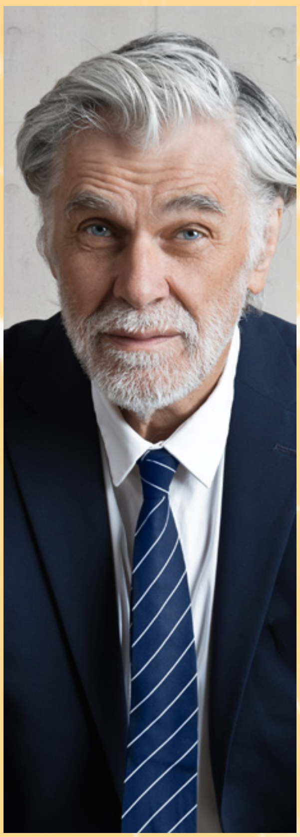
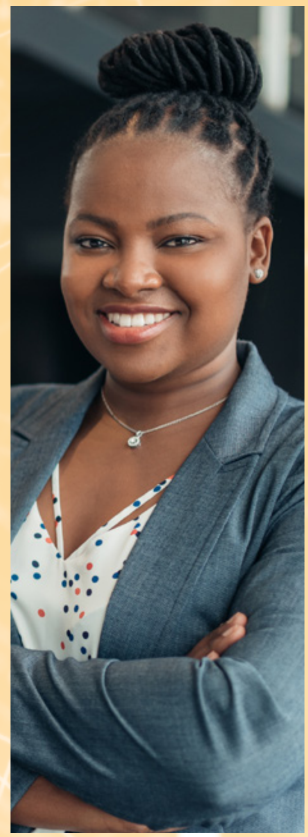
WASHINGTON STATE

2018 Other Postemployment Benefits Actuarial Valuation Report







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Letter of Introduction
Other Postemployment Benefits
Actuarial Valuation Report

June 2019

This report documents the results of an actuarial valuation of the employer provided post-retirement medical subsidies offered to retirees and their spouses in the Public Employee Benefits Board's (PEBB) retiree medical plans. PEBB was created within the Washington State Health Care Authority (HCA) to administer medical, dental, and life insurance plans for public employees, retirees, and their families.

The primary purpose of this valuation is to determine the state's Other Postemployment Benefits (OPEB) liability under the Governmental Accounting Standards Board Statement No. 75 (GASB 75) financial reporting requirements. GASB 75 information contained in this report will be used by the Office of Financial Management (OFM) in their *2019 Comprehensive Annual Financial Report* (CAFR). Liabilities associated with other major groups participating in PEBB, including K-12 school districts and political subdivisions, are included for informational purposes only.

The report is organized into the following sections:

- Key Results.
- Background.
- Actuarial Exhibits.
- Participant Data.
- Assumptions.
- Appendices.

The Key Results section summarizes key GASB 75 liabilities and provides explanation for the change in liability since the last valuation. The Background section discusses the nature of the OPEB liabilities, who is affected by the GASB requirements, and how the liabilities are calculated. The Actuarial Exhibits section documents additional GASB 75 results OFM will need to satisfy their OPEB reporting requirements in their 2019 CAFR. In addition, the section provides

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more detailed results of this valuation. The Participant Data section provides detailed information about the retired PEBB members who receive the subsidies and the active members who are potentially eligible for the subsidies. The Assumptions section provides a summary of the actuarial assumptions and a summary of plan provisions. The Appendices provides liabilities for other employers participating in PEBB and an expanded sensitivity analysis about how the results can change under a different set of assumptions.

With exception of the state, employers should not use this report to satisfy their individual employer reporting requirements under GASB 75. The Office of the State Actuary (OSA) created an online tool to help small employers calculate their individual reporting requirements. This online tool, available on our website, utilizes the alternative measurement method allowed under GASB 75 and can be used by employers with fewer than one hundred total plan members.

We encourage you to submit any questions you might have concerning this report to our office e-mail address: state.actuary@leg.wa.gov.

Luke Masselink, ASA, EA, MAAA
Senior Actuary

Kyle Stineman, ASA
Senior Actuarial Analyst

I. KEY RESULTS

HOW HAS THE LIABILITY CHANGED?

This section summarizes some key GASB 75 results since the prior valuation for the state. For GASB Statement 75, the Actuarial Accrued Liability under the Entry Age Normal (EAN) cost method is referred to as the Total OPEB Liability (TOL).

GASB 75 Key Results		
	Measurement Date	
(Dollars in Thousands)	6/30/2017	6/30/2018
TOL	$5,825,822	$5,078,633
OPEB Expense	$479,685	$303,238
Benefit Payments / Employer Contributions	$94,279	$92,197

WHY THE LIABILITY CHANGED?

Short-term actuarial gains or losses occur when the actual economic and demographic experience differs from what we expected in the valuation. An actuarial gain would reduce the liability while a loss would increase the liability. Significant changes in plan provisions, actuarial assumptions, and methods can also impact the liability. In total, the liability decreased by approximately 13 percent. Significant factors that impacted the results of this valuation include the following:

- Updating census data, including the passage of time, resulted in an approximate 11 percent increase in liabilities.
- The healthcare assumptions including trend rates, healthcare costs and retiree contributions were updated for this valuation.
  - The new healthcare trends decreased liabilities by approximately 19 percent due to reduced expectations in medical costs and a lower assumed inflation assumption. While not a change, please note the trends used in valuing the GASB 75 liabilities include the excise tax.
  - The new healthcare costs and retiree contributions decreased liabilities by an additional 10 percent due to recent experience and changes in prescription drug costs.
  - Legislation adopted during the 2019 Session increased the explicit subsidy for Medicare retirees and increased liabilities by approximately 7 percent.
- The assumed discount rate increased from 3.58 percent to 3.87 percent based on the measurement date of the valuation. This will change with each valuation based on the bond index we rely on to set the discount rate under GASB 75 requirements. This decreased liabilities by approximately 4 percent.
- Beginning with this valuation, we value the dental benefits for PEBB members which increased liabilities by 3 percent. This is not a new benefit provision but prior valuations had excluded this liability.

A more detailed analysis of the gain/loss can be found later in this report.

WHAT'S NEW TO THE REPORT?

The following changes were made to this report:

- Reporting Requirements: GASB Statements No. 74 and 75 replaced GASB Statements No. 43 and 45. For more information on the new requirements, please refer to the Background section of this report and GASB's website.
- Participant Data: Additional participant data tables were added for more information.

II. BACKGROUND

OTHER POSTEMPLOYMENT BENEFITS

OPEB are benefits provided to retired employees (and their spouses) beyond those provided by their pension plans. Such benefits include medical, prescription drug, life, dental, vision, disability, and long-term care insurance. PEBB offers retirees access to all of these benefits. However, PEBB employers primarily provide monetary assistance, or subsidies, only for medical, prescription drug, dental and vision insurance.

The OPEB relationship between PEBB employers and their employees and retirees is not formalized in a contract or plan document. Rather, the benefits are provided in accordance with a substantive plan. A substantive plan is one in which the plan terms are understood by the employers and plan members. This understanding is based on communications between the employers and plan members and the historical pattern of practice with regard to the sharing of benefit costs.

SUBSIDIES

HCA administers PEBB plan benefits. For medical insurance coverage, the HCA has two claims pools: one covering employees and non-Medicare eligible retirees, and the other covering retirees enrolled in Medicare Parts A and B. PEBB plan benefits provide two different subsidies for retirees: an explicit subsidy and an implicit subsidy. In addition, there is cost-sharing between employers and employees. Each participating employer pays a portion of the premium for active employees. Retirees are responsible for paying the full premium for participating in the program, which are reduced through the subsidies.

