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# 2013 Other Post-Employment Benefits Actuarial Valuation Report

October 2013

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Washington State Investment Board



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# Letter of Introduction



## Office of the State Actuary

*"Securing tomorrow's pensions today."*

### Letter of Introduction Other Post-Employment Benefits Actuarial Valuation Report

October 2013

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 (HCA) to administer medical, dental, and life insurance plans for public employees and retirees.

The primary purpose of this valuation is to determine the PEBB plan liability as of January 1, 2013. 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 and life insurance 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 Other Post-Employment Benefits (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

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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 \(osa.leg.wa.gov\)](http://osa.leg.wa.gov).

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

Matthew M. Smith, FCA, EA, MAAA  
State Actuary

Michael Harbour  
Actuarial Analyst

# Key Results

This section documents the key 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. 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 (unfunded past liability).

► **Annual Other Post-Employment Benefits (OPEB) Cost** — The ARC plus the amortization of the Net OPEB Obligation (NOO, see next bullet point). 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 state agency and higher education employers. K-12 employers (school districts) are split from the state because they are legally separate corporate 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 numbers change with small changes in our assumptions.

GASB 45 Key Results				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
Actuarial Accrued Liability (AAL)	\$3,706,856	\$3,333,222	\$341,056	\$7,381,134
Annual Required Contribution (ARC)	342,283	305,599	35,916	683,798
Annual OPEB Cost	347,033	309,943	36,513	693,490
Net OPEB Obligation (NOO) (6/30/2013)*	\$1,613,775	\$1,483,513	\$204,915	\$3,302,203

\*Estimated.

# Comments on 2013 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.

Significant changes in plan provisions or actuarial assumptions and methods also impact the GASB 45 liability. Significant factors that impacted the results of this valuation include the following.

- ▶ We lowered the assumed investment rate of return from 4.5 to 4.0 percent in consultation with the State Treasurer's Office. This assumption change increased the present value of future medical benefits by approximately 10.4 percent.
- ▶ With the assistance of a healthcare actuary, we developed new healthcare assumptions for this valuation.

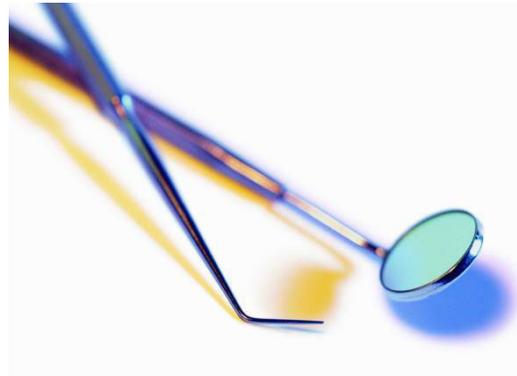
These assumptions include the expected impact of an excise tax paid by affected employers on "Cadillac" health care plans as defined under the Patient Protection and Affordable Care Act (PPACA). This excise tax, which does not go into effect until the year 2018, represents approximately 1.1 percent of 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.

- ▶ The average cost of medical plans providing coverage before Medicare eligibility decreased by 7.2 percent; the average cost for Medicare medical plans increased by 4.3 percent. Actual medical cost inflation since the last valuation date was lower than the assumed rate of approximately 14.6 percent, resulting in a gain to the plan.

- ▶ The average pre-Medicare plan premiums (retiree contributions) increased by 8.3 percent, while the average Medicare plan premiums increased by 11.6 percent. This actual inflation on premiums was lower than expected since the last valuation date, resulting in a loss to the plan.
- ▶ On average, the portion of plan costs paid by the retiree increased, resulting in lower costs paid by the state/ employer. The state's portion decreased by 17 percent for pre-Medicare plans and by 13 percent for Medicare plans since the last valuation date.
- ▶ The assumption and data changes increased liabilities by approximately 6.4 percent from the prior valuation.

A more detailed analysis of the gain/loss can be found in the **Actuarial Exhibits** section.

# Section One – Background



## Other Post-Employment Benefits

Other Post-Employment Benefits (OPEB) are benefits provided to retired employees beyond those provided by their pension plans. Such benefits include medical, prescription drug, life, dental, vision, disability, and long-term care insurance. The Public Employees Benefits Board (PEBB) offers retirees access to all of these benefits. However, PEBB employers provide monetary assistance, or subsidies, only for medical, prescription drug, life, 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 Washington State 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 retired members enrolled in Medicare Parts A and B. PEBB determines the amount of the explicit subsidy annually. The table to the right shows the amount of the monthly explicit subsidy in recent years. The explicit subsidy is the lesser of 50 percent of the monthly premium and the amount to the right.

