Actuarial Valuation of
The State Income Continuation Insurance Plan
As of December 31, 2021

For The State of Wisconsin
Department of Employee Trust Funds

Prepared by: Paul L. Correia, FSA, MAAA
Principal and Consulting Actuary
Milliman, Inc.

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

April 18, 2022

Table of Contents

Appendices:

121 Middle Street, Suite 401
Portland, ME 04101-4156
USA

Tel +1 207 772 0046
Fax +1 207 772 7512

milliman.com

April 18, 2022

Jim Guidry
Director
Benefit Services Bureau
Wisconsin Department of Employee Trust Funds
Madison, WI 53707

RE: Actuarial Valuation of State Income Continuation Insurance Plan as of December 31, 2021

Dear Jim:

Thank you for the opportunity to perform an actuarial valuation of the State Income Continuation Insurance (ICI) plan as of December 31, 2021. The valuation results are provided in this report, along with documentation of our calculation methods and assumptions.

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 74, 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 State ICI plan. Ultimately it is the responsibility of ETF and its auditors to determine the applicable accounting standards for the plan.

In 2020, Milliman developed new valuation assumptions for the State ICI plan that included claim termination rates, estimated offsets, and other assumptions. These assumptions were initially used to perform the December 31, 2019 valuation for the State ICI plan, and remain in place for the December 31, 2021 valuation. We expect to update the assumptions for performing the December 31, 2022 valuation. The discount rate assumption, which is specified by ETF and based on the most recent WRS Experience Study, was reduced this year from 7.0% as of December 31, 2020 to 6.8% as of December 31, 2021. 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 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 agreement, 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; and

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 claim and expense data from The Hartford 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 is inaccurate or incomplete, the results shown could be materially affected and this report may need to be revised.

This analysis is only an estimate of the State ICI 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 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; 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, 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.

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.

Sincerely,

Paul L. Correia

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

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

Section I: Introduction and Executive Summary

The actuarial liabilities for the State ICI plan as of December 31, 2021 are summarized in Table 1.1 below:

Table 1.1 Actuarial Liabilities for the State ICI Plan as of December 31, 2021				
Liability Component	**Basic Benefits**	**Supplemental Benefits**	**$75 Add-on**	**Total Liability Amount**
Open Claims	$76,683,938	$2,487,749	$226,667	$79,398,354
IBNR Claims	$4,029,192	$130,713	$11,910	$4,171,815
Loss Adjustment Expense	$4,694,101	$152,284	$13,875	$4,860,260
Total	**$85,407,231**	**$2,770,746**	**$252,452**	**$88,430,429**

The values shown above include estimated liabilities for monthly ICI benefit payments (Basic Benefits and Supplemental Benefits), and for additional benefits of $75 per month to disabled members whose disability lasts longer than 12 months, to help these members with medical expenses ($75 Add-on). The liability for the $75 add-on benefit only reflects the cost for disabled members who had not yet received the benefit as of December 31, 2021. For members who had already received the $75 add-on benefit, the liability is reflected in the liability for basic benefits.

The State ICI reserve (i.e., the funds available to cover future plan obligations) increased by $34.3 million between December 31, 2020 and December 31, 2021. This increase was due, in part, to strong investment earnings in 2021 ($16.2 million). It was also driven by the excess in premium contributions over insurance claims and expenses in 2021. Last year, the Group Insurance Board approved reducing 2022 State ICI premium rates by 50% to better align contributions with plan costs. As of December 31, 2021, the State ICI reserve is equal to 174% of the actuarial liability, which is higher than the target range of 130% to 140% for this plan. Table 1.2 shows State ICI reserve balances and financial experience from 2019 through 2021.

