Annual Actuarial Valuation
for
The State Income Continuation Insurance Plan

As of December 31, 2015

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April 18, 2016

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April 18, 2016

Ms. Deb Roemer
Director of the Benefit Services Bureau
Division of Retirement Services
Wisconsin Department of Employee Trust Funds
Madison, WI 53707

RE: Actuarial Valuation of State Income Continuation Insurance Plan as of December 31, 2015

Dear Deb:

At your request, we have performed an actuarial valuation of the State Income Continuation Insurance (ICI) Plan as of December 31, 2015. Our findings are set forth in this report.

The State of Wisconsin Department of Employee Trust Funds (ETF) has determined that the State ICI Plan is not subject to the provisions of GASB 43 or 45, which govern the financial reporting of Other Post-Employment Benefits (OPEBs), and which require the use of pension accounting methods, including the calculation of a liability for active lives. We have therefore performed this valuation according to the requirements of GASB 10 ("Accounting and Reporting for Risk Financing and Related Insurance Issues"), which does not require the calculation of a liability for active lives. This approach is consistent with prior valuation work performed on the plans. Ultimately it is the responsibility of ETF and its auditors to determine the applicable accounting standards for the plans.

This report is prepared solely for the internal business use of ETF. 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) ETF may provide a copy of Milliman's work, in its entirety, to ETF'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 ETF.

b) ETF 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.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by ETF, including historical claims data from Aetna and ETF. While Milliman has not audited this data, we have reviewed it for reasonableness and it is, in our opinion, sufficient and reliable for the purposes of our calculations. 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 discount rate used for this valuation was prescribed by ETF and is specified in this report. We have performed no independent assessment of the reasonableness of this assumption. ETF is solely responsible for establishing the assumption and communicating any changes to Milliman for the purpose of this valuation.

This analysis 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 employer contributions. While this report is based on the assumptions documented here, 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); 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. ETF has the final decision regarding the appropriateness of the assumptions and actuarial cost methods.

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.

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.

I, Daniel D. Skwire, FSA, MAAA, am a consulting actuary for Milliman, Inc. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

I, Paul L. Correia, FSA, MAAA, am a consulting actuary for Milliman, Inc. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely,

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

Paul L. Correia, FSA, MAAA
Consulting Actuary
Milliman, Inc.

Section I: Introduction and Executive Summary

This report contains the 12/31/2015 valuation for the State Income Continuation Insurance (ICI) Plan administered by the Wisconsin Department of Employee Trust Funds (ETF).

Summary of Actuarial Liabilities

The actuarial liabilities for the State ICI Plan as of 12/31/2015 are summarized below:

Table 1.1 Actuarial Liabilities for the State ICI Plan as of 12/31/2015				
Liability Component	Standard Benefit	Supplemental Benefit	$75 Add-on	Total Liability Amount
Open Claims	$73,637,666	$1,915,237	$408,320	$75,961,223
IBNR Claims	$2,884,814	$75,031	$15,996	$2,975,841
Loss Adjustment Expense	$3,486,784	$90,688	$19,334	$3,596,806
Total	$80,009,264	$2,080,956	$443,650	$82,533,870

A further discussion of these actuarial liabilities, including a description of methods and assumptions, a comparison to prior year values, and an assessment of the adequacy of the liabilities, is included in the body of this report.

Summary of Funding Analysis

As shown in the following table, the State ICI plan was in a deficit as of 12/31/2015:

Table 1.2 State ICI Fund Balances			
	12/31/2013	12/31/2014	12/31/2015
Beginning Balance	$46,907,891	$51,234,976	$50,563,266
Closing Adjustments	$3,654,782	($185,567)	($161,056)
Adjusted Beginning Balance	$50,562,673	$51,049,409	$50,402,211
Plus: Premium Contributions	$14,985,434	$15,746,565	$16,788,715
Plus: Investment Earnings	$5,382,623	$4,366,867	$3,554,831
Less: Insurance Claims	$17,865,831	$18,872,474	$19,060,450
Less: Administrative Expenses	$1,829,922	$1,727,102	$1,502,539
Ending Balance	$51,234,976	$50,563,266	$50,182,768
Actuarial Liability	$85,563,963	$78,817,416	$82,411,374
Surplus / (Deficit)	($34,328,987)	($28,254,150)	($32,228,606)

