STATE OF WISCONSIN
Department of Employee Trust Funds
Robert J. Conlin
SECRETARY

Wisconsin Department
of Employee Trust Funds
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etf.wi.gov

Correspondence Memorandum

Date: July 30, 2019

To: Group Insurance Board

From: Cindy Klimke-Armatoski, Chief Trust Finance Officer
Division of Trust Finance

Subject: Audit of State and Local Income Continuation Insurance (ICI) Actuarial Valuations

The Department of Employee Trust Funds (ETF) requests the Group Insurance Board (Board) accept the audit reports of the State and Local ICI actuarial valuation as of December 31, 2018 and direct ETF's consulting actuary to implement appropriate recommendations.

Segal Consulting completed audits of the State and Local ICI actuarial valuations as of December 31, 2018. An actuarial audit is a valuable method of monitoring the quality of actuarial services performed on behalf of benefit plans. ETF contracted with Segal Consulting to perform a full-scope audit, which includes replicating the original actuarial valuation. This is based on the same census data, assumptions, and actuarial methods used by the plans consulting actuary. In addition, the reviewing actuary examines the consulting actuary's methods and assumptions for reasonableness and consistency. The Government Finance Officers Association recommends actuarial audits at least once every five years.

Attached are two reports from Segal Consulting communicating the results of the audits as well as responses from Milliman, the ICI plan's consulting actuary who performed the original valuations. The original valuations were presented to the Board at its May 15, 2019 meeting. Segal Consulting found the valuations as of December 31, 2018 accurately reflect the results of the ICI State and Local plans and offered some minor recommendations.

Staff from Segal Consulting will be at the Board meeting to address any questions. Staff from Milliman will be available by phone during the meeting.

Attachment A: Actuarial Audit for the Actuarial Valuation of the State Income Continuation Insurance Plan as of December 31, 2018

Reviewed and approved by Robert J. Conlin, Secretary

Electronically Signed 8/6/19

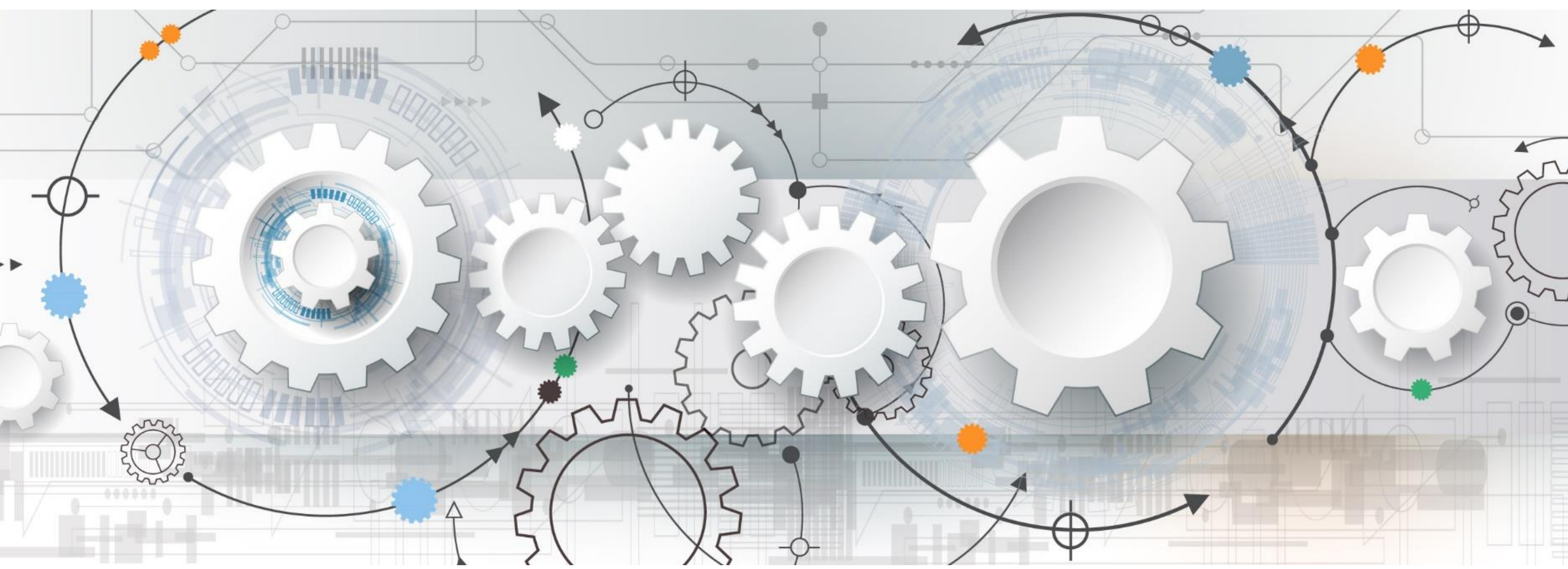
Board	Mtg Date	Item #
GIB	8.21.19	6

Attachment B: Milliman Response to Segal Audit Report on State ICI Valuation
Attachment C: Actuarial Audit for the Actuarial Valuation of the Local Income Continuation Insurance Plan as of December 31, 2018
Attachment D: Milliman Response to Segal Audit Report on Local ICI Valuation

Attachment A

Actuarial Audit for the Actuarial Valuation of the State Income Continuation Insurance Plan As of December 31, 2018 for the Wisconsin Department of Employee Trust Funds

July 30, 2019



Segal Consulting

Segal Consulting

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July 30, 2019

Cindy Klimke
Wisconsin Department of Employee Trust Funds
4822 Madison Yards Way
Madison, WI 53705-9100

RE: Audit of the State Income Continuation Insurance (ICI) Valuation for December 31, 2018

Dear Cindy:

This report will discuss the accuracy of results presented in Milliman's April 24, 2019 report labelled, "Actuarial Valuation of the State Income Continuation Insurance Plan as of December 31, 2018 for the State of Wisconsin Department of Employee Trust Funds" (Milliman Valuation).