Year	Explicit Subsidy Per Month	Increase Over Prior Year
2014	\$150.00	0.00%
2013	150.00	0.00%
2012	150.00	(17.98)
2011	182.89	0.00%
2010	182.89	0.00%
2009	182.89	11.46%
2008	164.08	9.63%
2007	149.67	13.50%
2006	131.87	13.50%
2005	116.19	13.52%
2004	102.35	10.36%
2003	92.74	8.04%
2002	85.84	22.66%
2001	69.98	12.00%
2000	\$62.48	N/A

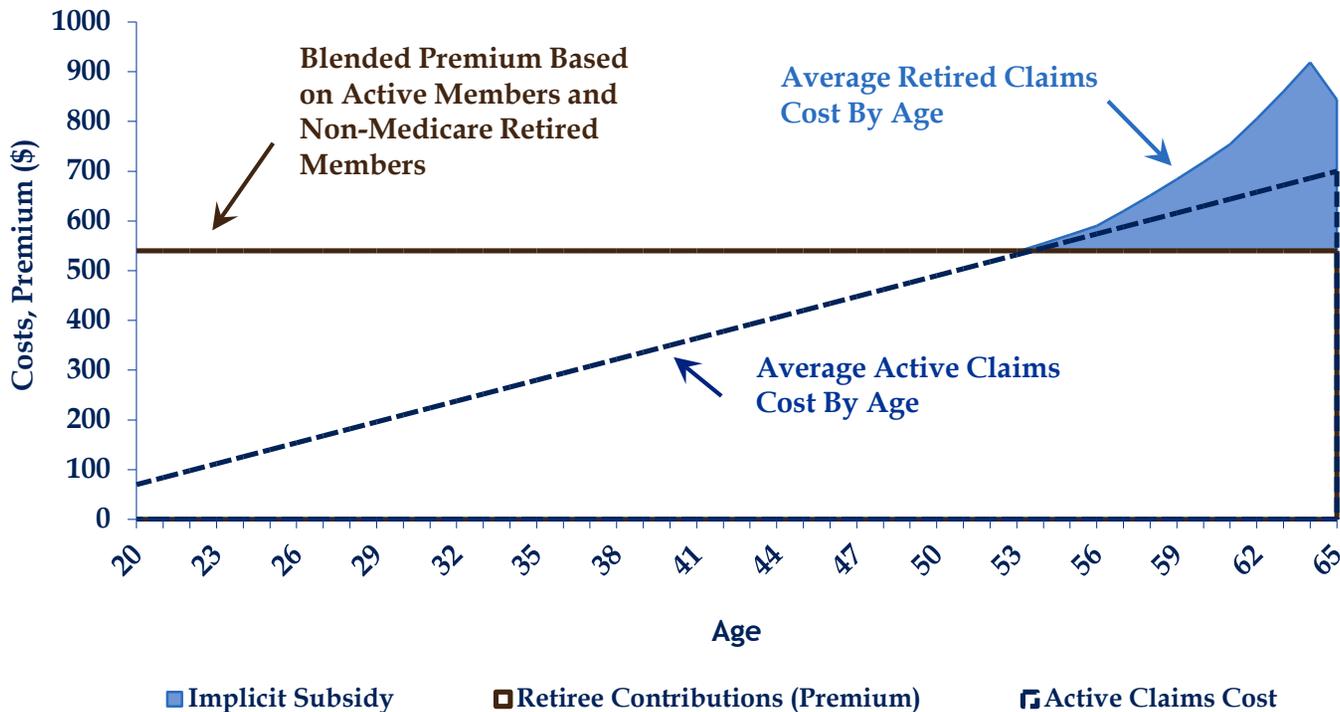
The **implicit subsidy**, set up under RCW 41.05.022, is more complex because it is not a direct payment from the employer on behalf of the member. Since claims experience for employees and non-Medicare eligible retirees are pooled when determining premiums, these retired members pay a premium based 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. For example, in the UMP, the average monthly claims cost for 60-year-old retirees is \$718, whereas the average monthly premium for 60-year-old retirees is \$540. There is an average implicit subsidy of \$178 per month for each 60-year-old PEBB retiree enrolled in UMP.

**Implicit Subsidy Valuation**  
**Average Monthly Claims Cost Vs. Premium for Male Member by Age**  
**Uniform Medical Plan**



## 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.

According to 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 Statement No. 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, GASB does not require a calculation of liability at the plan level.

