

Washington State



2017 Other Post-Employment Benefits Actuarial Valuation Report



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State Actuary

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Letter of Introduction Other Post-Employment Benefits Actuarial Valuation Report July 2017

In accordance with the reporting requirements of Statement No. 45 of the Governmental Accounting Standards Board (GASB), this report documents the results of an actuarial valuation of the employer-provided subsidies associated with post-employment medical benefits provided through the Public Employee Benefits Board (PEBB). PEBB was created within the Washington State Health Care Authority 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 PEBB plan Other Post-Employment Benefits (OPEB) liability as of January 1, 2017. This liability belongs to the participating employers of the plan, which include the state, K-12 school districts, and political subdivisions of the state. The valuation determines the total liability for the retiree medical benefits and the Annual Required Contribution needed to pre-fund them (although this funding policy is not required).

The report is organized into the following sections:

- ❖ Background.
- ❖ Actuarial Exhibits.
- ❖ Sensitivity Analysis.
- ❖ Participant Data.
- ❖ Appendices.

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 provides the results of this valuation and the necessary exhibits to satisfy the requirements of GASB Statement No. 45. The **Sensitivity Analysis** section provides further information about the impact of the methods and assumptions used in our calculations. The **Participant Data** section provides detailed information about the retired members who receive the subsidies and the active members who are potentially eligible for the subsidies. The **Appendices** provide a summary of the principal actuarial assumptions and methods, a summary of plan provisions, and a glossary of actuarial terms used throughout this report.



With the exception of employers noted in the appendix, employers should not use this report to satisfy their individual employer reporting requirements under GASB Statement No. 45. The Office of the State Actuary created an online tool to help small employers calculate their individual reporting requirements. This online tool is meant to perform an alternative measurement method mentioned in GASB Statement No. 45 and can be used by employers with fewer than one hundred total plan members. The online tool is available on our [website \(leg.wa.gov/osa\)](http://leg.wa.gov/osa).

We encourage you to submit any questions you might have concerning this report to our regular e-mail address: actuary.state@leg.wa.gov. We invite you to visit our website for more information regarding the actuarial funding of the Washington State retirement systems.

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Senior Actuary

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Key Results



KEY RESULTS

This section documents the key Governmental Accounting Standards Board (GASB) Statement No. 45 (GASB 45) valuation and accounting results related to the Public Employee Benefits Board (PEBB) employer-provided subsidies in Washington State. GASB 45 requires the disclosure of the following key measurements.

Actuarial Accrued Liability (AAL) – The amount of subsidies expected to be paid to current retirees and current active members (future retirees) that have already been earned, measured in today’s dollars. This is also referred to as the GASB 45 liability. Consistent with GASB 45, we assume continuation of the current plan provisions for purposes of this measurement.

Annual Required Contribution (ARC) – The annual amount required under the actuarial cost method to fully fund the liability. It is made up of the normal cost (the amount earned in the next year) plus the amortization of the unfunded AAL (the unfunded past liability).

Annual Other Post-Employment Benefits (OPEB) Cost – Equals the ARC plus the Amortization of the Net OPEB Obligation (NOO, see below). The Annual OPEB Cost is the “expense” for financial reporting.

Net OPEB Obligation (NOO) – The cumulative difference between the Annual OPEB Cost and actual employer contributions. The NOO is the “balance sheet liability” for financial reporting.

The table below shows these key measurements for the PEBB employers by major category. The State category contains all Washington State agency and higher education employers. K-12 employers (school districts) are split from the State because they are legally separate governmental entities. The Political Subdivision category includes local governments who have applied and been accepted to join PEBB. Together, these three groups comprise the PEBB employers.

Please read the rest of the report for a detailed description of what these measures represent, how they are calculated, and how they should be used. Please review the *Sensitivity Analysis* section for more information on how these results change when our assumptions change.

GASB 45 Key Results				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
Actuarial Accrued Liability (AAL)	\$5,480,321	\$5,019,456	\$569,005	\$11,068,782
Annual Required Contribution (ARC)	534,198	489,500	62,813	1,086,510
Annual OPEB Cost	530,287	485,852	62,275	1,078,414
Net OPEB Obligation (NOO)*	\$3,195,571	\$2,952,692	\$401,493	\$6,549,756

*Estimated NOO, projected to 6/30/2017.

COMMENTS ON 2017 RESULTS

Short-term actuarial gains or losses occur when actual economic and demographic experience differs from what we assume in the valuation. Actuarial gains reduce the GASB 45 liability; actuarial losses increase the GASB 45 liability. Under a reasonable set of actuarial assumptions and methods, actuarial gains and losses offset over long-term experience periods.

KEY RESULTS

Significant changes in plan provisions or actuarial assumptions and methods also impact the GASB 45 liability. A detailed analysis of the gain/loss can be found in the **Actuarial Exhibits** section. Significant factors that impacted the results of this valuation include the following:

➤ We lowered the discount rate from 4.00 to 3.75 percent per year. This increased liabilities by approximately 6 percent. We updated this assumption based upon a review of investments managed by the Office of the State Treasurer and our expectations for the future.

➤ The healthcare assumption and data changes increased liabilities by approximately 3 percent from the last valuation. This increase is roughly comprised of an 18 percent increase for updating the membership data and accounting for the passage of time, a 5 percent decrease for updating the healthcare costs and premiums, and a 10 percent decrease for updating the healthcare trend. The healthcare trend, also sometimes referred to as healthcare inflation, estimates future increases to costs of medical services as well as the utilization of those services.

➤ We updated our valuation software coding based on improved understanding of the anticipated movement of future retirees into specific Medicare plans. This reduced liabilities by 15 percent.

➤ The healthcare assumptions also include the expected impact of an excise tax paid by affected employers on “Cadillac” health care plans as defined under the Patient Protection and Affordable Care Act (PPACA). This excise tax, which does not go into effect until the year 2020, represents about 2.2 percent of all liabilities. The inclusion of this tax does not represent tax advice or an opinion that this tax applies to this medical plan. Please see the **Sensitivity Analysis** section for the results of this valuation without the excise tax.

GASB Statements No. 74 and 75 will replace 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](#).



I. Background



OTHER POST-EMPLOYMENT 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, 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

The Health Care Authority (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. Each participating employer pays a portion of the premiums for active employees. For retirees, participating employers provide two different subsidies: an explicit subsidy and an implicit subsidy.

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. PEBB determines the amount of the explicit subsidy annually. The explicit subsidy is the lesser of 50 percent of the monthly premium and the dollar amount described in the table. In 2017, the dollar amount was set at \$150. For this valuation, most Medicare PEBB plan options have a 2017 monthly premium (before the explicit subsidy is applied) in excess of \$300. This means the explicit subsidy for these plans in 2017 is \$150, since \$150 is less than 50 percent of the monthly premium. The only Medicare plan option that has a 2017 monthly premium (before the explicit subsidy is applied) less than \$300 is Plan F for non-disabled retirees. In 2017, the explicit subsidy for this plan is equal to 50 percent of the monthly premium.

At the direction of HCA, Milliman prepared trend assumptions that continues the \$150 level through the end of calendar year 2018. After that, other than reflecting aging factors, claims and premiums are assumed to grow at the same rate, which means the explicit subsidy grows at the healthcare trend. For more information on aging factors and healthcare trend, please see the [Economic Assumptions](#) section of the **Appendices**.

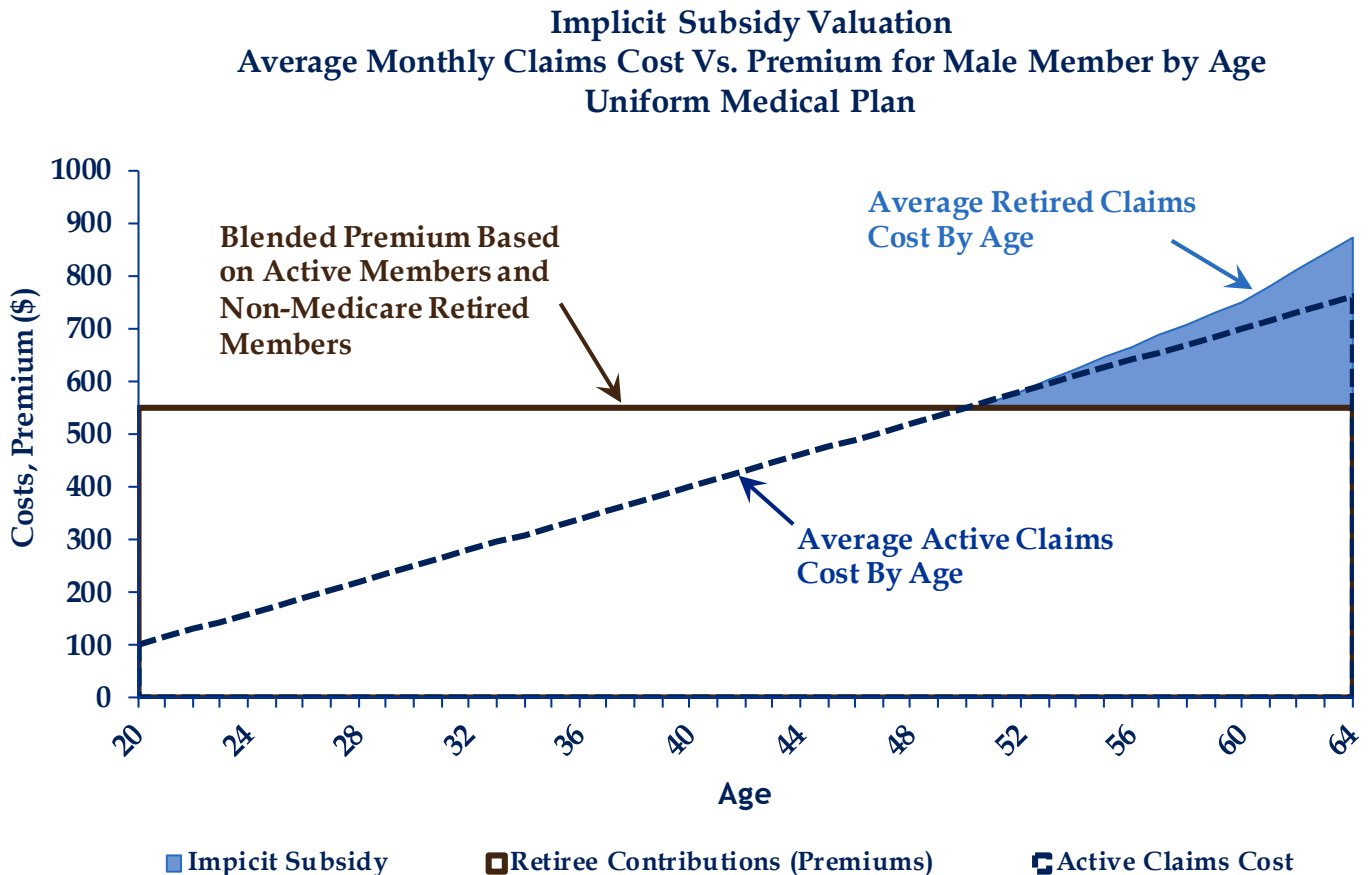
The implicit subsidy, set up under RCW 41.05.022, is more complex because it is not a direct payment from the employer on behalf of the member. Claims experience for employees

Year	Explicit Subsidy Per Month	Increase Over Prior Year
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

I. BACKGROUND

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 premium paid by the retirees. The graph below shows an example of the average monthly claims costs and the blended premium for the Uniform Medical Plan (UMP).

