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ACTUARIAL REVIEW REPORT FOR THE

LOS ANGELES COUNTY
OTHER POSTEMPLOYMENT BENEFITS PROGRAM

JULY 1, 2018 VALUATION

Prepared: June 28, 2019

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Cavanaugh Macdonald
CONSULTING, LLC
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June 28, 2019

Mr. Richard Bendall
Chief, Internal Audit
Los Angeles County Employees Retirement Association
300 North Lake Avenue, Suite 820
Pasadena, CA 91101

Dear Mr. Bendall:

Cavanaugh Macdonald Consulting, LLC (CMC) has performed an independent review of the July 1, 2018 Other Postemployment Benefits (OPEB) Program actuarial valuation prepared for LACERA and other stakeholders. As an independent reviewing, or auditing, actuary, we have been asked to express an opinion regarding the reasonableness and accuracy of the valuation results, including a review of sample lives as well as a replication of the main valuation results.

Our opinion on the valuation results was based on a replication of the July 1, 2018 OPEB actuarial valuations and a review of detailed sample lives. Previously, we reviewed the 2018 OPEB Experience Study to confirm the reasonableness of the assumptions and methods selected for the valuation. We would like to thank Milliman, the Association's retained actuary, for their cooperation and assistance in providing the required information to us. **We generally find the OPEB actuarial valuation results to be reasonable and accurate based on the assumptions and methods used. The valuation was performed by qualified actuaries and was performed in accordance with the principles and practices prescribed by the Actuarial Standards Board.** This report documents the detailed results of our review.

Additional Information and Disclosures

This report has been prepared for LACERA and its stakeholders by CMC, and is intended to assist LACERA as it validates the reasonability of the liabilities, costs, and other calculations for the OPEB Program as of June 30, 2018. Additionally, the findings, conclusions, and recommendations presented in this report are specific to LACERA, LACERA's OPEB Program, and the work produced by Milliman. CMC may produce different findings or arrive at different conclusions in other situations or even in cases involving similar other postemployment benefit plans. As such, it is important to keep in mind that the use of this information for purposes other than those expressed here may not be appropriate.

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In preparing this review, we have relied on the following information provided by LACERA and/or Milliman:

- Milliman's draft report titled, "2018 Investigation of Experience for Los Angeles County Other Postemployment Benefits Assumptions" (2018 Investigation of OPEB Program Experience Report);
- A report produced by Segal Consulting on July 27, 2017 titled, "Los Angeles County Other Postemployment Benefits Program Audit of the 7/1/2016 Valuation Results";
- Raw Retirement Plan actuarial valuation census data as of June 30, 2018;
- OPEB Program actuarial valuation census data as of June 30, 2018;
- Milliman's processed OPEB Program actuarial valuation census data as of June 30, 2018;
- Detailed sample lives prepared by Milliman; and
- Complete tables of actuarial assumptions used by Milliman.

While we cannot verify the accuracy of all this information, the supplied information was reviewed for reasonableness and consistency and we have no reason to doubt the substantial accuracy or completeness of the information and believe that it is reliable for the purpose of conducting this review. The results and conclusions contained in this report depend on the integrity of this information, and if any of the supplied information or analyses change, our results and conclusions may be different and this report may need to be revised.

The undersigned are familiar with the near-term and/or long-term aspects of other postemployment benefit plan valuations and collectively meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained in this report. All sections of this report, including any appendices and attachments, are considered an integral part of the actuarial opinions.

CMC does not provide legal, investment, or accounting advice. Thus, the information in this report is not intended to supersede or supplant the advice and interpretations of LACERA or its external consultants.

Sincerely,

Brent A. Banister, Ph.D., FSA, EA, MAAA, FCA	Jeffrey Gann, FSA, MAAA, FCA, EA
Chief Actuary	Senior Actuary

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1. Executive Summary

As an independent auditing actuary, Cavanaugh Macdonald Consulting, LLC (CMC) has been tasked to provide a general overview and express an opinion of the reasonableness and soundness of the work performed by Milliman for the Los Angeles County Retirement Association (LACERA). The work to be reviewed was the July 1, 2018 actuarial valuation for the Other Postemployment Benefits (OPEB) program. The specific items to be included in the actuarial audit include a replication of the major valuation results and a detailed review of selected sample lives.

