MILLIMAN REPORT

Actuarial Valuation of the Duty Disability Insurance Program

As of December 31, 2024

May 15, 2025

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May 15, 2024

Ms. Cindy Klimke, CPA
Chief Trust Finance Officer
State of Wisconsin
Department of Employee Trust Funds
4822 Madison Yards Way
Madison, Wisconsin 53705-9100

RE: Actuarial Valuation of the Duty Disability Insurance Program as of December 31, 2024

Dear Cindy,

This report contains the results of an actuarial valuation for the Duty Disability insurance program as of December 31, 2024. These results include estimated liabilities for Duty Disability claims and administrative expenses as of December 31, 2024, and projections of Duty Disability reserves and financial experience from 2025 through 2033. This report also contains documentation of the data, methods, and assumptions used in our analysis.

The State of Wisconsin Department of Employee Trust Funds (ETF) and its auditors have determined that the Duty Disability insurance program 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 do not require the calculation of a liability for active lives. This approach is consistent with last year’s valuation of the Duty Disability insurance program. Ultimately, it is the responsibility of ETF and its auditors to determine the applicable accounting standards for the plans.

We estimated liabilities for Duty Disability claims that were open as of December 31, 2024, and for Duty Disability claims that were incurred but not reported (IBNR) as of December 31, 2024. These liabilities represent the present value (discounted to the valuation date) of expected future benefit payments and related expenses for adjudicating claims.

This report is prepared solely for the internal business use of ETF for the purpose of reporting the liabilities for the Duty Disability plan as of December 31, 2024. 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 auditors 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.

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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 data, reserve statements, and active member data. 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 Duty Disability 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; and changes in plan provisions or applicable laws. 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, Maxwell E. Berube, 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,

Maxwell Berube

Paul Correia

Maxwell E. Berube, FSA, MAAA
Consulting Actuary
Milliman, Inc.

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

Section I: Introduction and Executive Summary

Table 1.1 contains the estimated liabilities for the Duty Disability insurance program as of December 31, 2024:

Table 1.1 Estimated Liabilities for the Duty Disability Program As of December 31, 2024	
Liability Component	Estimated Liability
Open Claims	$519,874,506
Future Survivors	$37,726,364
IBNR Claims	$46,260,945
Loss Adjustment Expenses	$12,398,593
Overpayment Recovery	($402,073)
Total	**$615,858,336**

The estimated liability for open claims is based on 955 disabled members and 59 survivors (i.e., surviving family members including spouses, domestic partners, and dependent children) who were receiving benefits on December 31, 2024. The estimated liability for future survivors represents the present value of expected future benefit payments to survivors of currently disabled members. The estimated liability for IBNR claims represents the present value of expected future benefit payments to members and survivors whose claims were incurred but not reported as of December 31, 2024, as well as any claims that were reported as of December 31, 2024 but had not yet been approved for benefits. The liability for loss adjustment expenses represents the present value of expected costs arising from the ongoing management and payment of Duty Disability claims. The Overpayment Recovery component represents the present value of overpayment balances expected to be recovered by ETF.

We estimated liabilities for open claims, future survivors, IBNR claims, and loss adjustment expenses using the same valuation assumptions and methods as last year. We also used the same assumptions and methods for determining the overpayment recovery credit. A summary of the valuation assumptions for the Duty Disability plan is provided in Appendix B of this report.

The liabilities were calculated based on a discount rate of 6.8%, which is the same as last year. The discount rate assumption is prescribed by ETF and we have performed no independent assessment of the reasonableness of this assumption.

We analyzed the funding status of the Duty Disability program as of December 31, 2024 based on a starting smoothed reserve balance equal to $778 million at the beginning of 2024. The ending reserve balance as of December 31, 2024 is equal to 128.3% of the actuarial liability as of December 31, 2024, as shown in Table 1.2 below. This fund ratio is within the target fund range of 125% to 135%, approved by the Board in 2019 and reviewed by the Board in 2022 resulting in no changes to the target range.

Table 1.2 Duty Disability Funding Analysis	
Balance Sheet Item	2024
A. Beginning of Year Reserve Balance (Smoothed)	$778,048,729
B. Investment Income (Smoothed)	$54,547,831
C. Premium Contributions	$1,231,526
D. Insurance Claims	$42,223,159
E. Administrative Expenses	$1,210,660
F. End of Year Reserve Balance (A + B + C – D – E)	$790,394,267
G. Actuarial Liability as of December 31, 2024	$615,858,336
H. Surplus (F – G)	$174,535,931
I. Fund Ratio (% of Estimated Liability)	128.3%

We have projected financial and reserve balances from 2025 through 2033 based on the current contribution rates and valuation assumptions. According to this projection, the fund ratio is expected to decrease slightly over time and is projected to reduce to below 125% (i.e., the low end of the target range) by December 31, 2028. This projection is provided in Section III of the report, along with other projection scenarios that consider different contribution rates and investment returns during the projection period.

Section II: Actuarial Valuation

The estimated liabilities for the Duty Disability program as of December 31, 2024 consist of the following components:

- *Open Claims*: The liability for open claims represents the present value of expected future benefit payments to disabled members and survivors approved for Duty Disability benefits as of December 31, 2024. There were 955 disabled members and 59 survivors reported as of December 31, 2024.