The valuation reports benefit liabilities of $90.5 million, and an asset value of $71 million. Segal's reproduction of these results produced liabilities of $91.5 million.

Overall, we believe that the Milliman Valuation report following provisions of GASB 10 (Accounting and Financial Reporting for Risk Financing and Related Insurance Issues) accurately reflects the accounting results for the State ICI Plan for the fiscal year ending December 31, 2018.

We appreciate the opportunity to provide this review for you, and hope that you have found it helpful. Please let us know if we can be of further assistance.

Sincerely,

David A. Berger

David A. Berger, FCA, ASA, MAAA, EA
Vice President and Consulting Actuary

Andrew Perrotta

Andrew Perrotta
Actuarial Consultant

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Overall, we believe that the Milliman Valuation report following provisions of GASB 10 (Accounting and Financial Reporting for Risk Financing and Related Insurance Issues) accurately reflects the accounting results for the Wisconsin State ICI Plan for the fiscal year ending December 31, 2018.

The primary assumptions are the discount rate, the probability of payment in a given month, and the associated assumed payment in that month for each individual. The demographic (e.g., other than the discount rate) assumptions appear to be reasonable in the aggregate, given the relatively narrow margin (1.1%) of the expected claims paid over the actual claims paid for the period 2016 – 2018.

We were able to duplicate the data summaries and the benefits detailed in the Milliman Valuation.

We recommend that:

- The base Claims Termination table should be updated in the next valuation.
- Milliman should continue to annually review the assumptions pertaining to the rate of continued coverage.
- Milliman should continue to annually review the assumptions pertaining to the offsets to the gross benefits (Social Security, retirement plan, etc.).
- The source of several of the assumptions should be documented by Milliman every three years, via email or memorandum. These include the Social Security offset assumptions, the Overpayment Credit assumption, and the average administrative fee for IBNR.
- The State should review whether the surpluses created by the Funding Projections produce the desired results and amend the scenarios, as needed.

Certification

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 herein.

David A. Berger, FCA, ASA, MAAA, EA
Vice President and Consulting Actuary

Methodology of Audit

The scope of our audit was to perform a full review. This entails the following:

- Collecting source data from the State for claims and asset information.
- Matching the participant counts by age band and gender reported by Milliman.
- Matching the benefits information reported by Milliman.
- Incorporating the valuation assumptions in our valuation system.
- Reviewing the reasonableness of those assumptions.
- Matching the assets displayed in the Milliman Valuation to the information received from the State.
- Matching the benefit liabilities (within tolerances) displayed in the valuation report.
- Commenting on the overall assumptions, methods, plan provision summaries, and report accuracy.

Analysis of Data

The GASB 10 methodology is to only reflect participants currently receiving benefits in the valuation. The data provided by the State was filtered to include only Open and Pending Claims, and for the State ICI Plan. The data summary below matches the data table shown in the Milliman Valuation report.

The benefit amounts used in the valuation, including a breakdown of benefit offsets, were obtained directly from Milliman. The monthly benefits in total are $3,000 higher than in the Milliman Valuation.

Participant Counts			
Year of Disability	Male	Female	Total
<2002	25	69	94
2002	4	11	15
2003	4	22	26
2004	8	23	31
2005	8	28	36
2006	17	23	40
2007	17	22	39
2008	15	25	40
2009	15	31	46
2010	16	36	52
2011	15	35	50
2012	25	45	70
2013	27	50	77
2014	22	41	63
2015	23	57	80
2016	31	60	91
2017	31	70	101
2018	54	135	189
Total	357	783	1,140

Participant Counts			
Age at Disability	Male	Female	Total
<25	4	16	20
25-29	7	37	44
30-34	24	53	77
35-39	49	125	174
40-44	57	149	206
45-49	79	134	213
50-54	69	135	204
55-59	43	98	141
60-64	22	34	56
65-68	3	2	5
Total	357	783	1,140

Benefit Amounts			
Age at Disability	M	F	Total
<25	3,165	20,054	23,219
25-29	8,973	62,630	71,603
30-34	36,650	77,353	114,003
35-39	70,498	178,433	248,931
40-44	86,618	202,479	289,097
45-49	106,377	180,492	286,869
50-54	70,179	157,630	227,809
55-59	57,315	150,022	207,337
60-64	34,850	70,503	105,354
65-68	8,149	3,731	11,880
Total	482,773	1,103,329	1,586,102

Analysis of Actuarial Assumptions and Methods

The primary assumptions are the discount rate, the probability of payment in a given month, and the assumed payment for each individual. To gauge the accuracy of these results in total, the estimated benefits to be paid in the upcoming year are compared to the actual benefits paid. Milliman's Valuation details the variance as 1.1% (Table 2.2, page 9) during 2016 - 2018 and 2.6% for 2014 – 2017 (2017 report, page 9). These variances overall are well within our expected tolerances, indicating the demographic (e.g., other than the discount rate) assumptions in aggregate produce a true expectation of future experience.