The horizontal line shows the constant premium for all members participating in the employee and non-Medicare eligible retiree pool. The upward sloping lines show the average monthly claims cost for each age. Whenever the retirees' upward sloping line is above the horizontal line there is an implicit subsidy (the shaded area in the graph). The value of the implicit subsidy is the difference between the higher sloped line and 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.



GASB STATEMENTS NO. 43 AND 45

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 meant 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 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 requires disclosure of information related to the entire plan. In the case of the PEBB plan, since it is considered an agent multiple-employer plan, GASB does not require a calculation of liability at the plan level.

GASB 45 requires each employer to calculate their OPEB liability. In addition to the overall liability, GASB requires a calculation of the ARC. The ARC is the annual amount required under the actuarial cost method and funding policy for amortizing the Unfunded Actuarial Accrued Liability (UAAL). GASB does not require that PEBB plan employers actually contribute the ARC each year. The ARC is documented so that all stakeholders can see the difference in the current and long-term cost of plan benefits.

In addition, the State discloses GASB 43 and 45 information in the 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 UAAL compared to payroll, budget, and tax base when making their determinations.

GASB STATEMENTS NO. 74 AND 75

GASB 74 and 75 are replacing GASB 43 and 45. The changes will be similar to the recent changes made with GASB Statements No. 67 and 68 for pension plan financial reporting and accounting. The new statements will require more extensive disclosures and required supplementary information. 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. Employees from the State Auditor's Office, the Office of Financial Management, the HCA, and the Office of the State Actuary are regularly meeting to discuss the

I. BACKGROUND

GASB 75 impacts. Please contact the [State Auditor's Office Helpdesk](#) or Debra Burleson (253.593.2047 ext. 121) if you have questions.

While GASB 45 provided the option between various acceptable actuarial costs methods to determine the AAL, GASB 75 requires the use of the Entry Age Normal (EAN) cost method. Cost methods vary in the manner they allocate benefits to past and future time periods. Please see the Glossary for an explanation of these actuarial cost methods. The table below illustrates how the January 1, 2017 AAL changes under the new methodology. Please note, the EAN AAL below does not represent the beginning total OPEB liability for the 2018 fiscal year-end. Under GASB 75, the discount rate will be based upon a 20-year municipal bond index which fluctuates from year-to-year.

Entry Age Normal Actuarial Accrued Liability (AAL)				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
EAN Net AAL	\$5,869,493	\$5,060,385	\$626,160	\$11,556,038
PUC Net AAL	\$5,480,321	\$5,019,456	\$569,005	\$11,068,782

ACTUARIAL VALUATION

We perform an actuarial valuation to determine the GASB 45 liabilities. 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. 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. The total amount remaining when there are no more benefits being paid would be zero. In this case, the benefit payments are the subsidies provided to PEBB retirees.

Under an actuarial valuation, an actuary needs inputs such as participant data, benefit provisions, and assumptions. Participant data includes the members' ages, membership service, plan selection, etc. Benefit provisions include the structure of the benefits that the members receive – in this case, the subsidies supporting retiree medical benefits. Assumptions include the interest rate (investment return), health care inflation rates, general inflation rates, decrement rates, participation rates, Medicare coverage, etc.

An actuary values these inputs using an actuarial cost method. The cost method chosen allocates costs between past and future plan membership service. Distinct actuarial cost methods produce somewhat different allocations since each method allocates cost differently. An actuary uses this information in valuation software to determine the liability and ARC. Essentially, the valuation software uses the inputs to estimate when a benefit will be paid, how much the benefit will be, and how long it will be paid to each member.

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 a NOO will accrue as the annual contributions fall short of the ARC. The results are lower current contributions in the short-run, a growing liability, and continued conflict with the principle of intergenerational equity. In addition, under pay-as-you-go funding policy, there are no assets to invest; therefore, the discount rate must be lower, generally in the range of 3 to 5 percent. A lower discount rate will mean a larger reported overall liability.

If, instead, employers fully pre-fund these liabilities, then annual contributions equal to the ARC are made and placed in an irrevocable trust. If the employers choose to fully pre-fund benefits, then a NOO will not accrue. Pre-funding will cause larger current contributions in the short-run, a lower unfunded liability, and 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, a discount rate in the range of 7 to 8 percent can be used. A higher discount rate will mean a smaller reported overall liability.

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

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

Employers could also choose a combination of the two funding policies. Partially pre-funding the liabilities will allow for an interest discount rate of 5 to 7 percent. A NOO will accrue, but not as fast as under a pay-as-you-go funding method. 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. A NOO would still accrue, however, since GASB requires funding under an irrevocable and dedicated trust. This approach would not contractualize retiree health subsidies.

COST-SHARING POLICY

Cost-sharing policy determines the funding split between employee and employer. 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,

I. BACKGROUND

so the percentage of the total cost that the employer pays will remain constant throughout the lives of the current active and inactive members. However at the direction of HCA, the healthcare inflation assumption is altered for member premiums to reflect no short-term growth in the explicit Medicare subsidies. For more information please see the Subsidies section of the *Background*. Projections could also be run to show policy decision makers what changing the cost-sharing policy further will do to the liability. It follows that reducing the cost-sharing policy, which will lead to larger retiree premiums, will reduce the OPEB liability.

II. Actuarial Exhibits





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Actuarial Certification Letter Other Post-Employment Benefits Actuarial Valuation Report July 2017

This report documents the results of an actuarial valuation of the post-retirement medical subsidies offered to retirees and their spouses by the employers participating in the Public Employee Benefits Board’s (PEBB) retiree medical plans. The primary purpose of this valuation is to determine the liability under the Governmental Accounting Standards Board (GASB) financial reporting requirements, as of January 1, 2017, for those subsidies. This valuation should not be used for other purposes. Please replace this report with a future report when available.

The Health Care Authority (HCA) and the Department of Retirement Systems (DRS) provided the member data used in this report. The raw data provided by HCA only includes individuals currently enrolled in the PEBB program. The census data is reported as of June 30, 2016, and was projected forward to match the open enrollment medical plan choices as of January 1, 2017. 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. For more information on the census data, please see the **Participant Data** section of the report.

There are currently no assets as the liability has not been pre-funded. In our opinion, the census data are adequate for the purposes of this valuation. We believe the census data is substantially complete, but as noted in the appendix, data for non K-12 employees who declined coverage as of January 1, 2017, but may be eligible for post-retirement medical from PEBB, are either excluded or indeterminable from the provided data files. The inclusion of this group at the time of retirement, when known, may materially increase the costs presented in this 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 assumptions; changes in plan provisions or applicable law, including cost-sharing between employers and retirees.

Consistent with GASB reporting requirements, we assumed a pay-as-you-go funding policy when selecting the assumed rate of investment return of 3.75 percent. The expected long-term yield on the assets used to finance the payment of benefits determines the investment return. General and salary inflation are the same as those used in the [June 30, 2016](#),



[Actuarial Valuation Report](#) (AVR). The percentage of spouses covered, Medicare coverage, and post-retirement participation assumptions are determined by the Office of the State Actuary and based on a review of past experience and expectations for the future. The remaining demographic assumptions are the same as those used in the June 30, 2016, AVR, which were developed from the [2007-2012 Experience Study](#) performed by the Office of the State Actuary. The Office of Financial Management is responsible for the selection of the actuarial cost method and funding policy for amortizing the UAAL.

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 April 28, 2017. 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 trend, 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 **Sensitivity Analysis** 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.

The Office of the State Actuary 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 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.

At the direction of HCA, Milliman prepared different healthcare trend assumptions for claims costs versus retiree contributions (premiums). The two sets of assumptions only differ for 2017 and 2018, to reflect the assumption that the explicit subsidy, permitted under RCW 41.05.085, will remain at the current level of 150 dollars per month for these two years. In 2019 and beyond, premiums and claims costs are assumed to grow by the same healthcare trends. By extension, in 2019 and beyond, the explicit subsidy will grow by the healthcare trend as well. While we believe this assumption to be reasonable, we do note the explicit subsidy has remained at 150 dollars per month since 2011, when it was 183 dollars per month. This subsidy effectively reduces retiree premiums. If the explicit subsidy remains at 150 dollars per month beyond 2019, or grows at a rate less than the healthcare trend, the results contained herein may be overstated. The **Sensitivity Analysis** section illustrates how much the liabilities would reduce if we assumed a lower trend rate. For reference, over 90 percent of the PEBB plan liability, as of this measurement, is attributable to the explicit subsidy.

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.

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PRESENT VALUE OF FUTURE BENEFITS

The Present Value of Future Benefits (PVFB) is the present value of future medical subsidies paid on behalf of the current actives (future retirees) and current retirees of the employers participating in the PEBB plan. Subscribers earn these benefits over their working career. The PVFB is based on all service currently earned and all service projected to be earned in the future. In other words, this is the present value of all subsidies expected to be paid out. The GASB 45 liability, however, is limited to the present value of all subsidies expected to be paid out that have already been earned as of the valuation date.

The table below shows the PVFB as of the valuation date, January 1, 2017, split among PEBB plan employers by major category, grouped by current active and inactive members. The [Detailed Liability Results](#) section of the **Appendices** shows what portions of the liability are attributable to the explicit subsidy and implicit subsidy. The table is broken into gross costs (total cost), cost sharing (retiree premiums), and net subsidy (gross cost minus cost sharing).

Present Value of Future Benefits (PVFB)				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
Gross Costs				
Actives (Future Retirees)	\$21,371,837	\$18,659,886	\$2,743,334	\$42,775,057
Retirees (Subscribers)	4,802,961	4,970,795	265,674	10,039,430
Gross Costs Total	\$26,174,798	\$23,630,681	\$3,009,008	\$52,814,487
Cost Sharing (Retiree Premiums)				
Actives (Future Retirees)	\$13,505,379	\$11,895,626	\$1,736,824	\$27,137,829
Retirees (Subscribers)	2,890,729	2,974,039	161,762	6,026,530
Cost Sharing Total	\$16,396,108	\$14,869,665	\$1,898,586	\$33,164,359
Net Subsidy = Gross Costs - Cost Sharing				
Actives (Future Retirees)	\$7,866,458	\$6,764,260	\$1,006,510	\$15,637,228
Retirees (Subscribers)	1,912,232	1,996,756	103,912	4,012,900
Net PVFB as of 1/1/2017	\$9,778,690	\$8,761,016	\$1,110,422	\$19,650,128

GASB STATEMENT NO. 45 LIABILITY (AAL)

The GASB 45 liabilities are employer's total accrued liability from the medical insurance subsidies offered through the PEBB plan. The GASB 45 liabilities are based on all service earned as of the valuation date. The GASB 45 liability is also referred to as the actuarial accrued liability or the projected unit credit liability.

The next table shows the GASB 45 liabilities as of January 1, 2017, and is structured in the same manner as the PVFB table. For more information, please see the [Detailed Liability Results](#) section in the **Appendices**.

