Milliman

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June 4, 2015

Mr. Robert C. Willett, CPA
Chief Trust Finance Officer
State of Wisconsin
Department of Employee Trust Funds
801 West Badger Road
Madison, Wisconsin 53707-7931

Re: Duty Disability Expense and Liability Calculations Under GASB Statement 43

Dear Bob:

Enclosed is a copy of our report which presents the results of our calculations under Statement No. 43 of the Governmental Accounting Standards Board, "Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans," for the 2015 fiscal year for the State of Wisconsin Duty Disability Program.

If you have any questions regarding this report, please contact me at dan.skwire@milliman.com or 207-771-1203.

Sincerely,

Daniel D. Skwire, FSA, MAAA
Principal and Consulting Actuary

Enclosure

cc: T. Herman
P. Correia

State of Wisconsin Duty Disability Program

January 1, 2015 Actuarial Valuation under GASB 43

Prepared by:

Daniel D. Skwire, FSA, MAAA
Principal and Consulting Actuary

Timothy J. Herman, FSA, EA, MAAA
Principal and Consulting Actuary

Paul L. Correia, FSA, MAAA
Consulting Actuary

Milliman, Inc.

June 4, 2015

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State of Wisconsin Duty Disability Program

January 1, 2015 Actuarial Valuation under GASB 43

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June 4, 2015

Mr. Robert C. Willett, CPA
Chief Trust Finance Officer
State of Wisconsin
Department of Employee Trust Funds
801 West Badger Road
Madison, Wisconsin 53707-7931

Re: January 1, 2015 Actuarial Valuation of the State of Wisconsin Duty Disability Program

Dear Bob:

As part of our engagement with the Department of Employee Trust Funds (ETF), we have completed an actuarial determination of the benefit cost and funded status relating to the future duty disability benefits of the State of Wisconsin Duty Disability Program as of January 1, 2015. The results of our calculations are set forth in the following report, as are the actuarial assumptions and methods on which our calculations have been made. Our determinations reflect the procedures and methods as prescribed in Statement No. 43 of the Governmental Accounting Standards Board (GASB 43), "Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans."

Actuarial computations under GASB 43 are for purposes of fulfilling certain accounting requirements. The calculations reported herein have been made on a basis consistent with our understanding of GASB 43. Determinations for purposes other than meeting the plan or employer financial accounting requirements of GASB 43 may differ significantly from the results reported herein.

In preparing this report, we have relied without audit on the employee data, plan provisions, and the value of the plan assets and other plan financial information as provided by your office. We have reviewed the data for reasonableness. If any of this information as summarized in this report is inaccurate or incomplete, the results shown could be materially affected and this report may need to be revised.

The actuarial cost method and certain actuarial assumptions, including discount rates, mortality tables, benefit increase assumptions are prescribed by the State of Wisconsin. We have performed no independent assessment of the reasonableness of these assumptions. ETF is solely responsible for establishing these assumptions and communicating any changes to Milliman for the purpose of this valuation.

This valuation report is only an estimate of the Program's financial condition as of a single date. It can neither predict the Program's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Program benefits, only the timing of the Program's accounting results. 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 such factors as 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 our assignment, we did not perform an analysis of the potential range of future measurements.

Milliman’s work is prepared solely for the use and benefit of the Department of the 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 exception(s):

> (a) The Department of Employee Trust Funds may provide a copy of Milliman’s work, in its entirety, to its 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 Department of Employee Trust Funds.
>
> (b) The Department of Employee Trust Funds may provide a copy of Milliman’s work, in its entirety, to other governmental entities, as required by law.

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 own specific needs.

The consultants who worked on this assignment are pension and health 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 accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

This report and its use are subject to the terms of our contract with the Department of Employee Trust Funds effective October 1, 2014.

We, Daniel D. Skwire, Timothy J. Herman, and Paul L. Correia, are actuaries for Milliman, Inc. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. This report uses the expertise of Milliman healthcare and retirement actuaries. Daniel D. Skwire and Paul L. Correia are responsible for the work related to the disability costs and duration. Timothy J. Herman is responsible for projecting the current costs into future years using the valuation assumptions and methodology and then calculating the accounting costs and liabilities reported herein.

Respectfully submitted,

Daniel D. Skwire, FSA, MAAA
Principal and Consulting Actuary

Timothy J. Herman, FSA, EA, MAAA
Principal and Consulting Actuary

Paul L. Correia, FSA, MAAA
Consulting Actuary

Milliman, Inc.

State of Wisconsin Duty Disability Program

January 1, 2015 Actuarial Valuation under GASB 43

I. INTRODUCTION AND PURPOSE

Milliman, Inc. prepared this report under our engagement with the Department of Employee Trust Funds to estimate the cost of the State of Wisconsin's current duty disability benefit program.

This report provides the information necessary for the Department of Employee Trust Funds' financial statement disclosures under the Statement of Governmental Accounting Standards No. 43 (GASB 43).

Since 2011, the actuarial valuation has been based on the standards required under GASB 43, which necessitate that the liabilities attributable to the current active population be accrued during their working careers. Therefore, a liability is determined for active participants based on expected future disablements in addition to current disabled participants and survivors.

As of January 1, 2015, the Plan is 132% funded on an actuarial basis.