- *Future Survivors*: Monthly death benefits are payable to surviving spouses/domestic partners and children if the disabled member dies as a result of the same injury or disease for which Duty Disability benefits were payable. The liability for future survivors represents the present value of expected future benefit payments to survivors of currently disabled members.

- *Incurred But Not Reported (IBNR) Claims*: The liability for IBNR claims represents the present value of expected future benefit payments to disabled members and survivors whose claims were incurred but had not been reported as of December 31, 2024, and for claims that were reported as of December 31, 2024 but had not yet been approved for benefits.

- *Loss Adjustment Expenses*: The liability for loss adjustment expenses represents the present value of expected future costs related to the ongoing management and payment of Duty Disability claims.

- *Overpayment Recovery*: The overpayment recovery credit represents the present value of amounts receivable from claimants due to overpayments.

Table 2.1 compares the estimated liabilities for the Duty Disability plan as of December 31, 2023 and December 31, 2024, followed by additional details for each liability component.

Table 2.1
Comparison of Estimated Liabilities
December 31, 2023 vs. December 31, 2024

Liability Component	December 31, 2023	December 31, 2024
Open Claims	$499,922,132	$519,874,506
Future Survivors	$35,883,664	$37,726,364
IBNR Claims	$46,660,191	$46,260,945
Loss Adjustment Expense	$12,000,058	$12,398,593
Overpayment Recovery	$(323,051)	($402,073)
Total	**$594,142,994**	**$615,858,336**

Open Claims

The estimated liability for open claims increased by approximately 4.0% from $500 million as of December 31, 2023 to $520 million as of December 31, 2024. The number of open claims increased slightly from 1,012 open claims as of December 31, 2023 to 1,014 open claims as of December 31, 2024. The average monthly benefit amount increased by approximately 2.5% from $3,309 as of December 31, 2023 to $3,391 as of December 31, 2024, which was driven, in part, by the automatic benefit increases applied in January of 2024 of 5.3% based on the national wage index and 1.6% based on the 2022 core annuity index (effective April 1, 2023). The corresponding benefit increases applied in January of 2025 were 4.4% based on the national wage index and 3.6% based on the 2023 core annuity index (effective April 1, 2024), which are reflected in the estimated liability for open claims as of December 31, 2024.

We used the same valuation assumptions and methods as last year for computing the liability for open claims. The valuation assumptions were derived from experience studies performed by Milliman in 2022 using historical Duty Disability claim experience. We have tested the claim termination rate assumptions by performing retrospective runoff studies using Duty Disability claim experience from 2020 through 2024. In performing these studies, we first calculated the liability for claims that were open on prior valuation dates using current valuation assumptions, and we then 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 liabilities for claims still open at the end of the study period. Due to the variability of benefit payments in the Duty Disability program arising from annual adjustments based on the national wage and core annuity indices, we held all benefit amounts constant for the purpose of conducting the runoff study. This means that the study focused on testing the claim termination rates rather than other elements typically considered in runout studies (such as offset assumptions).

The results from our runoff studies are shown below for disabled members (i.e., excluding survivors), based on Duty Disability claim experience for disabled members between 2020 and 2024. A positive annual margin in Table 2.2 indicates the liability provided adequate funding for the runout of open Duty Disability claims during the study period, while a negative margin would indicate a deficiency. The last row of the table shows the average annual margin over the five-year experience period.

Table 2.2
Retrospective Runoff Study for the Duty Disability Program
Disabled Members

Experience Year	Annual Margin
2020	0.54%
2021	0.72%
2022	0.89%
2023	0.62%
2024	1.05%
Average	**0.76%**

We typically target an overall average annual margin of 1% to 5% for this type of insurance program. Although the results from the runoff studies show modest positive margins that are slightly below the target range, we do not think these small positive margins pose a significant concern at this time due to the consistency of experience over time. We will continue to monitor Duty Disability experience along with the valuation assumptions to ensure that the liability estimates are adequate.

We also performed runoff studies to test the claim termination rate assumptions for survivors, which are different than the claim termination rate assumptions corresponding to disabled members. The runoff studies used historical experience from 2020 through 2024, and the results are shown in Table 2.3 below:

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Table 2.3
Retrospective Runoff Study for the Duty Disability Program
Survivors

Experience Year	Annual Margin
2020	-0.57%
2021	2.47%
2022	3.92%
2023	1.91%
2024	0.25%
Average	**1.60%**

The overall average annual margin of 1.60% is within the target range of 1 to 5%. This runoff study for survivors includes significantly fewer claims than the study for disabled members, which explains the volatility observed from year to year in Table 2.3.

Based on these results, we believe that the open claim liability estimate as of December 31, 2024 is close to a best estimate basis.

Future Survivors

The estimated liability for future survivors increased by approximately 5.1% from $35.9 million as of December 31, 2023 to $37.7 million as of December 31, 2024. We estimated the liability for future survivors by calculating the actuarial present value of expected benefits payable to survivors of currently disabled members. We have assumed that males are three years older than their spouse/domestic partner; and females are three years younger than their spouse/domestic partner. We also assumed that 25% of employee deaths would result in a benefit payable to dependents. In addition, we assumed that each disabled employee younger than age 55 would have 1.6 children at the time of death. These assumptions are the same as last year's valuation assumptions for estimating the liability for future survivors.