GASB 45 Actuarial Accrued Liability (AAL)				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
Gross Costs				
Actives (Future Retirees)	\$9,663,251	\$8,313,895	\$1,265,470	\$19,242,616
Retirees (Subscribers)	4,802,961	4,970,795	265,674	10,039,430
Gross Costs Total	\$14,466,211	\$13,284,690	\$1,531,144	\$29,282,046
Cost Sharing (Retiree Premiums)				
Actives (Future Retirees)	\$6,095,161	\$5,291,195	\$800,378	\$12,186,734
Retirees (Subscribers)	2,890,729	2,974,039	161,762	6,026,530
Cost Sharing Total	\$8,985,890	\$8,265,235	\$962,140	\$18,213,264
Net Subsidy = Gross Costs - Cost Sharing				
Actives (Future Retirees)	\$3,568,090	\$3,022,700	\$465,092	\$7,055,882
Retirees (Subscribers)	1,912,232	1,996,756	103,912	4,012,900
Net AAL as of 1/1/2017	\$5,480,321	\$5,019,456	\$569,005	\$11,068,782

ARC, ANNUAL OPEB COST, AND NOO

The ARC is the annual amount that would need to be contributed to fully fund the GASB 45 liability under acceptable actuarial methods. The ARC is composed of the normal cost plus the 30-year amortization, as a level percentage of payroll, of the actuarial accrued liability that has not been funded. In other words, it is the amount of liability that will be earned in the next year, plus a portion of the unpaid liability that has already been earned. The following table shows the ARC and its components split among the largest employers.

Annual Required Contribution (ARC)				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
Normal Cost	\$290,636	\$266,719	\$38,194	\$595,549
Amortization of UAAL*	243,561	222,781	24,619	490,961
ARC	\$534,198	\$489,500	\$62,813	\$1,086,510

*See the following sub-section of this report for the Amortization Schedule.

The Annual OPEB Cost is made up of the ARC, the Interest on the NOO, and the Amortization of the NOO. The NOO is the ongoing balance sheet item that shows the difference between the Annual OPEB Cost and what the employers have actually contributed. In other words, it is the liability for "deficient" contributions that have accrued since the ARC

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was first calculated including interest at the assumed discount rate. The tables below show the estimated Annual OPEB Cost and NOO for the PEBB plan employers by major category as of the fiscal year end, June 30, 2017.

Annual OPEB Cost				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
ARC	\$534,198	\$489,500	\$62,813	\$1,086,510
Interest on NOO	103,527	95,769	12,886	212,182
Amortization of NOO*	(107,438)	(99,417)	(13,424)	(220,279)
Annual OPEB Cost	\$530,287	\$485,852	\$62,275	\$1,078,414

*See the following sub-section of this report for the Amortization Schedule.

Net OPEB Obligation				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
NOO (6/30/2015)	\$2,322,888	\$2,138,488	\$290,605	\$4,751,981
Annual OPEB Cost	520,663	495,882	57,568	1,074,113
(7/1/2015 - 6/30/2016) Contributions*	(82,835)	(80,529)	(4,544)	(167,908)
NOO (6/30/2016)	\$2,760,715	\$2,553,841	\$343,629	\$5,658,186
Annual OPEB Cost	530,287	485,852	62,275	1,078,414
(7/1/2016 - 6/30/2017) Contributions*	(95,431)	(87,001)	(4,411)	(186,843)
NOO (6/30/2017)*	\$3,195,571	\$2,952,692	\$401,493	\$6,549,756

*Estimated.

AMORTIZATION SCHEDULE

The annual changes to the UAAL and NOO are amortized as a percentage of payroll over a closed thirty-year period. These tables show the components of this year's amortization of the UAAL and NOO separately for the State, K-12, and Political Subdivisions. The level percentage of pay amortization factor equals the remaining years of amortization because the assumed rate of investment return equals the assumed rate of general salary growth.

State Amortization of UAAL						
(Dollars in Thousands)	Beginning UAAL	Previous Amortization	Accrued Interest	Current UAAL	Amortization Factor	Amortization Amount
	(a)	(b)	(c)	(d) = a - b + c	(e)	(f) = d / e
2008	\$3,799,530	\$1,366,865	\$1,427,845	\$3,860,510	21	\$183,834
2009	118,829	36,497	36,927	119,259	22	5,421
2010	(244,154)	(64,280)	(66,448)	(246,322)	23	(10,710)
2011	(305,268)	(67,494)	(71,236)	(309,009)	24	(12,875)
2013	213,172	30,174	33,132	216,130	26	8,313
2015	1,585,908	107,842	122,897	1,600,964	28	57,177
2017	\$238,790	\$0	\$0	\$238,790	30	\$7,960
Total						\$239,119
Interest on Contributions						\$4,442
Total UAAL Amortization						\$243,561

K-12 Amortization of UAAL						
(Dollars in Thousands)	Beginning UAAL	Previous Amortization	Accrued Interest	Current UAAL	Amortization Factor	Amortization Amount
	(a)	(b)	(c)	(d) = a - b + c	(e)	(f) = d / e
2008	\$3,355,826	\$1,207,245	\$1,261,103	\$3,409,685	21	\$162,366
2009	101,266	31,103	31,469	101,632	22	4,620
2010	(100,788)	(26,535)	(27,430)	(101,683)	23	(4,421)
2011	(328,294)	(72,585)	(76,609)	(332,317)	24	(13,847)
2013	194,220	27,492	30,187	196,915	26	7,574
2015	1,768,945	120,288	137,081	1,785,739	28	63,776
2017	(\$40,515)	\$0	\$0	(\$40,515)	30	(\$1,350)
Total						\$218,718
Interest on Contributions						\$4,063
Total UAAL Amortization						\$222,781

Political Subdivision Amortization of UAAL						
(Dollars in Thousands)	Beginning UAAL	Previous Amortization	Accrued Interest	Current UAAL	Amortization Factor	Amortization Amount
	(a)	(b)	(c)	(d) = a - b + c	(e)	(f) = d / e
2008	\$339,972	\$122,304	\$127,760	\$345,428	21	\$16,449
2009	(7,777)	(2,389)	(2,417)	(7,805)	22	(355)
2010	33,534	8,829	9,127	33,832	23	1,471
2011	(70,332)	(15,550)	(16,412)	(71,194)	24	(2,966)
2013	34,475	4,880	5,358	34,953	26	1,344
2015	180,522	12,276	13,989	182,236	28	6,508
2017	\$51,554	\$0	\$0	\$51,554	30	\$1,718
Total						\$24,170
Interest on Contributions						\$449
Total UAAL Amortization						\$24,619

State Amortization of NOO						
(Dollars in Thousands)	Beginning NOO	Previous Amortization	Accrued Interest	Current NOO	Amortization Factor	Amortization Amount
	(a)	(b)	(c)	(d) = a - b + c	(e)	(f) = d / e
2008	\$0	\$0	\$0	\$0	0	\$0
2009	245,855	77,008	82,783	251,631	22	11,438
2010	241,490	65,876	78,103	253,716	23	11,031
2011	271,944	62,239	76,963	286,667	24	11,944
2012	235,362	43,927	57,067	248,503	25	9,940
2013	294,764	43,043	59,500	311,221	26	11,970
2014	261,871	28,015	42,226	276,082	27	10,225
2015	266,500	18,504	32,167	280,162	28	10,006
2016	414,679	13,823	33,285	434,141	29	14,970
2017	\$418,592	\$0	\$0	\$418,592	30	\$13,953
Total						\$105,478
Interest on Contributions						\$1,960
Total NOO Amortization						\$107,438

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K-12 Amortization of NOO						
(Dollars in Thousands)	Beginning NOO	Previous Amortization	Accrued Interest	Current NOO	Amortization Factor	Amortization Amount
	(a)	(b)	(c)	(d) = a - b + c	(e)	(f) = d / e
2008	\$0	\$0	\$0	\$0	0	\$0
2009	228,570	71,593	76,963	233,940	22	10,634
2010	244,602	66,725	79,109	256,986	23	11,173
2011	242,563	55,515	68,648	255,695	24	10,654
2012	209,844	39,164	50,880	221,560	25	8,862
2013	268,215	39,167	54,141	283,190	26	10,892
2014	231,791	24,797	37,376	244,371	27	9,051
2015	238,350	16,550	28,769	250,570	28	8,949
2016	391,829	13,061	31,451	410,218	29	14,145
2017	\$397,312	\$0	\$0	\$397,312	30	\$13,244
Total						\$97,604
Interest on Contributions						\$1,813
Total NOO Amortization						\$99,417

Political Subdivision Amortization of NOO						
(Dollars in Thousands)	Beginning NOO	Previous Amortization	Accrued Interest	Current NOO	Amortization Factor	Amortization Amount
	(a)	(b)	(c)	(d) = a - b + c	(e)	(f) = d / e
2008	\$0	\$0	\$0	\$0	0	\$0
2009	31,258	9,791	10,525	31,992	22	1,454
2010	33,180	9,051	10,731	34,860	23	1,516
2011	37,758	8,642	10,686	39,802	24	1,658
2012	28,218	5,266	6,842	29,794	25	1,192
2013	34,936	5,102	7,052	36,887	26	1,419
2014	31,515	3,372	5,082	33,226	27	1,231
2015	31,889	2,214	3,849	33,524	28	1,197
2016	50,460	1,682	4,050	52,828	29	1,822
2017	\$50,716	\$0	\$0	\$50,716	30	\$1,691
Total						\$13,179
Interest on Contributions						\$245
Total NOO Amortization						\$13,424

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 the plan has no assets to invest. If the decision was made to switch from a pay-as-you-go funding policy to any level of pre-funding, assets would accumulate in a fund and earn investment returns that would lower future contributions and shift part of the burden from future taxpayers to current taxpayers. This policy would be more in line with the principle of intergenerational equity. Under GASB, the market value of assets is the total monetary value of all assets held in an irrevocable trust. The actuarial value of assets smoothes gains and losses over time so that some of the volatility associated with investment returns can be minimized; thus minimizing the volatility of contributions required by PEBB plan employers. However, there is currently

no smoothing policy since there are no assets. Under GASB, an irrevocable, dedicated, and protected trust is required in order to accumulate assets for accounting purposes (not required for funding). The table below shows the market value of assets and the actuarial value of assets as of the valuation date.

Assets as of January 1, 2017	
<i>(Dollars in Thousands)</i>	
Market Value of Assets	\$0
Amortization of Gains/(Losses)	0
Actuarial Value of Assets	\$0

FUNDED RATIO

The funded ratio compares the assets as of the valuation date to the AAL. A funded ratio of 100 percent indicates that all benefits that have been accrued have been funded as of the valuation date. A ratio of less than 100 percent indicates that all benefits that have been accrued have not been fully funded as of the valuation date. The next table shows the funded status of PEBB plan employers' OPEB liabilities.