According to our financial projections, which are consistent with the plan’s valuation assumptions, the plan’s deficit is expected to increase if the current premiums remain unchanged. In 2015, the board approved annual rate increases of 20% each year starting in

2016 until 2020. We have modeled this scenario as well as several alternate funding scenarios that are intended to improve the plan's financial position, according to our financial projections:

- Baseline: The current premiums are increased by 20% each year until 2020, then held level thereafter.
- Scenario 1: The current premiums are doubled in 2017 and remain level thereafter.
- Scenario 2: The current premiums are increased by 50% in 2017, then by another 50% in 2018, and then held level thereafter.
- Scenario 3: The current premiums are increased by 10% each year
- Scenario 4: The current premiums are increased by 5% each year

The baseline scenario is expected to eliminate the deficit by 12/31/2022, and scenarios 1 and 2 are projected to eliminate the deficit by 12/31/2020. However, the significant rate increases to participants that are involved in each of these scenarios present implications for participation rates on this voluntary program, and for potential resulting adverse selection. Scenario 3 involves more moderate rate increases of 10% per year, and is only expected to eliminate the deficit by 12/31/2025. In scenario 4, the projection does not illustrate a surplus for the plan even after 10 years of 5% annual rate increases.

Over the past several months, Milliman has performed experience studies on the State ICI plan to develop a more comprehensive understanding of the underlying risk factors. The results show that State ICI experience has varied widely among several different risk classes, such as employment category, premium category, and age. Based on these results, we believe that the optimal approach to eliminating the deficit may not necessarily be to increase rates uniformly for all plan participants. We are in the process of formulating alternative approaches to funding and managing the State ICI plan for your consideration.

Section II: Actuarial Valuation

The actuarial liability for the State ICI Plan discussed in this report contains three components:

- Open Claims: The expected present value of future benefits payable to members disabled prior to the valuation date whose claims had been reported to ETF on or before that date

- Incurred but not Reported (IBNR) Claims: The expected present value of future benefits payable to members disabled prior to the valuation date, but whose claims had not yet been reported to ETF as of that date

- Loss Adjustment Expenses: The expected present value of future expenses related to the ongoing management and payment of disability claims

The following table compares the 12/31/2014 and 12/31/2015 liabilities for the State ICI plan:

Table 2.1
Current Year and Prior Year Liabilities for the State ICI Plan

Component	12/31/2014	12/31/2015
Open Claims	$72,263,687	$75,961,223
IBNR Claims	$3,114,965	$2,975,841
Loss Adjustment Expense	$3,438,764	$3,596,806
Total	$78,817,416	$82,533,870

Appendix C of this report provides the detailed valuation assumptions used to compute the 12/31/2015 liabilities for the State ICI plan. A discussion of the liability components is provided below:

Open Claims

The liability for open claims increased by approximately 5% due primarily to changes in claim demographics. Although the number of open claims increased only slightly from 1,221 as of 12/31/2014 to 1,222 as of 12/31/2015, the average monthly benefit amount increased by approximately 8% from $1,264 as of 12/31/2014 to $1,366 as of 12/31/2015.

In order to assess the adequacy of the liability for open claims, we performed a retrospective runoff test to determine whether the liabilities at prior valuation dates, estimated using the current valuation assumptions, would have been sufficient to cover the emerging costs of ICI claims. The study used State ICI claim experience from the period

1/1/2012 through 12/31/2015. The results shown below represent results from four mutually distinct 12-month studies that were combined.

Table 2.2 Runout Study for the ICI Plans	
Claim Duration	Estimated Margin
1 – 12 months	19.4%
13 – 24 months	4.7%
25 – 36 months	1.8%
37 – 48 months	2.1%
49 – 60 months	-1.5%
61 + months	1.7%
Total	***5.2%***

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 overall margin of 5.2% is slightly above our target of 1% to 5%. The margin in the first year of disability remains high, which could be because the ICI plan is used to cover short term disabilities as well as long term disabilities, and the valuation assumptions in the first year of disability may underestimate the high level of recoveries often experienced on short term disability claims. It could also be because we do not include an estimated 40.63/LTDI offset assumption in the valuation of the plan. This is an issue that we will continue to explore in future valuations.

The State ICI Plan provides an additional benefit of $75 per month to disabled employees whose disability lasts longer than 12 months, to help these employees with medical fees. The $75 monthly benefit is already included in the reported benefit amounts of employees disabled for 12 months or more as of the valuation date. Therefore, the additional liability for these claims was included as part of the open claim liability calculation. For employees that were disabled for fewer than 12 months as of the valuation date, the additional liability was determined using the same methods used in the open claim liability calculations. The additional liability for these claims was estimated to be $408,320 as of 12/31/2015.