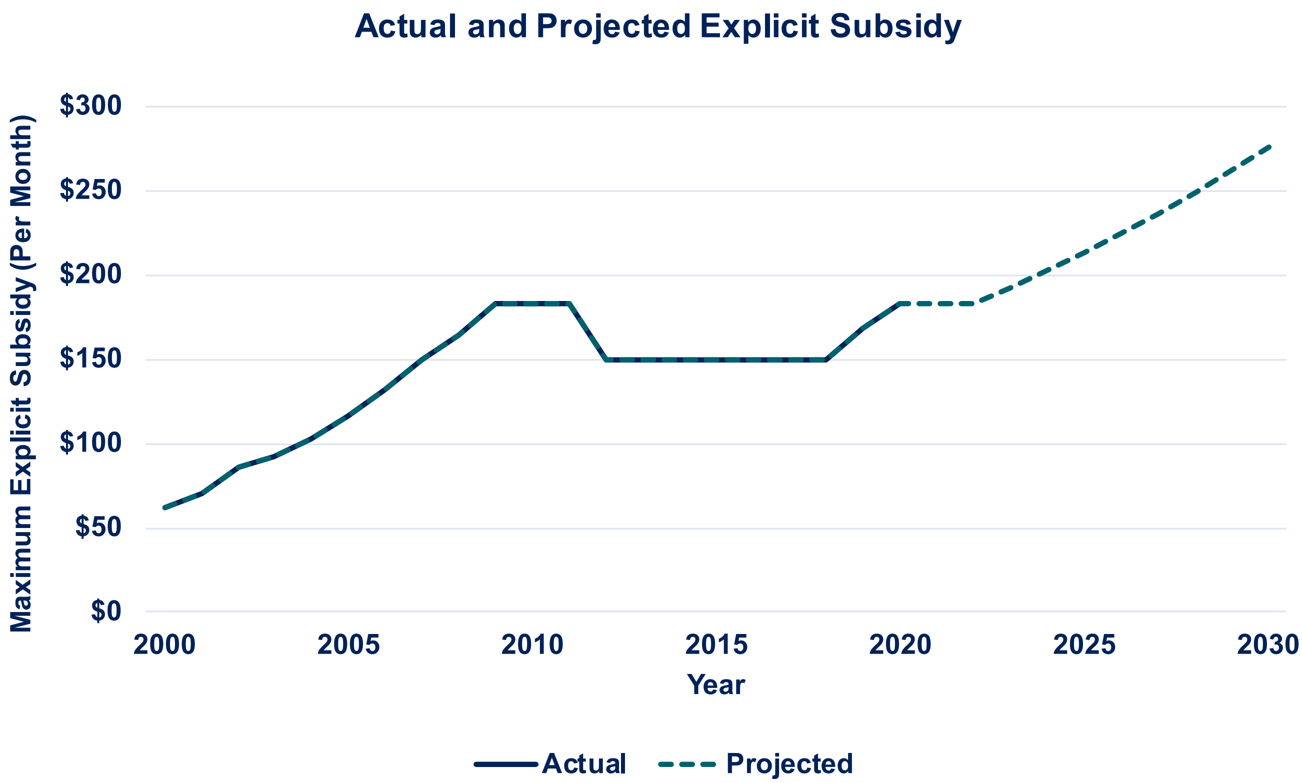
The explicit subsidy, permitted under RCW 41.05.085, is a straightforward, set dollar amount for a specific group of people. The explicit subsidy lowers the monthly premium paid by members over the age of 65 enrolled in Medicare Parts A and B. Annually, the HCA administrator recommends an amount for the next calendar year's explicit subsidy for inclusion in the Governor's budget. The final amount is approved by the state Legislature. The explicit subsidy is the lesser of 50 percent of the monthly premium and the dollar amount described in the next table. In 2019, the dollar amount was set at $168 and it will increase to $183[1] in 2020.

Based on discussions and input from HCA, OFM, OSA and other legislative staff, Milliman prepares trend assumptions that project the growth of the explicit subsidy. These assumptions have a significant impact on the liability. The current valuation assumes the $183, effective January 1, 2020, will remain constant for three years then grow with healthcare trend starting in 2023.

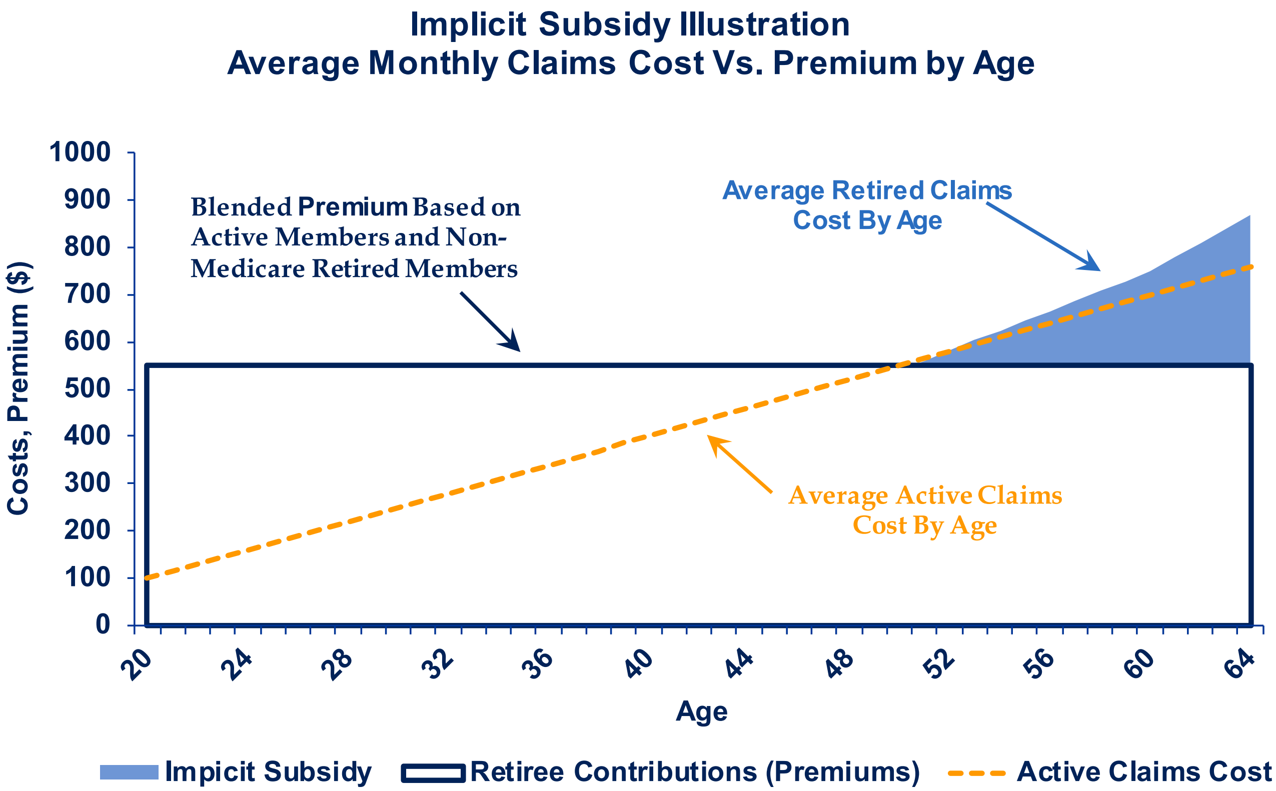
Year	Maximum Explicit Subsidy Per Month	Increase Over Prior Year
2020	$183.00	8.9%
2019	$168.00	12.0%
2018	$150.00	0.0%
2017	$150.00	0.0%
2016	$150.00	0.0%
2015	$150.00	0.0%
2014	$150.00	0.0%
2013	$150.00	0.0%
2012	$150.00	(18.0%)
2011	$182.89	0.0%
2010	$182.89	0.0%
2009	$182.89	11.5%
2008	$164.08	9.6%
2007	$149.67	13.5%
2006	$131.87	13.5%
2005	$116.19	13.5%
2004	$102.35	10.4%
2003	$92.74	8.0%
2002	$85.84	22.7%
2001	$69.98	12.0%
2000	$62.48	N/A

[1] *During the 2019 Legislative Session, the explicit subsidy increased to $183 beginning in 2020.*

The following graph provides the projected monthly explicit subsidy based on current assumptions, as well as historical values for context.



The implicit subsidy, set up under RCW 41.05.022, is more complex because it is not a direct payment from the employer on behalf of the member. Claims experience for employees and non-Medicare eligible retirees are pooled when determining premiums. Therefore, these retired members pay a premium based on a pool of members that, on average, are younger and healthier. There is an implicit subsidy from the employee group since the premiums paid by the retirees are lower than they would have been if the retirees were insured separately. The subsidies are valued using the difference between the age-based claims costs and the premiums paid by the retirees (referenced later in this report as "retiree contributions"). The illustration on the next page shows an example of the expected average monthly claims costs and the blended premium.



The horizontal line shows the constant premium for all members participating in the employee and non-Medicare eligible retiree pool. The line increasing, by age, shows the average monthly claims cost for each age. An implicit subsidy (the shaded area in the graph) occurs whenever the monthly costs are above the horizontal line. As a theoretical example, an average monthly claims cost for 60-year-old retirees could be $700, whereas an average monthly premium for 60-year-old retirees could be $550. As a result, there would be an average implicit subsidy of $150 per month for each 60-year-old PEBB retiree.

For dental benefits, there is only one claim pool. All retirees, both Medicare and non-Medicare eligible, are pooled with employees to determine a blended premium. Retirees pay the full premium so the only subsidy that exists is an implicit subsidy, since the premium retirees pay is lower due to being pooled with employees.

OPEB FINANCIAL REPORTING REQUIREMENTS

Before 2007, these subsidies were not projected and accounted for under an accrual basis. Accrual accounting is meant to match the timing between when something occurs and when it is accounted for. In this case, it is intended to match the expense to the year in which the benefits are earned by the member.

Pay-as-you-go funding occurs when an employer chooses to contribute (pay) for benefits only when they occur or become due (after retirement). Before 2007 this cost was expensed as PEBB plan employers paid the current year's subsidies. However, the unfunded liability, the difference between what members accrue (assuming on-going future payments) and what the PEBB plan employers currently pay, was growing and was not accounted for under the pay-as-you-go method.

GASB Statements No. 43 and 45 (GASB 43 and GASB 45) were created in an attempt to:

- Create financial transparency.
- Create better alignment between public and private sector accounting.
- Provide clarity among bargaining groups to show the true cost of benefits over time.
- Provide employers knowledge of the true cost of benefits over time.
- Provide investors knowledge of the true long-term liabilities.
- Show the decision makers a cost that they need to recognize.

GASB 43 and 45 were replaced by GASB statements No. 74 and 75 (GASB 74 and GASB 75). GASB 74 and 75 require more extensive disclosures and supplementary information than the prior reporting requirements. Most of GASB 74 does not apply to the OPEB offered through PEBB as these benefits are not pre-funded through a qualifying trust. GASB 75 is effective for employer fiscal years beginning after June 15, 2017, and requires employers to disclose key plan measures relative to their plan members, including the total OPEB liability and OPEB expense.