The assumption that each disabled employee would have 1.6 children at the time of death may be somewhat conservative since it was based on the total number of children an individual may have over a lifetime. This is somewhat mitigated by the age 55 limit. Offsets for spouses are assumed to be the same as the employee's current offsets for SSDI, disability (excluding LTDI) and retirement benefits. No other offsets are assumed, and no offsets are assumed for future child benefits.

IBNR Claims

The liability for IBNR claims represents the expected portion of program costs attributable to claims incurred but not reported as of the valuation date, and for claims that were reported as of December 31, 2024 but had not yet been approved for benefits. We calculated the liability for IBNR claims by first estimating incurred claims from 2020 through 2024 based on historical Duty Disability claim experience, and then by estimating the proportion of incurred claims that were unreported as of December 31, 2024. The IBNR assumptions and methodology are unchanged from last year.

Table 2.4
Duty Disability IBNR Factors
Applied to Incurred Claims in the Lookback Period

Lookback Period	IBNR Factors
First Year	96.66%
Second Year	60.93%
Third Year	53.88%
Fourth Year	42.71%
Fifth Year	12.80%

The following table provides details of the IBNR claim liability calculation as of December 31, 2024:

Table 2.5
Estimated Liability for IBNR Claims
As of December 31, 2024

Year	Expected Incurred Claims	IBNR Factor	Preliminary IBNR Liability Estimate	Interest Adjusted IBNR Liability Estimate
2020	$13,225,327	12.80%	$1,692,842	$2,276,077
2021	$13,213,275	42.71%	$5,643,390	$7,104,597
2022	$14,035,344	53.88%	$7,562,244	$8,914,126
2023	$15,470,445	60.93%	$9,426,142	$10,403,773
2024	$17,581,290	96.66%	$16,994,075	$17,562,371
Total	**$73,525,681**	**NA**	**$41,318,692**	**$46,260,945**

The final adjustment in the IBNR liability calculation (last column in Table 2.5) accumulates the estimated claims in the prior column to the valuation date of December 31, 2024, based on 6.8% interest.

Loss Adjustment Expenses

We used the same assumptions as last year for calculating the liability for loss adjustment expenses. These assumptions were developed from an analysis of Duty Disability administrative expenses from 2015 through 2019. We reviewed the loss adjustment expense assumptions this year and observed that the 2024 expense ratio (i.e., administrative expenses / benefit payments) was 2.9% which is close to the 3.2% expense ratio from 2015 through 2019. Since the expense ratio has been volatile between 2015 and 2024, ranging from 1.6% to 3.9%, we feel that the current assumption is still reasonable for projecting administrative expenses. In calculating the liabilities, we assumed that future expenses related to the ongoing management and payment of Duty Disability claims will be equal to 1.9% of benefit payments for open claims and 3.9% of benefit payments for IBNR claims. The assumption is higher for IBNR claims to reflect the additional costs related to adjudicating new claims. The estimated liability for loss adjustment expenses is $12,398,593 as of December 31, 2024.

Other Assumptions

The Duty Disability program is complex and we made a number of assumptions to evaluate the plan liabilities and future projections. We have identified and documented these assumptions below which we believe may have a bias to underestimation or overestimation:

- For the purpose of estimating IBNR claim liabilities, incurred claims are determined primarily by the reported “qualifying” date which is consistent with typical LTD plans. As part of our experience studies in the fall we will assess the reasonableness of this assumption.
- Our runout study is based on net benefit amounts that are assumed to be $1,000 per month for each claimant, rather than the actual paid amount, due to the volatility in annual benefit increases which is challenging to model precisely. This means that the runout study focuses on testing the claim termination rate assumptions and does not capture the effects of changes in net benefits (i.e. due to offsets or cost of living adjustments). Separately, we have performed studies of benefit offsets based on Duty Disability experience. While this approach tests the valuation assumptions in silos rather than holistically, our projected claim payments in 2024 were only about 2% higher than actual claim payments in 2024, which indicates that the valuation assumptions are reasonable for projecting overall net benefit payments.
- Annual benefit increases are assumed to be either 3.2% or 2.1% as described in Appendix B. We have not audited or verified this assumption although we have reviewed the assumption for reasonableness.
- We have not assumed mortality improvement in our valuation basis, consistent with prior valuations. When we conduct our experience studies in the fall we will consider the effect of mortality improvement on our claim termination rate assumptions.
- Future death benefits for disabled members are modeled under the simplifying assumption that the full value of the death benefit is paid out as a lump sum. While this approach does not affect our liability calculation, it may result in projections that indicate higher payments in earlier years and lower payments in later years.

