379,670	0	50,379,670	0	24,894,056	24,172,348
2036	0	52,414,088	0	52,414,088	0	24,955,984	24,194,989
2037	0	54,312,783	0	54,312,783	0	24,918,108	24,120,890
2038	0	56,137,338	0	56,137,338	0	24,817,107	23,985,951
2039	0	57,844,914	0	57,844,914	0	24,640,576	23,778,485
2040	0	59,417,520	0	59,417,520	0	24,388,581	23,498,893
2041	0	60,849,725	0	60,849,725	0	24,066,723	23,152,898
2042	0	62,144,793	0	62,144,793	0	23,683,693	22,749,160
2043	0	63,246,421	0	63,246,421	0	23,225,601	22,274,627
2044	0	64,166,473	0	64,166,473	0	22,705,209	21,741,851
2045	0	64,872,103	0	64,872,103	0	22,118,805	21,147,557
2046	0	65,366,402	0	65,366,402	0	21,475,565	20,500,794
2047	0	65,673,462	0	65,673,462	0	20,790,563	19,816,177
2048	0	65,795,809	0	65,795,809	0	20,070,626	19,100,382
2049	0	65,757,038	0	65,757,038	0	19,328,193	18,365,381
2050	0	65,565,627	0	65,565,627	0	18,569,985	17,617,642
2051	0	65,257,523	0	65,257,523	0	17,809,522	16,870,037
2052	0	64,821,774	0	64,821,774	0	17,046,253	16,122,049
2053	0	64,287,155	0	64,287,155	0	16,289,905	15,382,871
2054	0	63,655,090	0	63,655,090	0	15,542,247	14,654,135
2055	0	62,927,869	0	62,927,869	0	14,805,055	13,937,470
2056	0	62,091,923	0	62,091,923	0	14,076,298	13,230,916
2057	0	61,158,435	0	61,158,435	0	13,359,680	12,537,906
2058	0	60,124,107	0	60,124,107	0	12,655,364	11,858,539
2059	0	59,008,954	0	59,008,954	0	11,968,239	11,197,326
2060	0	57,841,647	0	57,841,647	0	11,304,187	10,559,684
2061	0	56,626,255	0	56,626,255	0	10,663,576	9,945,852
2062	0	55,347,598	0	55,347,598	0	10,043,154	9,352,695
2063	0	54,022,054	0	54,022,054	0	9,445,583	8,782,597
2064	0	52,648,576	0	52,648,576	0	8,870,143	8,234,787
2065	0	51,193,226	0	51,193,226	0	8,310,800	7,703,571
2066	0	49,660,501	0	49,660,501	0	7,768,332	7,189,598
2067	0	48,032,944	0	48,032,944	0	7,240,061	6,690,315
2068	0	46,300,632	0	46,300,632	0	6,724,752	6,204,519
2069	0	44,483,155	0	44,483,155	0	6,225,457	5,734,964

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**Actuarial Present Value of Projected Benefit Payments for 12/31/2016
(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*	Present Value of "Unfunded" Benefit Payments**	Present Value of Total Benefit Payments***
2070	\$0	\$42,595,889	\$0	\$42,595,889	\$0	\$41,044,410	\$40,980,906
2071	0	40,645,490	0	40,645,490	0	37,738,534	37,621,846
2072	0	38,621,719	0	38,621,719	0	34,553,385	34,393,249
2073	0	36,532,654	0	36,532,654	0	31,493,908	31,299,450
2074	0	34,366,229	0	34,366,229	0	28,547,202	28,327,042
2075	0	32,125,631	0	32,125,631	0	25,714,002	25,476,214
2076	0	29,820,641	0	29,820,641	0	22,999,654	22,751,711
2077	0	27,477,765	0	27,477,765	0	20,420,768	20,169,371
2078	0	25,119,040	0	25,119,040	0	17,987,882	17,738,948
2079	0	22,767,120	0	22,767,120	0	15,709,828	15,468,450
2080	0	20,449,571	0	20,449,571	0	13,596,711	13,367,087
2081	0	18,185,804	0	18,185,804	0	11,651,142	11,436,653
2082	0	16,007,201	0	16,007,201	0	9,881,838	9,684,913
2083	0	13,929,645	0	13,929,645	0	8,286,072	8,108,382
2084	0	11,972,609	0	11,972,609	0	6,862,523	6,704,970
2085	0	10,153,296	0	10,153,296	0	5,607,747	5,470,524
2086	0	8,488,396	0	8,488,396	0	4,517,449	4,400,089
2087	0	6,985,265	0	6,985,265	0	3,582,093	3,483,634
2088	0	5,654,062	0	5,654,062	0	2,793,836	2,712,839
2089	0	4,499,711	0	4,499,711	0	2,142,453	2,077,122
2090	0	3,521,896	0	3,521,896	0	1,615,807	1,564,112
2091	0	2,717,727	0	2,717,727	0	1,201,449	1,161,211
2092	0	2,069,886	0	2,069,886	0	881,723	850,874
2093	0	1,557,192	0	1,557,192	0	639,167	615,850
2094	0	1,158,769	0	1,158,769	0	458,306	440,904
2095	0	852,969	0	852,969	0	325,071	312,244
2096	0	620,773	0	620,773	0	227,963	218,629
2097	0	446,901	0	446,901	0	158,135	151,426
2098	0	318,150	0	318,150	0	108,476	103,713
2099	0	223,434	0	223,434	0	73,407	70,075
2100	0	154,947	0	154,947	0	49,052	46,753
2101	0	105,660	0	105,660	0	32,231	30,673
2102	0	70,400	0	70,400	0	20,693	19,662
2103	0	46,373	0	46,373	0	13,134	12,461
2104	0	29,838	0	29,838	0	8,143	7,714
2105	0	18,945	0	18,945	0	4,982	4,712
2106	0	11,826	0	11,826	0	2,997	2,830
2107	0	7,230	0	7,230	0	1,765	1,664
2108	0	4,343	0	4,343	0	1,022	962
2109	0	2,572	0	2,572	0	583	548
2110	0	1,477	0	1,477	0	323	303
2111	0	811	0	811	0	171	160
2112	0	408	0	408	0	83	77
2113	0	147	0	147	0	29	27
2114	0	62	0	62	0	12	11
2115	0	18	0	18	0	3	3
Total					332,919,937	+ 960,510,658	= 1,293,430,595

* Discounted at the long-term expected rate of return, 5.00%

** Discounted at the municipal bond rate, 3.78%

*** 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, 3.94%

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