A brief summary of the results of the current and prior GASB 43 valuations are shown below:

($ in millions)	1/1/2014[1]	1/1/2015
Actuarial Accrued Liability		
Actives	$ 99	$ 95
Disabled Members and Survivors	414	353
Total	$ 513	$ 448
Actuarial Value of Assets	$ (567)	$ (593)
Unfunded Actuarial Accrued Liability	$ (54)	$ (145)
Funded Ratio	111%	132%
Annual Required Contribution (GASB 43)	$ 8	$ 3

(1) *Prepared by prior actuary*

The primary changes in the 1/1/2015 valuation, relative to the 1/1/2014 valuation, include gains on plan assets and a change in liability assumptions pertaining to future benefits payable to survivors. These changes had the impact of reducing the plan's Unfunded Actuarial Accrued Liability. Further details about the changes in liabilities are provided in Section V of this report.

State of Wisconsin Duty Disability Program

January 1, 2015 Actuarial Valuation under GASB 43

II. COST PROJECTION RESULTS

A summary of the transactions during 2014 of the assets for the State of Wisconsin Duty Disability Program is shown below.

TABLE 1

($ in thousands)

1.	Market value of assets as of January 1, 2014		$599,393
2.	Income		
	Employer Contributions	$9,335	
	Investment Income	34,208	
	Total Income		$43,543
3.	Disbursements		
	Benefit Payments	$31,669	
	Expenses	841	
	Total Disbursements		$32,510
4.	Net Change in Assets: (2) – (3)		$11,033
5.	Market Value of Assets as of December 31, 2014: (1) + (4)		$610,426
6.	Estimated Rate of Investment Return on a Market Value Basis		5.67%

TABLE 2

The following table develops the Actuarial Value of Assets as of January 1, 2015.

($ in thousands)

1.	Market value of assets as of January 1, 2014	$599,393
2.	Contributions*	9,335
3.	Benefit Payments*	(31,669)
4.	Assumed earnings at 7.20% on (1), (2), and (3)	42,352
5.	Expected assets at January 1, 2015: (1)+(2)+(3)+(4)	$619,411
6.	Actual assets at January 1, 2015	$610,426
7.	Investment gain (loss)	
	a. Gain (loss) for 2014: (6) – (5)	$(8,985)
	b. Gain (loss) for 2013	31,922
	c. Gain (loss) for 2012	28,608
	d. Gain (loss) for 2011	(28,782)
8.	Gain (loss) not yet reflected in actuarial value of assets	
	a. 80% of 2014 gain (loss)	$(7,188)
	b. 60% of 2013 gain (loss)	19,153
	c. 40% of 2012 gain (loss)	11,443
	d. 20% of 2011 gain (loss)	(5,756)
	e. Total gain (loss) not yet reflected in actuarial value of assets:	17,652
9.	Actuarial value of plan assets as of January 1, 2015: (6) – (8e)	$592,774
10.	Estimated rate of return on actuarial value of assets	8.59%

* *Contributions and benefit payments are assumed to be paid evenly throughout the year.*

State of Wisconsin Duty Disability Program

January 1, 2015 Actuarial Valuation under GASB 43

The actuarial balance sheet is a demonstration of the basic actuarial equation that the actuarial present value of total projected benefits to be paid to the active, and disabled participants must equal the assets on hand plus the actuarial present value of future contributions to be received. Accordingly, the status of the plan in balance sheet form as of January 1, 2015 is shown below:

TABLE 3

($ in thousands)

	January 1, 2015
I. Actuarial Present Value of Total Projected Benefits	
22,225 Active Participants[1]	$161,045
990 Disabled Members and Survivors [1]	352,768
Grand Total Actuarial Present Value of Total Projected Benefits	$513,813
II. Assets and Future Employer Contributions	
Actuarial Value of Assets	$592,774
Unfunded Actuarial Accrued Liability	(144,677)
Present Value of Future Normal Costs (including the current year)	65,716
Total Assets and Future Employer Contributions	$513,813

[1] *Participant data as of January 1, 2015 is summarized in Section VII of this report.*

Liabilities and contributions shown in this report are computed using the Projected Unit Credit Method of funding. The objective under this method is to expense each participant's benefit under the plan as it accrues. At the time the Funding Method is introduced, there will be a liability which represents the contributions which would have been accumulated if this method of funding had always been used. The difference between this liability and the assets (if any) is the unfunded liability, which is typically funded over a chosen period in accordance with an amortization schedule. These calculations for 2015 are shown below:

TABLE 4

($ in thousands)

		2015
A.	**Employer Normal Costs** (Projected Unit Credit Actuarial Cost Method)	
(1)	Current Year Normal Cost – January 1	$ 10,983
(2)	Assumed Interest to the End of the Year	791
(3)	Current Year Normal Cost – December 31: [(1) + (2)]	$ 11,774
B.	**Determination of Current Year Amortization Payment** [2]	
(1)	Unfunded Actuarial Accrued Liability (see Table 3)	$(144,677)
(2)	Amortization Period	30 years
(3)	Level Percent of Pay Amortization Factor	18.2359
(4)	Amortization Amount – January 1: [(1) / (3)]	(7,934)
(5)	Assumed Interest to the End of the Year	(571)
(6)	Amortization Amount – December 31: [(4) + (5)]	$ (8,505)

[2] *When in an underfunded position, the unfunded liability is amortized using a closed 15-year level percent of pay amortization of experience gains and losses, assumption changes, and contribution deficiencies or excess contributions (contributions less than or greater than the Annual Required Contribution, respectively).*

When in an overfunded position, the unfunded liability is amortized using an open, 30-year level percent of pay amortization of the unfunded actuarial accrued liability.