Table 2.2 from Milliman's 2018 Valuation Runout Study for the ICI Plans 2016 - 2018	
Claim Duration	**Average Annual Margin**
1 - 12 months	-0.2%
13 -24 months	-0.7%
25 - 36 months	0.7%
37 - 48 months	13.9%
49 - 60 months	0.7%
61+ months	1.3%
Total	**1.1%**

The "Average Annual Margin" for months 37 – 48 appears to have a greater margin than the other entries in the table, possibly suggesting an adjustment be made to the Claims Termination table (though this could be the result of a single, large claim).

The Valuation Date is December 31, 2018.

Discount Rate

The discount rate is 7.00%.

The Plan is funded, and the expected rate of return used for the Pension Plan is used as the discount rate. The assets by investment class are not disclosed in the valuation. Our understanding is that the assets in this Trust are invested in the same investments and asset mix as the pension plan.

Claim Termination Rates

Claim Termination Rates determine the probability of future payment. They incorporate the chance of recovery, the probability of death, and any other reason payments might cease. The table used is the 1987 CGDT table, multiplied by a set of factors that result in the following probability of payment at each period subsequent to the valuation date.

Probability of Receiving the Net Benefit in Each Year						
Claim Duration (years)	Claim Duration as of the Valuation Date (years)					
	0	0.5	1	3	5	10
0	100%	N/A	N/A	N/A	N/A	N/A
0.5	48%	100%	N/A	N/A	N/A	N/A
1	23%	48%	100%	N/A	N/A	N/A
1.5	16%	33%	67%	N/A	N/A	N/A
3	9%	18%	38%	100%	N/A	N/A
5	7%	14%	29%	76%	100%	N/A
10	5%	11%	22%	58%	76%	100%
15	4%	9%	19%	49%	65%	86%
20	4%	8%	16%	42%	55%	73%

Future Offset Amount and Approval Rates

Many of the participants in the data have been previously awarded Social Security Benefits. For those in the first five years of payments, an assumption is made that they will eventually be awarded a benefit equal to 44% of the gross benefit amount.

Probability of Receiving a Social Security Disability Benefit:	
Claim Duration	Probability
1 - 12 months	69%
13 -24 months	45%
25 - 36 months	17%
37 - 48 months	8%
49 - 60 months	5%
61+ months	0%

Incurred But Not Reported Claims (IBNR)

Incurred But Not Reported Claims are assumed to be 25% of the estimated incurred claims for the current year, based on analyses of historical State ICI claims experience. The Loss Adjustment for these claims includes the first year cost of $800 per claim, then an average administrative fee ($506) times the number of assumed claims (263).

The $506 is an estimate, but we were not able to reproduce this figure.

Loss Adjustment Expenses

Loss Adjustment Expenses are assumed claim administration fees, characterized as follows:

Assumed Claim Administration Fee	
Component	Fee
New Claim Fee	$800 per new claim
Monthly fee, first year	$160 per month
Monthly fee, second year	$140 per month
Monthly fee, years 3 – 5	$75 per month
Monthly fee, years 6+	$50 per month

Overpayment Credits

The Overpayment Credit is attributable to Social Security awards that are backdated. The assumption is that 75% of the overpayment balance reported by ETF as of the Valuation Date is expected to be repaid by participants.

Suggested Changes to and Documentation of Assumptions

The base table for the Claims Termination rates is out-of-date, and should be replaced by a more recent table.

The source of several of the assumptions should be documented by Milliman, via email or memorandum. These include the Social Security offset assumptions, the Overpayment Credit assumption, and the average administrative fee for IBNR.

Plan Design

Segal used the description on page 20 of the Milliman Valuation as the basis for the Plan Design.

The basic benefit design is a Standard gross benefit, less offsets (either actual or assumed). Standard benefits after the first year include a $75 increase for medical benefits. There is also a Supplemental Benefit. Most benefits cease at age 65, but for participants that become disabled after age 62 and before age 70 there is a graduated schedule that provides for some coverage, but not beyond age 70.

The monthly gross benefit amounts are provided in the participant data. The Standard Benefit is up to 75% of a participant's average monthly earnings, capped at $4,000 per month.

The offsets are provided in the participant data for some participants. Offsets include amounts for Social Security, unemployment compensation, Worker's Compensation, WRS benefits, work earnings, and Duty Disability benefits. If the participant data does not have an offset, and the benefits are in the first five years of payments, then an offset is estimated and a probability of the offset reducing the payment is applied.

The Supplemental Benefit data is provided in the participant data. Supplemental Coverage is available to participants whose annual salary exceeds $64,000, and provides an additional benefit up to $3,500 per month.

There is an add-on benefit of $75 per month, payable after the first year of disability, to help cover medical expenses. The $75 benefit is in the monthly gross benefit data for participants that became disabled prior to 2018.

The benefits are not indexed.