Funded Status as of January 1, 2017				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
Actuarial Accrued Liability	\$5,480,321	\$5,019,456	\$569,005	\$11,068,782
Assets	0	0	0	0
Unfunded Liability (1/1/2017)	\$5,480,321	\$5,019,456	\$569,005	\$11,068,782
Funded Ratio				
1/1/2017	0.0%	0.0%	0.0%	0.0%
1/1/2015	0.0%	0.0%	0.0%	0.0%
1/1/2013	0.0%	0.0%	0.0%	0.0%
1/1/2011	0.0%	0.0%	0.0%	0.0%
1/1/2009	0.0%	0.0%	0.0%	0.0%
1/1/2008	0.0%	0.0%	0.0%	0.0%
1/1/2007	0.0%	0.0%	0.0%	0.0%

COVERED PAYROLL

The covered payroll is the total payroll of all current members that are eligible to receive subsidies from PEBB plan employers in the future. Contributions made by the employers are considered on a percentage of payroll basis, similar to the pension systems. The ARC is calculated as a percent of the covered payroll. The estimated current covered payroll can be seen in the table below, and is assumed to grow by the General Salary Increase assumption per year.

Covered Payroll				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
Total Payroll	\$6,511,457	\$6,993,075	\$865,978	\$14,370,510

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UNFUNDED LIABILITY AS A PERCENTAGE OF COVERED PAYROLL

We will look at the unfunded liability as a percentage of covered payroll as a measure of the relative magnitude of the unfunded liability. The table below shows the State's unfunded liability as a percentage of the State's total covered annual payroll. In other words, if this percentage of payroll were contributed to fund the subsidies, all accrued subsidies would be fully funded.

Unfunded Liability as a Percentage of Covered Payroll				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
Unfunded Liability (1/1/2017)	\$5,480,321	\$5,019,456	\$569,005	\$11,068,782
Total Payroll	\$6,511,457	\$6,993,075	\$865,978	\$14,370,510
Unfunded Liability as a % of Covered Payroll	84.16%	71.78%	65.71%	77.02%

PERCENTAGE OF ARC CONTRIBUTED

The following table shows the estimated percentage of the State's ARC contributed during the last fiscal year, on a pay-as-you-go basis. A percent below 100 relates to how much of the present value of the benefit being earned in the current year is being shifted to future periods.

Percentage of ARC Contributed				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
(7/1/2016 - 6/30/2017) Contributions*	\$95,431	\$87,001	\$4,411	\$186,843
ARC	\$534,198	\$489,500	\$62,813	\$1,086,510
Percentage of ARC Contributed	17.86%	17.77%	7.02%	17.20%

*Estimated.

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 from two years 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 over the two-year period. We expected the liability to increase since active subscribers are accruing additional benefits (normal cost) and there are fewer years of discounting future benefit payments.

The Correction Changes are attributable to members who selected either Group Health Classic or Value. We previously assumed they would maintain their membership in that plan for the remainder of their lifetime; we now

assume they will join the Group Health Medicare plan at age 65. The new approach best matches our understanding of how the HCA administers the PEBB plan benefits in this area.

Expected Change in Projected Unit Credit (PUC) Liability			
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions
2015 PUC Liability	\$5,273,530	\$5,085,158	\$519,928
Correction Changes	(348,580)	(341,762)	(47,675)
2015 Adjusted PUC Liability	\$4,924,950	\$4,743,396	\$472,253
Normal Cost	275,001	260,735	33,352
Interest	216,441	208,621	21,464
Disbursements	(75,523)	(74,399)	(3,645)
2016 Expected PUC Liability	5,340,870	5,138,354	523,424
Normal Cost	270,166	257,721	32,685
Interest	219,038	210,689	21,591
Disbursements	(84,475)	(82,124)	(4,634)
2017 Expected PUC Liability	5,745,599	5,524,640	573,065
Expected Change in PUC Liability	\$820,648	\$781,244	\$100,812

The second table shows the difference between the prior expected liability and this year’s actual liability by major source. We expected a 15 percent increase to the liability as a result of the passage of time. When reflecting the new census data, we observed an 8 percent increase due to new entrants joining a PEBB plan, and a 4 percent decrease due to more active employees terminating than expected. Members that terminate prior to retirement eligibility are not eligible for post-retirement medical benefits through PEBB.

We relied on new healthcare assumptions prepared by Milliman for this valuation. Updating the healthcare costs and premiums decreased liabilities by 5 percent and updating the healthcare trend decreased liabilities by an additional 10 percent. Claims costs are based on recent plan experience over a relatively short timeframe, often 12 months. This will naturally lead to some volatility in the costs information from valuation to valuation. Milliman shared that across the industry they are witnessing healthcare costs that have lagged below expectations for the last few years. In terms of healthcare trend, Milliman relied on the September 2016 update of the “Getzen Model” to predict long-term healthcare trend. This model views healthcare spending growth as a share of total U.S. Gross Domestic Product (GDP) spending. The updated model’s assumptions include a reduction to long-term GDP growth, which in turn predicts less healthcare spending over the long-term. That led to a decrease in the long-term healthcare trends relied on for this valuation. If additional information is needed about the healthcare assumptions or the gain/loss analysis, please contact our office.

II. ACTUARIAL EXHIBITS

Change in PUC Liability by Source			
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions
2015 Adjusted PUC Liability	\$4,924,950	\$4,743,396	\$472,253
Expected Change in Liability	\$820,648	\$781,244	\$100,812
Liability (Gain) / Loss			
Termination	(\$314,024)	(\$52,923)	(\$55,599)
Retirement	20,937	(12,254)	8,738
Mortality*	(91,545)	(125,161)	(7,314)
Disability	(5,214)	(2,913)	(626)
New Entrants	547,943	134,063	151,976
Other Liabilities	(7,731)	16,489	(68,135)
Total Liability (Gains) / Losses	\$150,365	(\$42,699)	\$29,039
Incremental Changes			
Plan Changes	\$0	\$0	\$0
Method Changes	0	0	0
Discount Rate Change	302,533	262,610	35,586
Update Costs/Premiums	(223,583)	(276,764)	(16,373)
Update Healthcare Trends	(494,592)	(448,331)	(52,313)
Total Incremental Changes	(\$415,642)	(\$462,486)	(\$33,099)
Total Change	\$555,371	\$276,060	\$96,752
2017 PUC Liability	\$5,480,321	\$5,019,456	\$569,005

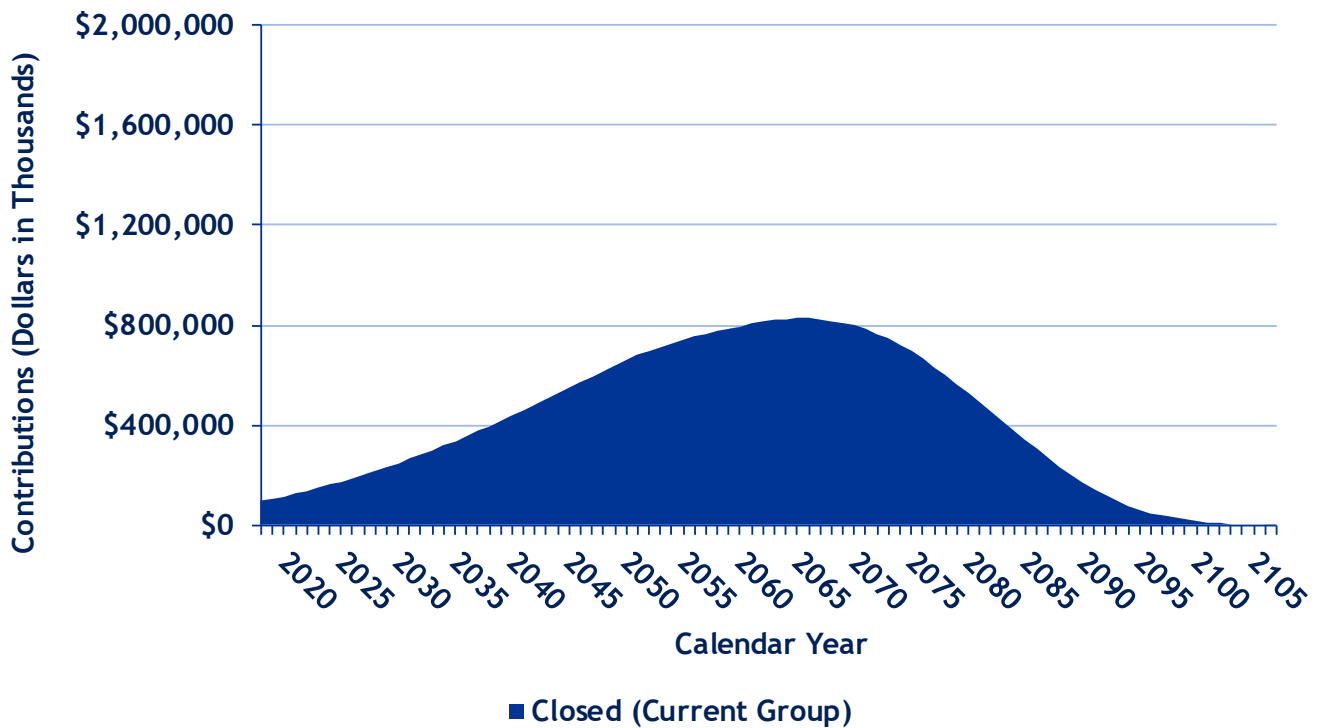
**This does not reflect spouses that continue medical coverage after the primary subscriber passes away and will overstate the liability gain due to mortality.*

PROJECTIONS

It is important to look at the projections of the contributions and the liability in order to determine if the contributions 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 payments will look like with a pay-as-you-go funding policy for the current participants for the next 90 years. Over the next 45 years, the annual contributions (or benefit payments) increase as a result of the large number of current members and high assumed medical inflation. After 45 years, the annual payments will reach a peak and decrease to zero in the long-run as projected medical inflation slows down and the closed current active population starts to dwindle.

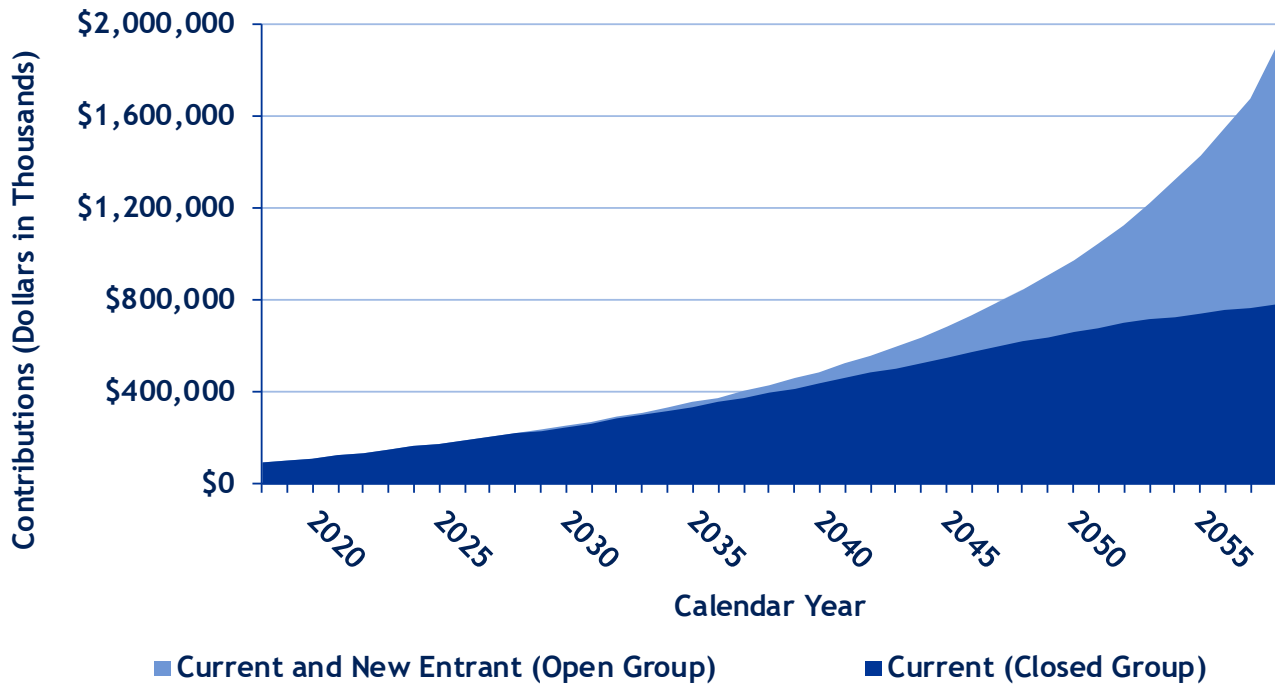
**Annual State Contributions on Pay-As-You-Go Basis
(Closed group basis; excludes new entrants.)**



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 the benefits of the current population of active and inactive members. However, new entrants will likely enter the plan, which would result in steady contribution increases into the future. These contributions are also considered when choosing how to fund the current liabilities since they represent real cash flows in the future. The following graph shows expected State contributions on both an open and closed-group basis.