DISCLOSURES

TABLE 5

($ in thousands)

Fiscal Year-End		12/31/2015
I.	Determination of Annual Required Contribution	
(1)	Discount Rate at Beginning of Fiscal Year	7.20%
(2)	Normal Cost for Benefits Attributable to Service in the Year	$11,774
(3)	Amortization of Unfunded Actuarial Accrued Liability	(8,505)
(4)	Annual Required Contribution (ARC): (2) + (3)	$3,269

TABLE 6

Actuarial gains and losses arise from experience different from that assumed, changes in actuarial assumptions and methods, and changes in plan provisions. The following summarizes the changes in the Unfunded Actuarial Accrued Liability (UAAL) due to these sources from January 1, 2014 to January 1, 2015.

($ in thousands)

a.	UAAL as of January 1, 2014	$(54,164)
b.	Normal Cost for 2014	10,594
c.	Annual Required Contribution for 2014	8,173
d.	Interest on UAAL and Normal Cost at 7.2%	(3,137)
e.	Expected UAAL as of January 1, 2015	(38,534)
f.	2014 (Gain)/Loss	(106,143)
g.	UAAL as of January 1, 2015	$(144,677)

Sources of 2014 (Gain)/Loss	
Demographic (Gain)/Loss	(27,902)
(Gain)/Loss due to assumption changes	(69,341)
(Gain)/Loss due to (over)/underpayment of ARC	(1,162)
(Gain)/Loss due to asset returns	(7,737)
Total	$(106,143)

Funded Status and Funding Progress. As of January 1, 2015, the most recent actuarial valuation date, the plan is estimated to be 132% funded. The actuarial accrued liability for benefits is $448,097,000 and the actuarial value of assets is $592,774,000, resulting in an unfunded actuarial accrued liability (UAAL) of $(144,677,000).

State of Wisconsin Duty Disability Program

January 1, 2015 Actuarial Valuation under GASB 43

REQUIRED SUPPLEMENTARY INFORMATION

TABLE 7

Schedule of Funding Progress

($ in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) – Unit Credit (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b-a)/c
1/1/2006	$222,692	$427,089	$204,397	52.1%	$1,144,529	17.9%
1/1/2008	311,778	471,668	159,890	66.1	1,257,666	12.7
1/1/2010	373,048	512,785	139,737	72.7	1,370,978	10.2
1/1/2011	412,988	499,034	86,046	82.8	1,297,690	6.6
1/1/2012	449,177	476,979	27,802	94.2	1,285,854	2.2
1/1/2013	490,137	507,081	16,944	96.7	1,279,908	1.3
1/1/2014	567,329	513,165	(54,164)	110.6	1,302,765	-4.2
1/1/2015	592,774	448,097	(144,677)	132.0	1,332,810	-10.9

TABLE 8

GASB No. 43 Schedule of Employer Contributions

($ in thousands)

Year Ended	Annual Required Contribution (a)	Employer Contribution (b)	Percentage Contributed (b/a)
12/31/2006	$44,397	$44,566	100.4%
12/31/2007	46,174	47,765	103.4
12/31/2008	47,684	50,574	106.1
12/31/2009	50,193	51,556	102.7
12/31/2010	53,181	51,861	97.5
12/31/2011	50,364	52,335	103.9
12/31/2012	48,377	52,978	109.5
12/31/2013	49,755	53,902	108.3
12/31/2014	8,173	9,335	114.2
12/31/2015	3,269	TBD	TBD

TABLE 9

Cash Flow Projections, the Annual Undiscounted Cash Flow Projections of GASB 43 Benefits for Current Disabled Members and Survivors Plus Current Active Employees

($ in thousands)

Year	Total
2015	$30,440
2016	31,542
2017	32,868
2018	34,124
2019	35,477
2020	36,744
2021	37,884
2022	39,020
2023	40,117
2024	41,151

III. ACTUARIAL COST METHOD

Projected Unit Credit Actuarial Cost Method

The actuarial cost method determines, in a systematic way, the incidence of plan sponsor contributions required to provide plan benefits. It also determines how actuarial gains and losses are recognized in other postemployment benefit costs. These gains and losses result from the difference between the actual experience under the plan and the experience by the actuarial assumptions.

The cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, turnover, etc. which are assumed to hold for many years into the future. Since actual experience may differ somewhat from the assumptions, the costs determined by the valuation must be regarded as estimates of the true costs of the Plan.

Actuarial liabilities and comparative costs shown in this Report were computed using the **Projected Unit Credit Actuarial Cost Method**, which recognized the following cost components:

1 **The Normal Cost** is the Actuarial Present Value of benefits accruing during the valuation year. For purposes of this valuation, we have accrued costs through date of disability for benefits provided.

2 **The Actuarial Accrued Liability** is the Actuarial Present Value of benefits accrued as of the valuation date.

3 **The Actuarial Value of Assets** are determined using a Five-Year Smoothed Market Value. Under this method, the Actuarial Value of Assets equals the Market Value less a decreasing fraction (4/5, 3/5, 2/5, etc.) of the prior five years of investment gains and losses compared to the assumed rate of investment return (currently 7.20%).