In addition to requiring new tables, GASB 75 has two key changes in assumptions and methodology from GASB 45. First, GASB 75 requires the use of the EAN cost method to measure Actuarial Accrued Liabilities (AAL) while the previous statement allowed for various acceptable actuarial cost methods. Cost methods vary in the manner in which they allocate benefits to past and future time periods. The EAN cost method is referred to as the Total OPEB Liability (TOL) in GASB 75. Also, the discount rate for plans without a dedicated trust fund will be based on a 20-year municipal bond index which means the discount rate will fluctuate from year-to-year.

The state also discloses GASB 75 information in the Office of the State Treasury Bond Prospectus. Rating agencies, such as Moody's, Fitch, and Standard & Poor's, analyze OPEB liabilities. Bond ratings, and the related cost of capital, may be impacted by a government's unfunded OPEB liabilities. However, the resulting analyses will not necessarily have a negative impact on ratings. These agencies will consider whether a plan is in place to manage these liabilities, look at the entity's ability to meet their budget, and analyze the size of the unfunded OPEB liability compared to payroll, budget, and tax base when making their determinations.

ACTUARIAL VALUATION

An actuary performs an actuarial valuation to estimate what benefits will be paid throughout the future lifetimes of current members, and then discounts those payments back to the present. The result is the Present Value of Future Benefits (PVFB). For example, a dollar amount today, equal to the present value of future benefits, could be invested during plan members' lifetimes to pay all future benefits when the members are eligible. In this case, the benefit payments are the subsidies provided to PEBB retirees and their spouses.

Under an actuarial valuation, an actuary needs inputs such as participant data, benefit provisions, and assumptions. Participant data includes age, membership service, medical and dental plan selection, spousal coverage, etc. Benefit provisions include the structure of the benefits that the members receive — in this case, the subsidies supporting PEBB member medical and dental benefits. Assumptions include the discount rate, medical and dental trends, decrement rates, participation rates, aging factors, etc.

An actuary values these inputs using an actuarial cost method. The cost method chosen allocates costs between past and future plan membership service before retirement. Distinct actuarial cost methods produce somewhat different allocations since each method allocates cost differently. The EAN cost method required under GASB 75 allocates plan benefits so they are earned, or accrued, as a level percentage of pay throughout an employee's working lifetime.

FUNDING POLICY

In Washington State, the implicit and explicit subsidies are funded on a pay-as-you-go basis, meaning that PEBB employers pay these costs as they occur. This generally means today's taxpayers are paying for benefits that were earned in the past. This funding policy is in conflict with the principle of intergenerational equity, which requires that a member's benefits be funded over the member's working lifetime. Intergenerational equity occurs when the member's benefits are paid by the taxpayers who benefit from that member's service, as opposed to making future taxpayers, who do not benefit from that member's service, pay for the member's benefits.

In the future, employers can continue to fund these liabilities on a pay-as-you-go basis, or they can be pre-funded. If employers continue pay-as-you-go funding, then contributions to the PEBB plan are lower in the short-run but will steadily rise as the number, and benefits, of PEBB members grow. The PEBB plan would have a continued conflict with the principle of intergenerational equity. In addition, under a pay-as-you-go funding policy, there are no assets to invest; therefore, the GASB 75 required discount rate is typically lower, which means a larger reported liability.

If, instead, employers fully pre-fund these liabilities, then annual contributions are made and placed in an irrevocable trust. Pre-funding will lead to larger current contributions in the short-run, a lower unfunded liability, and closer adherence to the principle of intergenerational equity. In addition, under pre-funding there will be assets to invest; the investment return applied to the liabilities will reflect the expected long-term yield of the assets used to finance the payment of the benefits. If these assets are invested similarly to those in a typical retirement plan then a higher discount rate can be assumed which results in a smaller reported overall liability.

An employer must consider many issues when creating a trust fund under a pre-funding policy. Such considerations include:

- Determining the level of pre-funding.
- Contractualizing retiree health subsidies.
- Making it difficult for employers to join or leave PEBB.
- Making larger contributions today to reduce future contributions.

Employers could also choose a combination of the two funding policies. Choosing this combination of funding methods allows for decision-makers to keep current contributions manageable, while still pre-funding part of the liability and being able to earn some investment returns from the assets.

Lastly, partial or full pre-funding could occur under a non-dedicated fund. Under this approach, future benefit payments are partially offset by anticipated investment earnings; however, GASB requires funding under an irrevocable and dedicated trust in order for the assets to offset the OPEB liability, i.e., reduce the unfunded OPEB liability, from a financial reporting standpoint. This approach would not contractualize retiree health subsidies and the discount rate would remain consistent with that of a pay-as-you-go plan.

COST-SHARING POLICY

Cost-sharing policy determines the funding split between the employer and either the employee or the retiree. It is measured in terms of the percentage of the total amount that each pays. GASB requires that the cost-sharing policy be determined from the substantive plan. The substantive plan reveals the plan terms as understood by the employer(s) and the plan members. However, a comprehensive plan document does not always exist. In this case, GASB requires that the cost-sharing policy be determined from what is communicated between the employer and employees, as well as the cost-sharing historical pattern of practice. We must assume continuation of the current cost-sharing policy, since that is the best estimate of what policy will be in place in the future.

In the actuarial valuation, this cost-sharing policy is used to project the retiree contributions and average retiree claims costs into the future. Generally, we use the same healthcare trend for projecting contributions and claims costs, so the percentage of the total cost that the employer pays will remain constant throughout the lives of the current active and inactive members for these ages. However, based on feedback from HCA, OFM and OSA, Milliman altered the medical healthcare inflation assumption for retiree contributions to reflect limited short-term growth in the explicit Medicare subsidies as well as to reflect the anticipated aging of the Medicare population. For more information please see the Assumptions section. Changing the cost sharing policy can significantly impact the liability. For example, reducing the cost-sharing policy, which will lead to larger retiree contributions, correspondingly reduces the OPEB liability.

III. ACTUARIAL EXHIBITS

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Actuarial Certification Letter
Other Postemployment Benefits
Actuarial Valuation Report

June 2019

This report documents the results of an actuarial valuation of the employer provided post-retirement medical subsidies offered to retirees and their spouses in the Public Employee Benefits Board's (PEBB) retiree medical plans. The primary purpose of this valuation is to determine the state, as an employer, Other Postemployment Benefits (OPEB) liability under the Governmental Accounting Standards Board Statement No. 75 (GASB 75) financial reporting requirements, as of June 30, 2018, for those subsidies. This valuation should not be used for other purposes. Please replace this report with a future report or letter when available.

The Health Care Authority (HCA) and the Department of Retirement Systems (DRS) provided the member data, as of June 30, 2018, used in this report. The raw data provided by HCA reflects members enrolled in a PEBB program as well as active employees who were eligible to join at that date but waived or did not select coverage. The data from HCA includes information on employers and we worked with the Office of Financial Management (OFM) to confirm which employers to include in the state[2] results. The DRS census data supplements the HCA data. More specifically, we relied on DRS data for retirement plan and membership service to estimate active employee eligibility for post-retirement medical benefits. We have checked the data for reasonableness as appropriate based on the purpose of the valuation. An audit of the participant data was not performed. We relied on all the information provided as complete and accurate. In our opinion, the data is adequate and complete for the purpose of this valuation. For more information on the census data, please see the Participant Data section of the report.

The valuation results summarized in this report also require assumptions about future economic and demographic events. 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

[2]*For purposes of this report, state employers include all Washington State agencies and higher education employers.*

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assumptions; changes in plan provisions or applicable law, including cost-sharing between employers and retirees.

There is no established trust fund dedicated to these benefits, therefore no assets were accounted for in this valuation. Further, GASB 75 requires the discount rate to be based on a 20-year, tax exempt, high-quality municipal bond rate if there is not a dedicated trust. We rely on the Bond Buyer General Obligation 20-Bond Municipal Index at the measurement date. The post-retirement participation percentage, percentage of spouses covered, and Medicare coverage demographic assumptions are determined by the Office of the State Actuary (OSA) and based on a review of past experience and expectations for the future during a 2017 experience study. The remaining non-healthcare economic and demographic assumptions are the same as those used in the *June 30, 2017, Actuarial Valuation Report*, which were developed from the *2007-2012 Demographic Experience Study* and *2017 Economic Experience Study* performed by the OSA. Our office will complete a new economic and demographic experience study in the fall of 2019 and 2020, respectively.

HCA contracted with Milliman to prepare the healthcare assumptions for this valuation, which include healthcare trend, claims costs, and aging factors. Robert Schmidt, a healthcare actuary in Milliman's Boise, Idaho office, provided these assumptions in a letter to HCA dated December 21, 2018 and an e-mail dated May 17, 2019. Based on discussions and feedback from HCA, OFM, OSA and other legislative staff, Milliman made modifications to the design of healthcare trends as well as included dental benefit assumptions. For more information, please see the Gain/Loss Analysis in the Actuarial Exhibits section. Milliman also performed analysis on the impact of the excise tax on "Cadillac" plans under the Patient Protection and Affordable Care Act. As a result, Milliman prepared two sets of healthcare trends, one with the excise tax and one without. We prepared the results of this report using assumptions that include the excise tax, but also illustrated the liability impact of not including the excise tax assumptions as part of the Appendices section. The inclusion of this excise tax in the report does not represent tax advice or an opinion that this tax applies to this plan.