The additional liability as of 12/31/2015, including an allocation of the IBNR and loss adjustment expense liabilities, is shown below. This table also provides a split between the liabilities pertaining to standard benefits (which cover up to $64,000 of annual earnings) and supplemental benefits (which cover annual earnings from $64,000 to $120,000).

Table 2.3 Actuarial Liabilities for the State ICI Plan as of 12/31/2015				
Liability Component	Standard Benefit	Supplemental Benefit	$75 Add-on	Total Liability Amount
Open Claims	$73,637,666	$1,915,237	$408,320	$75,961,223
IBNR Claims	$2,884,814	$75,031	$15,996	$2,975,841
Loss Adjustment Expense	$3,486,784	$90,688	$19,334	$3,596,806
Total	$80,009,264	$2,080,956	$443,650	$82,533,870

IBNR Claims

The liability for IBNR claims reflects the expected portion of the total cost of claims incurred in a given year that is attributable to those claims that had not been reported as of the end of the year. If, on average, claims are reported 6 months after the date of disability, then the IBNR liability would likely be approximately 50% of the expected total cost of new claims for the year. We therefore computed the IBNR liability by estimating the total cost of incurred claims for 2015 (based on recent trends) and by using historical claim data to determine the proportion of claims that were typically unreported at each year end.

The liability for IBNR claims decreased by approximately 4% from 12/31/2014 to 12/31/2015. This was because the estimated annual incurred claims, which is calculated using historical claims experience, decreased from $20.8 million last year to $19.8 million this year. We continue to assume that the proportion of unreported annual claims is 15% in our IBNR liability calculations, based on an analysis of ICI claim reporting lags.

Our IBNR calculation for the State ICI plan is summarized below:

Table 2.4 Development of IBNR Liability for the State ICI Plan	
Estimated Incurred Claims	$19,838,941
Estimated Proportion of Unreported Claims	15.0%
IBNR Liability as of 12/31/2015	$2,975,841

Loss Adjustment Expense

The liability for loss adjustment expenses was computed by comparing the annual fees payable to Aetna, which are estimated to be $3,405,740 in 2016, to the expected annual incurred claims amount for all three plans combined. The loss adjustment expense liability was then calculated as 4.5% of the open claim liability and 6.0% of the IBNR liability. The factor is lower for open claims than for IBNR claims because the expenses related to initial claim investigation have already been incurred and do not need to be included in the liability.

Our loss adjustment expense calculation for the State ICI plan is summarized below:

Table 2.5 Development of Loss Adjustment Expense Liability for the State ICI Plan			
Component	Liability	Expense Factor	Loss Adjustment Expenses
Open Claims	$75,961,223	4.5%	$3,418,255
IBNR	$2,975,841	6.0%	$178,550
Total	$78,937,064	4.6%	$3,596,806

Section III: Discussion of State ICI Funding Levels

The actuarial valuation of the State ICI plan included an analysis of current and future funding levels. The following table shows the fund balances as of the three most recent fiscal year-ends (the 2013 values were taken from valuation reports from the prior actuary):

Table 3.1
State ICI Fund Balances

	12/31/2013	12/31/2014	12/31/2015
Beginning Balance	$46,907,891	$51,234,976	$50,563,266
Closing Adjustments	$3,654,782	($185,567)	($161,056)
Adjusted Beginning Balance	$50,562,673	$51,049,409	$50,402,211
Plus: Premium Contributions	$14,985,434	$15,746,565	$16,788,715
Plus: Investment Earnings	$5,382,623	$4,366,867	$3,554,831
Less: Insurance Claims	$17,865,831	$18,872,474	$19,060,450
Less: Administrative Expenses	$1,829,922	$1,727,102	$1,502,539
Ending Balance	$51,234,976	$50,563,266	$50,182,768
Actuarial Liability	$85,563,963	$78,817,416	$82,411,374
Surplus / (Deficit)	($34,328,987)	($28,254,150)	($32,228,606)

The State ICI plan has run a large deficit for many years. In order to evaluate the potential long-term performance of this fund, we prepared a financial projection. The projection reflects actual results for 2015 and projected values in 2016 and beyond. The key elements of this projection include the following:

- Beginning Balance: The projected beginning balance for each year is equal to the prior year's ending balance.

