Actuarial Valuation of
The Long-Term Disability Insurance Plan

As of December 31, 2017

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 10, 2018

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

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

milliman.com

April 10, 2018

Jim Guidry
Director
Benefit Services Bureau
Wisconsin Department of Employee Trust Funds
P.O. Box 7931
Madison, WI 53707

RE: Actuarial Valuation of Long-Term Disability Insurance Plan as of 12/31/2017

Dear Jim:

Thank you for asking Milliman to perform an actuarial valuation of the Long-Term Disability Insurance (LTDI) Plan as of December 31, 2017. The results from our analyses are provided in this report, along with documentation of the valuation methods and assumptions.

The State of Wisconsin Department of Employee Trust Funds (ETF) has determined that the LTDI 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 plan. Ultimately it is the responsibility of ETF and its auditors to determine the applicable accounting standards for the plan.

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. The annual benefit increase rate for the LTDI plan was also specified by ETF. We have performed no independent assessment of the reasonableness of these assumptions. ETF is solely responsible for establishing these assumptions and communicating any changes to Milliman for the purpose of this valuation.

This 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, 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, 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 LTDI plan as of 12/31/2017 are summarized in Table 1.1 below:

Table 1.1
Actuarial Liabilities for the LTDI Plan as of 12/31/2017

Liability Component	Basic Benefits	Retirement Contributions	Total Liability
Open Claims	$265,810,352	$45,319,538	$311,129,891
IBNR Claims	$21,189,595	$3,612,736	$24,802,331
Loss Adjustment Expense	$16,102,841	$0	$16,102,841
Total	$303,102,788	$48,932,274	$352,035,063

The values above include estimated liabilities for monthly LTDI benefit payments (Basic Benefits) and for supplemental contributions to the retirement accounts of disabled participants (Retirement Contributions). The retirement contributions are a supplemental benefit provided by the LTDI plan, equal to 7% of final average salary and contributed by WRS into the participant's retirement account.

We have analyzed the funding status of the LTDI plan as of 12/31/2017, involving only the basic benefit and not the supplemental retirement contribution benefit (since the LTDI fund does not include contributions or disbursements related to the supplemental benefit). The LTDI plan was in a surplus position as of 12/31/2017, and had been in deficit over the past few years, as shown below.

Table 1.2
LTDI Fund Balances: Basic Benefit Only

Balance Sheet Component	Valuation Date		
	12/31/2015	12/31/2016	12/31/2017
Beginning Balance	$231,066,095	$239,163,895	$273,128,794
Closing Adjustments	($6,972,445)	($7,526,429)	($4,240,351)
Adjusted Beginning Balance	$224,093,650	$231,637,466	$268,888,443
Plus: Premium Contributions	$43,296,424	$71,271,030	$58,561,090
Plus: Investment Earnings	$14,368,484	$15,185,788	$22,358,020
Less: Insurance Claims	$40,110,299	$42,012,609	$43,265,328
Less: Administrative Expenses	$2,480,455	$2,952,882	$2,796,984
Ending Balance	$239,167,803	$273,128,794	$303,745,241
Actuarial Liability	$277,673,599	$295,336,018	$303,102,788
Surplus / (Deficit)	($38,505,795)	($22,207,224)	$642,452

Further discussions of the estimated liabilities and results from the funding analysis are provided in the remainder of this report, including detailed documentation of the valuation methods and assumptions, comparisons to prior year results, and an assessment of the adequacy of the liabilities.

Section II: Actuarial Valuation

We calculated actuarial liabilities for the LTDI Plan based on the following components:

- Open Claims: The present value of expected 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 present value of expected 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 present value of expected future expenses related to the ongoing management and payment of LTDI claims

The valuation also includes a calculation of the liability for retirement contributions. These contributions are a supplemental benefit provided by the LTDI plan. The supplemental benefit is 7% of final average salary, contributed by WRS into the participant's retirement account.