After the healthcare assumptions were prepared, the Supplemental Budget adopted during the 2019 Legislative Session increased the cap on the monthly premium reduction for Medicare (post-65) retirees and their spouses, also referred to as the explicit subsidy. In 2019, the cap is $168 per month and the Supplemental Budget increased that amount to $183 on January 1, 2020. While our valuation assumes future increases to this cap, the short-term increase to $183 on January 1, 2020, is larger than currently assumed. In consultation with Robert Schmidt at Milliman, we agreed this

change was material and its impact should be reflected now as the assumptions would not be reviewed for another two years. Instead of preparing a full set of new healthcare trends, Milliman estimated a 9.2 percent increase to the Post-Medicare liabilities to reflect the impact of this legislation.

OSA does not employ healthcare actuaries so we are not qualified to judge the reasonableness of the complete set of assumptions. However, we did have numerous discussions with HCA, OFM and Milliman about the healthcare assumptions to understand how they were determined, ensure consistency with the other economic assumptions, and clarify what may have caused the assumptions to change from the prior valuation.

In our opinion, all data, assumptions, methods, and calculations are appropriate and conform to generally accepted actuarial principles and standards of practice as of the date of this publication.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this report is intended to be complete, we are available to offer extra advice and explanations as needed.

Luke Masselink, ASA, EA, MAAA
Senior Actuary

Lisa A. Won, ASA, FCA, MAAA
Deputy State Actuary

GASB 75 RESULTS FOR THE STATE OF WASHINGTON

GASB 75 TABLES FOR MEASUREMENT DATE 6/30/2018

The primary purpose of this valuation is to determine the state's OPEB liability under the GASB 75 financial reporting requirements. The tables within this section meet the GASB 75 requirements and we intend for the tables to be used by OFM in their 2019 CAFR. The tables include Schedule of Changes in the TOL, OPEB Expense, Sensitivity of the TOL to Changes in Discount Rate and Healthcare Trend Assumptions, Deferred Outflows and Inflows of Resources, Subsequent Recognition Years, and Summary of Plan Participants. GASB 75 also requires disclosing information about assumptions and methods, which can be found in the Assumptions section.

This section of the report focuses on "State" PEBB employers which contains all Washington State agency and higher education employers. Liabilities associated with other major groups, including K-12 school districts and political subdivisions, are disclosed in the Appendices. We prepared the GASB 75 results using assumptions that include the excise tax, but also illustrated the liability impact of not including the excise tax assumptions as part of the Appendices section.

The following table shows the TOL as of June 30, 2017, and June 30, 2018, and it reconciles the change in the TOL as required under GASB 75. Two sources of volatility between measurement dates are the differences between the expected and actual experience and the changes in assumptions.

Schedule of Changes in Total Other Liability and Related Ratios Post-Employment Benefits Liability Measurement Date of June 30, 2018	
(Dollars in Thousands)	
Total OPEB Liability	
Service Cost	$317,524
Interest	218,296
Difference Between Expected and Actual Experience[1]	199,262
Changes in Benefit Terms	-
Changes of Assumptions[1]	(1,390,074)
Benefit Payments[2]	(92,197)
Other	-
Net Change in Total OPEB Liability	(747,189)
Total OPEB Liability - Beginning	5,825,822
Total OPEB Liability - Ending	$5,078,633
Covered Employee Payroll[2]	$8,390,804
TOL as a Percentage of Covered Payroll	60.53%

Note: Figures may not total due to rounding.

[1] The recognition period for these changes is 9 years. This is equal to the average expected remaining service lives of all active and inactive members.

[2] Source: Office of Financial Management (OFM).

The reconciliation of the TOL from one year to the next is also used to calculate the components of the OPEB Expense table. The service cost and interest cost line items are taken directly from the TOL reconciliation. The amortization of differences between expected and actual experience, and the amortization of assumption changes, relies on the gain and loss components in the prior table as well as gain and loss components from prior years. Instead of recognizing the entire gain or loss immediately from these sources in the OPEB Expense, it is amortized, or spread out, over a specific period of time. Under GASB 75, that time period equals the average of the expected remaining service lives of all active and inactive members that are provided with OPEB through the OPEB plan. To calculate the amortization component, we divided the gain or loss to be amortized by the average expected future service, which as of the most recent measurement date is nine years.

OPEB Expense for Measurement Date of June 30, 2018	
(Dollars in Thousands)	
Service Cost	$317,524
Interest Cost	218,296
Amortization of Differences Between Expected and Actual Experience	22,140
Amortization of Assumptions Changes	(254,723)
Changes in Benefit Terms	-
Other Changes in Fiduciary Net Position	-
Total OPEB Expense	**$303,238**

The remaining portion of gains and losses that will be recognized in OPEB expense in future years are referred to as deferred outflows of resources and deferred inflows of resources. Deferred outflows of resources will increase future OPEB expense, while deferred inflows of resources will decrease future OPEB expense. The table below provides the total deferred outflows and deferred inflows for the various gain and loss components.

Dollars in Thousands	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference Between Expected and Actual Experience	$177,122	$0
Changes of Assumptions	-	1,937,511
Transactions Subsequent to the Measurement Date*	-	-
Total	**$177,122**	**$1,937,511**

Note: Deferred outflows will increase future OPEB expense and deferred inflows will decrease future OPEB expense.

**OFM is the source of the Transactions Subsequent to the Measurement Date. Please see the 2019 CAFR.*

The amount of deferred outflows and deferred inflows of resources that will be recognized in future OPEB expense is summarized in the table on the following page. It provides the net impact to OPEB expense annually over the next five years and combines the impact beyond five years.

Subsequent Years	
2020	($232,582)
2021	($232,582)
2022	($232,582)
2023	($232,582)
2024	($232,582)
Thereafter	($597,477)

Note: Negative deferral reflects greater future inflows than outflows.

GASB 75 also requires analysis to analyze the impact of changing the Healthcare Trend and Discount Rate assumptions by 100 basis points.

Sensitivity Analysis - Healthcare Trend			
(Dollars in Thousands)	1% Decrease	Current Trend Rate	1% Increase
Total OPEB Liability	$4,169,066	$5,078,633	$6,288,186

Sensitivity Analysis - Discount Rate			
(Dollars in Thousands)	1% Decrease	Current Discount Rate	1% Increase
Total OPEB Liability	$6,123,638	$5,078,633	$4,263,304

We relied on data as of the June 30, 2018, valuation date and summarized the participant data below.

GASB 75 Summary of Plan Participants	
	State
Active Employees*	
Number	123,160
Average Age	45.9
Average Service	11.0
Retirees Receiving Benefits**	
Number	33,735
Average Age	74.0
Retirees Not Receiving Benefits***	
Number	6,000

**Reflects active employees eligible for PEBB program participation as of June 30, 2018.*

***Headcounts exclude spouses of retirees that are participating in a PEBB program as a dependent.*

****This is an estimate of the number of retirees that may be eligible to join a post-retirement PEBB program in the future. They are not eligible for benefits unless they choose to join in the future. In order to do so, they must show proof of continuous medical coverage since their separation of employment with the State of Washington that meets the requirements set forth in Washington Administrative Code 182-12-205.*

ACTUARIAL ACCRUED LIABILITY

The EAN cost method is the only actuarial cost method allowed under GASB 75 reporting requirements. The prescribed method allocates plan benefits so they are earned as a level percentage of pay throughout an employee's working lifetime. The liabilities under the EAN cost method are the employer's total accrued (or earned) liability from the medical insurance subsidies offered through the PEBB plan. These liabilities are based on all service earned as of the valuation date. The AAL under the EAN cost method is also referred to as the TOL in GASB 75.

The table below shows the state's TOL as of the valuation date, June 30, 2018, grouped by current and future members. The table is broken into gross costs (total cost), cost sharing (retiree contributions), and net subsidy (gross cost minus cost sharing).

Total OPEB Liability	
(Dollars in Thousands)	
Gross Costs	
Actives (Future Retirees)	$11,513,598
Retirees	5,607,378
Gross Costs Total	**$17,120,976**
Cost Sharing (Retiree Contributions)	
Actives (Future Retirees)	$8,201,345
Retirees	3,840,998
Cost Sharing Total	**$12,042,343**
Net Subsidy = Gross Costs - Cost Sharing	
Actives (Future Retirees)	$3,312,253
Retirees	1,766,380
Net TOL as of 6/30/2018	**$5,078,633**

The net subsidy can also be summarized into the portion of the liability attributable to the implicit and explicit costs. The explicit subsidy represents approximately 90 percent of the total OPEB liability. Please see the Appendices section for additional detail.

PRESENT VALUE OF FUTURE BENEFITS

The PVFB is the present value of expected future medical subsidies paid on behalf of the current actives (future retirees) and current retirees of the employers participating in the PEBB plan. In other words, this is the present value of all subsidies expected to be paid out in the future, whereas the TOL is the amount of the PVFB that has been accrued, or earned, as of the measurement date.