Table 1.2 State ICI Funding Analysis			
Balance Sheet Component	**Plan Year**		
	2019	**2020**	**2021**
A. Beginning Reserve Balance	$71,493,483	$90,324,629	$120,036,016
B. Closing Adjustments	99,718	(12,720)	(7,919)
C. Adjusted Beginning Reserve Balance	71,593,200	90,311,909	120,028,097
D. Premium Contributions	33,198,198	39,574,554	39,386,893
E. Investment Earnings	5,888,157	10,631,235	16,242,523
F. Insurance Claims	17,771,251	17,755,981	18,240,575
G. Administrative Expenses	2,583,677	2,725,701	3,126,920
H. Ending Reserve Balance (C + D + E – F – G)	90,324,629	120,036,016	154,290,018
I. Actuarial Liability	90,091,957	89,520,857	88,430,429
J. Surplus (H – I)	$232,672	$30,515,159	$65,859,589

Section II: Actuarial Valuation

The actuarial liabilities for the State ICI Plan consist of three components:

- Liability for Open Claims: Present value of expected future benefits payable to members disabled prior to December 31, 2021, whose claims had been reported to ETF on or before that date. There were 1,071 open claims and one pending claim reported as of the valuation date, for a total of 1,072 claims. We have assumed that the pending claim will transition to open status after satisfying the elimination period.

- Liability for Incurred but not Reported (IBNR) Claims: Present value of expected future benefits payable to members disabled prior to December 31, 2021, but whose claims had not yet been reported to ETF as of that date.

- Liability for Loss Adjustment Expenses: Present value of expected future expenses related to the ongoing management and payment of open and IBNR claims.

The following table compares the liabilities for the State ICI plan as of December 31, 2020 and December 31, 2021:

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

Component	December 31, 2020	December 31, 2021
Open Claims	$80,100,379	$79,398,354
IBNR Claims	$4,347,022	$4,171,815
Loss Adjustment Expense	$5,073,456	$4,860,260
Total	**$89,520,857**	**$88,430,429**

The total liability decreased by 1.2% from $89.5 million as of December 31, 2020 to $88.4 million as of December 31, 2021.

The liability for open claims decreased by 0.9% from $80.1 million as of December 31, 2020 to $79.4 million as of December 31, 2021. The number of open and pending open claims decreased by 3.9% from 1,116 as of December 31, 2020 to 1,072 as of December 31, 2021, and the average net benefit amount increased by 2.4% from $1,446 as of December 31, 2020 to $1,481 as of December 31, 2021.

The reduction in the liability for IBNR claims was driven by improvements in incurred claims experience observed in recent years.

The decrease in the loss adjustment expense liability was primarily driven by a reduction in the number of open claims.

The liabilities were calculated based on a discount rate of 6.8%, which is lower than the 7.0% discount rate used last year. The discount rate assumption is prescribed by ETF and we have performed no independent assessment of the reasonableness of this assumption. The impact of using a lower discount rate this year is a $0.9 million increase in the total liability (approximately 1%) as of December 31, 2021, with all else equal.

The liabilities for open claims, IBNR claims, and loss adjustment expenses are discussed in greater detail below. Appendix D of this report includes additional documentation of the valuation assumptions.

Open Claims

The liability for open claims was calculated using the same claim termination rate assumptions as last year. These claim termination rate assumptions are based on recovery and mortality rates from the 2012 Group Long-Term Disability Valuation Table adjusted for State ICI plan experience. The adjustment factors were developed from experience studies performed by Milliman in 2020 using ICI claim experience from 2014 through 2019. The estimated offset assumptions are also the same as last year and are based on results from an experience study performed by Milliman in 2020 using plan experience from 2016 through 2019. The claim termination rate adjustment factors and estimated offset assumptions are provided in Appendix D.

We tested these assumptions by performing retrospective runoff studies using State ICI claim experience from 2017 through 2021. In performing these studies, we first calculated the liability for claims that were open on prior valuation dates using current valuation assumptions, then we determined whether those liabilities would have provided sufficient funding for the emerging claim costs. The emerging claim costs were calculated as the present value of benefit payments made during the study period, plus the present value of the remaining liability for claims still open at the end of the study period. The results from our runoff studies are shown below, summarized in terms of average annual margins from five mutually distinct 12-month studies based on ICI experience from 2017 through 2021.

