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February 20, 2018

Ms. Debra Hembree
Actuarial Services Coordinator
Oregon PERS

Re: GASB 68 Employer Reporting for June 30, 2017 Measurement Date

Dear Debra,

As requested, we prepared the attached exhibits to assist the Oregon Public Employees Retirement System ("PERS" or "the System") in providing financial reporting information to participating employers using a June 30, 2017 Measurement Date. We understand PERS will provide employers the information needed to assist them in fulfilling Governmental Accounting Standards Board Statements No. 68 (GASB 68) reporting requirements. Under GASB 68, System financial reporting information using a June 30, 2017 Measurement Date can be used in employer CAFR disclosures for fiscal year-end dates up to June 30, 2018.

The attached exhibits also are intended to assist the System's auditor in reviewing the development of financial reporting information.

The attached exhibits are:

- Exhibit A: Collective Pension Expense
- Exhibit B: Schedule of Collective Deferred Outflows/(Inflows) of Resources
- Exhibit C: Net Pension Liability/(Asset) by Employer
- Exhibit D: Schedule of Pension Amounts by Employer
- Exhibit E: Proportionate Share – Development of Present Value of Future Normal Cost
- Exhibit F: Proportionate Share – Development of Unfunded Actuarial Liability (UAL)
- Exhibit G: Proportionate Share – Schedule of Employer Allocations
- Exhibit H: Deferred Outflows/(Inflows) for Employer-Specific Adjustments
- Exhibit I: Amortization Schedules for Employer-Specific Deferred Outflows/(Inflows)

Exhibit A shows the development of the System's "Collective Pension Expense" for the Measurement Period from July 1, 2016 to June 30, 2017. Exhibit B summarizes the deferred amounts relevant to the calculation of the Collective Pension Expense for the Measurement Period. Because PERS is considered a multiple-employer cost-sharing plan under GASB 68, all employers are required to recognize a proportionate share of the Collective Pension Expense.

The actuarial basis used to develop the Collective Pension Expense is identical to that used in preparing System financial reporting information as of June 30, 2017 under GASB 67, as described in our November 29, 2017 letter.



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Exhibit C lists each employer's proportionate share of the Net Pension Liability / (Asset) at both the current and prior Measurement Date. The collective Net Pension Liability / (Asset) for the System is shown in the table below, which comes from our November 29, 2017 letter providing GASB 67 results for the System.

Net Pension Liability (Asset)	Measurement Date	
	June 30, 2016	June 30, 2017
Total pension liability	\$ 77,094,380,998	\$ 79,851,741,053
Fiduciary net position	<u>62,082,059,102</u>	<u>66,371,703,247</u>
Net pension liability (asset)	\$ 15,012,321,896	\$ 13,480,037,806

Note that the sum of the Net Pension Liability / (Asset) allocated to employers on Exhibit C differs slightly from the amounts in the table due to rounding.

Exhibit D summarizes key information needed for GASB 68 reporting by employer. There are 920 employers included on this listing. The exhibit includes each employer's proportionate share of the Net Pension Liability, Collective Pension Expense, and Deferred Outflows and Inflows of Resources. In addition, the exhibit also shows expense and deferred amounts arising due to employer-specific adjustments described in Paragraphs 54 and 55 of GASB 68. These adjustments arise when an employer's proportionate share changes from one Measurement Date to another or when the employer's contributions (as reported to us by PERS) during the Measurement Period differ from the employer's proportionate share of all System contributions during the period. Amounts arising from these two sources of employer adjustments are shown separately on the exhibit.

The information from Exhibit D will also be provided in a separate one-page schedule for each listed employer. We understand PERS will distribute the additional schedules to employers.

Exhibits E through G show the development of each employer's proportionate share used in preparing the GASB 68 results. In accordance with the preference stated in GASB 68, this development is intended to represent each employer's estimated share of the projected long-term contribution effort to the System. Because the proportionate share is actuarially determined, it is developed as of the December 31, 2015 Actuarial Valuation Date used to develop the Total Pension Liability for the June 30, 2017 Measurement Date. Employers who were not included in the December 31, 2015 valuation (for example, new employers formed after that date) are included in these exhibits, but will show zero values for all valuation results and are considered to have a 0% proportion as of the June 30, 2017 Measurement Date. There are 87 such employers for the June 30, 2017 Measurement Date.