We examined whether the actuarial methods, considerations, and analyses used by Milliman in preparing the OPEB actuarial valuation are reasonable and consistent with generally accepted actuarial standards and practices as promulgated by the Actuarial Standards Board. This examination included:

a) An in-depth review and analysis of the valuation results, including an evaluation of the data used for reasonableness and consistency as well as a review of mathematical calculations for completeness and accuracy.

b) Verification that benefits have been valued accurately.

c) Verification that the data provided by LACERA is consistent with data used by Milliman.

d) Verification of the reasonableness of the calculation of the unfunded actuarial accrued liability and the amortization period.

We requested the original member census data from LACERA, some of which they asked Milliman to provide for efficiency. We also requested member data, as reconciled for the 2018 OPEB valuation, from Milliman along with complete descriptions of assumptions, methods and valuation procedures. We also requested a range of sample life information from Milliman.

It is our belief that an audit should not focus on finding trivial differences between actuarial processes, procedures, philosophies, or styles utilized by two different actuaries, but rather to verify there are no material errors, and to identify potential improvements to the process and procedures utilized by the Association's actuary. Because actuarial work draws on professional judgment, there is a subjective component that must be considered alongside the objective component of matching numerical results. In performing this audit, we attempt to limit discussions concerning stylistic preferences and focus more on the significant philosophical approaches, the accuracy of calculations, the completeness and reliability of reporting, and the compliance with generally acceptable actuarial practices and standards of practice in all of the work reviewed.

1. Executive Summary

As described in our report, we have determined that the actuarial methods, assumptions, processes, and reports are consistent with the applicable Actuarial Standards of Practice (ASOP). Throughout the report, we have noted a few issues where we believe there are opportunities for improvement.

In Section 2 of our report, we compare data used by Milliman with the original data produced by LACERA. **We find that the data is consistent and appropriate. We note in particular that Milliman now includes a description of how gender is handled, an addition suggested in the 2016 OPEB valuation audit conducted by Segal Consulting.**

In Section 3 of our report, the results of our independent calculations of the LACERA liabilities are compared with the results prepared by Milliman. We were able to match all liabilities within a reasonable range. **We find the calculation results to be reasonable and appropriate for their intended purposes.**

In Section 4, we provide our comments on the OPEB valuation report produced by Milliman. **We found the reports to be generally in compliance with the ASOPs, but offer some minor suggestions for improvement.**

In Section 5, we discuss our review of the sample lives provided by Milliman. **Our review further confirmed the accuracy of the OPEB valuation results discussed in section 3.**

Because of the complexity of actuarial work, we would not expect to match Milliman's valuation results exactly, nor would we necessarily expect our opinions regarding the results to be the same as those of Milliman. While we offer some different viewpoints or ideas, we believe that Milliman's work provides an appropriate assessment of the status of the OPEB Program for purposes of determining an appropriate funding strategy.

The remainder of this report provides the basis for our findings for each of the requested tasks, including our recommendations.

2. Data Review

Milliman and LACERA supplied CMC with the member data used for the July 1, 2018 OPEB valuation. This included both the raw data prepared by LACERA and the processed data used by Milliman in its valuation software. We compared the records and generally agreed with the processing being performed by Milliman.

There is minimal data scrubbing performed by Milliman, so we were generally able to confirm that the records used by Milliman contained the data provided by LACERA. We further tested that the manner in which records were selected for inclusion or exclusion in the valuation or assignment of valuation status was appropriate. We note that Milliman details in their report in Appendix C that there are cases where certain adjustments were required. We believe such adjustments are reasonable.

We tested the counts by status and the totals of selected key fields to be sure they were reasonably close. The following tables contain some additional detail summarizing our review. We believe that the data provided by LACERA is sufficient for Milliman to reasonably perform its work. We did not audit the data, but simply determined whether Milliman was using the data appropriately. ***Overall, we are comfortable that the data Milliman uses to perform its valuation is consistent with the data supplied by LACERA.***

2. DATA REVIEW

Data Items Checked

Active & Deferred Vested Raw Data Field	Result
- Count	Matched within 0.08%
- Date of Birth	Matched 100%
- Average Age	Matched 100%
- Date of Hire	Matched 100%
- Average Service	Matched 100%
- Gender	Matched 100%
- Group ID	Matched 100%
Medical Raw Data Field	
- Count	Matched within 0.03%
- Date of Birth	Matched within 0.02%
- Average Age	Matched 100%
- Gender	Matched 100%
Dental Raw Data Field	
- Count	Matched within 0.09%
- Date of Birth	Matched within 0.02%
- Average Age	Matched 100%
- Gender	Matched 100%