TOL and PVFB Liability		
(Dollars in Thousands)		
	TOL	**PVFB**
Net Liability as of 6/30/2018	$5,078,633	$8,042,701

ASSETS

Currently, Washington State does not pre-fund post-retirement medical insurance subsidies. Since the PEBB plan subsidies are paid for on a pay-as-you-go basis and there is no dedicated trust, the plan has no assets that are recognized under GASB 75.

GAIN/LOSS ANALYSIS

The results of this report are based on assumptions about future economic and demographic events. It is important to note over time how actual events differed from those assumptions. An event that causes the plan to cost less than was expected is described as a gain to the plan. An event that causes the plan to cost more than was expected is described as a loss to the plan. An analysis of the gains and losses between the valuation a year ago and this year's valuation shows what events are attributable to the change in expected cost of the plan.

The first table shows the development of the expected change in the liability since the last valuation (June 30, 2017, measurement date)[3]. We expected the liability to increase by approximately 8 percent as a result of passage of time. A year of interest increases costs since there is one less year of discounting on future benefit payments. In addition, active members accrue additional benefits (Service Cost). The liability is also expected to decrease by the benefit payments paid out during the year.

Expected Change in TOL	
(Dollars in Thousands)	
6/30/2017 TOL	**$5,825,822**
Service Cost	317,524
Interest	218,296
Benefit Payments	(92,197)
6/30/2018 Expected TOL	**$6,269,445**
Expected Change in TOL	**$443,623**

The end of year liability will change by more than just the expected change in liability. The other two major sources are liability gain/loss and incremental changes. A liability gain/loss examines how new census data compares to what we expected. Incremental changes reflect changes in assumptions and methodology since the prior valuation. The second table reconciles the change in liability from beginning of year to end of year by these sources.

In total, the liability (gain)/loss section increased liabilities by approximately 3 percent. We observed more terminations than we expected which resulted in a 2 percent decrease in liabilities since members that terminate prior to retirement eligibility are not eligible for post-retirement medical benefits through PEBB. This was offset by new hires (or members hired since the last valuation), which added a 4 percent increase to liabilities since they were not valued in the previous valuation.

[3]*A valuation with a 6/30/2017 measurement date was completed for the 2018 CAFR. Please see Additional Services OPEB on the OSA website for additional detail.*

In total, the incremental changes reduced liabilities by approximately 24 percent. They are summarized below.

- **Reflecting Dental Benefits**: Beginning with this valuation, we value the dental benefits for PEBB members which increased the TOL by 3 percent. Dental benefits are not new to PEBB members, but prior valuations excluded these benefits.
- **Discount Rate Change**: The discount rate increased from 3.58 percent to 3.87 percent with the new measurement date which decreased liabilities by 4 percent.
- **Update Costs and Retiree Contributions**: We received new healthcare costs, retiree contributions, and aging factor assumptions from Milliman. Updating the healthcare costs/retiree contributions and aging factors decreased liabilities by 10 percent.
  - The claims and retiree contribution assumptions can be volatile since they are developed using the most recent 12 months of data. The decrease is generally due to recent experience and prescription drug costs that were less than previously assumed.
  - Milliman relied on nationwide data in order to have sufficient credibility to set the aging factors assumption. In comparison to the previous assumptions, the medical aging factors for Medicare members have flattened (or reduced) due to how prescription drugs are provided to retirees as they age.
- **Update Healthcare Trends**: We received new assumptions for healthcare trends from Milliman. The updated healthcare trends decreased liabilities by 19 percent. Healthcare trends for medical costs are generally lower than the prior valuation due to lower prescription drug trends and our office's lower long-term inflation assumption. In addition, the healthcare trends applied to medical premiums reflect the projected aging of the retiree population which further reduced the liability. This is a change from prior valuations.
- **2019 Legislation Impacting Explicit Subsidy**: After the healthcare trend assumptions were produced, the Washington State Legislature increased the explicit subsidy during the 2019 Legislative Session. Milliman provided updated assumptions to reflect this change which increased liabilities by approximately 7 percent.

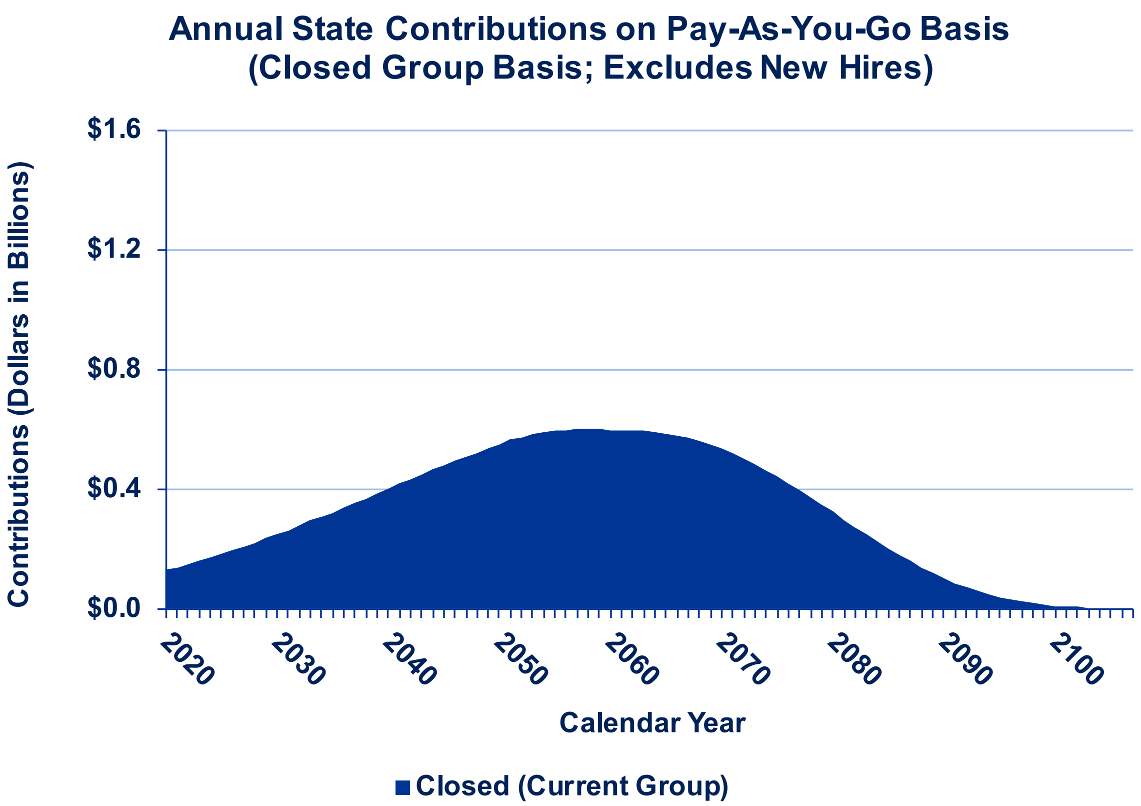
Change in TOL by Source	
(Dollars in Thousands)	
6/30/2017 TOL	**$5,825,822**
Expected Change in Liability	$443,623
Liability (Gain)/Loss	
Termination	($135,527)
Retirement	5,901
Mortality	(65,914)
Disability	(3,023)
New Hires	206,134
Other Liabilities	191,691
Total Liability (Gains)/Losses	**$199,261**
Incremental Changes	
Reflecting Dental Benefits	$149,162
Discount Rate Change	(245,094)
Update Costs/Retiree Contributions	(594,671)
Update Healthcare Trends	(1,088,488)
2019 Legislation Impacting Explicit Subsidy	389,017
Total Incremental Changes	**($1,390,074)**
Total Change	**($747,189)**
6/30/2018 TOL	**$5,078,633**

If additional information is needed about the healthcare assumptions or the gain/loss analysis, please contact our office.