Section III: Discussion of Duty Disability Funding Levels

This section contains an analysis of current and future funding levels for the Duty Disability plan. The following table shows Duty Disability reserve balances and financial experience from 2024:

Table 3.1
Duty Disability Funding Analysis
As of December 31, 2024

Balance Sheet Item	2024
A. Beginning of Year Reserve Balance (Smoothed)	$778,048,729
B. Investment Income (Smoothed) and Miscellaneous Income	$54,547,831
C. Premium Contributions	$1,231,526
D. Insurance Claims	$42,223,159
E. Administrative Expenses	$1,210,660
F. End of Year Reserve Balance (Smoothed) (A + B + C – D – E)	$790,394,267
G. Actuarial Liability as of December 31, 2024	$615,858,336
H. Surplus (F – G)	$174,535,931
I. Fund Ratio (% of Estimated Liability)	128.3%

The reserve balance as of December 31, 2024 ($790.4 million) is equal to 128.3% of the actuarial liability as of December 31, 2024. In 2019, the Board approved a fund ratio target range of 125% to 135% of the actuarial liability for the Duty Disability plan and subsequently reviewed this policy in 2022 resulting in no change to the target range. The fund ratio as of December 31, 2024 falls within the target range.

The actual 2024 values used in our projection are based on a smoothed asset valuation method where earnings based on the assumed investment return are recognized each year and differences between actual and assumed investment earnings are phased in over a five-year period. Table 3.2 below shows the development of the end of year reserve balance based on Fair Market Value compared to the smoothed End of Year Reserve developed in Table 3.1.

Table 3.2
Fair Market Value of Assets and Smoothed Reserve Balance
As of December 31, 2024

Balance Sheet Item	2024
A. Beginning of Year Reserve Balance (Fair Market Value)	$748,171,526
B. Investment Income (Fair Market Value) and Miscellaneous Income	$62,705,963
C. Premium Contributions	$1,231,526
D. Insurance Claims	$42,223,159
E. Administrative Expenses	$1,210,660
F. End of Year Reserve Balance (Fair Market Value) (A + B + C – D – E)	$768,675,196
G. End of Year Reserve Balance (Smoothed) (Table 3.1 F)	$790,394,267

We developed financial projections to analyze the long-term performance of the Duty Disability reserve. The projections reflect actual results for 2024 and projected values in 2025 and beyond. The key elements of these projections include the following:

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

- **Payroll**: 2024 payroll was provided to us by ETF. Future payroll is assumed to increase by 3.0% per year, consistent with the assumption used by ETF for retirement fund projections. We also assume an increase in payroll in 2025 and beyond due to *2023 Assembly Bill 245,* which allows new hires from the City of Milwaukee and the County of Milwaukee to enter the Wisconsin Retirement System, based on enrollment data from 2024 and 2025 provided to Milliman by ETF. We assume this increase is approximately 1.33% in 2025 and grades down to 1.20% by 2033. We intend to revise these assumptions when we perform experience studies in the fall of 2025, as enrollment experience for these employee cohorts matures.

- **Premium Contributions**: Premiums are modeled as a percentage of payroll. Although actual contribution rates vary by employer, we calculated an overall contribution rate of 0.145% of covered payroll for 2025 based on the 2024 covered payroll and expected changes in payroll due to *2023 Assembly Bill 245*.

- **Investment Income**: Investment income is equal to 6.8% of starting fund balances throughout the projection period, specified by ETF.

- **Insurance Claims**: Annual paid insurance claims are the sum of projected payments on existing claims as of December 31, 2024, and payments on expected future claims incurred after December 31, 2024.

- **Administrative Expenses**: Administrative expenses are modeled as a constant percentage of paid insurance claims, based on actual values in 2024.

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

- **Estimated Liability**: The incurred claim 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, 2024 and of the increasing liability for claims incurred after December 31, 2024. Future incurrals are based on our calculation of incurred claims in 2024, scaled based on changes in future payroll. Since incurred claims are based in part on actual historical payments which include variable benefit adjustments that may not conform exactly to projected future benefit adjustments, there may be some differences in the assumptions underlying the development of the initial incurred claims for each year and the payment patterns for those claims.

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

A model was developed for the purpose of creating financial projections for the following scenarios:

- **Baseline Scenario:** This scenario assumes the current contribution rates are held level in all years. In the Baseline Scenario, the fund ratio is expected to decrease over time and is projected to reduce below 125% (i.e., the low end of the target range) by December 31, 2028. The projected fund ratio as of December 31, 2033 is 116%.

- **Scenario 1**: This scenario demonstrates the sensitivity of reserve balances to adverse investment income in 2025. We assumed a -15% return on investments in 2025 and no change to the contribution rates, resulting in a projected fund ratio of 100% by December 31, 2025. The projected fund ratio continues to reduce to 75% as of December 31, 2033 assuming no premium rate action is taken.

- **Scenario 2**: This scenario illustrates a gradual rate increase approach where the contribution rates are increased by 0.1% of covered payroll each year beginning in 2026 for four consecutive years and then held level. The current contribution rate is approximately 0.145% of covered payroll in total and would increase to 0.545% of covered payroll in 2029. This scenario keeps the fund ratio within the target over the projection period, and beginning in 2028 the fund ratio begins to trend upward.

- **Scenario 3**: This scenario illustrates a rate increase from 0.145% of covered payroll in 2025 to 0.506% of covered payroll in 2026. Contributions are then held level. In this scenario, the fund ratio is projected to increase beginning in 2026 and to reach the mid-point of the target range by 2032.