4 **The Unfunded Actuarial Accrued Liability** is the excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. When in an underfunded position, the unfunded liability is amortized using a closed 15-year level percent of pay amortization of experience gains and losses, assumption changes, and contribution deficiencies or excess contributions (contributions less than or greater than the Annual Required Contribution, respectively).

When in an overfunded position, the unfunded liability is amortized using an open, 30-year level percent of pay amortization of the unfunded actuarial accrued liability.

Funding Policy

The program is funded entirely by employer contributions, which vary by experience. The contribution policy (see Section VI of this report for a description of the contribution policy) does not meet the GASB 43 requirements for determining an Annual Required Contribution (ARC), which requires using a consistent amortization policy for the unfunded actuarial accrued liability.

IV. ACTUARIAL ASSUMPTIONS

Valuation Date: January 1, 2015

Census Date: January 1, 2015

Discount Rate: 7.20% (net of expenses)

Salary Increases: Salary increase assumptions for individual active members are shown for sample services below. Part of the assumption for each age is for merit and longevity increase, and another 3.2% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces.

% of Merit & Longevity Increase Next Year

Years of Service	Protective with Social Security	Protective w/o Social Security
1	4.75%	5.50%
2	4.75	5.50
3	4.10	4.66
4	3.45	3.82
5	2.80	2.98
10	1.14	0.88
15	0.84	0.54
20	0.74	0.44
25	0.64	0.34
30	0.54	0.24

Payroll Growth: 3.2% annually

Pre-Retirement Mortality: This assumption applies to death while in service. Rates are based on the 2009-2011 Experience Study performed by the actuary for the Wisconsin Retirement System. Sample rates of mortality are as follows:

Age	Males	Females
25	0.0184%	0.0097%
35	0.0398	0.0230
45	0.0717	0.0519
55	0.2228	0.1345

Beneficiary Mortality: This assumption applies to death of beneficiaries. Rates are from the Wisconsin 2012 Mortality Table, as adopted by the Board in connection with the 2009-2011 Experience Study performed by the actuary for the Wisconsin Retirement System. The rates in this table were based on actual WRS experience projected to 2017 with scale BB to allow for future improvements (margin) in mortality. Sample rates of mortality are as follows:

Age	Males	Females
45	0.1303%	0.0943%
55	0.4050	0.2445
65	0.8752	0.5408
75	2.4683	1.6645
85	8.4634	6.2186

Post-Disability Mortality: This assumption applies to death after disablement. Rates are based on the 2009-2011 Experience Study performed by the actuary for the Wisconsin Retirement System. Sample rates of mortality are as follows:

Age	Males	Females
45	0.2512%	0.1576%
55	0.6654	0.4021
65	1.9079	1.0968
75	6.3302	3.7543
85	18.7785	13.1729

Disability: Percent of employees expected to become disabled each year are as follows:

Age	Rate of Disablement
20	0.01%
25	0.02
30	0.09
35	0.13
40	0.18
45	0.24
50	0.35
55	0.20
60	0.20

Withdrawal: Percent of employees expected to terminate each year within the first 10 years of employment are as follows:

Years of Service	Protective with Social Security	Protective w/o Social Security
0	15.0%	4.0%
1	7.0	3.5
2	4.3	2.1
3	3.8	1.3
4	3.4	1.2
5	2.6	1.1
6	2.5	1.0
7	2.3	0.9
8	2.0	0.8
9	1.7	0.7

Withdrawal:
(continued)

Percent of employees expected to terminate each year after the first 10 years of employment are as follows:

Age	Protective with Social Security	Protective w/o Social Security
25	1.58%	0.70%
30	1.58	0.70
35	1.38	0.67
40	1.18	0.62
45	1.07	0.57
50	1.02	0.52
55+	1.00	0.50

Retirement:

Percent of employees expected to retire each year are as follows.

Age	Protective with Social Security	Protective w/o Social Security
50	6.0%	3.5%
51	7.0	3.8
52	8.0	4.5
53	23.0	17.0
54	18.0	25.0
55	17.0	21.0
56	16.0	27.0
57	16.0	30.0
58	16.0	30.0
59	16.0	30.0
60	18.0	26.0
61	18.0	15.0
62	22.0	20.0
63	29.0	40.0
64	16.0	40.0
65	30.0	40.0
66	20.0	40.0
67	15.0	40.0
68	25.0	40.0
69	20.0	40.0
70	100.0	100.0

Benefit Offsets: The following assumptions estimate the offsets to the member's basic benefit.

Offset	Valuation Estimate
WRS Benefits and LTDI:	Assume 20% of members qualify for a WRS disability benefit or LTDI. Assume 10% of members under age 50 who do not qualify for a WRS disability benefit or LTDI elect to receive a WRS separation benefit. Assume other members commence a WRS retirement benefit at age 50 (requirement of plan). Benefits are based on plan provisions and actuarial assumptions stated above.
Social Security:	Assume 10% of members covered by Social Security qualify for a Social Security disability award. Benefits are based on the Social Security Primary Insurance Amount formula using 2015 bend points. Benefits for currently active participants are based on Social Security formula and assuming: • 3.2% pay increases • 3.2% Social Security Taxable Wage Base increases • 2.5% cost-of-living adjustments
Unemployment Compensation:	None (No offsets observed)
Combined Offset from: • Worker's Compensation • Employer Earnings • Other Earnings	Assume 3% reduction to 75%/80% target benefit (Observed reduction from all these offsets was about 2.9% of target benefits as of 12/31/2014. This observation does not include a review of income tax returns or one-time earnings offsets as observation is taken from the December Payroll of each year.)