Table 2.3
Runout Study for the ICI Plans
Study Period: 2017 – 2021

Claim Duration	Average Annual Margin
1 – 12 months	3.9%
13 – 24 months	9.7%
25 – 36 months	5.2%
37 – 48 months	1.3%
49 – 60 months	0.1%
61 + months	2.1%
Total	**2.5%**

In the preceding table, a positive result in the final column (average annual margin) indicates the estimated liability provided adequate funding for the runoff of open claims during the study period, while a negative result indicates a deficiency. For this type of plan, we typically target a positive overall average annual margin of 1% to 5%, with reasonably consistent patterns by claim duration. The results in the preceding table show that the State ICI plan meets our overall objective, although there is some variation by claim duration. The 9.7% average annual margin for claims in durations 13 – 24 months may be due to the change in the State ICI definition of disability from short-term disability to long-term disability after 12 months. It is not uncommon to see a spike in disability claim termination rates at the change in definition, because some short-term disability claims may not qualify for long-term disability benefits.

IBNR Claims

The liability for IBNR claims represents the present value of expected benefits for claims incurred on or prior to December 31, 2021 that were unreported as of that date. We have assumed that all IBNR claims were incurred in 2021, and that 25% of claims incurred in 2021 were unreported as of the valuation date. This is the same assumption as last year, and was determined from an analysis performed by Milliman in 2020 of unreported claims at various historical year-end dates, using State ICI claim experience from 2015 through 2019. We have also assumed that the total cost of claims incurred in 2021 will be $16.7 million, based on an analysis of State ICI incurred claim costs from 2016 through 2020. The calculation of the liability for IBNR claims is provided below:

Table 2.4 IBNR Liability Calculation As of December 31, 2021	
A. Estimated Incurred Claims in 2021	$16,687,260
B. Assumed Proportion of Unreported Claims	25.0%
C. IBNR Liability as of December 31, 2021 (A x B)	**$4,171,815**

Loss Adjustment Expenses

The liability for loss adjustment expenses was calculated using the following administrative fees specified by The Hartford in 2020 in its response to the request for proposals for administering the ICI program.

Table 2.5
Assumed Claim Administration Fees

Fee Component	Assumed Amount
One-time new claim fee	$1,488 per new claim
Monthly fee, first two years	$130 per month
Monthly fee, years 3 +	$66 per month

We calculated the liability for loss adjustment expenses separately for open claims and IBNR claims. For open claims, the liability represents the present value of expected future claim administration fees. Expected fees were projected using the same claim termination rate assumptions as the assumptions used for calculating the open claim liabilities. For IBNR claims, we assumed the one-time new claim fee applies to 275 claims unreported as of the valuation date, based on trends in claim incidence between 2016 and 2020. The liability for ongoing monthly fees for IBNR claims is based on the same relationship between IBNR and open claim liabilities. Estimated loss adjustment expense liabilities as of December 31, 2021 are shown below for open claims, IBNR claims, and in total.

Table 2.6
Liability for Loss Adjustment Expenses

Claim Type	Estimated Liability
Open claims	$4,228,652
IBNR claims	$631,609
Total	**$4,860,260**

Section III: State ICI Funding Analysis

We performed a funding analysis based on the State ICI reserve balance as of December 31, 2021 and projected future experience for the State ICI plan. The reserve increased from $90.3 million as of December 31, 2019 to $154.3 million as of December 31, 2021, as shown below:

Table 3.1
State ICI Funding Analysis

Balance Sheet Component	Plan Year		
	2019	**2020**	**2021**
Beginning Reserve Balance	$71,493,483	$90,324,629	$120,036,016
Closing Adjustments	99,718	(12,720)	(7,919)
Adjusted Beginning Reserve Balance	71,593,200	90,311,909	120,028,097
Premium Contributions	33,198,198	39,574,554	39,386,893
Investment Earnings	5,888,157	10,631,235	16,242,523
Insurance Claims	17,771,251	17,755,981	18,240,575
Administrative Expenses	2,583,677	2,725,701	3,126,920
Ending Reserve Balance (C + D + E – F – G)	90,324,629	120,036,016	154,290,018
Actuarial Liability	90,091,957	89,520,857	88,430,429
Surplus (H – I)	$232,672	$30,515,159	$65,859,589

The increase in reserves was driven by a combination of strong investment earnings on assets backing reserves, and by premium contributions that exceeded claims and expenses in recent years. The Group Insurance Board approved a series of 20% annual rate increases from 2015 through 2020 that helped move the plan from a deficit to a surplus position. The rate increases ended in 2020 and rates were held level in 2021. Last year, the Board approved a 50% reduction in premium rates effective January 1, 2022, to better align contributions with State ICI plan costs.