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**Annual State Contributions on Pay-As-You-Go Basis
(Open group basis; includes new entrants.)**



Note that the contributions in this graph are higher than those in the prior graph because they include contributions for new entrants. We prepared five average new entrant cohorts that are based upon the same data used to establish the New Entrant Profiles created as part of the [2016 Risk Assessment Assumptions Study](#). Further, we assumed that the total active population will increase by the Annual Growth in Membership assumption.

III. Sensitivity Analysis



A single point estimate is only the start of understanding the GASB 45 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.

HEALTHCARE TREND ASSUMPTION

In this section we determined how much the State's liability would change due to small changes in the healthcare trend assumption. The healthcare claims cost trend assumption varies by medical plan and Medicare coverage. Based on HCA's direction, the healthcare premium trend assumption for Medicare plans differ from the healthcare cost inflation assumptions for the first two years, then match the healthcare cost inflation assumptions each year thereafter. The healthcare premium inflation assumptions for non-Medicare plans match the healthcare cost inflation assumptions in all years.

For the detailed healthcare trend assumptions, refer to the Appendices. Although this is our best estimate, it is reasonable that the healthcare trend could be higher or lower. The table below shows the results of changing the healthcare trend assumption by 1.0 percent per year (i.e. 100 basis points) for the State, as a PEBB plan employer.

Sensitivity Analysis (State) - Healthcare Trend			
<i>(Dollars in Thousands)</i>	High (+1.0%)	Expected	Low (-1.0%)
PVFB	\$13,222,902	\$9,778,690	\$7,399,703
GASB 45 Liability (AAL)	\$6,905,500	\$5,480,321	\$4,430,321

It is important to realize that economic assumptions, such as healthcare inflation, can vary based on random events such as wars, medical breakthroughs, and legislation. Knowing the variability in our best estimate is just as important as knowing the best estimate itself.

DISCOUNT RATE ASSUMPTION AND IMPACT OF EXCISE TAX

We also prepared sensitivity analysis assuming 0.5 percent higher and lower investment rate of return, and illustrated the impact of the PPACA excise taxes.

Sensitivity Analysis (State) - Discount Rate			
<i>(Dollars in Thousands)</i>	High (4.25%)	Expected (3.75%)	Low (3.25%)
PVFB	\$8,447,984	\$9,778,690	\$11,403,149
GASB 45 Liability (AAL)	\$4,898,979	\$5,480,321	\$6,166,900

Sensitivity Analysis (State) - Impact of Excise Tax		
<i>(Dollars in Thousands)</i>	w/o Excise Tax	Expected
PVFB	\$9,373,363	\$9,778,690
GASB 45 Liability (AAL)	\$5,361,268	\$5,480,321

III. SENSITIVITY ANALYSIS

PARTICIPATION PERCENTAGE

Finally, we prepared sensitivity analysis assuming a 15 percent higher and lower participation percentage. This assumption estimates the portion of active employees that are expected to join PEBB as a retiree.

Sensitivity Analysis (State) - Participation Percentage			
<i>(Dollars in Thousands)</i>	High (80%)	Expected (65%)	Low (50%)
PVFB	\$11,475,349	\$9,778,690	\$8,082,031
GASB 45 Liability (AAL)	\$6,249,277	\$5,480,321	\$4,711,366

Note: This assumption is under review and any changes will be reflected in the next valuation report.

IV. Participant Data



OVERVIEW OF PEBB MEMBERSHIP

HCA administers PEBB benefits for eligible active and inactive members (retirees and their spouses). The table below shows the active and inactive member counts by employer type. This is the current count of members enrolled in PEBB (subscribers) and current members either receiving a subsidy, or eligible to receive a subsidy in the future (eligible). Dependent children are assumed to not have a subsidy and are excluded. The “% Subscribing” column shows how many members, who are eligible for post-employment subsidies, are currently enrolled in PEBB.

Membership By Employer			
Actives	Subscribers	Eligible*	% Subscribing
State	116,825	116,825	100%
K-12	5,175	129,179	4%
Political Subdivision	14,102	14,102	100%
Total Actives	136,102	260,106	52%
Retirees and Spouses			
State	65,203	65,203	100%
K-12	28,597	28,597	100%
Political Subdivision	2,465	2,465	100%
Total Retirees and Spouses	96,265	96,265	100%
Total	232,367	356,371	65%

**Eligible counts were estimated. All K-12 employees are eligible to join PEBB upon retirement.*

Retirees’ access to PEBB depends on the retirement eligibility of their respective retirement system and if their employer offers PEBB to their retirees. PEBB members are covered in the following retirement systems: Public Employees’ Retirement System (PERS), Teachers’ Retirement System (TRS), School Employees’ Retirement System (SERS), Public Safety Employees’ Retirement Systems (PSERS), Washington State Patrol Retirement System (WSPRS), Judicial Retirement System, and Higher Education. The next table shows the active and inactive member counts by retirement system.

All school district employees are provided access to PEBB upon retirement even if their employer did not offer PEBB medical coverage during their employment. Most school districts offer medical plans outside of PEBB for their employees prior to retirement. On the other hand, PERS active members (along with other retirement systems), generally have access to PEBB upon retirement only if their current employer offers PEBB medical plans.

For non-K-12 employees, we rely on current PEBB subscribers and apply assumptions to estimate how many will retain PEBB plan coverage after retirement. This means employees who are eligible for PEBB medical plan coverage, but either declined or deferred coverage, will be excluded from this valuation. These employees may be eligible for post-retirement PEBB plan coverage in the future. If they elect to join a PEBB plan at retirement, this may lead to an unanticipated liability increase. Ideally, the valuation would include records for all active employees who are eligible to elect a PEBB plan. For all non-K-12 employees in the table, the eligible number equals the subscriber count. We are working with HCA and DRS on this issue. If we can identify the remaining group of eligible active employees, we may reflect them in future valuations.

IV. PARTICIPANT DATA

Eligible Membership By Retirement System						
	Actives		Inactives		Total	
	Subscribers	Eligible*	Retirees	Spouses	Members	Eligible*
PERS						
PERS 1	1,562	1,562	17,246	6,784	25,592	25,592
PERS 2	64,506	64,506	10,216	4,294	79,016	79,016
PERS 3	20,173	20,173	1,111	557	21,841	21,841
Total PERS	86,241	86,241	28,573	11,635	126,449	126,449
TRS						
TRS 1	243	967	18,166	8,199	26,608	27,332
TRS 2	478	17,242	1,973	806	3,257	20,021
TRS 3	2,138	52,706	4,037	1,862	8,037	58,605
Total TRS	2,859	70,915	24,176	10,867	37,902	105,958
SERS						
SERS 2	1,090	25,950	2,229	903	4,222	29,082
SERS 3	1,226	32,314	2,192	1,067	4,485	35,573
Total SERS	2,316	58,264	4,421	1,970	8,707	64,655
PSERS						
Total PSERS	3,055	3,055	15	7	3,077	3,077
LEOFF						
LEOFF 1	0	0	0	0	0	0
LEOFF 2	487	487	163	110	760	760
Total LEOFF	487	487	163	110	760	760
WSPRS						
WSPRS 1	489	489	545	400	1,434	1,434
WSPRS 2	464	464	0	0	464	464
Total WSPRS	953	953	545	400	1,898	1,898
Judicial						
Total Judicial	0	0	49	31	80	80
Higher Education**						
Total Higher Education	30,064	30,064	7,572	2,379	40,015	40,015
Other***						
Total Other	10,127	10,127	2,550	802	13,479	13,479
Total Membership	136,102	260,106	68,064	28,201	232,367	356,371

*Eligible counts were estimated.

**This category only covers active employees and retirees that do not currently participate in a DRS-administered retirement system. The remaining Higher Education active employees and retirees are shown in the retirement system they joined, such as PERS.

***These active employees and retirees do not currently participate in a DRS-administered retirement system. Example employers include hospitals and health districts.

SUMMARY OF PEBB PLAN PARTICIPANTS

The following table shows summary information for the average eligible active and inactive members by major employer category.

Summary of Plan Participants				
	State	K-12*	Political Subdivisions	Total
Actives				
Number	116,825	129,179	14,102	260,106
Total Salary (In Thousands)	\$6,565,040	\$6,992,293	\$875,531	\$14,432,864
Average Age	45.9	47.5	46.8	46.7
Average Service	12.0	11.4	12.1	11.7
Average Salary	\$56,196	\$54,129	\$62,086	\$55,488
Retirees and Spouses				
Number	52,366	41,434	2,465	96,265
Average Retiree Age	73.9	73.1	70.6	73.4
Average Monthly Subsidy per Subscriber	\$152	\$175	\$149	\$162

*All K-12 employees are eligible to join PEBB upon retirement.