The following tables compare the 12/31/2017 and 12/31/2016 liabilities for the LTDI plan:

Table 2.1a
Actuarial Liabilities for the LTDI Plan as of 12/31/2017

Liability Component	Basic Benefit	Retirement Contribution	Total Liability Amount
Open Claims	$265,810,352	$45,319,538	$311,129,891
IBNR Claims	$21,189,595	$3,612,736	$24,802,331
Loss Adjustment Expense	$16,102,841	$0	$16,102,841
Total	$303,102,788	$48,932,274	$352,035,063

Table 2.1b
Actuarial Liabilities for the LTDI Plan as of 12/31/2016

Liability Component	Basic Benefit	Retirement Contribution	Total Liability Amount
Open Claims	$258,167,166	$44,078,236	$302,245,402
IBNR Claims	$21,466,969	$3,665,168	$25,132,138
Loss Adjustment Expense	$15,701,882	$0	$15,701,882
Total	$295,336,018	$47,743,404	$343,079,422

The estimated liability for the LTDI program increased by approximately 3% since last year, from $343 million as of 12/31/2016 to $352 million as of 12/31/2017. The increase was driven by several different factors including a 1% increase in the number of open claims from 2,378 claims as of 12/31/2016 to 2,400 as of 12/31/2017, and a 2% increase in the average monthly benefit amount from $1,409 to $1,439.

A discussion of the calculation methods and assumptions is provided below for each of the different liability components.

Open Claims

The LTDI plan is now closed to new claims, effective 1/1/2018. Participants who are not currently receiving benefits will be covered under Section 40.63, the disability benefit within the WRS retirement plan. Therefore, the LTDI liability is expected to decrease over time because no new LTDI claims will be approved for disabilities beginning 1/1/2018 and later, and the existing claim inventory will shrink as claims terminate due to recovery, death, or reaching the maximum benefit period.

The assumptions used to calculate LTDI liabilities as of 12/31/2017 were the same as the assumptions used in last year's valuation. These include claim termination rate assumptions and interest rate assumptions. The claim termination rate assumptions were derived from historical LTDI claim experience. The 7.2% interest assumption was specified by ETF.

To evaluate the adequacy of the liability for open claims, we performed a retrospective runoff test. We calculated the liabilities at prior valuation dates using current valuation assumptions, and tested whether the liabilities provided sufficient funding for emerging claim costs. The emerging costs were 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. The study used LTDI experience from 12/31/2014 through 12/31/2017. The results, shown below, represent three mutually distinct 12-month studies that were combined.

Table 2.2
Runout Study for LTDI Plan: Basic Benefits
Study Period: 12/31/2014 – 12/31/2017

Claim Duration	Average Annual Margin
1 – 12 months	-0.8%
13 – 24 months	1.6%
25 – 36 months	1.8%
37 – 48 months	1.3%
49 – 60 months	1.4%
61 + months	1.4%
Total	1.3%

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. For this type of plan, we typically target a positive overall margin of 1% to 5%, with reasonably consistent patterns by claim duration. The preceding table indicates that the LTDI plan meets that objective.

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 claims that have not been reported as of the valuation date. For example, 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 computed the IBNR liability by estimating the total cost of incurred claims for 2017, based on an analysis of recent claim costs, and by analyzing the proportion of claims that are typically unreported at each year end, using historical claim data. We have assumed that 55% of LTDI claims incurred in 2017 were unreported as of 12/31/2017. This assumption was derived from an analysis of historical LTDI reporting lags.

Our IBNR calculation for the LTDI plan is summarized below:

Table 2.3 Development of IBNR Liability for the LTDI Plan: Basic Benefits	
Estimated Incurred Claims	$38,526,536
Estimated Proportion of Unreported Claims	55.0%
IBNR Liability as of 12/31/2017	$21,189,595

The IBNR liability for supplemental retirement contribution benefits was developed using the same ratio of IBNR to open claim liabilities as for basic benefits. Note that the IBNR liability is expected to be eliminated in the near future, since the LTDI program is closed to new claims.

Loss Adjustment Expense

In 2018, ETF began performing some of the administrative functions for the LTDI program. These functions are being transitioned from Aetna, the LTDI claim administrator for the past several years. ETF is planning to transition all of the functions by year-end 2018.