- **Scenario 4**: This scenario shows the effect of reducing claim termination rates by 10% which results in higher liabilities. All other assumptions are the same as the Baseline scenario.

The financial projections are provided on the following pages of this report and depend on a variety of actuarial assumptions about future experience, including but not limited to investment income, payroll growth, future mortality rates, and disability claim incidence rates. For example, as demonstrated in Scenario 1, the projections are sensitive to the investment income assumption. 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.

Baseline Scenario
Investment Income: 6.8%
Premium Contributions: Current contribution rates

Calendar Year	Actual	Projected								
	2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
BOY Reserve Balance	$778,048,729	$790,394,267	$801,035,610	$809,596,480	$815,941,005	$819,924,281	$823,043,917	$825,114,798	$825,939,976	$825,324,793
Premium Contributions	$1,231,526	$3,274,888	$3,417,340	$3,565,393	$3,719,252	$3,879,135	$4,045,263	$4,217,867	$4,397,187	$4,583,470
Miscellaneous Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Investment Income	$54,547,831	$53,746,810	$54,470,421	$55,052,561	$55,483,988	$55,754,851	$55,966,986	$56,107,806	$56,163,918	$56,122,086
Total Revenues	$55,779,357	$57,021,698	$57,887,762	$58,617,953	$59,203,241	$59,633,986	$60,012,249	$60,325,673	$60,561,106	$60,705,556
Insurance Claims	$42,223,159	$45,087,565	$47,951,970	$50,816,376	$53,680,781	$54,939,087	$56,326,330	$57,841,999	$59,471,081	$60,676,121
Administrative Expense	$1,210,660	$1,292,791	$1,374,922	$1,457,052	$1,539,183	$1,575,262	$1,615,039	$1,658,497	$1,705,208	$1,739,760
Total Operating Expenses	$43,433,819	$46,380,355	$49,326,892	$52,273,428	$55,219,964	$56,514,350	$57,941,368	$59,500,496	$61,176,288	$62,415,881
Net Change in Reserve Balance	$12,345,538	$10,641,343	$8,560,870	$6,344,525	$3,983,276	$3,119,636	$2,070,881	$825,177	-$615,183	-$1,710,324
EOY Reserve Balance	$790,394,267	$801,035,610	$809,596,480	$815,941,005	$819,924,281	$823,043,917	$825,114,798	$825,939,976	$825,324,793	$823,614,468
Estimated Liability	$615,858,336	$629,368,577	$641,358,786	$651,859,699	$660,864,037	$670,110,854	$679,517,665	$689,002,359	$698,478,848	$708,410,230
Surplus / (Deficit)	$174,535,931	$171,667,032	$168,237,694	$164,081,306	$159,060,244	$152,933,063	$145,597,133	$136,937,617	$126,845,945	$115,204,239
Fund Ratio	128.3%	127.3%	126.2%	125.2%	124.1%	122.8%	121.4%	119.9%	118.2%	116.3%

** The estimated liability shown above includes the liability for open claims and claims incurred but not reported as of December 31, 2024, as well as the liability for new claims incurred by active members and survivors in 2025 and beyond.*

Scenario 1: Baseline Scenario with a -15% Net Investment Return in 2025

Calendar Year	Actual	Projected								
	2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
BOY Reserve Balance	$778,048,729	$790,394,267	$628,729,660	$625,573,725	$619,404,703	$610,023,510	$598,869,894	$585,696,941	$570,241,705	$552,239,039
Premium Contributions	$1,231,526	$3,274,888	$3,417,340	$3,565,393	$3,719,252	$3,879,135	$4,045,263	$4,217,867	$4,397,187	$4,583,470
Miscellaneous Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Investment Income	$54,547,831	-$118,559,140	$42,753,617	$42,539,013	$42,119,520	$41,481,599	$40,723,153	$39,827,392	$38,776,436	$37,552,255
Total Revenues	$55,779,357	-$115,284,252	$46,170,957	$46,104,406	$45,838,772	$45,360,733	$44,768,415	$44,045,259	$43,173,623	$42,135,725
Insurance Claims	$42,223,159	$45,087,565	$47,951,970	$50,816,376	$53,680,781	$54,939,087	$56,326,330	$57,841,999	$59,471,081	$60,676,121
Administrative Expense	$1,210,660	$1,292,791	$1,374,922	$1,457,052	$1,539,183	$1,575,262	$1,615,039	$1,658,497	$1,705,208	$1,739,760
Total Operating Expenses	$43,433,819	$46,380,355	$49,326,892	$52,273,428	$55,219,964	$56,514,350	$57,941,368	$59,500,496	$61,176,288	$62,415,881
Net Change in Reserve Balance	$12,345,538	-$161,664,607	-$3,155,934	-$6,169,022	-$9,381,192	-$11,153,616	-$13,172,953	-$15,455,237	-$18,002,665	-$20,280,156
EOY Reserve Balance	$790,394,267	$628,729,660	$625,573,725	$619,404,703	$610,023,510	$598,869,894	$585,696,941	$570,241,705	$552,239,039	$531,958,884
Estimated Liability	$615,858,336	$629,368,577	$641,358,786	$651,859,699	$660,864,037	$670,110,854	$679,517,665	$689,002,359	$698,478,848	$708,410,230
Surplus / (Deficit)	$174,535,931	-$638,918	-$15,785,061	-$32,454,996	-$50,840,527	-$71,240,960	-$93,820,724	-$118,760,654	-$146,239,808	-$176,451,346
Fund Ratio	128.3%	99.9%	97.5%	95.0%	92.3%	89.4%	86.2%	82.8%	79.1%	75.1%