Accuracy of Results

The results reported in Table 1.1 of the Milliman Valuation are as follows:

Actuarial Liabilities for the State ICI Plan as of December 31, 2018 Milliman Valuation Results				
Liability Component	Standard Benefit	Supplemental Benefit	$75 Add-on[1]	Total Liability Amount
Open Claims	$79,583,755[2]	$1,642,364	$296,911	$81,523,030
IBNR Claims	4,820,291	99,476	17,984	4,937,750
Loss Adjustment Expense	3,991,204	82,366	14,890	4,088,460
Total	$88,395,250	$1,824,206	$329,785	$90,549,241

Actuarial Liabilities for the State ICI Plan as of December 31, 2018 Segal Valuation Results				
Liability Component	Standard Benefit	Supplemental Benefit	$75 Add-on	Total Liability Amount
Open Claims	$80,320,565	$1,789,687	$297,692	$82,407,944
IBNR Claims	4,812,678	107,235	17,837	$4,937,750
Loss Adjustment Expense	4,043,058	90,087	14,985	$4,148,130
Total	$89,176,301	$1,987,009	$330,514	$91,493,824
Ratio of Milliman Total Results to Segal Results	**99.1%**	**91.8%**	**99.8%**	**99.0%**

The results reflect a reduction in the Actuarial Liabilities for the Overpayment Credit of approximately $2.2 million in both the Milliman Valuation and Segal's results.

Funding Projections

The State has been less than 100% funded for several years, and asked Milliman to prepare results on a couple of different funding policies and two plan designs (current and redesigned).

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1 For participants that became disabled in 2018. For other participants, the $75 add-on is included in the Standard Benefit.

2 The offset for the overpayments are allocated .

We did not try to duplicate the Actuarial Liability or the projected Insurance Claims in these projections. Given the GASB 10 methodology does not include a liability for active employees, we find using the percentage of payroll estimation method would likely be the method for estimating new claims that we would use.

Based on the difference in the Insurance Claims assumptions (0.65% of payroll in the current plan to 0.26% of payroll in the revised plan), we would expect a greater difference in the Insurance Claims by 2027 than the 4.4% difference in the results under the Baseline Scenario (redesigned plan) and Scenario 2 (continuance of the current plan).

The surpluses created by these projections are in two scenarios in excess of 150% funded by 2027.

Projected Funding Results in Milliman Valuation				
$ millions	**Actuarial Liability**	**Assets**	**Surplus / (Deficit)**	**Funded Ratio**
December 31, 2018	$90.5	$71.5	($19.0)	79%
December 31, 2022				
Redesigned Plan, Increase rates by 20% in 2019 and 2020	$114.6	$120.0	$5.4	105%
Redesigned Plan, Increase rates by 20% in 2019 and 10% in 2020	114.6	116.1	1.5	101%
Current Plan, Increase rates by 20% in 2019 and 2020	127.4	161.8	34.4	127%
Current Plan, Increase rates by 20% in 2019 and 10% in 2020	127.4	150.5	23.1	118%
December 31, 2027				
Redesigned Plan, Increase rates by 20% in 2019 and 2020	$76.3	$105.6	$29.3	138%
Redesigned Plan, Increase rates by 20% in 2019 and 10% in 2020	76.3	100.1	23.8	131%
Current Plan, Increase rates by 20% in 2019 and 2020	163.6	311.8	148.2	191%
Current Plan, Increase rates by 20% in 2019 and 10% in 2020	163.6	273.6	110.0	167%

Plan Assets

The Trust values appear to be reasonable based on the prior year information. The State provided us the asset detail, and it matched the detail in the Milliman Valuation. We did not perform any further audit of these results.

Conclusion

The valuation reports benefit liabilities of $90.5 million, and an asset value of $71 million. Segal's reproduction of these results produced liabilities of $91.5 million. This would typically be considered an accepted tolerance level for an Income Continuance Insurance plan.

Overall, we believe that the Milliman Valuation report following provisions of GASB 10 (Accounting and Financial Reporting for Risk Financing and Related Insurance Issues) accurately reflects the accounting results for the State ICI Plan for the fiscal year ending December 31, 2018.

The primary assumptions are the discount rate, the probability of payment in a given month, and the associated assumed payment in that month for each individual. These assumptions appear to be reasonable in the aggregate, given the relatively narrow margin (1.1%) of the expected claims paid over the actual claims paid for the period 2016 – 2018.

We recommend that:

- The base Claims Termination table should be updated in the next valuation.
- Milliman should continue to annually review the assumptions pertaining to the rate of continued coverage.
- Milliman should continue to annually review the assumptions pertaining to the offsets to the gross benefits (Social Security, retirement plan, etc.).
- The source of several of the assumptions should be documented by Milliman every three years, via email or memorandum. These include the Social Security offset assumptions, the Overpayment Credit assumption, and the average administrative fee for IBNR.
- The State should review whether the surpluses created by the Funding Projections produce the desired results and amend the scenarios, as needed.

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July 31, 2019

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: Response to Segal Audit Report on State ICI Valuation

Dear Cindy,

This letter contains Milliman's response to the audit report produced by Segal for the State Income Continuation Insurance plan. The audit report contains observations related to Milliman's valuation methods and funding analyses, based on the December 31, 2018 valuation of the State ICI plan.