The annual fees that ETF paid Aetna in prior years were approximately equal to 6% of estimated annual incurred claims. Because we do not yet have a good sense for the expenses incurred by ETF to administer claims, the loss adjustment expense liability was calculated based on prior year expense levels (i.e. roughly 6% of annual incurred claims). In particular, the liability was calculated as 7% of the IBNR liability and 5.5% of the open claim 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 LTDI plan is summarized below:

Table 2.4 Development of Loss Adjustment Expense Liability for the LTDI Plan as of 12/31/2017			
Component	Claim Liability	Expense Factor	LAE Liability
Open Claims	$265,810,352	5.5%	$14,619,569
IBNR	$21,189,595	7.0%	$1,483,272
Total	$286,999,947	5.6%	$16,102,841

No separate loss adjustment expense liability is held for supplemental retirement contribution benefits because no additional expenses are incurred beyond what is needed to adjudicate the basic benefits.

Section III: Discussion of LTDI Funding Levels

We performed a funding analysis on the LTDI plan, involving only the basic benefit and not the supplemental retirement contribution benefit (since the LTDI fund does not include contributions or disbursements related to the supplemental benefit). The following table shows the fund balances as of the three most recent fiscal year-ends.

Table 3.1
LTDI Fund Balances: Basic Benefits Only

Balance Sheet Component	Valuation Date		
	12/31/2015	12/31/2016	12/31/2017
Beginning Balance	$231,066,095	$239,163,895	$273,128,794
Closing Adjustments	($6,972,445)	($7,526,429)	($4,240,351)
Adjusted Beginning Balance	$224,093,650	$231,637,466	$268,888,443
Plus: Premium Contributions	$43,296,424	$71,271,030	$58,561,090
Plus: Investment Earnings	$14,368,484	$15,185,788	$22,358,020
Less: Insurance Claims	$40,110,299	$42,012,609	$43,265,328
Less: Administrative Expenses	$2,480,455	$2,952,882	$2,796,984
Ending Balance	$239,167,803	$273,128,794	$303,745,241
Actuarial Liability	$277,673,599	$295,336,018	$303,102,788
Surplus / (Deficit)	($38,505,795)	($22,207,224)	$642,452

The LTDI plan was in a surplus position on 12/31/2017.

We have prepared a financial projection for the future funding status of the LTDI plan. The projection reflects actual results for 2017 and projected values in 2018 and beyond. The key elements of this projection included the following:

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

- LTDI Payroll: Current payroll was provided to us by ETF. Future payroll is assumed to increase 3.20% per year, which was specified by ETF and is consistent with the assumptions used by ETF for retirement fund projections.

- Premium Contributions: The contribution rate for 2018 is 0.06%. No further contributions were assumed beyond 2018.

- Investment Income: Investment income is projected using the valuation assumption of 7.2%, specified by ETF.

- Insurance Claims: Annual paid insurance claims are the sum of projected payments on open and IBNR claims as of 12/31/2017. Since LTDI is now a closed block, there are no expected future claims.

- Administrative Expenses: Administrative expenses are modeled as a constant percentage of paid insurance claims, based on actual expenses reported in 2017.

- 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 liability on claims that were either open or incurred but not reported as of 12/31/2017.

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

LTDI financial projections are provided below for the baseline scenario (based on the assumptions and methods described above) and for a scenario that assumes a lower investment earnings rate of 4%. The baseline results show the surplus growing in future years, as LTDI claims run off. The results from the sensitivity test indicate that the plan could return to a deficit position if investment earnings are lower than expected and no future contributions are made to the plan.

Please note that the 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.

LTDI Fund Balance Analysis as of December 31, 2017

Baseline: Contributions of 0.06% in 2018 and no further contributions.