** The estimated liability shown above includes the liability for open claims and claims incurred but not reported as of December 31, 2024, as well as the liability for new claims incurred by active members and survivors in 2025 and beyond.*

Scenario 2: Contribution rates are increased by an additive 0.1% of covered payroll starting in 2026 through 2029 and then are held level at 0.545%.

Calendar Year	Actual	Projected								
	2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
BOY Reserve Balance	$778,048,729	$790,394,267	$801,035,610	$811,960,124	$823,397,468	$835,605,178	$850,523,312	$865,654,607	$880,905,842	$896,193,804
Premium Contributions	$1,231,526	$3,274,888	$5,780,984	$8,497,484	$11,436,646	$14,611,332	$15,237,077	$15,887,218	$16,562,653	$17,264,316
Miscellaneous Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Investment Income	$54,547,831	$53,746,810	$54,470,421	$55,213,288	$55,991,028	$56,821,152	$57,835,585	$58,864,513	$59,901,597	$60,941,179
Total Revenues	$55,779,357	$57,021,698	$60,251,406	$63,710,773	$67,427,674	$71,432,484	$73,072,663	$74,751,731	$76,464,250	$78,205,494
Insurance Claims	$42,223,159	$45,087,565	$47,951,970	$50,816,376	$53,680,781	$54,939,087	$56,326,330	$57,841,999	$59,471,081	$60,676,121
Administrative Expense	$1,210,660	$1,292,791	$1,374,922	$1,457,052	$1,539,183	$1,575,262	$1,615,039	$1,658,497	$1,705,208	$1,739,760
Total Operating Expenses	$43,433,819	$46,380,355	$49,326,892	$52,273,428	$55,219,964	$56,514,350	$57,941,368	$59,500,496	$61,176,288	$62,415,881
Net Change in Reserve Balance	$12,345,538	$10,641,343	$10,924,514	$11,437,345	$12,207,710	$14,918,134	$15,131,295	$15,251,235	$15,287,962	$15,789,614
EOY Reserve Balance	$790,394,267	$801,035,610	$811,960,124	$823,397,468	$835,605,178	$850,523,312	$865,654,607	$880,905,842	$896,193,804	$911,983,418
Estimated Liability	$615,858,336	$629,368,577	$641,358,786	$651,859,699	$660,864,037	$670,110,854	$679,517,665	$689,002,359	$698,478,848	$708,410,230
Surplus / (Deficit)	$174,535,931	$171,667,032	$170,601,337	$171,537,769	$174,741,141	$180,412,459	$186,136,942	$191,903,483	$197,714,956	$203,573,188
Fund Ratio	128.3%	127.3%	126.6%	126.3%	126.4%	126.9%	127.4%	127.9%	128.3%	128.7%

** The estimated liability shown above includes the liability for open claims and claims incurred but not reported as of December 31, 2024, as well as the liability for new claims incurred by active members and survivors in 2025 and beyond.*

Scenario 3: Contribution rates are increased to 0.506% of payroll beginning in 2026 and then are held level.

Calendar Year	Actual	Projected								
	2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
BOY Reserve Balance	$778,048,729	$790,394,267	$801,035,610	$818,139,831	$833,978,785	$848,486,761	$863,246,483	$878,164,295	$893,141,506	$908,088,995
Premium Contributions	$1,231,526	$3,274,888	$11,960,691	$12,478,874	$13,017,383	$13,576,971	$14,158,419	$14,762,535	$15,390,155	$16,042,146
Miscellaneous Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Investment Income	$54,547,831	$53,746,810	$54,470,421	$55,633,509	$56,710,557	$57,697,100	$58,700,761	$59,715,172	$60,733,622	$61,750,052
Total Revenues	$55,779,357	$57,021,698	$66,431,113	$68,112,383	$69,727,940	$71,274,071	$72,859,180	$74,477,707	$76,123,778	$77,792,198
Insurance Claims	$42,223,159	$45,087,565	$47,951,970	$50,816,376	$53,680,781	$54,939,087	$56,326,330	$57,841,999	$59,471,081	$60,676,121
Administrative Expense	$1,210,660	$1,292,791	$1,374,922	$1,457,052	$1,539,183	$1,575,262	$1,615,039	$1,658,497	$1,705,208	$1,739,760
Total Operating Expenses	$43,433,819	$46,380,355	$49,326,892	$52,273,428	$55,219,964	$56,514,350	$57,941,368	$59,500,496	$61,176,288	$62,415,881
Net Change in Reserve Balance	$12,345,538	$10,641,343	$17,104,221	$15,838,954	$14,507,976	$14,759,721	$14,917,812	$14,977,211	$14,947,489	$15,376,317
EOY Reserve Balance	$790,394,267	$801,035,610	$818,139,831	$833,978,785	$848,486,761	$863,246,483	$878,164,295	$893,141,506	$908,088,995	$923,465,312
Estimated Liability	$615,858,336	$629,368,577	$641,358,786	$651,859,699	$660,864,037	$670,110,854	$679,517,665	$689,002,359	$698,478,848	$708,410,230
Surplus / (Deficit)	$174,535,931	$171,667,032	$176,781,045	$182,119,086	$187,622,724	$193,135,629	$198,646,629	$204,139,147	$209,610,147	$215,055,083
Fund Ratio	128.3%	127.3%	127.6%	127.9%	128.4%	128.8%	129.2%	129.6%	130.0%	130.4%