The December 31, 2021 reserve ($154.3 million) is 174% of the actuarial liability ($88.4 million), which is higher than the target reserve ratio range of 130% to 140% for the State ICI plan.

We have developed financial projections to demonstrate the long-term performance of State ICI reserves under different scenarios. The projections are provided in Appendix A and reflect actual experience for 2021 and projected experience for 2022 and beyond. The key elements of these projections include the following:

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

- **Payroll**: 2021 State ICI payroll was provided by ETF. Future payroll is assumed to increase at a rate of 3.0% per year, which is consistent with the assumptions used by ETF for retirement fund projections.

- **Premium Contributions**: Annual premium contributions are modeled as a percentage of payroll. The 2021 premium rate is 1.23% of payroll.

- **Investment Income**: Annual investment income in 2022 and beyond is projected as 6.8% of the reserve balance at the beginning of the year.

- **Insurance Claims:** Annual insurance claims are the sum of projected payments on existing claims as of December 31, 2021, and payments on expected future claims incurred after December 31, 2021. Insurance claims for 2022 and beyond are equal to 0.60% of payroll, based on historical experience from 2016 through 2020 increased by 10% to add margin, and adjusted for expected aging in future years. Benefit payments for these new claims are then computed using runout patterns generated from our valuation assumptions, which in turn are based on recent plan experience.

- **Administrative Expenses**: Administrative expenses are modeled as a constant percentage of paid insurance claims, based on actual values in 2021.

- **Ending Reserve Balance**: The ending reserve 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 December 31, 2021 and of the increasing liability for claims incurred after December 31, 2021.

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

Financial projections were developed for the following scenarios:

- The **Baseline** scenario assumes a 50% reduction in premium rates in 2022, as approved by the Group Insurance Board in 2021, then rates are held level in 2023 and beyond.

- **Scenario 1** assumes a 50% reduction in premium rates in 2022 followed by a 20% reduction in 2023, then rates are held level in 2024 and beyond.

- **Scenario 2** assumes a 50% reduction in contribution rates in 2022 then held level in 2023 and beyond, and that State ICI benefit enhancements become effective on January 1, 2023. These enhancements would extend covered payroll for basic benefits from $64,000 to $120,000 for all members as well as eliminate supplemental benefits.

Note that the financial projections shown below 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.

Appendix A: Financial Projections

Financial projections were developed for the following scenarios:

1. **Baseline Scenario**: 50% reduction in premium rates in 2022, then rates are held level in future years.

   In the Baseline scenario, the reserve ratio is projected to decrease from 174% of the actuarial liability as of December 31, 2021 to 156% of the actuarial liability as of December 31, 2027. The decrease is driven by the 50% rate reduction in 2022.

2. **Scenario 1**: 50% reduction in premium rates in 2022 followed by a 20% reduction in 2023, then rates are held level in future years.

   In Scenario 1, the reserve ratio is projected to decrease from 174% of the actuarial liability as of December 31, 2021 to 137% of the actuarial liability as of December 31, 2027. This scenario suggests that an additional rate reduction in 2023 can help bring reserves to within the target range of 130% to 140% by the end of 2027.

3. **Scenario 2**: 50% reduction in contribution rates in 2022 the held level in 2023 and beyond, and State ICI benefit enhancements become effective on January 1, 2023.

   In Scenario 2, the reserve ratio is projected to decrease from 174% of the actuarial liability as of December 31, 2021 to 157% of the actuarial liability as of December 31, 2027. We adjusted State ICI premium contributions and claims in 2023 and beyond based on the results of an analysis performed by Milliman in 2021 of the expected impact of State ICI benefit enhancements (see letter from Milliman named "Letter on ICI Program Changes 11-24-21"). The results from our analysis suggest that premium contributions would be approximately 9% higher if covered payroll for basic benefits is extended to $120,000 for all members. Note that the additional premium is not caused by an increase in rates, rather it is from the additional premium corresponding to the additional covered payroll. We have also assumed that claims costs would be approximately 5% higher under the enhanced State ICI plan.