Active Members Included: Currently eligible WRS active members.

Administrative Expenses: 1.5% of paid benefits.

Future Service: All members earn a full year of service in each calendar year.

Marital Status: 100% of members are assumed to be married. Husbands are assumed to be three years older than their wives.

Dependents: No dependent children are assumed to be covered at retirement.

Annual Benefit Increases: Annual benefit increases of either 3.20% or 2.10% were assumed based on the following criteria:

1) Assumed 3.20% annual increases for the following individuals:
   - under age 60, or
   - older than 60 and receiving a regular disability retirement or regular LTDI benefit, or

- receiving a duty disability death benefit based on 1998 law.

2) Assumed 2.10% for the following individuals:
   - over age 60 and receiving special disability retirement or special LTDI benefits, or
   - over age 60 and not receiving any regular disability retirement or LTDI benefits

Death Benefits Payable to Survivors: Assumed that 33% of survivors will eventually receive death benefits

Benefit Adjustments for Current Inactives: None

Changes Since Prior Valuation: The assumption that 33% of survivors will eventually receive death benefits is new this year. Last year, the assumption was that 100% of survivors would eventually receive death benefits. The new assumption was developed from an analysis of historical duty disability claim experience, which indicated that the majority of survivors do not qualify for death benefits through the Duty Disability program.

The administrative expense assumption is also new this year. This represents expenses related to the ongoing management and payment of Duty Disability benefits.

V. Analysis of Results

The actuarial liability for the Duty Disability program discussed in this report consists of the following components:

- Active Lives: The liability for active lives represents the expected present value of future benefits payable to active participants based upon expected future disablements. There were 22,225 active protective occupation participants as of 1/1/2015.
- Open Claims: The liability for open claims represents the expected present value of future benefits payable to disabled members and survivors whose claims had been reported on or before 1/1/2015. There were 935 disabled members and 55 survivors reported as of 1/1/2015.
- Future Death Benefits: The liability for future death benefits represents the expected present value of future death benefits payable to survivors of currently disabled members.
- Incurred but not Reported (IBNR) Claims: The liability for IBNR claims represents the expected present value of future benefits payable to members disabled prior to 1/1/2015 whose claims had not been reported as of that date.
- Administrative Expenses: The liability for administrative expenses represents the expected present value of future expenses related to the ongoing management and payment of Duty Disability claims.

The 1/1/2014 valuation performed by the plan's prior actuary included the first three items explicitly, and it appears to have included a liability for IBNR claims implicitly. It did not, however, include a liability for administrative expenses. It is our view that GASB 43 explicitly requires this liability and we have therefore included it in the current valuation.

The following table compares the 1/1/2014 and 1/1/2015 liabilities for the Duty Disability program:

Comparison of Current Year and Prior Year Liabilities for the Duty Disability Program		
Liability Component	**1/1/2014**	**1/1/2015**
Active Lives	$98,718,000	$95,329,270
Disabled Members and Survivors	$414,447,000	$348,013,064
Admin. Expenses	N/A	$4,754,596
Total	$513,165,000	$448,096,930

Further detail on the liability for disabled lives and survivors is provided below (this detail was unavailable for the 1/1/2014 valuation):

Detail of Liability for Disabled Lives and Survivors for the Duty Disability Program		
Liability Component	**1/1/2014**	**1/1/2015**
Disabled Members	N/A	$300,495,265
Survivors	N/A	$16,477,790
Future Death Benefits	N/A	$28,120,984
IBNR	N/A	$2,919,025
Total	$414,447,000	$348,013,064

State of Wisconsin Duty Disability Program

January 1, 2015 Actuarial Valuation under GASB 43

The combined liabilities for disabled members, survivors and future death benefits decreased by approximately 16% (from $414,447,000 to $348,013,064) due primarily to a change in one of the assumptions used to estimate future death benefits. The assumption that only 33% of survivors will eventually receive death benefits is new this year. Last year, the assumption was that 100% of survivors would eventually receive death benefits. The new assumption was developed from an analysis of past claim experience, which showed that a large majority of survivors do not qualify for Duty Disability death benefits. In order to qualify, the disabled member must die from the same condition that triggered the onset of Duty Disability benefits. Our analysis suggests that only about 10-20% of survivors eventually receive death benefits. The studies were based on a relatively small sample, however, which may not be considered fully credible, and therefore we used an assumption that 33% of survivors will qualify for Duty Disability death benefits.

The liability for IBNR claims as of 1/1/2015 represents the expected portion of the total cost attributable to disabilities incurred prior to 1/1/2015 that had not been reported as of that date. We computed the IBNR liability by first estimating the average annual incurred claim cost, and then estimating the proportion of incurred claims that are typically unreported at a given valuation date. Both of these estimates were derived from analyses of historical claim experience using claim data from 2008 through 2014.