- Covered Payroll: The current covered payroll was provided to us by ETF. Future covered payroll is assumed to increase 3.20% per year, which is consistent with the assumptions used by ETF for retirement fund projections.

- Premium Contributions: Premiums are modeled as a percentage of covered payroll. The rate for 2016 is 0.613% based on recent experience, including the impact of a 20% increase implemented by ETF in 2016.

- Investment Income: Investment income is projected using the valuation assumption of 7.2%.

- Insurance Claims: Annual paid insurance claims are the sum of projected payments on existing claims as of 12/31/2015, and of payments on expected future claims incurred after 12/31/2015. Future incurred claims are based on historical experience of 0.65% of covered payroll in 2015, adjusted for expected aging in subsequent years.

- Administrative Expenses: Administrative expense are modeled as a constant percentage of paid insurance claims, based on actual values in 2015.

- Ending Balance: The ending balance equals the starting balance, plus premiums, plus investment earnings, less claims, and less expenses.

- Actuarial Liability: The actuarial liability is modeled in a similar fashion to the insurance claims. It represents the sum of the decreasing liability on claims that existed as of 12/31/2015, and of the increasing liability for claims incurred after 12/31/2015.

- Surplus or Deficit: The projected surplus or deficit equals the ending balance less the actuarial liability.

The current premiums for the plan, which equate to 0.613% of covered payroll, fall short of the expected annual cost of new disability claims and related administrative expenses. The magnitude of the current deficit, coupled with the mismatch between the current premiums and the annual cost of new disabilities, means that significant premium increases are required to return the plan to a fully funded status. In 2015, the board approved annual rate increases of 20% each year starting in 2016 until 2020. We have modeled this scenario as well as several alternate funding scenarios, described below:

- Baseline: The current premiums (which we estimate by using a rate of 0.613% of covered payroll) are increased by 20% each year until 2020, then held level thereafter.

- Scenario 1: The current premiums are doubled in 2017 and remain level thereafter.

- Scenario 2: The current premiums are increased by 50% in 2017, then by another 50% in 2018, and then held level thereafter.

- Scenario 3: The current premiums are increased by 10% each year.

- Scenario 4: The current premiums are increased by 5% each year.

The baseline scenario is expected to eliminate the deficit by 12/31/2022, and scenarios 1 and 2 are projected to eliminate the deficit by 12/31/2020. Please note, however, that the significant rate increases to participants in the baseline scenario and in scenarios 1 and 2, in order to restore the plan's surplus, present implications for participation rates on this voluntary program and for potential resulting adverse selection. It is likely that the long-term solution for improving the financial performance of this plan will involve items beyond just premium increases. ETF is currently evaluating the factors driving the experience on this plan and the potential for achieving savings through plan design modifications or other measures, possibly in combination with more modest rate actions.

We have performed experience studies on the State ICI plan in order to develop a better understanding of the underlying risk factors. Because State ICI experience has varied widely among several different risk classes – such as employment category, premium category, and age – we believe that the optimal approach to eliminating the deficit may not be by increasing rates uniformly for all classes. We are formulating alternative approaches to funding and managing the plan for your consideration.

The detailed output from our baseline scenario and scenarios 1 through 4 is provided on the following pages. Please note that these projections depend on a variety of actuarial assumptions about future experience, including but not limited to investment earnings, payroll growth, and disability claim experience. It is nearly certain that actual experience will vary from these assumptions, meaning that the plan's actual surplus or deficit will be higher or lower than the illustrated values.

State ICI Fund Balance Analysis as of December 31, 2015

Baseline: Increase contribution rate by 20% each year until 2020, then hold level at 1.272%