** The estimated liability shown above includes the liability for open claims and claims incurred but not reported as of December 31, 2024, as well as the liability for new claims incurred by active members and survivors in 2025 and beyond.*

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Scenario 4: Baseline Scenario with a 10% Reduction in Claim Termination Rates

Calendar Year	Actual	Projected								
	2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
BOY Reserve Balance	$778,048,729	$790,394,267	$801,015,952	$809,536,170	$815,817,621	$819,713,877	$822,666,164	$824,478,821	$824,943,716	$823,854,047
Premium Contributions	$1,231,526	$3,274,888	$3,417,340	$3,565,393	$3,719,252	$3,879,135	$4,045,263	$4,217,867	$4,397,187	$4,583,470
Miscellaneous Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Investment Income	$54,547,831	$53,746,810	$54,469,085	$55,048,460	$55,475,598	$55,740,544	$55,941,299	$56,064,560	$56,096,173	$56,022,075
Total Revenues	$55,779,357	$57,021,698	$57,886,425	$58,613,852	$59,194,850	$59,619,678	$59,986,562	$60,282,427	$60,493,360	$60,605,546
Insurance Claims	$42,223,159	$45,106,674	$47,990,190	$50,873,705	$53,757,220	$55,087,863	$56,552,384	$58,150,198	$59,866,483	$61,160,435
Administrative Expense	$1,210,660	$1,293,339	$1,376,017	$1,458,696	$1,541,375	$1,579,528	$1,621,520	$1,667,334	$1,716,545	$1,753,646
Total Operating Expenses	$43,433,819	$46,400,013	$49,366,207	$52,332,401	$55,298,595	$56,667,391	$58,173,905	$59,817,532	$61,583,029	$62,914,082
Net Change in Reserve Balance	$12,345,538	$10,621,685	$8,520,218	$6,281,451	$3,896,255	$2,952,287	$1,812,657	$464,895	-$1,089,669	-$2,308,536
EOY Reserve Balance	$790,394,267	$801,015,952	$809,536,170	$815,817,621	$819,713,877	$822,666,164	$824,478,821	$824,943,716	$823,854,047	$821,545,511
Estimated Liability	$627,663,953	$642,103,369	$655,082,803	$666,634,685	$676,750,713	$687,114,963	$697,640,467	$708,240,482	$718,823,729	$729,850,951
Surplus / (Deficit)	$162,730,314	$158,912,583	$154,453,367	$149,182,936	$142,963,163	$135,551,201	$126,838,354	$116,703,234	$105,030,318	$91,694,560
Fund Ratio	125.9%	124.7%	123.6%	122.4%	121.1%	119.7%	118.2%	116.5%	114.6%	112.6%

** The estimated liability shown above includes the liability for open claims and claims incurred but not reported as of December 31, 2024, as well as the liability for new claims incurred by active members and survivors in 2025 and beyond.*

Appendix A: Plan Description

A summary of the Duty Disability plan provisions is provided below:

<u>Benefit Eligibility</u>: Members must satisfy all 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

<u>Member Benefits</u>: 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. 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

<u>Benefit Increases</u>: 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 1998 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), 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, 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, 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

Appendix B: Valuation Assumptions

Valuation Date: December 31, 2024

Discount Rate: 6.80%, representing the long-term investment return for assets held in the Duty Disability reserve.

Claim Termination Rates: Rates are based on the mortality rates from the 2018 - 2020 Experience Study performed by the actuary for the Wisconsin Retirement System, adjusted for recent trends in Duty Disability claim experience and liability runoff studies. The rates vary by attained age and gender. Annual sample rates are provided below for disabled members and survivors. The claim termination rates include adjustments of 0.50 for disabled members and 0.30 for survivors applied to the base mortality rates from the 2018 - 2020 Experience Study.