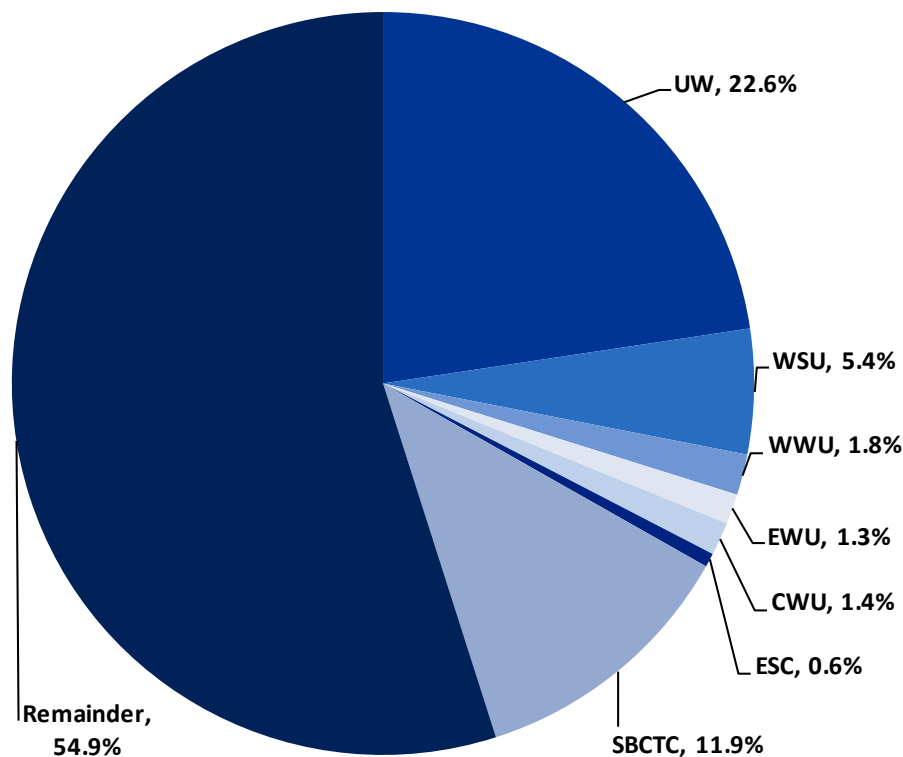
V. Appendices



HIGHER EDUCATION

Public employers preparing financial statements in accordance with Generally Accepted Accounting Principles (GAAP) are required to comply with the reporting and disclosure requirements of GASB 45. Washington State's four-year institutions of higher education, while part of the State, issue separate financial reports. The pie chart below shows the portion of the State's liability attributable to the four-year institutions and the State Board for Community and Technical Colleges (SBCTC).

Composition of State's Liability



The next table shows each of the six four-year State colleges' and SBCTC's GASB 45 liability, ARC, Annual OPEB Cost, and NOO.

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Higher Education GASB 45 Measurements				
(Dollars in Thousands)	University of Washington	Washington State University	Western Washington University	Eastern Washington University
PVFB	\$2,538,959	\$531,099	\$159,813	\$117,242
GASB 45 Liability (AAL)	\$1,240,292	\$298,089	\$97,138	\$72,061
Normal Cost	78,704	15,540	4,713	3,324
Amortization	52,015	12,624	4,149	3,031
ARC	\$130,719	\$28,164	\$8,862	\$6,355
Interest on NOO	24,554	5,367	1,802	1,246
Amortization of NOO	(25,440)	(5,581)	(1,870)	(1,295)
Annual OPEB Cost	\$129,833	\$27,950	\$8,794	\$6,307
Beginning NOO (6/30/2015)	550,677	121,073	40,426	28,013
Annual OPEB Cost	113,703	25,133	8,758	5,948
(7/1/2015 - 6/30/2016) Contributions*	(9,619)	(3,077)	(1,123)	(731)
NOO (6/30/2016)	654,761	143,129	48,061	33,230
Annual OPEB Cost	129,833	27,950	8,794	6,307
(7/1/2016 - 6/30/2017) Contributions*	(16,119)	(5,863)	(2,065)	(1,602)
Ending NOO (6/30/2017)*	\$768,475	\$165,216	\$54,790	\$37,934

*Estimated.

Higher Education GASB 45 Measurements (Cont.)			
(Dollars in Thousands)	Central Washington University	Evergreen State College	State Board for Community and Technical Colleges
PVFB	\$128,975	\$54,521	\$1,087,401
GASB 45 Liability (AAL)	\$78,698	\$32,960	\$651,233
Normal Cost	3,713	1,677	34,126
Amortization	3,300	1,419	24,551
ARC	\$7,013	\$3,096	\$58,677
Interest on NOO	1,316	654	4,697
Amortization of NOO	(1,363)	(682)	(4,386)
Annual OPEB Cost	\$6,965	\$3,068	\$58,989
Beginning NOO (6/30/2015)	29,387	14,829	78,633
Annual OPEB Cost	6,481	2,951	54,480
(7/1/2015 - 6/30/2016) Contributions ¹	(787)	(344)	(7,860)
NOO (6/30/2016)	35,081	17,436	125,254
Annual OPEB Cost	6,965	3,068	58,989
(7/1/2016 - 6/30/2017) Contributions ¹	(1,713)	(564)	(12,590)
Ending NOO (6/30/2017)*	\$40,333	\$19,941	\$171,653

*Estimated.

We estimated the liabilities for the active members covered under the higher education institutions' retirement plans (non-PERS eligible) using the same behavioral assumptions we make for PERS, such as termination and retirement rates.

DEPARTMENT OF LABOR AND INDUSTRIES

The table below shows the accounting results for the Department of Labor and Industries (L&I). L&I, while part of the State, issues separate financial statements.

L&I GASB 45 Measurements	
<i>(Dollars in Thousands)</i>	
PVFB	\$237,804
GASB 45 Liability	\$140,429
Normal Cost	7,034
Amortization	5,892
ARC	\$12,926
Interest on NOO	1,990
Amortization of NOO	(1,989)
Annual OPEB Cost	\$12,927
Beginning NOO (6/30/2015)	42,573
Annual OPEB Cost	13,031
(7/1/2015 - 6/30/2016) Contributions*	(2,525)
NOO (6/30/2016)	53,078
Annual OPEB Cost	12,927
(7/1/2016 - 6/30/2017) Contributions*	(2,549)
Ending NOO (6/30/2017)*	\$63,456
<i>*Estimated.</i>	
Other L&I Information	
Actives	2,881
Retirees and Spouses	1,230
Total Subscribers	4,111
Average Implicit Subsidy Per Subscriber (Under 65)	\$197
Average Explicit Subsidy Per Subscriber (65 and Older)	\$169

ACTUARIAL METHODS

The actuarial funding method chosen will determine the allocation of costs. For example, one method may allocate all costs between now and the time a member is fully eligible to retire, whereas another method may allocate all costs between now and the time a member is expected to retire (several years after retirement eligibility). One method might allocate costs as a level dollar amount while another might allocate costs as a level percentage of payroll. Using a different method will provide slightly different results. In short, different methods will relatively frontload the costs or backload the costs.

GASB 43 and 45 allows the selection of one of six different actuarial methods. The method selected for this report was Projected Unit Credit (PUC). PUC is known to backload the costs; however, for OPEB liabilities, which are “soft liabilities” (non-contractual liabilities, highly sensitive to assumption changes) in Washington State, this is reasonable

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Currently, there is no asset valuation method since there are no assets invested in an irrevocable, dedicated, and protected trust.

The unfunded actuarial accrued liability is amortized over a closed 30-year period as a level percent of payroll. GASB also allows for the selection of the amortization period (not to exceed 30 years). A longer amortization period means that the unfunded liability is being smoothed, and funded, over a longer period of time. This can be compared to a mortgage being paid off over a longer period of time (lower payments, but more interest).

ECONOMIC ASSUMPTIONS

The economic assumptions are used in the actuarial valuation to determine liabilities and contributions in the future. For presentation purposes, they are broken into non-healthcare and healthcare economic assumptions. The non-healthcare economic assumptions specify how we expect total active employee counts and salaries to grow. We also used the discount rate to convert future cash flows into today's dollars. Aside from the discount rate, these are consistent with the assumptions used in the [June 30, 2016 Actuarial Valuation Report](#) (AVR).

The Investment Return Assumption (discount rate) is chosen based on the expected long-term yield of assets anticipated to finance the payment of benefits. The subsidies are paid from the State's Concentration Account. The Concentration Account is the State's primary bank account that is invested in short-term products such as repurchase agreements, FNMA instruments, and U.S. Treasury obligations. We believe the expected long-term yield is reasonable for purposes of this report.

Non-Healthcare Economic Assumptions		
	State and Political Subdivisions	K-12
Annual Growth in Membership ²	0.95%	0.80% ¹
Investment Return Assumption (Discount Rate) ³	3.75%	3.75%
Inflation ⁴	3.00%	3.00%
General Salary Increases (due to inflation) ⁵	3.75%	3.75%

¹ Only applies to K-12 employees in TRS.

² This assumption is used for open group projections only; does not impact GASB accounting results.

³ Annual rate, compounded annually.

⁴ Based on the CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bremerton, WA - All Items.

⁵ Excludes step salary increases that usually apply to employees in the early part of their careers.

The healthcare economic assumptions specify how we expect the benefit (subsidies) will behave in the future. We relied on Robert Schmidt, a healthcare actuary in Milliman's Boise office, contracted through the HCA, to determine the healthcare trend rates.

Healthcare Trend - Claims Costs with Excise Tax					
Calendar Year	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2017	6.7%	6.8%	6.7%	6.8%	6.8%
2018	6.7%	7.4%	6.7%	7.4%	7.4%
2019	7.0%	7.4%	7.0%	7.4%	7.4%
2020	5.5%	5.4%	5.5%	5.3%	5.3%
2021	5.5%	5.4%	5.6%	5.4%	5.4%
2022	5.5%	5.5%	5.6%	5.4%	5.4%
2023	5.6%	5.5%	5.7%	5.5%	5.5%
2024	5.8%	5.6%	5.7%	5.5%	5.5%
2025	5.9%	5.6%	5.7%	5.6%	5.6%
2026	6.0%	5.7%	5.8%	5.6%	5.6%
2027	6.0%	5.7%	5.8%	5.6%	5.6%
2028	6.0%	5.7%	6.2%	5.6%	5.6%
2029	6.0%	5.7%	6.2%	5.6%	5.6%
2030	6.1%	5.7%	6.2%	5.7%	5.7%
2031	6.3%	5.7%	6.2%	5.7%	5.7%
2032	6.8%	5.7%	6.2%	5.7%	5.7%
2033	6.8%	5.7%	6.2%	5.7%	5.7%
2034	6.8%	5.7%	6.2%	5.7%	5.7%
2035	6.7%	5.8%	6.3%	5.7%	5.7%
2036	6.7%	5.8%	6.4%	5.7%	5.7%
2037	6.7%	5.8%	6.4%	5.7%	5.7%
2038	6.7%	5.8%	6.4%	5.8%	5.8%
2039	6.7%	5.8%	6.3%	5.8%	5.8%
2040	6.6%	5.7%	6.2%	5.7%	5.7%
2041	6.4%	5.7%	6.1%	5.6%	5.6%
2042	6.4%	6.0%	6.2%	5.6%	5.6%
2043	6.3%	6.0%	6.3%	5.5%	5.5%
2044	6.2%	5.9%	6.3%	5.5%	5.5%
2045	6.2%	5.9%	6.2%	5.5%	5.5%
2046	6.1%	5.9%	6.2%	5.5%	5.5%
2047	6.1%	5.8%	6.1%	5.5%	5.5%
2048	6.1%	5.8%	6.1%	5.4%	5.4%
2049	6.0%	5.8%	6.0%	5.4%	5.4%
2050	6.0%	5.7%	6.0%	5.4%	5.4%
2051	6.0%	5.7%	6.0%	5.4%	5.4%
2052	5.9%	6.0%	6.0%	5.4%	5.4%
2053	5.9%	6.3%	5.9%	5.4%	5.4%
2054	5.9%	6.2%	5.9%	5.8%	5.4%
2055	5.9%	6.2%	5.9%	5.8%	5.4%
2056	5.9%	6.2%	5.9%	5.8%	5.4%
2057	5.8%	6.1%	5.9%	5.7%	5.4%
2058	5.8%	6.1%	5.9%	5.7%	5.4%
2059	5.8%	6.1%	5.8%	5.7%	5.4%