Calendar Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BOY Fund Balance	$50,402,211	$50,182,768	$51,877,609	$57,581,729	$68,685,072	$85,652,872	$110,600,849	$136,882,116	$164,543,928	$193,936,420
Premium Contributions	$16,788,715	$19,376,865	$23,996,310	$29,717,030	$36,801,571	$45,575,065	$47,033,467	$48,538,538	$50,091,771	$51,694,708
Investment Income	$3,554,831	$3,613,159	$3,735,188	$4,145,885	$4,945,325	$6,167,007	$7,963,261	$9,855,512	$11,847,163	$13,963,422
Total Revenues	$20,343,546	$22,990,025	$27,731,498	$33,862,915	$41,746,896	$51,742,072	$54,996,728	$58,394,050	$61,938,934	$65,658,130
Insurance Claims	$19,060,450	$19,739,143	$20,417,836	$21,096,529	$22,968,485	$24,836,249	$26,617,220	$28,486,631	$30,168,272	$31,964,651
Carrier Administrative Expenses	$1,258,495	$1,303,307	$1,348,118	$1,392,930	$1,516,529	$1,639,851	$1,757,442	$1,880,873	$1,991,906	$2,110,514
Administrative Expense	$244,044	$252,734	$261,423	$270,113	$294,081	$317,995	$340,798	$364,734	$386,265	$409,265
Total Operating Expenses	$20,562,989	$21,295,183	$22,027,378	$22,759,572	$24,779,095	$26,794,095	$28,715,461	$30,732,238	$32,546,443	$34,484,430
Net Change in Fund Balance	($219,443)	$1,694,841	$5,704,120	$11,103,343	$16,967,800	$24,947,977	$26,281,267	$27,661,812	$29,392,491	$31,173,700
EOY Fund Balance	$50,182,768	$51,877,609	$57,581,729	$68,685,072	$85,652,872	$110,600,849	$136,882,116	$164,543,928	$193,936,420	$225,110,119
Incurred Claim Liability	$82,411,374	$94,382,763	$104,802,990	$114,348,450	$123,390,598	$131,994,425	$140,304,695	$148,337,424	$156,178,879	$163,926,706
Surplus / (Deficit)	($32,228,606)	($42,505,154)	($47,221,261)	($45,663,378)	($37,737,726)	($21,393,576)	($3,422,579)	$16,206,504	$37,757,541	$61,183,413

State ICI Fund Balance Analysis as of December 31, 2015

Scenario 1: Double contribution rate to 1.226% in 2017 and hold level at that rate

Calendar Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BOY Fund Balance	$50,402,211	$50,182,768	$51,877,609	$73,579,269	$97,391,058	$122,218,529	$148,181,600	$175,499,283	$204,218,713	$234,689,840
Premium Contributions	$16,788,715	$19,376,865	$39,993,850	$41,273,653	$42,594,410	$43,957,431	$45,364,069	$46,815,719	$48,313,823	$49,859,865
Investment Income	$3,554,831	$3,613,159	$3,735,188	$5,297,707	$7,012,156	$8,799,734	$10,669,075	$12,635,948	$14,703,747	$16,897,668
Total Revenues	$20,343,546	$22,990,025	$43,729,038	$46,571,361	$49,606,567	$52,757,166	$56,033,144	$59,451,668	$63,017,570	$66,757,533
Insurance Claims	$19,060,450	$19,739,143	$20,417,836	$21,096,529	$22,968,485	$24,836,249	$26,617,220	$28,486,631	$30,168,272	$31,964,651
Carrier Administrative Expenses	$1,258,495	$1,303,307	$1,348,118	$1,392,930	$1,516,529	$1,639,851	$1,757,442	$1,880,873	$1,991,906	$2,110,514
Administrative Expense	$244,044	$252,734	$261,423	$270,113	$294,081	$317,995	$340,798	$364,734	$386,265	$409,265
Total Operating Expenses	$20,562,989	$21,295,183	$22,027,378	$22,759,572	$24,779,095	$26,794,095	$28,715,461	$30,732,238	$32,546,443	$34,484,430
Net Change in Fund Balance	($219,443)	$1,694,841	$21,701,660	$23,811,789	$24,827,471	$25,963,070	$27,317,683	$28,719,430	$30,471,127	$32,273,103
EOY Fund Balance	$50,182,768	$51,877,609	$73,579,269	$97,391,058	$122,218,529	$148,181,600	$175,499,283	$204,218,713	$234,689,840	$266,962,943
Incurred Claim Liability	$82,411,374	$94,382,763	$104,802,990	$114,348,450	$123,390,598	$131,994,425	$140,304,695	$148,337,424	$156,178,879	$163,926,706
Surplus / (Deficit)	($32,228,606)	($42,505,154)	($31,223,721)	($16,957,392)	($1,172,069)	$16,187,174	$35,194,587	$55,881,288	$78,510,961	$103,036,236

State ICI Fund Balance Analysis as of December 31, 2015

Scenario 2: Increase contribution rate by 50% in 2017 and 2018, then hold level at 1.380%