Calendar Year	2017	2018	2019	2020	2021	2022	2023
BOY Fund Balance	$268,888,443	$303,745,241	$288,546,800	$265,738,659	$244,308,054	$224,046,494	$204,971,977
Premium Contributions	$58,561,090	$8,633,578	$0	$0	$0	$0	$0
Investment Income	$22,358,020	$21,869,657	$20,775,370	$19,133,183	$17,590,180	$16,131,348	$14,757,982
Total Revenues	$80,919,110	$30,503,235	$20,775,370	$19,133,183	$17,590,180	$16,131,348	$14,757,982
Insurance Claims	$43,265,328	$42,926,590	$40,937,043	$38,100,684	$35,553,315	$33,068,103	$30,379,641
Carrier Administrative Expenses	$2,170,359	$2,153,367	$2,053,564	$1,911,281	$1,783,495	$1,658,826	$1,523,963
Administrative Expenses	$626,625	$621,719	$592,904	$551,824	$514,930	$478,935	$439,998
Total Operating Expenses	$46,062,312	$45,701,676	$43,583,510	$40,563,789	$37,851,739	$35,205,865	$32,343,602
Net Change in Fund Balance	$34,856,798	($15,198,441)	($22,808,141)	($21,430,605)	($20,261,559)	($19,074,517)	($17,585,619)
EOY Fund Balance	$303,745,241	$288,546,800	$265,738,659	$244,308,054	$224,046,494	$204,971,977	$187,386,358
Incurred Claim Liability	$303,102,788	$277,562,589	$252,921,785	$229,548,696	$207,196,034	$186,006,809	$166,172,917
Surplus / (Deficit)	**$642,452**	**$10,984,211**	**$12,816,874**	**$14,759,358**	**$16,850,460**	**$18,965,168**	**$21,213,440**

LTDI Fund Balance Analysis as of December 31, 2017

Sensitivity Test: Contributions of 0.06% in 2018 and no further contributions. Investment income rate of 4%.

Calendar Year	2017	2018	2019	2020	2021	2022	2023
BOY Fund Balance	$268,888,443	$303,745,241	$278,826,952	$246,396,520	$215,688,592	$186,464,396	$158,717,107
Premium Contributions	$58,561,090	$8,633,578	$0	$0	$0	$0	$0
Investment Income	$22,358,020	$12,149,810	$11,153,078	$9,855,861	$8,627,544	$7,458,576	$6,348,684
Total Revenues	$80,919,110	$20,783,387	$11,153,078	$9,855,861	$8,627,544	$7,458,576	$6,348,684
Insurance Claims	$43,265,328	$42,926,590	$40,937,043	$38,100,684	$35,553,315	$33,068,103	$30,379,641
Carrier Administrative Expenses	$2,170,359	$2,153,367	$2,053,564	$1,911,281	$1,783,495	$1,658,826	$1,523,963
Administrative Expenses	$626,625	$621,719	$592,904	$551,824	$514,930	$478,935	$439,998
Total Operating Expenses	$46,062,312	$45,701,676	$43,583,510	$40,563,789	$37,851,739	$35,205,865	$32,343,602
Net Change in Fund Balance	$34,856,798	($24,918,289)	($32,430,432)	($30,707,928)	($29,224,195)	($27,747,289)	($25,994,917)
EOY Fund Balance	$303,745,241	$278,826,952	$246,396,520	$215,688,592	$186,464,396	$158,717,107	$132,722,190
Incurred Claim Liability	$303,102,788	$277,562,589	$252,921,785	$229,548,696	$207,196,034	$186,006,809	$166,172,917
Surplus / (Deficit)	**$642,452**	**$1,264,363**	**($6,525,265)**	**($13,860,104)**	**($20,731,638)**	**($27,289,702)**	**($33,450,727)**

Appendix A: Plan Description

The LTDI Plan provides long-term disability benefits as summarized below. This is a high-level plan summary intended to provide a context for understanding the valuation analysis. It is not a comprehensive plan description:

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

Age on Benefit Effective Date	Maximum Benefit Period
Before Age 61	End of the month in which you reach age 65
Age 61 or 62	End of the month in which you reach age 66
Age 63 or 64	End of the month in which you reach age 67
Age 65 or 66	End of the month in which you reach age 68
Age 67	End of the month in which you reach age 69
Age 68	End of the month in which you reach age 70
Age 69 and Older	12 months after LTDI benefit effective date

- Benefit Amount: The amount of the benefit is 40% or 50% of the participant's average salary based on his or her three highest years of earnings. The benefit is 50% of the participant's average salary if he or she is not eligible for Social Security benefits. Otherwise, the benefit is 40% of the average salary.

- Supplemental Retirement Contribution Benefit: An additional 7% of final average salary is contributed to the participant's WRS retirement account.

- Benefit Increases: The basic benefit amount is adjusted every year by the same Core Fund dividend percentage as monthly retirement annuities.