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Healthcare Trend - Claims Costs with Excise Tax					
Calendar Year	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2060	5.8%	6.1%	5.8%	5.7%	5.4%
2061	5.8%	6.0%	5.8%	5.7%	5.3%
2062	5.7%	6.0%	5.8%	5.7%	5.3%
2063	5.7%	5.9%	5.7%	5.6%	5.3%
2064	5.7%	5.9%	5.7%	5.6%	5.3%
2065	5.6%	5.8%	5.6%	5.5%	5.2%
2066	5.5%	5.7%	5.5%	5.4%	5.2%
2067	5.4%	5.6%	5.4%	5.7%	5.1%
2068	5.3%	5.5%	5.3%	5.7%	5.0%
2069	5.2%	5.4%	5.2%	5.6%	4.9%
2070	5.1%	5.3%	5.2%	5.5%	4.9%
2071	5.1%	5.2%	5.1%	5.4%	4.8%
2072	5.0%	5.1%	5.0%	5.3%	4.7%
2073	4.9%	5.0%	4.9%	5.2%	4.7%
2074	4.8%	4.9%	4.8%	5.1%	4.7%
2075	4.8%	4.9%	4.8%	5.1%	4.9%
2076	4.8%	4.9%	4.8%	5.1%	4.9%
2077	4.8%	4.9%	4.8%	5.1%	4.9%
2078	4.8%	4.9%	4.8%	5.1%	4.9%
2079	4.8%	4.9%	4.8%	5.0%	4.9%
2080	4.8%	4.9%	4.8%	5.0%	4.9%
2081	4.8%	4.9%	4.8%	5.0%	4.9%
2082	4.8%	4.9%	4.8%	5.0%	4.9%
2083	4.8%	4.9%	4.8%	5.0%	4.9%
2084	4.8%	4.9%	4.8%	5.0%	4.8%
2085	4.8%	4.9%	4.8%	5.0%	4.9%
2086	4.8%	4.9%	4.8%	5.0%	4.8%
2087	4.8%	4.9%	4.8%	5.0%	4.8%
2088	4.8%	4.9%	4.8%	5.0%	4.8%
2089	4.8%	4.9%	4.8%	5.0%	4.8%
2090	4.8%	4.9%	4.8%	5.0%	4.8%
2091	4.8%	4.9%	4.8%	5.0%	4.8%
2092	4.8%	4.9%	4.8%	5.0%	4.8%
2093	4.8%	4.9%	4.8%	4.9%	4.9%
2094	4.8%	4.8%	4.8%	4.9%	5.2%
2095	4.8%	4.8%	4.8%	4.9%	5.2%
2096	4.8%	4.8%	4.8%	4.9%	5.1%
2097	4.8%	4.8%	4.8%	4.9%	5.1%
2098	4.8%	4.8%	4.8%	4.9%	5.1%
2099	4.8%	4.8%	4.8%	4.9%	5.1%
2100	4.8%	4.8%	4.8%	4.9%	5.1%
2101	4.8%	4.8%	4.8%	4.9%	5.1%
2102+	4.8%	4.8%	4.8%	4.9%	5.2%

Healthcare Trend - Subscriber Premiums					
Calendar Year	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2017	6.7%	10.5%	6.7%	12.8%	6.8%
2018	6.7%	11.1%	6.7%	13.1%	7.4%
2019+	Identical to underlying Claims Cost medical inflation trend.				

Note: Subscriber Premiums trend the same for first two years, w/ and w/o Excise Tax.

Milliman also prepared medical cost and premium trend rates without effect of the excise tax. We analyzed the impact of this assumption as part of the **Sensitivity Analysis** section. Note that the table below only shows every 5 years; a full table of rates is available upon request.

Healthcare Trend - Claims Costs without Excise Tax					
Calendar Year	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2017	6.7%	6.8%	6.7%	6.8%	6.8%
2022	5.5%	5.5%	5.5%	5.4%	5.4%
2027	5.7%	5.7%	5.7%	5.6%	5.6%
2032	5.8%	5.7%	5.8%	5.7%	5.7%
2037	5.8%	5.8%	5.8%	5.7%	5.7%
2042	5.7%	5.6%	5.6%	5.6%	5.6%
2047	5.5%	5.5%	5.5%	5.5%	5.5%
2052	5.5%	5.4%	5.4%	5.4%	5.4%
2057	5.4%	5.4%	5.4%	5.4%	5.4%
2062	5.4%	5.4%	5.4%	5.3%	5.3%
2067	5.1%	5.1%	5.1%	5.1%	5.1%
2072	4.8%	4.8%	4.8%	4.7%	4.7%
2077	4.6%	4.6%	4.6%	4.6%	4.6%
2082	4.6%	4.6%	4.6%	4.6%	4.6%
2087	4.6%	4.6%	4.6%	4.6%	4.6%
2092	4.6%	4.6%	4.6%	4.6%	4.6%
2097	4.6%	4.6%	4.6%	4.6%	4.6%
2102+	4.6%	4.6%	4.6%	4.6%	4.6%

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Milliman provided us with the age 65 medical cost. The age 65 medical costs are shown in the table below. This represents the average claims cost for a 65-year-old retiree and is broken down by each plan for non-Medicare and Medicare separately, by gender. On average, younger retirees cost less and older retirees cost more, prior to any Medicare offsets.

Age 65 Annual Medical Cost				
Medical Plan	Non-Medicare		Medicare	
	Males	Females	Males	Females
Group Health Classic	\$17,779	\$15,820	N/A	N/A
Group Health CDHP	6,761	6,016	N/A	N/A
Group Health Medicare	N/A	N/A	\$3,460	\$3,286
Group Health Value	13,245	11,786	N/A	N/A
Group Health Sound Choice	12,413	11,046	N/A	N/A
Kaiser Permanente Classic	14,298	12,723	3,393	3,222
Kaiser Permanente CDHP	8,503	7,567	N/A	N/A
Uniform Medical Plan Classic	10,185	9,063	4,919	4,672
Uniform Medical Plan CDHP	8,117	7,223	N/A	N/A
Uniform Medical Plan Puget Sound	13,470	11,986	N/A	N/A
Uniform Medical Plan UW	\$13,655	\$12,151	N/A	N/A
Supplements	Non-Medicare		Medicare	
	Males	Females	Males	Females
Plan F Retired	N/A	N/A	\$2,256	\$2,142
Plan F Disabled	N/A	N/A	\$3,835	\$3,642

Milliman also provided us with aging factors. Per Milliman, the table below is not based on a study of HCA's retiree cost by age. Instead, it is based on nationwide data in order to have sufficient credibility. These factors tend to change a fair amount from one valuation to the next. This is due in part because only one year of data is used to set these assumptions. Further, pharmacy costs have been changing rapidly, as well as how prescription drugs are provided to retirees as they age.

Aging Factors		
Age	Males	Females
0-26	8.79%	16.16%
27-31	1.87%	(1.80%)
32-36	12.64%	5.96%
37-41	2.23%	2.01%
42-46	(2.61%)	(2.13%)
47-51	(0.41%)	(1.38%)
52-56	3.16%	1.46%
57-61	4.80%	3.38%
62-64	6.60%	3.71%
65-71	2.55%	1.98%
72-76	1.39%	1.12%
77-81	0.64%	0.46%
82-88	(0.08%)	(0.54%)
89+	0.00%	0.00%

We use aging factors to determine the average claims cost at different ages. As an illustrative example, to determine the average 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 cost of \$10,400.

Note that a retiree's age does not affect the premium. Milliman provided the following retiree contributions, often referred to as the retiree premium in this report. The Medicare premiums in the table already reflect the reduction from the explicit subsidy. We rely on these premiums for the purpose of this valuation, however they do not represent what the retiree actually pays for their PEBB plan coverage. For instance, the amounts below exclude any direct pass-through expenses that are 100 percent paid by retirees. These pass-through expenses are excluded from the claims costs as well. The actual amount retirees pay for coverage can be found in the [Plan Eligibility and Premium](#) section the **Appendices**.

Annual Retiree Contributions (Valuation Premiums)		
Medical Plan	Non-Medicare	Medicare
Group Health Classic	\$8,071	N/A
Group Health CDHP	5,934	N/A
Group Health Medicare	N/A	\$2,057
Group Health Value	7,138	N/A
Group Health Sound Choice	6,862	N/A
Kaiser Permanente Classic	7,886	1,907
Kaiser Permanente CDHP	5,947	N/A
Uniform Medical Plan Classic	7,436	3,281
Uniform Medical Plan CDHP	5,930	N/A
Uniform Medical Plan Puget Sound	7,098	N/A
Uniform Medical Plan UW	\$7,098	N/A
Supplements	Non-Medicare	Medicare
Plan F Retired	N/A	\$1,258
Plan F Disabled	N/A	\$2,479

DEMOGRAPHIC ASSUMPTIONS

Demographic assumptions include rates of decrement (reasons members would exit the plan: retirement, termination, disability, and mortality), as well as participation percentage, percentage of spouses covered, and Medicare coverage. The rates of decrement are the same as those used in the [June 30, 2016 AVR](#); the State and Political Subdivision members use the PERS decrement rates, whereas K-12 members in TRS use the TRS decrement rates and K-12 members in SERS use the SERS decrement rates.

We looked at the valuation data to determine the other demographic assumptions including participation percentage, percentage of spouses covered, and Medicare coverage. Participation percentage refers to how many current active members 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 their spouses and what percentage will enroll in Medicare Parts A & B once eligible. These assumptions can be seen in the table below.

Demographic Assumptions		
	State and Political Subdivisions	K-12
Participation Percentage	65.0%	50.0%
Percentage of Spouses Covered	45.0%	45.0%
Medicare Coverage After Initial Participation	100.0%	100.0%

We are working with HCA and DRS to review the participation percentage assumption. Any changes to the assumption will be reflected in the next PEBB plan measurement.

Additionally, we assume that members will select the Medicare plan within the same “family” of health insurances upon Medicare eligibility. For example, we assume pre-Medicare retirees in Group Health Classic or Value will select Group Health Medicare upon turning age 65.

We further make a Plan-Choice assumption for active employees in K-12 (i.e. TRS and SERS members), that are not PEBB subscribers prior to retirement. Specifically, we assume that they will elect to join Group Health, Kaiser Permanente, and UMP in the same proportion as we observe for current non- K-12 subscribers.

PLAN ELIGIBILITY AND PREMIUMS

Retirees' access to PEBB depends on meeting the retirement eligibility of their respective retirement system at the time of retirement. PEBB members are covered in the following retirement systems: PERS, TRS, SERS, PSERS, WSPRS, Judicial, and Higher Education. The following table shows the retirement eligibility for each system and plan. For example, PERS 2 members are eligible for retirement with five years of service at age 65, or with twenty years of service at age 55.

Retirement Eligibility By System		
System	Years of Service	Age
PERS 1	5	60
	25	55
	30	Any
PERS 2/3	5	65
PERS 2	20	55
PERS 3	10	55
TRS 1	5	60
	25	55
	30	Any
TRS 2/3	5	65
TRS 2	20	55
TRS 3	10	55
SERS 2/3	5	65
SERS 2	20	55
SERS 3	10	55
PSERS 2	5 Total	65
	10 PSERS	60
	20 Total	53
WSPRS 1	Any	55
	25	Any
WSPRS 2	Any	55
	25	Any
Judicial	15	60
Higher Education	10	55
	Any	62

HCA administers the medical plans in PEBB. The premium a retiree pays depends on:

- The plan chosen by the retiree; and,
- Whether the retiree is enrolled in Parts A and B of Medicare.