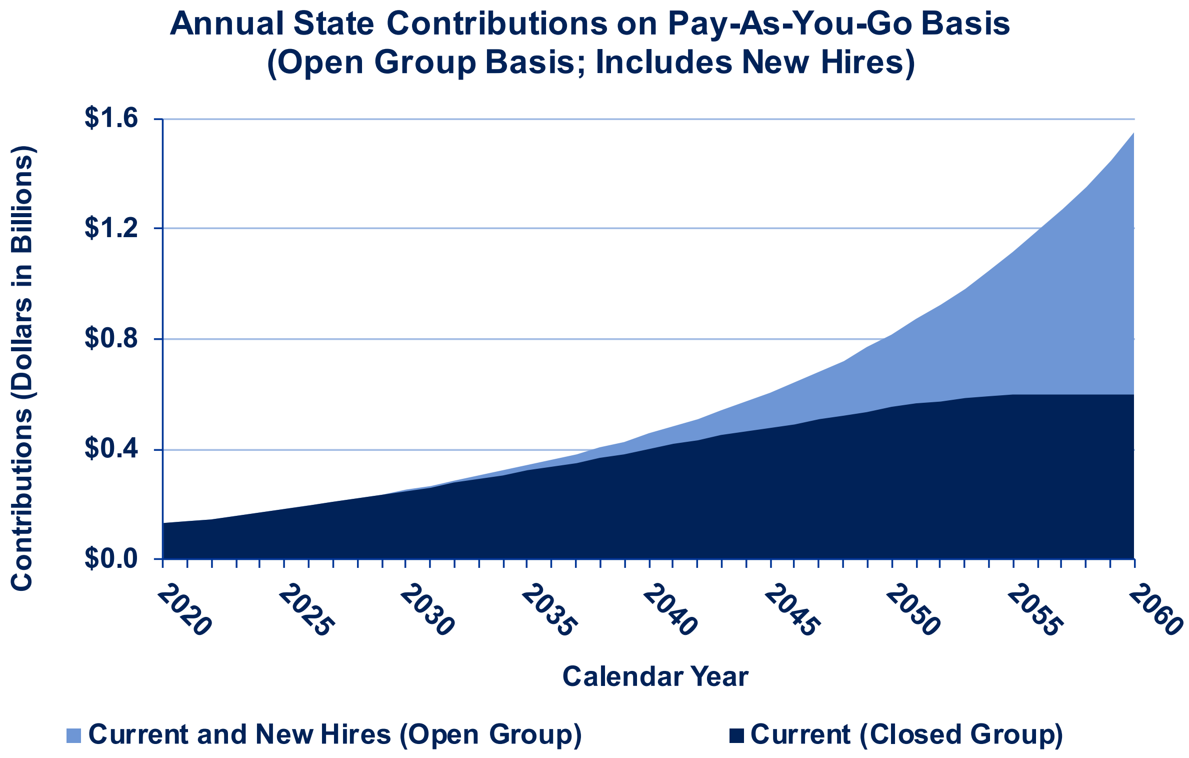
PROJECTIONS

It is important to look at the projections of the benefit payments (or employer contributions) in order to determine if the payments are manageable. Projections allow policy decision makers to determine the best funding policy for the state and their constituents while providing investors and stakeholders knowledge of what lies ahead.

First, we observe what the stream of contributions will look like with a pay-as-you-go funding policy for the current members for the next 90 years. Over the next 40 years, the annual contributions increase as a result of the large number of active employees retiring and high assumed medical inflation. After 40 years, the annual contributions will reach a peak and decrease to zero in the long-run as projected medical inflation slows down and the closed future retiree population starts to dwindle.



Thus far, we have only looked at contributions for a closed group. In other words, we have only looked at the contributions that would pay for the benefits of the current members. However, new hires will enter the plan, resulting in steady contribution increases into the future. These subsidies are also considered when choosing how to fund the current liabilities since they represent expected real cash flows in the future. The following graph illustrates expected state contributions on both an open and closed-group basis.



Note that the contributions in this graph are higher than those in the prior graph because they include contributions for new hires. For this illustration, we prepared new hire cohorts based upon the Public Employees' Retirement System (PERS) Plans 2/3 demographics displayed on our website. Further, we assumed that the total active population will increase by our PERS Annual Growth in Membership assumption of 0.95 percent. Contributions could also be more or less if the explicit subsidy grows more or less than assumed.

IV. PARTICIPANT DATA

SUMMARY OF PEBB MEMBERSHIP

The table below summarizes data used in the actuarial valuation for the June 30, 2018, measurement date. The Summary of Plan Participants includes K-12 and Political Subdivisions to help provide context on the size of all employers who offer PEBB plan benefits to their retirees.

Summary of Plan Participants				
	State	K-12*	Political Subdivisions	Total
Active Employees**				
Number	123,160	136,452	16,841	276,453
Average Age	45.9	47.0	46.9	46.5
Average Service	11.0	11.1	11.3	11.0
Retirees and Spouses***				
Number	47,583	51,255	3,528	102,366
Average Age	73.3	73.5	70.1	73.3

**For the purpose of this report, we assume all K-12 employees, who meet the eligibility requirements will have the option to join PEBB at retirement. With the recent creation of the School Employees Benefit Board (SEBB) program, that assumption may change in future reports.*

***Includes members who waived or did not select medical coverage, as those members may be eligible for PEBB at retirement.*

****Includes dependent spouses. These counts differ from the GASB 75 Summary of Plan Participants table which excludes dependent spouses, per GASB requirements.*

The number of active K-12 employees currently participating in PEBB is significantly lower than counts in the table above. As of June 30, 2018, there were 4,041 active K-12 employees in PEBB. Prior to creation of the School Employees Benefit Board (SEBB) program, all school district employees are provided access to PEBB upon retirement even if their employer did not offer PEBB medical coverage during their employment. On the other hand, non K-12 employees generally have access to PEBB upon retirement only if their current employer offers PEBB medical plans. Beginning January 1, 2020, the SEBB program will offer medical plans outside of PEBB for their employees prior to retirement and this program may change K-12 eligibility for PEBB. We will continue to monitor how K-12 members are impacted by the SEBB program.

CHANGE IN COUNTS

For comparison purposes, we summarized how the state counts have changed since the prior valuation.

Change in State PEBB Plan Participation		
	2017*	**2018****
Active Employees		
Total Number	121,518	123,160
Actively Participating	111,467	112,689
Not Actively Participating	10,051	10,471
Average Age	46.1	45.9
Average Service	11.2	11.0
Retirees and Spouses		
Total Number	45,141	47,583
Retirees and Surviving Spouses	32,107	33,735
Covered (Dependent) Spouses	13,034	13,848
Average Age	73.1	73.3
Average Monthly Subsidy	$174	$176

**Census data collected as of January 1, 2017.*

***Census data collected as of June 30, 2018.*

MEDICAL AND DENTAL PLANS

PEBB offers a variety of medical plans but there are four "families" of health insurances including: Uniform Medical Plan, Kaiser Permanente Washington (formerly known as Group Health), Kaiser Permanente Northwest (formerly known as Kaiser Permanente), and Plan F. As of this valuation, the Uniform Medical Plan is the most commonly selected medical plan.

Dental benefits are offered to PEBB participants and members have the option of three plans including: Uniform, DeltaCare, and Willamette. As of this valuation, Uniform is the most commonly selected dental plan.

The table below summarizes the medical and dental plan selections for the state as of June 30, 2018.

Medical and Dental Plan Selection for State	
Medical Plan Selection	
Active Employees	**Percent**
Uniform Medical Plan	71%
Kaiser Permanente WA	28%
Kaiser Permanente NW	1%
Retirees and Spouses	**Percent**
Uniform Medical Plan	60%
Kaiser Permanente WA	30%
Kaiser Permanente NW	2%
Plan F	8%
Dental Plan Selection	
Active Employees	**Percent**
Uniform	78%
DeltaCare	11%
Willamette	11%
Retirees and Spouses	**Percent**
Uniform	93%
DeltaCare	2%
Willamette	5%

We expect the headcounts in Plan F to decline in future reports since new members will no longer be eligible to participate in Plan F beginning January 1, 2020[4].

[4]Article: *Why is Medicare Supplement Plan F Being Phased Out In 2020?*

V. ASSUMPTIONS

We use both economic and demographic assumptions to determine liabilities for this valuation. This section summarizes our assumptions.

ECONOMIC ASSUMPTIONS

The economic assumptions are used in the actuarial valuation to determine liabilities and benefit payments in the future. For presentation purposes, they are shown separately for non-healthcare and healthcare.

The **non-healthcare** economic assumptions are summarized in the table below.

Non-Healthcare Economic Assumptions		
Discount Rate*	Beginning of Year (June 30, 2017)	3.58%
	End of Year (June 30, 2018)	3.87%
Inflation**		2.75%

**Per Bond Buyer General Obligation 20-Bond Municipal Index.*

***Based on the CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bremerton, WA - All Items.*

The inflation assumption is a building block component of the healthcare trend rates and reflects our office's current assumption for future inflation. This assumption is studied by our office every two years as part of the Economic Experience Study. Please see our website for the most recent study. The PEBB programs do not provide salary-based benefits, however we rely on a salary growth assumption to complete this analysis based on the GASB 75 prescribed EAN cost method. All other non-healthcare economic assumptions, including salary growth, are consistent with assumptions presented in the *June 30, 2017 Actuarial Valuation Report (AVR).*

The **healthcare** economic assumptions specify how we expect the subsidies will grow in the future. We relied on Robert Schmidt, a healthcare actuary in Milliman's Boise office, contracted through the HCA, to determine the healthcare economic assumptions. Please note, after these assumptions were prepared, the Supplemental Budget adopted during the 2019 Legislative Session increased the cap on the monthly premium reduction for Medicare (post-65) retirees and their spouses, also referred to as the explicit subsidy. In 2019, the cap is $168 per month and the Supplemental Budget increased that amount to $183 on January 1, 2020. While the healthcare economic assumptions assumed future increases to this cap, the short-term increase to $183 on January 1, 2020, is larger than was assumed. In consultation with Robert Schmidt, we agreed this change was material and its impact should be reflected now as the assumptions would not be reviewed for another two years. Instead of preparing a full set of new healthcare trends, based on Milliman's input, we increased the Post-Medicare liabilities by 9.2 percent to reflect the impact of this legislation.

As you review the tables below, please remember the healthcare trend assumptions were prepared prior to the Supplemental Budget adopted during the 2019 Legislative Session and do not reflect legislation that increased the explicit subsidy above short-term expectations.

Medical costs and retiree contributions are expected to grow in the future so we project future growth using the healthcare trend rates. Based on discussions with HCA, OFM and OSA, Milliman prepared trend assumptions that assume no change in the explicit subsidy ($168 per month) through the end of calendar year 2022. After that, claims and retiree contributions are expected to grow with the assumed healthcare trend. The healthcare trends vary by medical plan (UMP, Kaiser Permanente plans [Insured Medical], Plan F [Medicare Supplement], and Dental) and by Medicare coverage (Non-Medicare, Medicare). The trends can also vary for costs and retiree contributions.