2. DATA REVIEW

Not In-Pay Reconciliation

	Raw Data	Milliman Exhibit	Percent Difference
Records Received (Pension File)	197,123		
Pension Retirees / Survivors	(70,633)		
No Further Benefits	(17,830)		
Adjustment for Duplicate Records	(1,891)		
Net Records	106,769		
- Active Status	98,335	98,415	-0.1%
- Deferred Vested Status	8,434	8,434	0.0%

In-Pay Reconciliation

	Medical Raw Data	Milliman Medical Exhibit	Percent Difference	Dental Raw Data	Milliman Dental Exhibit	Percent Difference
Records Received (Retirees / Spouses / Dependents)	79,941			79,789		
Adjustment for Duplicate Records	(4,062)			(4,896)		
Load for Dependent Children	1,629			4,501		
Data Adjustments	220			(162)		
Net Records	77,728	77,705		79,232	79,164	
- Retirees / Survivors	50,273	50,271	0.0%	51,489	51,420	0.1%
- Spouses and Dependents	27,455	27,434	0.1%	27,743	27,744	0.0%

3. ACTUARIAL VALUATION RESULTS REVIEW

This section of our review discusses the reasonableness and accuracy of the liabilities and costs developed in Milliman's July 1, 2018 OPEB actuarial valuations. We independently programmed the benefits provided under LACERA's OPEB Program using standard actuarial approaches.

The OPEB Program offered by LACERA is quite complex compared with most OPEB Programs, largely because of the number of groups in the program and the extensive number of coverage options available to its members. Consequently, different actuaries could reasonably take different approaches to modelling the liabilities of the Program. In order to be able to meaningfully compare our results to Milliman's results and to perform a useful sample life audit, we chose certain approaches to mimic those used by Milliman. We made an effort to minimize this type of information in order to have our results be as independent as possible. While Milliman was responsive to questions that we asked, they were also careful not to provide any information that would have provided inappropriate insight into their processes. As a result, we believe that the results we obtained are a meaningful test of the work performed by Milliman.

As the following summaries show, we matched well overall and reasonably well on the various component pieces. We do not expect to be able to match exactly because we know we are using independent approaches to modelling the liabilities. Results are shown for the Present Value of Benefits (PVB), the Actuarial Accrued Liability (AAL), and the Normal Cost. The PVB is a measure of all benefits expected to be ultimately paid for all current members of the Plan. The AAL reflects the portion of the PVB attributable to service already performed, and is the measure typically used for funding and accounting purposes. The Normal Cost is the portion of the PVB that will be earned in the upcoming year. Of the three measures, we generally expect to match the PVB the closest, typically within 1-3%, while the AAL is often not quite as close, and the Normal Cost may be only within 3-6%.

Employer Provided Present Value of Benefits
(dollars in millions)

	Milliman	CMC	Percent Difference
Actives	$ 19,590.0	$ 19,082.6	-2.6%
Deferreds	488.6	469.2	-4.0%
Retirees	9,619.3	9,379.5	-2.5%
Total	$ 29,697.9	$ 28,931.3	-2.6%

3. Actuarial Valuation Results Review

Employer Provided Actuarial Accrued Liability
(dollars in millions)

	Milliman	CMC	Percent Difference
Actives			
Medical	$ 8,972.6	$ 9,061.8	1.0%
Dental/Vision	470.4	469.3	-0.2%
Part B	1,477.9	1,475.6	-0.2%
Life	38.0	38.0	0.0%
	$ 10,958.9	$ 11,044.7	0.8%
Deferreds			
Medical	$ 377.5	$ 359.4	-4.8%
Dental/Vision	21.2	21.7	2.4%
Part B	84.2	82.5	-2.0%
Life	5.7	5.6	-1.8%
	$ 488.6	$ 469.2	-4.0%
Retirees			
Medical	$ 7,692.4	$ 7,394.2	-3.9%
Dental/Vision	552.4	577.4	4.5%
Part B	1,251.1	1,285.5	2.7%
Life	123.4	122.4	-0.8%
	$ 9,619.3	$ 9,379.5	-2.5%
Total	$ 21,066.8	$ 20,893.4	-1.2%

Employer Provided Normal Cost
(dollars in millions)

	Milliman	CMC	Percent Difference
Medical	$ 546.7	$ 535.5	-2.0%
Dental/Vision	24.6	24.2	-1.6%
Part B	89.5	89.1	-0.4%
Life	2.3	2.3	0.0%
Total	$ 663.1	$ 651.1	-1.8%

4. Valuation Report Review

Content of the Actuarial Reports

The Actuarial Standard Board has issued a number of Actuarial Standards of Practice (ASOP) which provide guidance on measuring retiree group benefit obligations and communicating the results (ASOP Nos. 5, 6, 23, 25, 7, 35, 41, and 44). Those standards list specific elements to be included, either directly or by reference to other documents, in OPEB actuarial communications. Some of the elements would not be pertinent in all communications, but since an actuarial valuation report is the most complete picture of the actuarial status of the plan, all of the elements listed should be covered in the report, even if only briefly.