Note that a retiree's age does not affect the premium. The explicit subsidy is for all retirees that are enrolled in Parts A and B of Medicare, while the implicit subsidy is for all retirees not enrolled in Parts A and B of Medicare. A more detailed explanation of the subsidies can be found in the **Background** section. The following tables show the

V. APPENDICES

different medical plans administered by PEBB and the monthly premium for each medical plan, broken into non-Medicare and Medicare rates. For each medical plan's complete provisions, as well as all coverage options, please visit *HCA's website*. The following tables represent actual premiums subscribers pay during calendar year 2017, however they do not represent what we relied on for the OPEB valuation. Please see the **Economic Assumptions** section for the OPEB valuation premiums.

2017 Non-Medicare Retiree Annual Rates		
Medical Plans	Retiree & Spouse or SRDP*	
	Retiree	
Group Health Classic	\$8,118.24	\$16,179.84
Group Health CDHP	6,759.36	13,384.08
Group Health SoundChoice	6,909.60	13,762.56
Group Health Value	7,185.72	14,314.80
Kaiser Permanente Classic	7,933.20	15,809.76
Kaiser Permanente CDHP	6,777.96	13,415.28
Uniform Medical Plan Classic	7,483.80	14,910.96
Uniform Medical Plan CDHP	6,754.92	13,375.20
UMP Plus - PSHVN	7,145.88	14,235.12
UMP Plus - UW Medicine ACN	\$7,145.88	\$14,235.12

* State-Registered Domestic Partner.

2017 Medicare Retiree Annual Rates			
Medical Plans	Retiree & Spouse or SRDP*		
	Retiree	Number Eligible for Medicare	
		1	2
Group Health Classic	N/A	\$10,175.64	N/A
Group Health Medicare Plan	2,114.04	N/A	4,171.44
Group Health SoundChoice	N/A	8,967.00	N/A
Group Health Value	N/A	9,243.12	N/A
Kaiser Permanente Senior Advantage	1,963.56	9,840.12	3,870.48
Uniform Medical Plan Classic	\$3,337.56	\$10,764.72	\$6,618.48

Medical Plans	Retiree & Spouse or SRDP*		
	Retiree	Number Eligible for Medicare	
		1	2**
Plan F - Age 65+	\$1,315.08	\$8,742.24	\$3,793.68
Plan F - Members w/ Disabilities (Age<65)	\$2,535.24	\$9,962.40	\$3,793.68

* State-Registered Domestic Partner.

** 1 Retired, 1 Disabled.

DETAILED LIABILITY RESULTS

The following two tables show an expanded set of liability results under the PVFB and PUC liability measurements. Specifically, they split the liabilities between implicit and explicit costs.

Present Value of Future Benefits (PVFB)				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
Gross Costs				
Actives (Future Retirees)				
Explicit Medical Subsidy	\$18,051,086	\$16,087,236	\$2,333,360	\$36,471,682
Implicit Medical Subsidy	3,320,751	2,572,650	409,974	6,303,375
Total Actives	\$21,371,837	\$18,659,886	\$2,743,334	\$42,775,057
Retirees (Subscribers)				
Explicit Medical Subsidy	4,614,764	4,826,177	246,575	9,687,516
Implicit Medical Subsidy	188,197	144,618	19,099	351,914
Total Retirees	\$4,802,961	\$4,970,795	\$265,674	\$10,039,430
Gross Costs Total	\$26,174,798	\$23,630,681	\$3,009,008	\$52,814,487
Cost Sharing (Retiree Premiums)				
Actives (Future Retirees)				
Explicit Medical Subsidy	\$10,941,878	\$9,850,025	\$1,418,216	\$22,210,118
Implicit Medical Subsidy	2,563,501	2,045,601	318,609	4,927,711
Total Actives	\$13,505,379	\$11,895,626	\$1,736,824	\$27,137,829
Retirees (Subscribers)				
Explicit Medical Subsidy	2,742,805	2,859,950	146,986	5,749,740
Implicit Medical Subsidy	147,924	114,090	14,776	276,790
Total Retirees	\$2,890,729	\$2,974,039	\$161,762	\$6,026,530
Cost Sharing Total	\$16,396,108	\$14,869,665	\$1,898,586	\$33,164,359
Net Subsidy = Gross Costs - Cost Sharing				
Actives (Future Retirees)				
Explicit Medical Subsidy	\$7,109,208	\$6,237,211	\$915,144	\$14,261,564
Implicit Medical Subsidy	757,250	527,049	91,365	1,375,664
Total Actives	\$7,866,458	\$6,764,260	\$1,006,510	\$15,637,228
Retirees (Subscribers)				
Explicit Medical Subsidy	1,871,959	1,966,227	99,589	3,937,776
Implicit Medical Subsidy	40,272	30,529	4,323	75,124
Total Retirees	\$1,912,232	\$1,996,756	\$103,912	\$4,012,900
Net PVFB as of 1/1/2017	\$9,778,690	\$8,761,016	\$1,110,422	\$19,650,128

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GASB 45 Actuarial Accrued Liability (AAL)				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
Gross Costs				
Actives (Future Retirees)				
Explicit Medical Subsidy	\$8,215,757	\$7,211,183	\$1,085,603	\$16,512,543
Implicit Medical Subsidy	1,447,494	1,102,712	179,867	2,730,073
Total Actives	\$9,663,251	\$8,313,895	\$1,265,470	\$19,242,616
Retirees (Subscribers)				
Explicit Medical Subsidy	4,614,764	4,826,177	246,575	9,687,516
Implicit Medical Subsidy	188,197	144,618	19,099	351,914
Total Retirees	\$4,802,961	\$4,970,795	\$265,674	\$10,039,430
Gross Costs Total	\$14,466,211	\$13,284,690	\$1,531,144	\$29,282,046
Cost Sharing (Retiree Premiums)				
Actives (Future Retirees)				
Explicit Medical Subsidy	\$4,981,307	\$4,416,277	\$660,665	\$10,058,249
Implicit Medical Subsidy	1,113,854	874,918	139,713	2,128,485
Total Actives	\$6,095,161	\$5,291,195	\$800,378	\$12,186,734
Retirees (Subscribers)				
Explicit Medical Subsidy	2,742,805	2,859,950	146,986	5,749,740
Implicit Medical Subsidy	147,924	114,090	14,776	276,790
Total Retirees	\$2,890,729	\$2,974,039	\$161,762	\$6,026,530
Cost Sharing Total	\$8,985,890	\$8,265,235	\$962,140	\$18,213,264
Net Subsidy = Gross Costs - Cost Sharing				
Actives (Future Retirees)				
Explicit Medical Subsidy	\$3,234,450	\$2,794,906	\$424,938	\$6,454,293
Implicit Medical Subsidy	333,640	227,794	40,155	601,589
Total Actives	\$3,568,090	\$3,022,700	\$465,092	\$7,055,882
Retirees (Subscribers)				
Explicit Medical Subsidy	1,871,959	1,966,227	99,589	3,937,776
Implicit Medical Subsidy	40,272	30,529	4,323	75,124
Total Retirees	\$1,912,232	\$1,996,756	\$103,912	\$4,012,900
Net AAL as of 1/1/2017	\$5,480,321	\$5,019,456	\$569,005	\$11,068,782

VI. Glossary



ACTIVES

Members who are currently employed.

ACTUARIAL ACCRUED LIABILITY (AAL)

Computed differently under different funding methods, the Actuarial Accrued Liability generally represents the portion of the Present Value of Fully Projected Benefits attributable to service credit that has been earned (or accrued) as of the valuation date.

ACTUARIAL GAIN OR LOSS

Experience, from one year to the next, which differs from that assumed will result in an actuarial gain or loss. For example, an actuarial gain would occur if less members retired than assumed.

ACTUARIAL VALUE OF ASSETS

The value of pension plan investments and other property used by the actuary for the purpose of an actuarial valuation (sometimes referred to as valuation assets). It is common for actuaries to select an actuarial valuation method that smooths the effects of short term volatility in the market value of assets.

ANNUAL REQUIRED CONTRIBUTION (ARC)

This refers to a GASB disclosure requirement. The ARC is the annual contribution that will fund the current active and inactive members' subsidies by the end of their working lifetimes. It can be calculated as a level dollar amount or a percent of payroll on a year to year basis.

ACTUARIAL VALUATION REPORT (AVR)

Created biannually to monitor the State's pension plans.

DECREMENT

The mode in which a member leaves employment. Examples include retirement, termination, disability, or death.

ENTRY AGE NORMAL (EAN) FUNDING METHOD

The EAN funding method is a standard actuarial funding method. The annual cost of benefits under EAN is comprised of two components:

- Normal cost; plus
- Amortization of the unfunded liability.

The normal cost is determined on an individual basis, from a member's age at plan entry, and is designed to be a level percentage of pay throughout a member's career.

FUNDED RATIO

The ratio of a plan's assets to its liabilities. There are several acceptable methods of measuring a plan's assets and liabilities. In financial reporting, funded status is reported using consistent measures by all governmental entities. According to GASB, the funded ratio is the actuarial value of assets divided by the actuarial accrued liability calculated under PUC (see below).

GOVERNMENTAL ACCOUNTING STANDARDS BOARD (GASB)

Refers to the private, nonpartisan, nonprofit organization that works to create and improve the rules U.S. state and local governments follow when accounting for their finances and reporting to the public.

INACTIVES

Retired members, beneficiaries, or terminated members entitled to a benefit.

NET OPEB OBLIGATION (NOO)

Refers to the GASB disclosure requirement on the balance sheet. It is the cumulative difference between the annual OPEB cost and the actual contributions.

NORMAL COST

Computed differently under different funding methods, the normal cost generally represents the portion of the cost of projected benefits allocated to the current plan year.

VI. GLOSSARY

OTHER POST-EMPLOYMENT BENEFITS (OPEB)

Refers to benefits offered to retirees besides a pension and includes, among other benefits, medical insurance, prescription drug insurance, dental insurance, and long-term care insurance.

PRESENT VALUE OF FULLY PROJECTED BENEFITS (PVFB)

Computed by projecting the total future benefit cash flows from the plan, using actuarial assumptions (i.e., probability of death, retirement, salary increases, etc.), and discounting the cash flows to the valuation date using the assumed valuation interest rate to determine the present value (today's value).

PROJECTED UNIT CREDIT (PUC) ACTUARIAL COST METHOD

The PUC cost method is a standard actuarial funding method. The annual cost of benefits under PUC is comprised of two components:

- Normal cost; plus
- Amortization of the unfunded actuarial accrued liability.

The PUC normal cost is the estimated present value of projected benefits current plan members will earn in the year following the valuation date. It represents today's value of one year of earned benefits.

UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)

The excess, if any, of the actuarial accrued liability over the actuarial value of assets. In other words, the present value of benefits earned to date not covered by plan assets.

Washington State

2017 Other Post-Employment Benefits Actuarial Valuation Report



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