Calendar Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BOY Fund Balance	$50,402,211	$50,182,768	$51,877,609	$63,580,807	$91,831,913	$121,583,427	$152,995,449	$186,330,238	$221,681,461	$259,449,134
Premium Contributions	$16,788,715	$19,376,865	$29,995,388	$46,432,860	$47,918,712	$49,452,110	$51,034,578	$52,667,684	$54,353,050	$56,092,348
Investment Income	$3,554,831	$3,613,159	$3,735,188	$4,577,818	$6,611,898	$8,754,007	$11,015,672	$13,415,777	$15,961,065	$18,680,338
Total Revenues	$20,343,546	$22,990,025	$33,730,576	$51,010,678	$54,530,609	$58,206,117	$62,050,250	$66,083,462	$70,314,116	$74,772,686
Insurance Claims	$19,060,450	$19,739,143	$20,417,836	$21,096,529	$22,968,485	$24,836,249	$26,617,220	$28,486,631	$30,168,272	$31,964,651
Carrier Administrative Expenses	$1,258,495	$1,303,307	$1,348,118	$1,392,930	$1,516,529	$1,639,851	$1,757,442	$1,880,873	$1,991,906	$2,110,514
Administrative Expense	$244,044	$252,734	$261,423	$270,113	$294,081	$317,995	$340,798	$364,734	$386,265	$409,265
Total Operating Expenses	$20,562,989	$21,295,183	$22,027,378	$22,759,572	$24,779,095	$26,794,095	$28,715,461	$30,732,238	$32,546,443	$34,484,430
Net Change in Fund Balance	($219,443)	$1,694,841	$11,703,198	$28,251,106	$29,751,514	$31,412,022	$33,334,789	$35,351,224	$37,767,673	$40,288,255
EOY Fund Balance	$50,182,768	$51,877,609	$63,580,807	$91,831,913	$121,583,427	$152,995,449	$186,330,238	$221,681,461	$259,449,134	$299,737,389
Incurred Claim Liability	$82,411,374	$94,382,763	$104,802,990	$114,348,450	$123,390,598	$131,994,425	$140,304,695	$148,337,424	$156,178,879	$163,926,706
Surplus / (Deficit)	($32,228,606)	($42,505,154)	($41,222,183)	($22,516,537)	($1,807,172)	$21,001,024	$46,025,542	$73,344,037	$103,270,255	$135,810,683

State ICI Fund Balance Analysis as of December 31, 2015

Scenario 3: Increase contribution rate by 10% each year

Calendar Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BOY Fund Balance	$50,402,211	$50,182,768	$51,877,609	$55,582,037	$61,794,932	$69,811,651	$80,223,033	$93,813,274	$111,304,043	$133,846,477
Premium Contributions	$16,788,715	$19,376,865	$21,996,618	$24,970,560	$28,346,580	$32,179,038	$36,529,644	$41,468,451	$47,074,986	$53,439,524
Investment Income	$3,554,831	$3,613,159	$3,735,188	$4,001,907	$4,449,235	$5,026,439	$5,776,058	$6,754,556	$8,013,891	$9,636,946
Total Revenues	$20,343,546	$22,990,025	$25,731,805	$28,972,467	$32,795,815	$37,205,477	$42,305,702	$48,223,007	$55,088,877	$63,076,471
Insurance Claims	$19,060,450	$19,739,143	$20,417,836	$21,096,529	$22,968,485	$24,836,249	$26,617,220	$28,486,631	$30,168,272	$31,964,651
Carrier Administrative Expenses	$1,258,495	$1,303,307	$1,348,118	$1,392,930	$1,516,529	$1,639,851	$1,757,442	$1,880,873	$1,991,906	$2,110,514
Administrative Expense	$244,044	$252,734	$261,423	$270,113	$294,081	$317,995	$340,798	$364,734	$386,265	$409,265
Total Operating Expenses	$20,562,989	$21,295,183	$22,027,378	$22,759,572	$24,779,095	$26,794,095	$28,715,461	$30,732,238	$32,546,443	$34,484,430
Net Change in Fund Balance	($219,443)	$1,694,841	$3,704,428	$6,212,895	$8,016,720	$10,411,381	$13,590,241	$17,490,769	$22,542,434	$28,592,040
EOY Fund Balance	$50,182,768	$51,877,609	$55,582,037	$61,794,932	$69,811,651	$80,223,033	$93,813,274	$111,304,043	$133,846,477	$162,438,517
Incurred Claim Liability	$82,411,374	$94,382,763	$104,802,990	$114,348,450	$123,390,598	$131,994,425	$140,304,695	$148,337,424	$156,178,879	$163,926,706
Surplus / (Deficit)	($32,228,606)	($42,505,154)	($49,220,953)	($52,553,518)	($53,578,947)	($51,771,392)	($46,491,422)	($37,033,382)	($22,332,402)	($1,488,189)