Additional background and rationale for the methodology used to develop the proportionate share is described in a memo provided to PERS in January 2016 and which we understand is posted on the PERS website.



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Exhibit H shows the detailed development of the deferred amounts arising during the Measurement Period due to employer-specific adjustments under Paragraphs 54 and 55 of GASB 68.

Exhibit I lists all outstanding deferral bases associated with employer-specific adjustments. This includes amounts arising during the most recent Measurement Period and amounts from prior periods. Each deferral base is identified as either attributable to a change in proportion (Paragraph 54) or employer's contributions (Paragraph 55). This exhibit provides the detail behind the summary amounts related to employer-specific adjustments shown on Exhibit D.

Measurement Date and Reporting Date Timing

The results contained in the attached exhibits were developed as of a June 30, 2017 Measurement Date, based on an Actuarial Valuation Date of December 31, 2015.

An employer's Reporting Date under GASB 68 is the employer's fiscal year-end. However, the information reported as of that date can be based on a Measurement Date up to 12 months earlier. There is an additional constraint that the Actuarial Valuation Date can be no more than 30 months prior to the Reporting Date.

For PERS employers with a June 30 fiscal year-end, the information contained in the attached exhibits can be used for a GASB 68 Reporting Date of June 30, 2018, because it satisfies both prongs of the timing requirements: the Measurement Date (June 30, 2017) is no more than 12 months prior to the Reporting Date and the Actuarial Valuation Date (December 31, 2015) is no more than 30 months prior to the Reporting Date.

PERS employers with other than a June 30 fiscal year-end will need to map these results to the appropriate Reporting Date to comply with GASB's timing requirements. For example, an employer with a December 31, 2017 Reporting Date should use the results developed at the June 30, 2017 Measurement Date for their GASB 68 reporting.

Valuation

The December 31, 2015 Actuarial Valuation is used to develop the GASB 67 and GASB 68 financial reporting results for the Tier 1/Tier 2 and OPSRP liabilities as of June 30, 2017. The formal December 31, 2015 Actuarial Valuation report should be referenced for full detail on the data and assumptions used, actuarial methods applied, provisions valued, and other important information regarding the use, applicability, and limitations of actuarial valuation results. Additional information on the actuarial assumptions is included in the 2014 Experience Study report, published September 23, 2015. There were no differences between the assumptions and plan provisions used for June 30, 2017 Measurement Date calculations compared to those shown in the aforementioned reports.

Changes Subsequent to the Measurement Date

As described above, GASB 67 and GASB 68 require the Total Pension Liability to be determined based on the benefit terms in effect at the Measurement Date. Any changes to benefit terms that occurs after that date are reflected in amounts reported for the subsequent Measurement Date. However, Paragraph 80f of GASB 68 requires employers to briefly describe any changes between the Measurement Date and the employer's reporting date that are expected to have a significant effect on the employer's share of the collective Net Pension Liability, along with an estimate of the resulting change, if available.

We are not aware of any changes subsequent to the June 30, 2017 Measurement Date that meet this requirement and thus would require a brief description under the GASB standard.

Actuarial Basis

Our analysis and conclusions are based on our understanding of the request and the data, methods, and assumptions described herein. Differences in the data, methods, assumptions, and interpretations of the plan provisions may produce different results.

In preparing these results, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While the valuation is based on an array of individually reasonable assumptions, 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.

Future actuarial measurements may differ significantly from the current measurements presented in these reports due to such factors as the following: System 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 or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we



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did not perform an analysis of the potential range of future measurements. The Oregon PERS Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated herein at the September 2015 Board Meeting.

Some of the actuarial computations presented in the valuation report are for purposes of determining contribution rates for System employers. The actuarial computations presented in this letter under GASB Statement No. 68 are for purposes of assisting the System in providing information to participating employers to fulfill financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our reports. The calculations in the report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations have been made on a basis consistent with our understanding of the System benefit provisions as summarized in the report, and of GASB Statements No. 68. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work has been prepared exclusively for the Oregon Public Employees Retirement System for a specific and limited purpose. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. It is a complex, technical analysis that assumes a high level of knowledge concerning the System's operations, and uses the System's data, which Milliman has not audited. 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.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

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. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Sincerely,



Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary



Scott D. Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary

cc: Amanda Marble
Jason Stanley



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