Our IBNR calculation for the Duty Disability program is summarized below:

Development of IBNR Liability for Duty Disability Program	
Estimated Annual Incurred Claims for 2014	$5,838,051
Estimated Proportion of Unreported Claims	50.0%
IBNR Liability as of 1/1/2015	$2,919,025

The liability calculation for administrative expenses was based, in part, on ETF’s estimated allocation of staff time for administering the plan. This estimated expense was approximately equal to 1.5% of total benefit payments made in 2014. Thus, the administrative expense liability was determined by assuming that the program’s administrative costs will equal 1.5% of annual benefit payments in all future years.

To test the assumptions that were used in liability calculations for open claims (i.e. disabled members and survivors), we performed retrospective runoff studies. The results of the runoff studies can be useful in assessing how well the assumptions have predicted the emerging costs of Duty Disability claims. Separate studies were performed for disabled members and survivors, since the valuation assumptions are different for these two groups. Both studies used claims experience from 1/1/2012 through 12/31/2013. The results represent two 12-month studies (for calendar years 2012 and 2013) that were combined. The results are shown in the following table:

Liability Runoff Studies Margin as % of Initial Liability	
Segment	Margin %
Disabled Members	(0.9%)
Survivors	(0.2%)

In the preceding table, a positive margin indicates the liability was adequate to cover the runout of open disability claims during the study period, while a negative margin indicates a deficiency. The cost of the claim runout is computed as the present value of paid claims during the study period, plus the present value of the liability for these claims at the end of the study period. For this type of plan, we typically target a positive overall margin of 1% to 5%, with reasonably consistent patterns by claim duration.

The results of the disabled member and survivor studies both show slight negative margins. The studies were challenging to develop because of the complex benefit design, which includes variable annual benefit adjustments and offsets from multiple sources of other income, which are subject to change over time. We do not believe that the small negative margins pose a significant concern at this time, but we will continue to monitor Duty Disability experience alongside the valuation assumptions to ensure that the liability estimates are adequate. Consistent negative margins in future years may require updates to the valuation assumptions.

VI. Summary of Principal Plan Provisions

Participants Included: State and local protective occupation active employees, and disabled members and their survivors who are currently receiving duty disability program benefits

Benefit Eligibility: Member must satisfy all of the following:

- injured while performing duties or contracted disease due to occupation
- disability is work-related
- disability is expected to be permanent

Also, the disability must result in one of the following:

- reduction in pay or position
- assignment to light duty
- retirement
- impairs promotional opportunities

Member Benefits: 80% of salary (75% for local employees who are not eligible for a Social Security disability award and not eligible for a WRS disability benefit or LTDI). For local members who have been terminated but not approved for WRS disability or LTDI only, the percentage is reduced by 0.5% for each month of WRS creditable service over 25 years. For local members who have not been terminated or have been approved for WRS disability or LTDI, the percentage is reduced by 0.5% per month for every month over 30 years, but not to less than 50% of the participant's monthly salary. For all members, the offsets are as follows (with mandatory commencement ages in parenthesis if applicable):

- Any Social Security benefit based upon the participant's work record (age 62; if not already receiving SSDI)
- Unemployment compensation
- Worker's Compensation
- Any WRS retirement, separation, or disability benefit based upon member's earnings and service
- all earnings from the employer where the disability occurred
- a percent of other earnings as follows:
  - 1/3 of earnings less than 40% of salary
  - 1/2 of earnings between 40% and 80% of salary
  - 2/3 of earnings over 80% of salary
- a 5% reduction for non-state members who have not filed a Worker's Compensation claim for permanent disability

Annual Increases in Member Benefits: Individuals receive an annual increase of either 1 or 2 below:

1) Social Security salary index for the following individuals:
   - Under age 60, or
   - older than 60 and receiving a regular disability retirement or

regular LTDI, or
- receiving a duty disability death benefit based on 1988 law.

2) Prior year's WRS core annuity dividend for the following individuals:
   - over age 60 and receiving special disability retirement or special LTDI, or
   - over age 60 not receiving any regular disability retirement or LTDI

Survivor Benefits:

State employees and pre-5/3/88 applications for local employees

- Disabled member dies from the same condition that triggered the onset of Duty Disability benefit in order for a survivor benefit to be payable
- 1/3 of the participant's monthly salary at time of death to surviving spouse (or domestic partner – State employees only) if the spouse was married to or in a domestic partnership with the participant on the date the participant was disabled, plus
- $15/month to the guardian of each unmarried child under the age of 18
- not to exceed 65% of the participant's monthly salary at time of death
- no annual adjustments

Post-5/3/88 applications for local employees

- Disabled member dies from the same condition that triggered the onset of Duty Disability benefit in order for a survivor benefit to be payable
- 1/2 of the participant's monthly salary at time of death to surviving spouse or domestic partner if the spouse was married to or in a domestic partnership with the participant on the date the participant was disabled, less other income sources that are based on the participant's earnings record, plus
- 1/10 of the participant's monthly salary at time of death to each unmarried child under the age of 18
- not to exceed 70% of the participant's monthly salary at time of death less offsets for other income
- subject to annual adjustments based on salary indexing

Cancer Presumptive Law (state and local)

- Disabled member dies from the same condition that triggered the onset of Duty Disability benefit in order for a survivor benefit to be payable
- 70% of the participant's monthly salary at time of death to surviving spouse or domestic partner if the spouse was married to or in a domestic partnership with the participant on the date the participant was disabled, less other income sources that are based on the

participant's earnings record

- 1/10 of the participant's monthly salary at time of death to the guardian of each unmarried child under the age of 18, as long as there is no surviving spouse or domestic partner
- there is no maximum on dependent benefits
- subject to annual adjustments based on salary indexing

Survivor benefits are offset by Chapter 102 Worker's Compensation death benefits

Contributions: The Plan is funded entirely by Employer contributions, which vary by experience as detailed in the following table. The contribution rate is adjusted by an Actuarial Adjustment Rate (AAR), updated each year such that expected employer contributions equal the current year's ARC.