State ICI Fund Balance Analysis as of December 31, 2015

Scenario 4: Increase contribution rate by 5% each year

Calendar Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BOY Fund Balance	$50,402,211	$50,182,768	$51,877,609	$54,582,190	$58,504,638	$62,592,053	$67,019,852	$72,078,483	$77,904,667	$84,958,560
Premium Contributions	$16,788,715	$19,376,865	$20,996,771	$22,752,101	$24,654,177	$26,715,266	$28,948,663	$31,368,771	$33,991,200	$36,832,864
Investment Income	$3,554,831	$3,613,159	$3,735,188	$3,929,918	$4,212,334	$4,506,628	$4,825,429	$5,189,651	$5,609,136	$6,117,016
Total Revenues	$20,343,546	$22,990,025	$24,731,959	$26,682,019	$28,866,511	$31,221,894	$33,774,092	$36,558,422	$39,600,336	$42,949,881
Insurance Claims	$19,060,450	$19,739,143	$20,417,836	$21,096,529	$22,968,485	$24,836,249	$26,617,220	$28,486,631	$30,168,272	$31,964,651
Carrier Administrative Expenses	$1,258,495	$1,303,307	$1,348,118	$1,392,930	$1,516,529	$1,639,851	$1,757,442	$1,880,873	$1,991,906	$2,110,514
Administrative Expense	$244,044	$252,734	$261,423	$270,113	$294,081	$317,995	$340,798	$364,734	$386,265	$409,265
Total Operating Expenses	$20,562,989	$21,295,183	$22,027,378	$22,759,572	$24,779,095	$26,794,095	$28,715,461	$30,732,238	$32,546,443	$34,484,430
Net Change in Fund Balance	($219,443)	$1,694,841	$2,704,581	$3,922,447	$4,087,416	$4,427,799	$5,058,631	$5,826,184	$7,053,893	$8,465,450
EOY Fund Balance	$50,182,768	$51,877,609	$54,582,190	$58,504,638	$62,592,053	$67,019,852	$72,078,483	$77,904,667	$84,958,560	$93,424,010
Incurred Claim Liability	$82,411,374	$94,382,763	$104,802,990	$114,348,450	$123,390,598	$131,994,425	$140,304,695	$148,337,424	$156,178,879	$163,926,706
Surplus / (Deficit)	($32,228,606)	($42,505,154)	($50,220,800)	($55,843,812)	($60,798,545)	($64,974,573)	($68,226,212)	($70,432,758)	($71,220,319)	($70,502,696)

Appendix A: Plan Description

The State ICI Plan provides short and long term disability benefits as summarized below:

- Elimination Period: University of Wisconsin employees select their elimination period up to 180 days. All other state employees have a 30-day elimination period. State ICI participants must use sick leave time up to a maximum of 130 working days before benefits begin.

- Maximum Benefit Period: The following table shows the maximum duration of benefits:

Age at Disablement	Maximum Benefit Period
Before age 62	To age 65
62	3.50 years
63	3.00 years
64	2.50 years
65	2.00 years
66	1.75 years
67	1.50 years
68	1.25 years
69	To Age 70

- Benefit Amount: The Standard benefit provides up to 75% of a participant's average monthly earnings, capped at $4,000 per month. Supplemental Coverage is available to employees whose annual salary exceeds $64,000, and provides an additional benefit up to $3,500 per month.

- Benefit Increases: None

- Benefit Offsets: The ICI plan benefit is offset by income received from other sources including, but not limited to: Social Security (regular or disability), unemployment compensation, worker's compensation (except permanent disability awards), WRS benefits (retirement, disability retirement, Long Term Disability Insurance, or separation), work earnings, and Duty Disability benefits.

- Definition of Disability: During the first 12 months of disability, the participant is disabled if unable to perform his or her job and under the care of a physician. After the first 12 months of disability, the participant is disabled if unable to engage in any substantial gainful activity for which he or she is reasonably qualified.