State ICI Funding Analysis as of December 31, 2021
Baseline Scenario
50% reduction in premium rates in 2022 then held level in 2023 and beyond

Calendar Year	2021	2022	2023	2024	2025	2026	2027
BOY Reserve Balance	$120,028,097	$154,290,018	$163,584,817	$173,612,998	$182,930,104	$191,629,213	$199,732,965
Premium Contributions	$39,386,893	$20,689,935	$21,310,633	$21,949,952	$22,608,450	$23,286,704	$23,985,305
Investment Income	$16,242,523	$10,491,721	$11,123,768	$11,805,684	$12,439,247	$13,030,786	$13,581,842
Total Revenues	$55,629,416	$31,181,656	$32,434,400	$33,755,636	$35,047,698	$36,317,490	$37,567,147
Insurance Claims	$18,240,575	$18,683,934	$19,127,292	$20,862,195	$22,492,735	$24,084,938	$25,724,819
Carrier Administrative Expenses	$2,332,822	$2,389,524	$2,446,226	$2,668,106	$2,876,639	$3,080,269	$3,289,996
Administrative Expense	$794,098	$813,399	$832,701	$908,229	$979,215	$1,048,531	$1,119,922
Total Operating Expenses	$21,367,495	$21,886,857	$22,406,219	$24,438,530	$26,348,589	$28,213,738	$30,134,738
Net Change in Reserve Balance	$34,261,921	$9,294,799	$10,028,181	$9,317,105	$8,699,109	$8,103,753	$7,432,409
EOY Reserve Balance	$154,290,018	$163,584,817	$173,612,998	$182,930,104	$191,629,213	$199,732,965	$207,165,374
Actuarial Liability	$88,430,429	$95,405,848	$103,460,832	$111,004,912	$118,355,684	$125,584,203	$132,683,605
Surplus / (Deficit)	$65,859,589	$68,178,969	$70,152,167	$71,925,192	$73,273,528	$74,148,762	$74,481,770
Ratio of EOY Fund Balance to Liability	**174%**	**171%**	**168%**	**165%**	**162%**	**159%**	**156%**

State ICI Funding Analysis as of December 31, 2021
Scenario 1
50% reduction in premium rates in 2022 followed by 20% reduction in 2023, then held level in 2024 and beyond

Calendar Year	2021	2022	2023	2024	2025	2026	2027
BOY Reserve Balance	$120,028,097	$154,290,018	$163,584,817	$169,350,872	$173,988,162	$177,557,529	$180,047,066
Premium Contributions	$39,386,893	$20,689,935	$17,048,506	$17,559,962	$18,086,760	$18,629,363	$19,188,244
Investment Income	$16,242,523	$10,491,721	$11,123,768	$11,515,859	$11,831,195	$12,073,912	$12,243,201
Total Revenues	$55,629,416	$31,181,656	$28,172,274	$29,075,821	$29,917,955	$30,703,275	$31,431,445
Insurance Claims	$18,240,575	$18,683,934	$19,127,292	$20,862,195	$22,492,735	$24,084,938	$25,724,819
Carrier Administrative Expenses	$2,332,822	$2,389,524	$2,446,226	$2,668,106	$2,876,639	$3,080,269	$3,289,996
Administrative Expense	$794,098	$813,399	$832,701	$908,229	$979,215	$1,048,531	$1,119,922
Total Operating Expenses	$21,367,495	$21,886,857	$22,406,219	$24,438,530	$26,348,589	$28,213,738	$30,134,738
Net Change in Reserve Balance	$34,261,921	$9,294,799	$5,766,055	$4,637,290	$3,569,367	$2,489,537	$1,296,707
EOY Reserve Balance	$154,290,018	$163,584,817	$169,350,872	$173,988,162	$177,557,529	$180,047,066	$181,343,773
Actuarial Liability	$88,430,429	$95,405,848	$103,460,832	$111,004,912	$118,355,684	$125,584,203	$132,683,605
Surplus / (Deficit)	$65,859,589	$68,178,969	$65,890,040	$62,983,251	$59,201,844	$54,462,863	$48,660,168
Ratio of EOY Fund Balance to Liability	**174%**	**171%**	**164%**	**157%**	**150%**	**143%**	**137%**