Contribution Rate Schedule

Employers pay the lower of the contribution rate associated with their claims as a percentage of payroll or their number of claims

Contribution Rate* (as a % of Covered Payroll)	Claims as a % of Covered Payroll	Number of Claims
0.25%	<=1.5%	1
0.50%	> 1.5% but ≤ 3.0%	2
1.00%	> 3.0% but ≤ 4.5%	3
1.75%	> 4.5% but ≤ 6.0%	4
2.75%	> 6.0% but ≤ 7.5%	5
4.00%	> 7.5% but ≤ 9.0%	6
5.50%	> 9.0% but ≤ 10.5%	7
6.60%	Claims > 10.5%	8 or more

* *Contribution rates shown above are before adjustment for the Actuarial Adjustment Rate (AAR); for FY 2015, the AAR was (0.12%).*

VII. Data

The participant data used in the valuation was provided by the State of Wisconsin as of January 1, 2015. 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.

	Protective with Social Security	Protective w/o Social Security	Total
a. Active Participants			
Count	19,511	2,714	22,225
Average Age	40.7	41.2	40.7
Average Years of Service	12.8	14.2	13.0
Average 2014 Pay	$58,067	$74,027	$60,016
b. Disabled Participants and Survivors*			
Count	794	196	990
Average Age	61	64	62
Average Current Benefit	$2,693	$2,507	$2,656

* *Includes 51 disabled participants with zero benefits.*

VIII. GLOSSARY

The following is an explanation of many of the terms referenced by the Statement of the Governmental Accounting Standards Board, “Financial Reporting for Postemployment Benefits Other than Pension Plans.”

1. **Actuarial Cost Method.** This is a procedure for determining the Actuarial Present Value of Benefits and allocating it to time periods to produce the Actuarial Accrued Liability and the Normal Cost. The Statement assumes a closed group of employees and other participants unless otherwise stated; that is, no new entrants are assumed. Six methods are permitted – Projected Unit Credit, Entry Age Normal, Attained Age, Aggregate, Frozen Entry Age, and Frozen Attained Age.

2. **Actuarial Accrued Liability.** This is the portion of the Actuarial Present Value of Benefits attributable to periods prior to the valuation date by the Actuarial Cost Method (i.e., that portion not provided by future Normal Costs).

3. **Actuarial Present Value of Benefits.** This is the value, as of the applicable date, of future payments for benefits and expenses under the Plan, where each payment is:

   (a) Multiplied by the probability of the event occurring on which the payment is conditioned, such as the probability of survival, death, disability, termination of employment, etc.; and

   (b) Discounted at the assumed discount rate.

4. **Actuarial Value of Assets.** This is the value of cash, investments and other property belonging to the Plan, as used by the actuary for the purpose of an Actuarial Valuation.

5. **Amortization Payment.** This is the amount of the contribution required to pay interest on and to amortize over a given period the Unfunded Actuarial Accrued Liability or the Unfunded Frozen Actuarial Accrued Liability. A closed amortization period is a specific number of years counted from one date and reducing to zero with the passage of time; an open amortization period is one that begins again or is recalculated at each actuarial valuation date.

6. **Annual Required Contribution (“ARC”).** The level of contribution on an ongoing basis that would fund the normal cost and amortize the unfunded actuarial liability attributed to past service.. This amount is required to be calculated under GASB 43. However, there is no requirement that this amount be paid.

7. **Attribution Period.** The period of an employee’s service to which the expected postemployment benefit obligation for that employee is assigned. The beginning of the attribution period is the employee’s date of hire. The end of the attribution period is the full retirement eligibility date. For disability retirement, the end of the attribution period is the date of disability.

8. **Benefit Payments.** The monetary or in-kind benefits or benefit coverage to which participants may be entitled under a postemployment benefit plan, including health care benefits and life insurance not provided through a pension plan.

9. **Funding Excess.** This is the excess of the Actuarial Value of Assets over the actuarial accrued liability.

10. **Normal Cost.** This is the portion of the Actuarial Present Value of Benefits allocated to a valuation year by the Actuarial Cost Method.

11. **Other Postemployment Benefits ("OPEB").** This refers to postemployment benefits other than pension benefits, including healthcare benefits regardless of the type of plan that provides them, and all other postemployment benefits provided separately from a pension plan, excluding benefits defined as termination benefits or offers.

12. **Return on Plan Assets.** This is the actual investment return on plan assets during the fiscal year.

13. **Substantive Plan.** The terms of the postemployment benefit plan as understood by an employer that provides postemployment benefits and the employees who render services in exchange for those benefits. The substantive plan is the basis for the accounting for the plan.

14. **Unfunded Actuarial Accrued Liability.** This is the excess of the actuarial accrued liability over the Actuarial Value of Assets.