Valuation Methods

Segal noted that the claim termination rates used by Milliman for performing the valuation are based on adjustments to the 1987 Commissioner's Group Disability Table (1987 CGDT), and suggested using a more recent industry table for projecting claim terminations:

> "*The base table for the Claims Termination rates is out-of-date, and should be replaced by a more recent table*"—page 6 of the audit report

We believe the current claim termination rate assumptions, as adjusted by Milliman to reflect ETF experience, provides a reasonable basis for the valuation, for the following reasons:

1. We adjust the claim termination rates from 1987 CGDT to reflect specific trends in State ICI claim experience. The adjusted rates are very different than the base rates from 1987 CGDT.

2. We test our claim termination rate assumptions annually by performing retrospective runout studies. The results from these tests, shown in our valuation reports, indicate that the rates are a reasonable basis for projecting State ICI claim terminations. If the results indicated a mismatch between actual and expected experience, we would modify the adjustment factors.

3. While we are not opposed to using a more current table as the starting point for developing claim termination rate assumptions, we would then develop adjustment factors to apply to the rates from that table to reflect specific trends in State ICI claim experience. The result would be an assumption essentially identical to the one we currently use, with an immaterial impact on plan liabilities.

Segal also noted that the valuation reports could include more documentation around the development of certain assumptions:

> "*The source of several of the assumptions should be documented. These include the Social Security offset assumptions, the Overpayment Credit assumption, and the average administrative fee for IBNR*"—page 6 of the audit report

We are happy to provide additional documentation of these assumptions in our valuation reports going forward.

<u>Funding Analyses</u>

After reviewing the financial projections developed by Milliman for the State ICI plan, Segal noted that the difference in insurance claims from the Baseline Scenario and Scenario 2 was smaller than expected:

> "*Based on the difference in the Insurance Claims assumptions (0.65% of payroll in the current plan to 0.26% of payroll in the revised plan), we would expect a greater difference in the Insurance Claims by 2027 than the 4.4% difference in the results under the Baseline Scenario (revised plan) and Scenario 2 (continuance of the old plan)"*—page 8 of audit report

We do not agree with this assessment because, although the expected claim rate under the redesigned plan (0.26% of payroll) is lower than the expected claim rate under the current plan (0.65% of payroll), the expected payroll of covered members is greater under the redesigned plan than the expected payroll under the current plan.

We would expect payroll under the redesigned plan to be greater than payroll of members who currently participate in the State ICI plan because any member who does not currently participate in the plan will most likely participate in the redesigned plan, which will feature an option that is fully funded by the employer.

Segal also noted that the expected funding ratio was in excess of 150% in year 2027 for two scenarios in the financial projections:

> "*The surpluses created by these projections are in two scenarios in excess of 150% funded by 2027.*."—page 9 of audit report

The financial projections are intended to provide insight on how the rate increases approved by the Group Insurance Board in 2015 are expected to impact funding levels. In 2015, the Group Insurance Board approved annual rate increases of 20% each year starting in 2016 until 2020. We modeled this scenario, as well as a scenario that assumes a 20% increase in 2019 and a more modest 10% increase in 2020. Both are expected to return the plan to a fully funded status in the near future.

If the Group Insurance Board approves a target funding ratio for the State ICI plan, then we can develop financial projections that take into consideration the approved ratio.

General

The information in this letter is intended for the internal use of Wisconsin ETF and may not be distributed to other parties without the written consent of Milliman. In preparing this information, we have relied on data provided to us by Wisconsin ETF, including the State ICI audit report from Segal. To the extent this information is inaccurate or incomplete, the results of our work may be materially affected.

I, Paul Correia, am a consulting actuary with Milliman and a member of the American Academy of Actuaries. I meet the qualification standards of the Academy to render the actuarial opinion contained herein.

Please let me know if you have any questions. Thank you.

Sincerely,

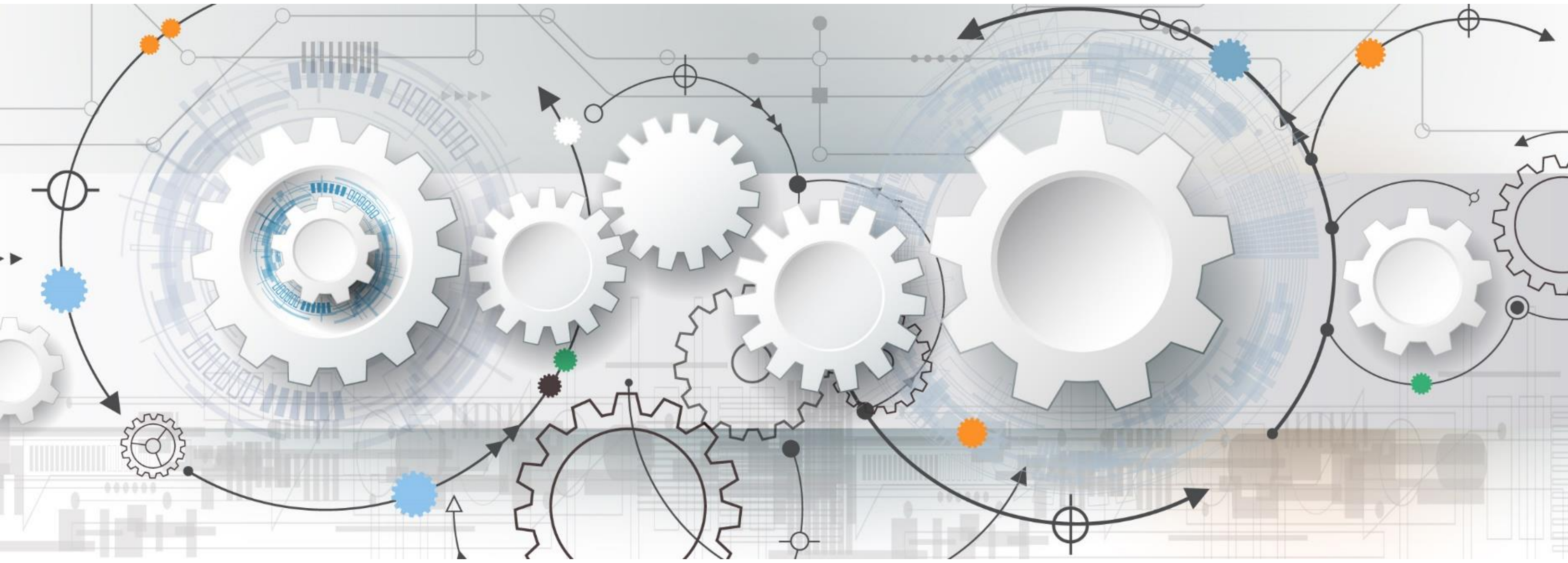
Paul Correia, FSA, MAAA
Principal & Consulting Actuary