State ICI Funding Analysis as of December 31, 2020
Scenario 2

50% reduction in contribution rates in 2022, then premiums and claims are adjusted to reflect benefit enhancements in 2023 and beyond

Calendar Year	2021	2022	2023	2024	2025	2026	2027
BOY Reserve Balance	$120,028,097	$154,290,018	$163,584,817	$175,406,419	$186,327,213	$196,325,429	$205,492,234
Premium Contributions	$39,386,893	$20,689,935	$23,228,590	$23,925,448	$24,643,211	$25,382,507	$26,143,983
Investment Income	$16,242,523	$10,491,721	$11,123,768	$11,927,636	$12,670,251	$13,350,129	$13,973,472
Total Revenues	$55,629,416	$31,181,656	$34,352,357	$35,853,084	$37,313,462	$38,732,637	$40,117,454
Insurance Claims	$18,240,575	$18,683,934	$19,233,604	$21,283,698	$23,317,932	$25,239,167	$27,122,355
Carrier Administrative Expenses	$2,332,822	$2,389,524	$2,459,822	$2,722,013	$2,982,175	$3,227,885	$3,468,730
Administrative Expense	$794,098	$813,399	$837,329	$926,579	$1,015,139	$1,098,780	$1,180,764
Total Operating Expenses	$21,367,495	$21,886,857	$22,530,756	$24,932,290	$27,315,246	$29,565,832	$31,771,848
Net Change in Reserve Balance	$34,261,921	$9,294,799	$11,821,602	$10,920,794	$9,998,215	$9,166,805	$8,345,607
EOY Reserve Balance	$154,290,018	$163,584,817	$175,406,419	$186,327,213	$196,325,429	$205,492,234	$213,837,840
Actuarial Liability	$88,430,429	$95,405,848	$104,486,045	$112,965,900	$120,959,704	$128,553,686	$135,829,251
Surplus / (Deficit)	$65,859,589	$68,178,969	$70,920,374	$73,361,313	$75,365,725	$76,938,548	$78,008,589
Ratio of EOY Fund Balance to Liability	**174%**	**171%**	**168%**	**165%**	**162%**	**160%**	**157%**

Appendix B: Plan Description

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

- Elimination Period: University of Wisconsin faculty and academic staff 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 basic 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 benefits (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 basic coverage are paid by the employer and the employee. Premiums for supplemental coverage are paid entirely by the employee.

Appendix C: Data for Valuation

The following tables provide the distribution of open and pending open claims as of December 31, 2021 by year of disability and gender, as well as by age at disability and gender. There were 1,071 open claims and one pending open claim as of the valuation date.

Number of Open and Pending Open State ICI Claims as of December 31, 2021 By Year of Disability and Gender			
Disability Year	**Male**	**Female**	**Total**
2001 and earlier	14	40	54
2002	3	10	13
2003	2	16	18
2004	7	18	25
2005	8	22	30
2006	12	16	28
2007	10	18	28
2008	10	21	31
2009	10	23	33
2010	12	28	40
2011	13	29	42
2012	18	32	50
2013	22	41	63
2014	20	30	50
2015	11	38	49
2016	19	36	55
2017	19	45	64
2018	21	60	81
2019	16	29	45
2020	33	66	99
2021	54	120	174
Total	**334**	**738**	**1,072**

Number of Open and Pending Open State ICI Claims as of December 31, 2021 By Age at Disability and Gender			
Age at Disability	**Male**	**Female**	**Total**
< 20	0	0	0
20-24	6	15	21
25-29	9	37	46
30-34	28	56	84
35-39	45	116	161
40-44	47	135	182
45-49	72	119	191
50-54	68	129	197
55-59	43	85	128
60-64	15	42	57
65+	1	4	5
Total	**334**	**738**	**1,072**

The following tables show a distribution of net monthly benefit amounts as of December 31, 2021 by year of disability and gender, as well as by age at disability and gender.