Appendix A

Summary of Participant Demographic Information

Actives - Protective without Social Security
Active Members as of January 1, 2015

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	19	31	2	0	0	0	0	0	52
25-29	26	174	84	0	0	0	0	0	284
30-34	23	124	197	63	0	0	0	0	407
35-39	4	40	123	175	69	0	0	0	411
40-44	1	16	44	130	239	58	1	0	489
45-49	0	6	17	72	167	169	55	0	486
50-54	1	7	4	22	59	115	159	40	407
55-59	1	4	2	4	19	47	42	21	140
60-64	1	1	1	1	1	11	13	9	38
65+	0	0	0	0	0	0	0	0	0
ALL	76	403	474	467	554	400	270	70	2,714

Average Annual Earnings

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	29,639	52,430	58,937	0	0	0	0	0	44,352
25-29	28,369	58,227	71,141	0	0	0	0	0	59,313
30-34	22,013	59,484	70,871	73,426	0	0	0	0	65,036
35-39	23,381	58,610	71,193	74,471	77,468	0	0	0	71,952
40-44	21,084	49,591	73,524	74,698	79,155	84,088	80,080	0	76,964
45-49	0	53,207	71,413	76,851	80,675	82,332	86,248	0	80,652
50-54	39,443	70,530	90,205	74,324	80,176	80,546	86,445	95,779	83,779
55-59	85,943	79,952	84,463	90,722	79,126	78,860	85,859	89,777	83,134
60-64	2,116	121,276	80,292	82,900	73,774	86,644	86,072	79,635	82,870
65+	0	0	0	0	0	0	0	0	0
ALL	26,962	58,374	71,458	74,910	79,501	81,783	86,272	91,902	74,027

State of Wisconsin Duty Disability Program

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Actives - Protective with Social Security
Active Members as of January 1, 2015

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	349	357	2	0	0	0	0	0	708
25-29	380	1,362	584	6	0	0	0	0	2,332
30-34	159	721	1,490	544	11	0	0	0	2,925
35-39	76	328	642	1,374	584	0	0	0	3,004
40-44	41	211	364	806	1,545	376	4	0	3,347
45-49	40	123	224	458	881	1,189	305	4	3,224
50-54	23	92	140	310	346	618	676	155	2,360
55-59	12	44	91	206	163	203	165	194	1,078
60-64	4	27	35	94	71	71	50	85	437
65+	2	17	11	21	13	9	7	16	96
ALL	1,086	3,282	3,583	3,819	3,614	2,466	1,207	454	19,511

Average Annual Earnings

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	16,548	43,965	42,924	0	0	0	0	0	30,447
25-29	17,884	49,038	56,120	41,319	0	0	0	0	45,715
30-34	17,593	47,317	59,589	58,512	53,728	0	0	0	54,058
35-39	17,982	46,839	56,804	62,113	63,079	0	0	0	58,381
40-44	17,690	43,809	56,274	60,373	67,017	68,194	72,353	0	62,319
45-49	14,088	43,430	50,772	57,653	63,868	71,946	77,680	74,730	64,977
50-54	18,456	39,531	45,510	53,952	62,032	70,864	76,662	81,402	66,464
55-59	16,059	37,516	47,404	51,461	58,942	68,136	72,450	77,052	62,244
60-64	11,068	32,365	38,711	50,525	53,912	61,914	64,090	72,467	56,316
65+	9,838	17,354	39,721	48,189	49,835	71,022	63,037	72,850	48,515
ALL	17,223	46,619	56,502	59,066	64,411	70,496	75,729	77,510	58,067

Total
Active Members as of January 1, 2015

Years of Service

Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	368	388	4	0	0	0	0	0	760
25-29	406	1,536	668	6	0	0	0	0	2,616
30-34	182	845	1,687	607	11	0	0	0	3,332
35-39	80	368	765	1,549	653	0	0	0	3,415
40-44	42	227	408	936	1,784	434	5	0	3,836
45-49	40	129	241	530	1,048	1,358	360	4	3,710
50-54	24	99	144	332	405	733	835	195	2,767
55-59	13	48	93	210	182	250	207	215	1,218
60-64	5	28	36	95	72	82	63	94	475
65+	2	17	11	21	13	9	7	16	96
ALL	1,162	3,685	4,057	4,286	4,168	2,866	1,477	524	22,225

Average Annual Earnings

Years of Service

Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	17,224	44,641	50,931	0	0	0	0	0	31,398
25-29	18,555	50,079	58,009	41,319	0	0	0	0	47,191
30-34	18,152	49,102	60,906	60,060	53,728	0	0	0	55,399
35-39	18,252	48,118	59,118	63,509	64,599	0	0	0	60,014
40-44	17,771	44,217	58,134	62,363	68,643	70,318	73,898	0	64,186
45-49	14,088	43,885	52,228	60,261	66,546	73,239	78,989	74,730	67,030
50-54	19,330	41,723	46,752	55,302	64,675	72,383	78,525	84,351	69,011
55-59	21,435	41,052	48,201	52,209	61,049	70,152	75,171	78,295	64,645
60-64	9,278	35,540	39,866	50,866	54,188	65,231	68,626	73,153	58,440
65+	9,838	17,354	39,721	48,189	49,835	71,022	63,037	72,850	48,515
ALL	17,860	47,905	58,249	60,792	66,417	72,071	77,656	79,433	60,016