cc: Jim Guidry, Gina Fischer, Erin Esser, Megan Jeffers (ETF), Dan Skwire (Milliman)

Attachment C

Actuarial Audit for the Actuarial Valuation of the Local Income Continuation Insurance Plan As of December 31, 2018 for the Wisconsin Department of Employee Trust Funds

July 30, 2019



Segal Consulting

Segal Consulting

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July 30, 2019

Cindy Klimke
Wisconsin Department of Employee Trust Funds
4822 Madison Yards Way
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RE: Audit of the Local Income Continuation Insurance (ICI) Valuation for December 31, 2018

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The Milliman Valuation reports benefit liabilities of $6.0 million, and an asset value of $32.9 million. Segal's reproduction of these results produced liabilities of $6.1 million.

Overall, we believe that the Milliman Valuation report following provisions of GASB 10 (Accounting and Financial Reporting for Risk Financing and Related Insurance Issues) accurately reflects the accounting results for the Local ICI Plan for the fiscal year ending December 31, 2018.

We appreciate the opportunity to provide this review for you, and hope that you have found it helpful. Please let us know if we can be of further assistance.

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David A. Berger

David A. Berger, FCA, ASA, MAAA, EA
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We recommend that:

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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 herein.

David A. Berger

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Vice President and Consulting Actuary

Methodology of Audit

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Participant Counts			
Year of Disability	**Male**	**Female**	**Total**
<2002	1	2	3
2002	1	0	1
2003	2	0	2
2004	1	2	3
2005	1	2	3
2006	1	1	2
2007	0	0	0
2008	0	0	0
2009	3	2	5
2010	5	0	5
2011	2	0	2
2012	2	0	2
2013	1	1	2
2014	2	3	5
2015	6	7	13
2016	7	0	7
2017	3	1	4
2018	15	7	22
Total	53	28	81

Participant Counts			
Age at Disability	**Male**	**Female**	**Total**
<25	0	0	0
25-29	2	1	3
30-34	4	4	8
35-39	5	1	6
40-44	8	4	12
45-49	10	4	14
50-54	9	5	14
55-59	11	6	17
60-64	2	3	5
65-68	2	0	2
Total	53	28	81

Benefit Amounts			
Age at Disability	**Male**	**Female**	**Total**
<25	0	0	0
25-29	4,013	2,875	6,888
30-34	12,599	2,354	14,953
35-39	8,069	3,313	11,382
40-44	16,248	1,968	18,216
45-49	12,266	8,428	20,694
50-54	16,967	5,998	22,965
55-59	14,281	6,371	20,653
60-64	2,301	4,350	6,651
65-68	5,875	0	5,875
Total	92,618	35,658	128,276

Analysis of Actuarial Assumptions and Methods

The primary assumptions are the discount rate, the probability of payment in a given month, and the assumed payment for each individual. To gauge the accuracy of these results in total, the estimated benefits to be paid in the upcoming year are compared to the actual benefits paid. Milliman's Valuation details the variance as 1.1% (Table 2.2, page 9) during 2016 - 2018 and 2.6% for 2014 – 2017 (2017 report, page 9). These variances overall are well within our expected tolerances, indicating the demographic (e.g., other than the discount rate) assumptions in aggregate produce a true expectation of future experience.

Table 2.2 from Milliman's 2018 Valuation Runout Study for the ICI Plans 2016 - 2018	
Claim Duration	**Average Annual Margin**
1 - 12 months	-0.2%
13 -24 months	-0.7%
25 - 36 months	0.7%
37 - 48 months	13.9%
49 - 60 months	0.7%
61+ months	1.3%
Total	**1.1%**

The "Average Annual Margin" for months 37 – 48 appears to have a greater margin than the other entries in the table, possibly suggesting an adjustment be made to the Claims Termination table (though this could be the result of a single, large claim).

The Valuation Date is December 31, 2018.

Discount Rate

The discount rate is 7.00%.

The Plan is funded, and the expected rate of return used for the Pension Plan is used as the discount rate. The assets by investment class are not disclosed in the valuation. Our understanding is that the assets in this Trust are invested in the same investments and asset mix as the pension plan.