State ICI Net Monthly Benefit Amounts as of December 31, 2021 By Year of Disability and Gender			
Disability Year	**Male**	**Female**	**Total**
2001 and earlier	$10,464	$29,099	$39,564
2002	2,775	9,351	12,126
2003	361	12,347	12,708
2004	4,502	13,727	18,229
2005	6,805	19,909	26,714
2006	11,582	11,577	23,159
2007	10,452	18,804	29,256
2008	10,595	15,488	26,083
2009	9,231	25,374	34,605
2010	13,417	32,927	46,344
2011	14,087	21,121	35,207
2012	12,840	32,001	44,840
2013	32,872	46,517	79,389
2014	14,973	36,107	51,080
2015	11,538	41,166	52,703
2016	16,660	45,141	61,802
2017	21,636	70,761	92,398
2018	30,306	71,970	102,276
2019	30,747	41,868	72,615
2020	60,650	121,880	182,530
2021	178,235	365,986	544,222
Total	**$504,728**	**$1,083,122**	**$1,587,850**

State ICI Net Monthly Benefit Amounts as of December 31, 2021 By Age at Disability and Gender			
Age at Disability	Male	Female	Total
< 20	$0	$0	$0
20-24	8,723	17,989	26,712
25-29	16,769	61,236	78,005
30-34	55,984	86,357	142,340
35-39	71,280	182,981	254,260
40-44	59,371	180,240	239,611
45-49	90,778	155,640	246,419
50-54	109,606	162,439	272,045
55-59	64,927	134,490	199,418
60-64	25,102	93,228	118,330
65+	2,188	8,523	10,710
Total	**$504,728**	**$1,083,122**	**$1,587,850**

Appendix D: Actuarial Methods and Assumptions

- **Valuation Date**: December 31, 2021
- **Discount Rate**: 6.8%, specified by ETF. This assumption represents a long-term investment return for the State ICI reserve.
- **Claim Termination Rates**: Claim termination rate assumptions were derived from State ICI plan experience relative to the 2012 Group Long-Term Disability Valuation Table, as shown below:

Disability Duration	2012 GLTD Termination Rate Adjustment Factor
1 – 9 months	1.25
10 – 12 months	2.50
13 – 24 months	1.25
25 – 60 months	0.98
61 + months	0.96

- **Future Offset Approval Rates**: Estimated Social Security offset assumptions were derived from State ICI plan experience as shown below.

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

Claim Duration	Probability
1 – 12 months	67%
13 – 24 months	58%
25 – 36 months	45%
37 – 48 months	35%
49 – 60 months	9%
61 + months	0%

  No future offsets are assumed on claimants disabled more than five years.

  Future Social Security offset amount as percentage of gross benefit amount: 45%.

- **Incurred But Not Reported Claims**: 25% of the estimated incurred claims for the current year, determined from analyses of historical State ICI claims experience.
- **Overpayment Credit**: 75% of the overpayment balance reported by ETF as of December 31, 2021. We assume that 75% of the December 31, 2021 overpayment balance will eventually be recovered, and we applied this amount as an offset to the total liability. This assumption is based on an analysis performed by Milliman in

2020 of historical overpayment balances and recoveries from December 31, 2012 through December 31, 2016.

- Loss Adjustment Expenses: Assumed claim administration fees are provided below:

Assumed Claim Administration Fees	
Fee Component	**Fee**
New claim fee	$1,488 per new claim
Monthly fee, years 1 and 2	$130 per month
Monthly fee, years 3+	$66 per month

Appendix E: Reliance Items

In performing the valuation, we relied, without audit, on certain data and information provided by ETF and The Hartford. 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 open disability claims and related information provided by The Hartford;

- Reserve balances, premium contributions, plan expenses, covered payroll, and other financial information provided by ETF;

- Plan descriptions provided by ETF; and

- Discussions with ETF and staff at The Hartford.