- Benefit Offsets: The LTDI plan benefit is offset by WRS retirement benefits. It is not offset for Social Security benefits or other sources.

- Definition of Disability: A participant is disabled if he or she is unable to engage in any substantial gainful activity by reason of a medically determinable impairment, whether physical or mental, which can reasonably be expected to result in death or to be permanent or of long-continued and indefinite duration.

Appendix B: Data for Valuation

The following tables show the distribution of open claims as of 12/31/2017 by year of disability and gender, and by age at disability and gender.

Number of Open LTDI Claims as of 12/31/2017 By Year of Disability and Gender			
Disability Year	Male	Female	Total
2001 and earlier	17	53	70
2002	9	19	28
2003	13	26	39
2004	18	28	46
2005	15	58	73
2006	21	68	89
2007	33	74	107
2008	38	68	106
2009	37	81	118
2010	44	101	145
2011	55	138	193
2012	82	157	239
2013	86	166	252
2014	94	168	262
2015	96	143	239
2016	106	167	273
2017	42	79	121
Total	806	1,594	2,400

Number of Open LTDI Claims as of 12/31/2017 By Age at Disability and Gender			
Age at Disability	Male	Female	Total
< 20	0	0	0
20-24	2	1	3
25-29	9	17	26
30-34	25	64	89
35-39	44	152	196
40-44	105	235	340
45-49	150	288	438
50-54	216	410	626
55-59	187	325	512
60-64	59	95	154
65+	9	7	16
Total	806	1,594	2,400

The following tables show the distribution of total net monthly benefit amounts as of 12/31/2017 by year of disability and gender, and by age at disability and gender.

Total Net Monthly Benefit Amounts as of 12/31/2017 By Year of Disability and Gender			
Disability Year	Male	Female	Total
2001 and earlier	$18,171	$57,532	$75,703
2002	$10,409	$21,212	$31,621
2003	$15,934	$27,414	$43,347
2004	$19,313	$27,058	$46,371
2005	$17,978	$62,981	$80,959
2006	$26,883	$82,678	$109,561
2007	$49,536	$93,287	$142,823
2008	$57,521	$82,273	$139,795
2009	$63,390	$116,235	$179,626
2010	$66,082	$148,179	$214,261
2011	$94,050	$196,663	$290,713
2012	$140,159	$239,379	$379,539
2013	$142,990	$256,164	$399,154
2014	$144,954	$250,765	$395,719
2015	$152,154	$213,596	$365,750
2016	$150,082	$225,619	$375,701
2017	$69,482	$112,991	$182,473
Total	$1,239,088	$2,214,027	$3,453,116

Total Net Monthly Benefit Amounts as of 12/31/2017 By Age at Disability and Gender			
Age at Disability	Male	Female	Total
< 20	$0	$0	$0
20-24	$1,875	$889	$2,765
25-29	$12,058	$22,398	$34,456
30-34	$31,481	$82,148	$113,629
35-39	$64,885	$208,925	$273,810
40-44	$177,690	$329,910	$507,600
45-49	$241,712	$408,933	$650,645
50-54	$336,974	$604,299	$941,273
55-59	$303,967	$448,860	$752,828
60-64	$63,101	$103,783	$166,884
65+	$5,345	$3,882	$9,227
Total	$1,239,088	$2,214,027	$3,453,116

Appendix C: Actuarial Methods and Assumptions

- Valuation Date: 12/31/2017

- Discount Rate: 7.20%, specified by ETF

- Annual Benefit Increases: 2.10%, specified by ETF.

- Claim Termination Rates: Claim termination rate assumptions were derived from the 1987 Commissioner's Group Disability Table (CGDT). The CGDT rates were multiplied by a factor of 0.25 for the first 24 months of disability, and by a factor of 0.50 for all subsequent months.

- Incurred But Not Reported Claims: 55% of the estimated incurred claims for the current year, as determined from analyses of historical LTDI claims experience.

- Loss Adjustment Expenses: 5.5% of the liability for open claims plus 7.0% of the liability for IBNR claims.

- Overpayment Credit: 75% of the overpayment balance reported by ETF as of 12/31/2017

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