Claim Termination Rates

Claim Termination Rates determine the probability of future payment. They incorporate the chance of recovery, the probability of death, and any other reason payments might cease. The table used is the 1987 CGDT table, multiplied by a set of factors that result in the following probability of payment at each period subsequent to the valuation date.

Probability of Receiving the Net Benefit in Each Year						
Claim Duration (years)	Claim Duration as of the Valuation Date (years)					
	0	0.5	1	3	5	10
0	100%	N/A	N/A	N/A	N/A	N/A
0.5	48%	100%	N/A	N/A	N/A	N/A
1	23%	48%	100%	N/A	N/A	N/A
1.5	16%	33%	67%	N/A	N/A	N/A
3	9%	18%	38%	100%	N/A	N/A
5	7%	14%	29%	76%	100%	N/A
10	5%	11%	22%	58%	76%	100%
15	4%	9%	19%	49%	65%	86%
20	4%	8%	16%	42%	55%	73%

Future Offset Amount and Approval Rates

Many of the participants in the data have been previously awarded Social Security Benefits. For those in the first five years of payments, an assumption is made that they will eventually be awarded a benefit equal to 44% of the gross benefit amount.

Probability of Receiving a Social Security Disability Benefit:	
Claim Duration	Probability
1 - 12 months	69%
13 -24 months	45%
25 - 36 months	17%
37 - 48 months	8%
49 - 60 months	5%
61+ months	0%

Incurred But Not Reported Claims (IBNR)

Incurred But Not Reported Claims are assumed to be 25% of the estimated incurred claims for the current year, based on analyses of historical Local ICI claims experience. The Loss Adjustment for these claims includes the first year cost of $800 per claim, then an average administrative fee ($506) times the number of assumed claims (263).

The $506 is an estimate, but we were not able to reproduce this figure.

Loss Adjustment Expenses

Loss Adjustment Expenses are assumed claim administration fees, characterized as follows:

Assumed Claim Administration Fee	
Component	Fee
New Claim Fee	$800 per new claim
Monthly fee, first year	$160 per month
Monthly fee, second year	$140 per month
Monthly fee, years 3 – 5	$75 per month
Monthly fee, years 6+	$50 per month

Overpayment Credits

The Overpayment Credit is attributable to Social Security awards that are backdated. The assumption is that 75% of the overpayment balance reported by ETF as of the Valuation Date is expected to be repaid by participants.

Suggested Changes to and Documentation of Assumptions

The base table for the Claims Termination rates is out-of-date, and should be replaced by a more recent table.

The source of several of the assumptions should be documented by Milliman, via email or memorandum. These include the Social Security offset assumptions, the Overpayment Credit assumption, and the average administrative fee for IBNR.

Plan Design

Segal used the description on page 16 of the Milliman Valuation as the basis for the Plan Design.

The basic benefit design is a Standard gross benefit, less offsets (either actual or assumed). Standard benefits after the first year include a $75 increase for medical benefits. There is also a Supplemental Benefit. Most benefits cease at age 65, but for participants that become disabled after age 62 and before age 70 there is a graduated schedule that provides for some coverage, but not beyond age 70.

The monthly gross benefit amounts are provided in the participant data. The Standard Benefit is up to 75% of a participant's average monthly earnings, capped at $4,000 per month.

The offsets are provided in the participant data for some participants. Offsets include amounts for Social Security, unemployment compensation, Worker's Compensation, WRS benefits, work earnings, and Duty Disability benefits. If the participant data does not have an offset, and the benefits are in the first five years of payments, then an offset is estimated and a probability of the offset reducing the payment is applied.

The Supplemental Benefit data is provided in the participant data. Supplemental Coverage is available to participants whose annual salary exceeds $64,000, and provides an additional benefit up to $3,500 per month.

There is an add-on benefit of $75 per month, payable after the first year of disability, to help cover medical expenses. The $75 benefit is in the monthly gross benefit data for participants that became disabled prior to 2018.

The benefits are not indexed.

Accuracy of Results

The results reported in Table 1.1 of the Milliman Valuation are as follows:

Actuarial Liabilities for the Local ICI Plan as of December 31, 2018 Milliman Valuation Results				
Liability Component	Standard Benefit	Supplemental Benefit	$75 Add-on[1]	Total Liability Amount
Open Claims	$5,242,793[2]	$96,632	$30,077	$5,369,502
IBNR Claims	296,480	5,465	1,701	303,645
Loss Adjustment Expense	286,272	5,276	1,642	293,190
Total	$5,825,544	$107,373	$33,420	$5,966,337

Actuarial Liabilities for the Local ICI Plan as of December 31, 2018 Segal Valuation Results				
Liability Component	Standard Benefit	Supplemental Benefit	$75 Add-on	Total Liability Amount
Open Claims	$5,345,142	$100,197	$31,097	$5,476,436
IBNR Claims	296,366	5,555	1,724	$303,645
Loss Adjustment Expense	240,643	4,511	1,400	$296,854
Total	$5,882,151	$110,263	$34,221	$6,076,935
Ratio of Milliman Total Results to Segal Results	**99.0%**	**97.4%**	**97.7%**	**98.2%**

The results reflect a reduction in the Actuarial Liabilities for the Overpayment Credit of approximately $131,000 in both the Milliman Valuation and Segal's results.