Duty Disability Annual Claim Termination Rates					
Disabled Members			Survivors		
Age	Male	Female	Age	Male	Female
25	0.097%	0.061%	25	0.006%	0.004%
30	0.145%	0.105%	30	0.010%	0.007%
35	0.197%	0.164%	35	0.015%	0.009%
40	0.247%	0.220%	40	0.018%	0.012%
45	0.317%	0.291%	45	0.024%	0.016%
50	0.460%	0.426%	50	0.037%	0.026%
55	0.647%	0.574%	55	0.074%	0.069%
60	0.847%	0.688%	60	0.127%	0.106%
65	1.047%	0.756%	65	0.205%	0.150%
70	1.321%	0.947%	70	0.341%	0.241%
75	1.860%	1.441%	75	0.628%	0.462%
80	2.913%	2.408%	80	1.201%	0.923%
85	4.792%	4.108%	85	2.305%	1.804%
90	7.957%	6.684%	90	4.290%	3.407%
95	12.385%	10.453%	95	7.220%	6.058%
100	17.807%	15.922%	100	10.684%	9.553%

Estimated Offsets: We estimated the following offsets to Duty Disability benefits:

Estimated Offset	Assumption
WRS Benefits:	Assume 97% of individuals over age 50 without separation or 40.63 benefits receive a retirement offset, if they had not already received one as of the valuation date. Retirement benefits are estimated as 35% of gross benefit amount. Separation benefits are estimated for individuals under age 50 without 40.63 benefits, based on the probabilities developed in our experience study report. Separation benefits are estimated as 5% of gross benefit amounts.

Social Security:	For those under attained age 62 SSDI is estimated based on the probabilities developed in our experience study report. SSDI benefits are estimated as 42% of the gross benefit amount. After age 62, Social Security Disability/Retirement is assumed to be awarded to 96% of individuals provided they had not already reached that age as of the valuation date. Benefits after age 62 are assumed to be 22% of the gross benefit amount.

Benefit Increases: We assumed annual benefit increases of either 3.20% or 2.10%, 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, 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, or
   - Over age 60 not receiving any regular disability retirement or LTDI

Survivor Benefits: Assumed that 25% of survivors (i.e., spouses/domestic partners) will be eligible to receive monthly benefits upon the death of the disabled member. These benefits are payable to survivors of disabled members who die as a result of the same injury or disease that triggered the Duty Disability benefit.

Assumed that members under age 55 as of the valuation date have 1.6375 eligible dependent children, and that members age 55 and older had no eligible children. Each child was assumed to have up to 10 years of benefits payable with an annual mortality rate of 21.73 per 100,000.

IBNR Factors: We applied the following factors to estimated incurred claims in the five-year lookback period:

Duty Disability IBNR Factors	
Lookback Period	IBNR Factors
First Year	96.66%
Second Year	60.93%
Third Year	53.88%
Fourth Year	42.71%
Fifth Year	12.80%

Appendix C: Contribution Rates

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 a targeted amount based on actuarial projections.

2025 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.

Tier	Contribution Rate as a % of Covered Payroll	Claims as a % of Covered Payroll	Number of Claims
1	0.06%	<=1.5%	1
2	0.12%	> 1.5% but ≤ 3.0%	2
3	0.24%	> 3.0% but ≤ 4.5%	3
4	0.42%	> 4.5% but ≤ 6.0%	4
5	0.67%	> 6.0% but ≤ 7.5%	5
6	0.97%	> 7.5% but ≤ 9.0%	6
7	1.33%	> 9.0% but ≤ 10.5%	7
8	1.60%	Claims > 10.5%	8 or more

Appendix D: Data for Valuation

This appendix contains demographic summaries for Duty Disability open claims as of December 31, 2024. There were 955 disabled members and 59 survivors as of the valuation date. Table D1 shows counts of disabled members and their average net benefits by claim duration. Tables D2 and D3 show the distribution of disabled members and survivors by age and gender. Table D4 shows overall net benefits for disabled members and survivors.

Table D1		
Open Disabled Member Claims as of December 31, 2024		
By Claim Duration		
Claim Duration (Years)	*Count*	*Average Monthly Net Benefit*
1	6	$4,911
2	9	$3,310
3	14	$4,753
4	16	$3,261
5	17	$2,446
6	17	$3,412
7	21	$3,172
8	22	$3,753
9	24	$3,490
10	23	$3,047
11+	786	$3,432
Total	**955**	**$3,433**

Table D2		
Open Disabled Member Claims as of December 31, 2024		
By Attained Age and Gender		
Attained Age	*Male*	*Female*
Under 30	0	0
30-39	15	9
40-49	54	16
50-59	153	56
60-69	220	70
70-79	238	32
80-89	81	6
90+	5	0
Total	**766**	**189**

Table D3		
Open Survivor Claims as of December 31, 2024		
By Attained Age and Gender		
Attained Age	*Male*	*Female*
Under 30	0	0
30-39	0	4
40-49	1	7
50-59	0	12
60-69	1	17
70-79	0	14
80-89	0	3
90+	0	0
Total	**2**	**57**

Table D4			
Open Claims as of December 31, 2024			
Cohort	*Monthly Net Benefit*	*Count*	*Average Monthly Net Benefit*
Members	$3,278,052	955	$3,433
Survivors	$160,833	59	$2,726
Total	**$3,438,885**	**1014**	**$3,391**

Appendix E: Reliance Items

In performing the valuation of the Duty Disability program as of December 31, 2024, we relied, without audit, on certain data and information provided by ETF. To the extent any of the data or other items were 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
- Fund balances, premium contributions, plan expenses, payroll, and other financial information provided by ETF
- Plan descriptions provided by ETF
- Discussions with ETF
- The 2018-2020 Experience Study performed by the actuary for the Wisconsin Retirement System

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