Medical and Dental Costs Healthcare Trend - Includes Excise Tax*

	UMP		Insured Medical			
Fiscal Year	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement	Dental
2019	7.7%	3.3%	4.7%	4.6%	3.1%	1.1%
2020	6.3%	7.8%	6.3%	7.8%	5.6%	2.0%
2021	6.0%	7.8%	6.2%	7.8%	5.0%	2.0%
2022	5.2%	5.2%	5.4%	5.1%	5.1%	2.5%
2023	5.4%	5.2%	5.3%	5.1%	5.1%	3.5%
2024	5.6%	5.2%	5.4%	5.2%	5.2%	4.0%
2025	5.6%	5.3%	5.4%	5.2%	5.2%	4.0%
2026	5.6%	5.3%	5.5%	5.2%	5.2%	4.0%
2027	5.6%	5.3%	5.6%	5.3%	5.2%	4.0%
2028	5.7%	5.3%	5.8%	5.3%	5.3%	4.0%
2029	5.7%	5.3%	5.9%	5.3%	5.3%	4.0%
2030	6.2%	5.4%	5.9%	5.3%	5.3%	4.0%
2040	6.3%	5.9%	6.0%	5.4%	5.4%	4.0%
2050	5.8%	6.1%	5.8%	5.2%	5.2%	4.0%
2060	5.5%	5.8%	5.6%	5.5%	5.1%	4.0%
2070	4.9%	5.1%	4.9%	5.3%	4.6%	4.0%
2080	4.5%	4.6%	4.6%	4.8%	4.6%	4.0%
2090	4.5%	4.6%	4.5%	4.7%	4.7%	4.0%
2100+	4.5%	4.6%	4.5%	4.7%	4.9%	4.0%

Note: For display purposes, tables were summarized. Please see our website for the full table.

**Excludes impact of 2019 Legislation which increased the Medicare premium reduction to $183 on January 1, 2020.*

The healthcare retiree contribution trends for dental benefits and non-Medicare aged members match the healthcare cost inflation assumptions. The Medicare aged retiree contribution trends are higher than the cost trends for two reasons: 1) in the near-term to reflect the maximum explicit subsidy is assumed to remain at $168 per month through 2022, and 2) in the long-term to reflect the projected aging of the retiree population.

Medical and Dental Retiree Contributions Healthcare Trend - Includes Excise Tax*						
	UMP		Insured Medical			
Fiscal Year	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement	Dental
2019	7.7%	2.4%	4.7%	4.0%	3.3%	1.1%
2020	6.3%	12.1%	6.3%	15.9%	5.8%	2.0%
2021	6.0%	11.7%	6.2%	14.8%	5.2%	2.0%
2022	5.2%	6.5%	5.4%	7.2%	5.3%	2.5%
2023	5.4%	5.4%	5.3%	5.3%	5.3%	3.5%
2024	5.6%	5.4%	5.4%	5.4%	5.4%	4.0%
2025	5.6%	5.5%	5.4%	5.4%	5.4%	4.0%
2026	5.6%	5.5%	5.5%	5.4%	5.4%	4.0%
2027	5.6%	5.5%	5.6%	5.5%	5.4%	4.0%
2028	5.7%	5.5%	5.8%	5.5%	5.5%	4.0%
2029	5.7%	5.5%	5.9%	5.5%	5.5%	4.0%
2030	6.2%	5.6%	5.9%	5.5%	5.5%	4.0%
2040	6.3%	6.0%	6.0%	5.5%	5.5%	4.0%
2050	5.8%	6.2%	5.8%	5.3%	5.3%	4.0%
2060	5.5%	5.8%	5.6%	5.5%	5.1%	4.0%
2070	4.9%	5.1%	4.9%	5.3%	4.6%	4.0%
2080	4.5%	4.6%	4.6%	4.8%	4.6%	4.0%
2090	4.5%	4.6%	4.5%	4.7%	4.7%	4.0%
2100+	4.5%	4.6%	4.5%	4.7%	4.9%	4.0%

Note: For display purposes, tables were summarized. Please see our website for the full table.

**Excludes impact of 2019 Legislation which increased the Medicare premium reduction to $183 on January 1, 2020.*

Milliman also prepared cost and retiree contribution trend rates without impact of the excise tax. We analyzed the impact of this assumption as part of the Appendices.

Medical and Dental Costs Healthcare Trend - Excludes Excise Tax*						
	UMP		Insured Medical			
Fiscal Year	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement	Dental
2019	7.7%	3.3%	4.7%	4.6%	3.1%	1.1%
2020	6.3%	7.8%	6.3%	7.8%	5.6%	2.0%
2021	6.0%	7.8%	6.0%	7.8%	5.0%	2.0%
2022	5.2%	5.2%	5.2%	5.1%	5.1%	2.5%
2023	5.2%	5.2%	5.2%	5.1%	5.1%	3.5%
2024	5.3%	5.2%	5.2%	5.2%	5.2%	4.0%
2025	5.3%	5.3%	5.3%	5.2%	5.2%	4.0%
2026	5.3%	5.3%	5.3%	5.2%	5.2%	4.0%
2027	5.4%	5.3%	5.3%	5.3%	5.2%	4.0%
2028	5.4%	5.3%	5.3%	5.3%	5.3%	4.0%
2029	5.4%	5.3%	5.4%	5.3%	5.3%	4.0%
2030	5.4%	5.4%	5.4%	5.3%	5.3%	4.0%
2040	5.5%	5.5%	5.5%	5.4%	5.4%	4.0%
2050	5.2%	5.2%	5.2%	5.2%	5.2%	4.0%
2060	5.2%	5.1%	5.1%	5.1%	5.1%	4.0%
2070	4.7%	4.7%	4.7%	4.7%	4.6%	4.0%
2080	4.4%	4.4%	4.4%	4.4%	4.4%	4.0%
2090	4.4%	4.4%	4.4%	4.4%	4.4%	4.0%
2100+	4.4%	4.4%	4.4%	4.4%	4.4%	4.0%

Note: For display purposes, tables were summarized. Please see our website for the full table.

**Excludes impact of 2019 Legislation which increased the Medicare premium reduction to $183 on January 1, 2020.*

Medical and Dental Retiree Contributions Healthcare Trend - Excludes Excise Tax*						
	UMP		Insured Medical			
Fiscal Year	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement	Dental
2019	7.7%	2.4%	4.7%	4.0%	3.3%	1.1%
2020	6.3%	12.1%	6.3%	15.9%	5.8%	2.0%
2021	6.0%	11.7%	6.0%	14.8%	5.2%	2.0%
2022	5.2%	6.5%	5.2%	7.2%	5.3%	2.5%
2023	5.2%	5.4%	5.2%	5.3%	5.3%	3.5%
2024	5.3%	5.4%	5.2%	5.4%	5.4%	4.0%
2025	5.3%	5.5%	5.3%	5.4%	5.4%	4.0%
2026	5.3%	5.5%	5.3%	5.4%	5.4%	4.0%
2027	5.4%	5.5%	5.3%	5.5%	5.4%	4.0%
2028	5.4%	5.5%	5.3%	5.5%	5.5%	4.0%
2029	5.4%	5.5%	5.4%	5.5%	5.5%	4.0%
2030	5.4%	5.6%	5.4%	5.5%	5.5%	4.0%
2040	5.5%	5.6%	5.5%	5.5%	5.5%	4.0%
2050	5.2%	5.3%	5.2%	5.3%	5.3%	4.0%
2060	5.2%	5.1%	5.1%	5.1%	5.1%	4.0%
2070	4.7%	4.7%	4.7%	4.7%	4.6%	4.0%
2080	4.4%	4.4%	4.4%	4.4%	4.4%	4.0%
2090	4.4%	4.4%	4.4%	4.4%	4.4%	4.0%
2100+	4.4%	4.4%	4.4%	4.4%	4.4%	4.0%

Note: For display purposes, tables were summarized. Please see our website for the full table.

**Excludes impact of 2019 Legislation which increased the Medicare premium reduction to $183 on January 1, 2020.*

The retiree claim costs and retiree contributions are displayed in the next two tables. The tables are broken into non-Medicare and Medicare aged populations. For display purposes, we show the retiree claim costs at age 65 which represents the expected average claim costs for a 65-year old retiree. On average, younger retirees cost less and older retirees cost more, prior to any Medicare offsets. The retiree contributions reflect the contributions used in this valuation and will not match actual plan premiums[5] because the contributions in this report exclude direct pass through expenses, like administration fees, that are paid 100 percent by the retirees.