Funding Projections

The State has asked Milliman to prepare results on two plan designs (Current and Redesigned).

We did not try to duplicate the Actuarial Liability or the projected Insurance Claims in these projections. Given the GASB 10 methodology does not include a liability for active

[1] For participants that became disabled in 2018. For other participants, the $75 add-on is included in the Standard Benefit.

[2] The offset for the overpayments was assumed to be applied here.

employees, we find using the percentage of payroll estimation method would likely be the method for estimating new claims that we would use.

The funding levels in the various scenarios appear to be sufficient in the next ten years in both the Current and Redesigned Plans.

Projected Funding Results in Milliman Valuation				
$ millions	Actuarial Liability	Assets	Surplus / (Deficit)	Funded Ratio
December 31, 2018	6.0	38.9	32.9	648%
December 31, 2022				
Redesigned Plan, No Contributions	6.5	42.5	36.0	654%
Current Plan, No Contributions	8.3	42.1	33.8	507%
December 31, 2027				
Redesigned Plan, No Contributions	4.1	48.5	44.4	1183%
Current Plan, No Contributions	10.9	44.8	33.9	411%

Plan Assets

The Trust values appear to be reasonable based on the prior year information. The State provided us the asset detail, and it matched the detail in the Milliman Valuation. We did not perform any further audit of these results.

Conclusion

The valuation reports benefit liabilities of $6.0 million, and an asset value of $32.9 million. Segal's reproduction of these results produced liabilities of $6.1 million. This would typically be considered an accepted tolerance level for an Income Continuance Insurance plan.

Overall, we believe that the Milliman Valuation report following provisions of GASB 10 (Accounting and Financial Reporting for Risk Financing and Related Insurance Issues) accurately reflects the accounting results for the Local ICI Plan for the fiscal year ending December 31, 2018.

The primary assumptions are the discount rate, the probability of payment in a given month, and the associated assumed payment in that month for each individual. These assumptions appear to be reasonable in the aggregate, given the relatively narrow margin (1.1%) of the expected claims paid over the actual claims paid for the period 2016 – 2018.

We recommend that:

- The base Claims Termination table should be updated in the next valuation.
- Milliman should continue to annually review the assumptions pertaining to the rate of continued coverage.
- Milliman should continue to annually review the assumptions pertaining to the offsets to the gross benefits (Social Security, retirement plan, etc.).
- The source of several of the assumptions should be documented by Milliman every three years, via email or memorandum. These include the Social Security offset assumptions, the Overpayment Credit assumption, and the average administrative fee for IBNR.

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August 4, 2019

Ms. Cindy Klimke, CPA
Chief Trust Finance Officer
State of Wisconsin
Department of Employee Trust Funds
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RE: Response to Segal Audit Report on Local ICI Valuation

Dear Cindy,

This letter contains Milliman's response to the audit report produced by Segal for the Local Income Continuation Insurance plan. The audit report contains observations related to Milliman's valuation methods and funding analyses, based on the December 31, 2018 valuation of the Local ICI plan.

Valuation Methods

Segal noted that the claim termination rates used by Milliman for performing the valuation are based on adjustments to the 1987 Commissioner's Group Disability Table (1987 CGDT), and suggested using a more recent industry table for projecting claim terminations:

> "*The base table for the Claims Termination rates is out-of-date, and should be replaced by a more recent table*"—page 7 of the audit report

We believe the current claim termination rate assumptions, as adjusted by Milliman to reflect ETF experience, provides a reasonable basis for the valuation, for the following reasons:

1. We adjust the claim termination rates from 1987 CGDT to reflect specific trends in ICI claim experience. The adjusted rates are very different than the base rates from 1987 CGDT.

2. We test our claim termination rate assumptions annually by performing retrospective runout studies. The results from these tests, shown in our valuation reports, indicate that the rates are a reasonable basis for projecting ICI claim terminations. If the results indicated a mismatch between actual and expected experience, we would modify the adjustment factors.

3. While we are not opposed to using a more current table as the starting point for developing claim termination rate assumptions, we would then develop adjustment factors to apply to the rates from that table to reflect specific trends in ICI claim experience. The result would be an assumption essentially identical to the one we currently use, with an immaterial impact on plan liabilities.

Segal also noted that the valuation reports could include more documentation around the development of certain assumptions:

> "*The source of several of the assumptions should be documented by Milliman, via email or memorandum. These include the Social Security offset assumptions, the Overpayment Credit assumption, and the average administrative fee for IBNR*"—page 7 of the audit report

We are happy to provide additional documentation of these assumptions in our valuation reports going forward.

General

The information in this letter is intended for the internal use of Wisconsin ETF and may not be distributed to other parties without the written consent of Milliman. In preparing this information, we have relied on data provided to us by Wisconsin ETF, including the Local ICI audit report from Segal. To the extent this information is inaccurate or incomplete, the results of our work may be materially affected.

I, Paul Correia, am a consulting actuary with Milliman and a member of the American Academy of Actuaries. I meet the qualification standards of the Academy to render the actuarial opinion contained herein.

Please let me know if you have any questions. Thank you.

Sincerely,

Paul Correia, FSA, MAAA
Principal & Consulting Actuary

cc: Jim Guidry, Gina Fischer, Erin Esser, Megan Jeffers (ETF), Dan Skwire (Milliman)