- Premium Contributions: Premiums for Standard Coverage are paid by the employer and the employee. Premiums for Supplemental Coverage are paid entirely by the employee.

Appendix B: Data for Valuation

Number of Active State ICI Claims by Year of Disability as of December 31, 2015			
Year of Disability	Male	Female	Total
2001 and earlier	39	91	130
2002	7	18	25
2003	6	24	30
2004	10	28	38
2005	9	35	44
2006	17	27	44
2007	23	28	51
2008	18	30	48
2009	21	36	57
2010	23	43	66
2011	19	51	70
2012	32	62	94
2013	41	84	125
2014	36	75	111
2015	90	199	289
Total	**391**	**831**	**1,222**

Total Net Monthly Benefit by Year of Disability as of December 31, 2015			
Year of Disability	Male	Female	Total
2001 and earlier	$29,174	$66,207	$95,381
2002	$5,629	$12,245	$17,874
2003	$1,468	$17,257	$18,725
2004	$7,762	$21,253	$29,016
2005	$6,474	$33,342	$39,816
2006	$15,829	$21,066	$36,895
2007	$17,663	$31,699	$49,362
2008	$11,763	$22,617	$34,380
2009	$13,815	$41,440	$55,255
2010	$24,640	$45,166	$69,806
2011	$17,210	$38,756	$55,966
2012	$33,944	$74,931	$108,875
2013	$54,263	$98,577	$152,839
2014	$48,976	$144,880	$193,857
2015	$220,115	$490,728	$710,843
Total	**$508,725**	**$1,160,165**	**$1,668,890**

Number of Active State ICI Claims by Age at Disability as of December 31, 2015			
Year of Disability	Male	Female	Total
< 20	0	0	0
20-24	7	14	21
25-29	6	34	40
30-34	30	61	91
35-39	45	127	172
40-44	65	153	218
45-49	82	126	208
50-54	83	156	239
55-59	51	116	167
60-64	22	41	63
65+	0	3	3
Total	**391**	**831**	**1,222**

Total Net Monthly Benefit by Age at Disability as of December 31, 2015			
Age at Disability	Male	Female	Total
< 20	$0	$0	$0
20-24	$10,091	$19,385	$29,476
25-29	$8,374	$46,067	$54,441
30-34	$46,936	$97,519	$144,455
35-39	$58,818	$185,001	$243,819
40-44	$91,012	$202,194	$293,206
45-49	$104,800	$171,986	$276,786
50-54	$94,272	$191,291	$285,563
55-59	$60,156	$170,341	$230,497
60-64	$34,267	$72,920	$107,187
65+	$0	$3,459	$3,459
Total	**$508,725**	**$1,160,165**	**$1,668,890**

Appendix C: Actuarial Methods and Assumptions

- Valuation Date: 12/31/2015

- Discount Rate: 7.20%, specified by ETF

- Claim Termination Rates: Claim termination rate assumptions were derived from 1987 CGDT rates using the following adjustment factors:

Disability Duration	Termination Rate Adjustment Factor
1 – 24 months	2.50
25 – 36 months	2.40
37 – 48 months	2.20
49 – 60 months	2.00
61 – 72 months	1.80
73 – 84 months	1.60
85 – 96 months	1.40
97 – 108 months	1.20
109 + months	1.00

- Future Offset Approval Rates: Estimated Social Security offset assumptions are shown below. No future offsets are assumed on claimants disabled more than five years.

  Probability of being approved for Social Security benefits (if not already approved):

Claim Duration	Probability
1 – 12 months	69%
13 – 24 months	45%
25 – 36 months	17%
37 – 48 months	8%
49 – 60 months	5%
61 + months	0%

  Future Social Security offset amount as percentage of gross benefit amount: 44%.

- Incurred But Not Reported Claims: 15% of the estimated incurred claims for the current year, as determined from analyses of historical State ICI claims experience.

- Loss Adjustment Expenses: 4.5% of the liability for open claims plus 6.0% of the liability for IBNR claims.

Appendix D: Reliance Items

In performing the valuation, we relied, without audit, on certain data and information provided by ETF and Aetna. To the extent any of the data or other items was incomplete or inaccurate, the results of our work may be materially affected.

The principal items on which we relied included the following:

- Lists of active disability claims and related information provided by Aetna
- Asset balances, premium contributions, plan expenses, covered payroll, and other financial information provided by ETF
- Plan descriptions provided by ETF
- Discussions with ETF and Aetna personnel