The July 1, 2018 OPEB actuarial valuation (in its initial draft) report generally provides sufficient information for another actuary to understand the process and to assess the reasonableness of the results.

We compared the contents of the draft report to over 30 specific items detailed for pension actuarial work in the ASOPs listed above. ***In our review of the report, we found it to be substantially in compliance with the applicable ASOPs***. We identified two areas where some clarification or enhancement might be helpful and which Milliman intends to reflect in their final report:

- ASOP 6, Paragraphs 4.1(h) and 4.1(p) call for disclosures regarding how the plan is funded and the implications of that funding strategy over time. We believe that the report should provide at least some brief discussion about the overall funding strategy and perhaps indicate that it is anticipated that the funding valuation may eventually guide the actual funding amounts.
- ASOP 6, Paragraph 4.1(t) and its subparagraphs call for certain information regarding the disclosure of funded status. In particular, there needs to be statements clarifying what the status information might or might not signify regarding settling plan liabilities or plan contributions. These statements may be very brief, but should be included.

As an issue that is probably more form than substance, we note that ASOP 41, Paragraph 4.3 (among other places) discusses how methods and assumptions are disclosed. Milliman tends to group the discussion of both methods and assumptions under the term “assumptions”. We would suggest that the term “methods and assumptions” be used where the phrase could help clarify that both methods and assumptions are being discussed. Milliman intends to reflect this in their final report.

In the process of replicating the valuation results, additional information was requested to assist in resolving differences. As a result of Milliman’s responses to our questions, we identified several assumptions or methods that, despite being minor, should be disclosed in the OPEB valuation report and which Milliman intends to reflect in their final report:

- A description of the way in which adjustments are made for the retiree-paid premium when the chosen plan has a premium in excess of the benchmark.
- The table of the proportion of the premium paid by tier 2 spouses.
- A description of how current actives who terminate in the future when vested are handled.

5. SAMPLE LIFE REVIEW

In addition to the replication of results discussed in section 3, we were also asked by LACERA to perform a review of sample lives. These samples included 14 retirees and surviving spouses, 11 of whom have a current spouse entitled to benefits, 16 deferred members, and 17 active members. We were provided with details of calculations for medical benefits and premiums, dental benefits and premium, the Part B reimbursement provision, and life insurance benefits. (Deferred members only had medical benefits and premiums provided.) Additionally decrement tables were provided for active and deferred members, and additional detail to support the Entry Age Normal cost allocation was provided for active members. This sample appropriately covered a range of ages, pension plan participation, medical or dental plan election, and general demographic variation.

We reviewed all benefits for each individual included in the sample. In many cases, we matched liabilities to the nearest penny, particularly for life insurance, but also some medical, dental, and Part B benefits. This level of matching is much closer than we would generally expect since we were independently programming how benefits are valued, but is partly a reflection of certain benefits being straightforward to value and using the same underlying valuation software. In many cases we did not match exactly, but we were reasonably close and an inspection of the intermediate calculations did not indicate any systemic issues.

In one case, we noted that our calculation of the premiums paid by a retired member and spouse were approximately the same in total, but our method of allocating the cost resulted in a different split between the member and the spouse. That fact that nearly the same result could be obtained with different approaches should be viewed as a positive, reflecting an alternative model yielding similar results.

One item we did detect in our review that is of negligible consequence relates to certain deferred inactive members with very low service, who are not vested. Under the retirement plan provisions for plans A, B, C, D, and G, these individuals are eligible to retire at age 70 regardless of the amount of service. Milliman had these individuals commencing benefits at age 75, even though the listed assumption is that a portion could commence as early as 70. We recommend that in the future, Milliman either change the coding or state as an assumption that benefits are assumed to commence at 75 for this group of people. Because these individuals receive no subsidy for the medical or dental plans, there is no impact on the liabilities for those benefits. There would be some very tiny increases in the Part B and life insurance liabilities.