[5]*Please see the Washington State Health Care Authority website for actual premiums.*

Annual Costs and Retiree Contributions at Age 65 (Non-Medicare)			
Medical Plan	**Costs**		**Retiree Contributions**
	Males	**Females**	**Males and Females**
Kaiser Permanente WA Classic	$19,457	$17,168	$8,648
Kaiser Permanente WA CDHP	8,828	7,789	6,306
Kaiser Permanente WA Value	14,161	12,494	7,676
Kaiser Permanente WA Sound Choice	10,833	9,559	7,199
Kaiser Permanente NW Classic	16,054	14,165	8,357
Kaiser Permanente NW CDHP	9,634	8,500	6,333
Uniform Medical Plan Classic	12,057	10,638	8,054
Uniform Medical Plan CDHP	8,340	7,359	6,305
Uniform Medical Plan Puget Sound	12,855	11,343	7,249
Uniform Medical Plan UW	$13,125	$11,581	$7,249
Dental Plan	**Costs**		**Retiree Contributions**
	Males	**Females**	**Males and Females**
Uniform	$619	$602	$550
DeltaCare	577	561	521
Willamette	$603	$587	$474

Annual Costs and Retiree Contributions at Age 65 (Medicare)			
Medical Plan	**Costs**		**Retiree Contributions**
	Males	**Females**	**Males and Females**
Kaiser Permanente WA Medicare	$3,544	$3,419	$1,958
Kaiser Permanente NW Classic	3,554	3,429	1,966
Uniform Medical Plan Classic	$5,285	$5,098	$3,814
Dental Plan	**Costs**		**Retiree Contributions**
	Males	**Females**	**Males and Females**
Uniform	$619	$602	$550
DeltaCare	577	561	521
Willamette	$603	$587	$474
Medical Cost Supplement Plan	**Costs**		**Retiree Contributions**
	Males	**Females**	**Males and Females**
Plan F Retired	$2,350	$2,267	$1,274
Plan F Disabled	$3,995	$3,854	$2,425

The retiree contributions do not vary by age. non-Medicare medical retiree contributions are based on pooled claim costs for active employees and non-Medicare retirees. Medicare medical retiree contributions reflect the reduction from the explicit subsidy. Dental retiree contributions are based on pooled claims for all members and the contribution does not change based on eligibility for Medicare.

Unlike retiree contributions, the medical and dental costs vary by age. We use aging factors to determine the expected average claims cost at different ages. As an illustrative example, to determine the average medical claims cost for a 66-year-old, apply an example aging factor of 4 percent to a 65-year-old hypothetical cost [$10,000 * (1 + 0.04)]. This formula results in a 66-year-old theoretical retiree medical cost of $10,400.

Aging Factors for Costs				
	Medical		Dental	
Age	Males	Females	Males	Females
0-26	5.73%	6.16%	3.61%	1.75%
27-31	(1.09%)	9.66%	1.81%	1.08%
32-36	14.93%	2.59%	0.77%	0.51%
37-41	(1.27%)	0.82%	0.73%	0.80%
42-46	(0.03%)	(1.13%)	1.41%	0.95%
47-51	0.68%	(1.97%)	2.59%	1.86%
52-56	2.58%	1.04%	2.46%	1.38%
57-61	4.69%	2.80%	2.16%	1.63%
62-64	6.63%	3.74%	1.55%	(0.08%)
65-71	2.03%	1.24%	1.55%	(0.08%)
72-76	1.40%	0.74%	0.00%	0.00%
77-81	0.44%	0.29%	0.00%	0.00%
82-88	(0.32%)	(0.52%)	0.00%	0.00%
89+	0.00%	0.00%	0.00%	0.00%

DEMOGRAPHIC ASSUMPTIONS

Demographic assumptions include rates of decrement (reasons members would exit employment: retirement, termination, disability, and mortality), as well as participation percentage, percentage of spouses covered, and Medicare coverage. The rates of decrement are consistent with those presented in the 2017 AVR; we apply PERS decrement rates to the State and Political Subdivision members. TRS and SERS decrement rates are applied to K-12 members.

Participation percentage refers to how many current active members, who meet the eligibility requirements, will elect to enroll in a PEBB plan as a retiree. Percentage of spouses covered and Medicare coverage refer to how many current active members will cover a spouse and what percentage will enroll in Medicare Parts A & B once eligible. These assumptions can be seen in the table below.

Demographic Assumptions	
Participation Percentage	65%
Percentage of Spouses Covered	45%
Medicare Coverage After Initial Participation	100%

In addition to post-retirement participation assumptions, we also make an assumption on the medical plan a member selects upon attaining eligibility for Medicare. We assume that members will select the Medicare plan within the same "family" of health insurances. For example, we assume Non-Medicare retirees in Kaiser Permanente Washington Classic will select Kaiser Permanente Washington Medicare upon turning age 65.

We further make a Plan-Choice assumption for 1) active employees in K-12 (i.e. TRS and SERS members), that are not PEBB subscribers prior to retirement and 2) members that waived or did not select PEBB coverage. Specifically, we assume that they will elect to join one of three medical and dental plans using percentages displayed in the table below. These assumptions are based on observed plan selection behavior from our most recent census data.

Default Medical and Dental Coverage	
Medical Coverage	
Uniform Medical Plan	76%
Kaiser Permanente Washington Classic	10%
Kaiser Permanente Washington Value	14%
Dental Coverage	
Uniform	83%
DeltaCare	8%
Willamette	9%

Survivors of PEBB members that decease prior to retirement are eligible for PEBB. We considered valuing this benefit but ultimately did not include this liability. We tested the impact of this liability and determined it was not material to the plan as a whole.

PLAN ELIGIBILITY

A future retiree's access to PEBB depends on meeting the retirement eligibility of their respective retirement system at the time of retirement. The following table shows the retirement eligibility for each system and plan.

Retirement Eligibility By Plan

Plan	*Years of Service*	*Age*
PERS 1 / TRS 1	5	60
	25	55
	30	Any
PERS, TRS, SERS Plan 2	5	65
	20	55
PERS, TRS, SERS Plan 3	5	65
	10	55
PSERS 2	5 Total	65
	10 PSERS	60
	20 Total	53
WSPRS 1/2	Any	55
	25	Any
Higher Education*	10	55
	Any	62

**Retirement eligibility may vary by institution. The retirement eligibility in the table above was used for all institutions in our report.*

VI. APPENDICES

OTHER LIABILITY INFORMATION

LIABILITY ESTIMATES BEYOND THE STATE

For informational purposes only, we provide the TOL for the other major groups participating in PEBB. Individual employers within these groups are generally required to calculate and report their OPEB liability. We show the total across all groups in the PEBB program for context below.

Total OPEB Liability				
(Dollars in Thousands)	**State**	**K-12**	**Political Subdivisions**	**Total**
Net Subsidy = Gross Costs - Cost Sharing				
Actives (Future Retirees)				
Implicit Medical Subsidy	$412,193	$387,998	$49,492	$849,683
Explicit Medical Subsidy	2,889,810	2,979,311	404,009	6,273,130
Total	**$3,302,003**	**$3,367,309**	**$453,501**	**$7,122,813**
Retirees				
Implicit Medical Subsidy	$48,974	$32,778	$6,109	$87,861
Explicit Medical Subsidy	1,727,657	1,889,044	144,346	3,761,047
Total	**$1,776,631**	**$1,921,822**	**$150,455**	**$3,848,908**
Total (Actives and Retirees)				
Net TOL as of 6/30/2018	**$5,078,633**	**$5,289,132**	**$603,956**	**$10,971,721**

SENSITIVITY ANALYSIS

A single point estimate is only the start of understanding the GASB 75 liabilities. This estimate will only be realized if future economic and demographic experience matches our assumptions. It is equally important to understand what will happen if the economic and demographic experience is different than we assumed. For instance, as part of the Actuarial Exhibits section, we analyze the impact of changing the Healthcare Trend and Discount Rate assumptions by 100 basis points. In this section, we also consider the impact of excluding the excise tax and varying the participation percentage.

Impact of Excise Tax

The valuation results for this report include the impact of the excise tax under the Patient Protections and Affordable Care Act, but we also examined the impact of excluding the excise tax. The table below shows the results of excluding the excise tax for the State, as a PEBB plan employer.

Sensitivity Analysis - Impact of Excise Tax		
(Dollars in Thousands)	**w/o Excise Tax**	**w/ Excise Tax**
Total OPEB Liability	$4,944,117	$5,078,633

Participation Percentage

For the last sensitivity analysis, we considered 15 percent lower and higher participation percentages than our expectation. The table below shows the results of the sensitivity around the participation percentage for the State, as a PEBB plan employer.

Sensitivity Analysis - Participation Percentage			
(Dollars in Thousands)	**Low (50%)**	**Expected (65%)**	**High (80%)**
Total OPEB Liability	$4,316,633	$5,078,633	$5,840,634

THE OFFICE OF THE STATE ACTUARY'S WEBSITE

Our website contains additional information and educational material not included in this report. The site also contains an archive of prior Actuarial Valuation Reports and other recent studies that OSA had produced. The following is a list of materials found on our website that could be useful to the reader.

Glossary

Definitions for frequently used actuarial terms.

Prior OPEB Valuations

Archive of prior OPEB valuations.

OPEB Tools

Employers other than the state should not use this report to satisfy their individual employer reporting requirements under GASB 75. OSA created an online tool to help small employers calculate their individual reporting requirements. This online tool utilizes the alternative measurement method allowed under GASB 75 and can be used by employers with fewer than one hundred total plan members.

OPEB Assumptions

Tables display annual healthcare trends.

2007-12 Demographic Experience Study

Most recent report examining demographic behavior within each retirement system

2017 Report on Financial Condition and Economic Experience Study

Report examining the financial health of the retirement systems and long-term economic assumptions

WASHINGTON STATE

2018 Other Postemployment Benefits Actuarial Valuation Report

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