GASB Statement No. 45 requires each employer to calculate their OPEB liability. In addition to the overall liability, GASB requires a calculation of the Annual Required Contribution (ARC). The ARC is the annual amount required under the actuarial cost method and funding policy for amortizing the unfunded actuarial accrued liability. GASB does not require that PEBB plan employers actually contribute the ARC each year, just that it is recognized so that all stakeholders can see the difference in the current and long-term cost of benefits.

In addition, the state discloses GASB Statements No. 43 and 45 information in the Treasury Bond Prospectus. Rating agencies, such as Moody's, Fitch, and Standard & Poors, 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 actuarial accrued liability compared to payroll, budget, and tax base when making their determinations.

## Actuarial Valuation

We perform an actuarial valuation to determine the GASB 45 liabilities. An actuary performs an actuarial valuation to determine what benefits will be paid throughout the future lifetimes of current members and discounts those payments back to the present. The result is the present value of future benefits. For example, if you had a dollar amount today, which equaled the present value of future benefits, you could invest that amount, accrue earnings during the current plan members'

lifetimes, and use the original investment plus earnings 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 (who is receiving the benefits), benefit provisions (what are the benefits), and assumptions (how do we expect the members and the economy to behave). 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 have been funded on a pay-as-you-go basis, meaning that PEBB employers have paid these costs as they occurred. 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

(Net OPEB Obligation) 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 interest discount rate must be lower, in the range of 3 to 5 percent. A lower interest 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. The results are 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, an interest discount rate in the range of 7 to 8 percent can be used. A higher interest discount rate will mean a smaller reported overall liability.

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

- ▶ Determining the level of pre-funding.
- ▶ Contractualizing retiree health subsidies (pro or con).
- ▶ Making it difficult for school districts and political subdivisions to join or leave PEBB.
- ▶ Making larger contributions today (lower contributions later).

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 amount that the employee pays versus the 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 and the historical pattern of practice with regard to the sharing of benefit costs between the employer and plan members. 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

using the same medical inflation trend rate for each. Generally, we use the same medical inflation trend rate for future 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 this valuation, however, we have altered the inflation assumption for contributions to reflect the reduction in future explicit Medicare subsidies. Projections could also be run to show policy decision makers what changing the cost-sharing policy further will do to the liability. As a frame of reference, reducing cost-sharing policy by half will cut the liability in half since the subsidies would all be half of their current amount.



# Section Two – Actuarial Exhibits



## Office of the State Actuary

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**Actuarial Certification Letter  
Other Post-Employment Benefits  
Actuarial Valuation Report  
October 2013**

This report documents the results of an actuarial valuation of the post-retirement medical subsidies offered to employees by the employers participating in the Public Employee Benefits Board’s (PEBB) plan. The primary purpose of this valuation is to determine the liability under Governmental Accounting Standards Board (GASB) accounting requirements, as of January 1, 2013, for the subsidies associated with retiree medical benefits provided by PEBB plan employers. This valuation should not be used for other purposes.

The valuation results summarized in this report involve calculations that require assumptions about future economic and demographic events. We believe that the assumptions and methods used in the underlying valuation are reasonable and appropriate for the primary purposes stated above. The use of another set of assumptions and methods, however, could also be reasonable and could result in materially different results. Please replace the report with a future report when available.

Consistent with GASB reporting requirements, we assumed a pay-as-you-go funding policy when selecting the assumed rate of investment return of 4 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, 2012, Actuarial Valuation Report](#) (AVR). Participation percentage, percentage of spouses covered, and Medicare coverage were determined by the Office of the State Actuary. Demographic assumptions are the same as those used in the June 30, 2012, AVR, which were developed from the [2001-2006 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, asset valuation method, and funding policy for amortizing the UAAL.

The medical trend, claims costs, and aging factors were provided by Robert Schmidt, a healthcare actuary in Milliman’s Boise office. We relied on these assumptions provided by Milliman for purposes of performing this valuation. 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 medical trend assumptions, 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

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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.

In my opinion, all methods, assumptions, and calculations are reasonable and are in conformity with generally accepted actuarial principles and standards of practice as of the date of this publication.

The Health Care Authority and the Department of Retirement Systems provided the member data used in this report. The census data is reported as of June 30, 2012, and was projected forward to match the open enrollment medical plan choices as of January 1, 2013. We have checked the data for reasonableness as appropriate based on the purpose of the valuation. There are currently no assets as the liability has not been pre-funded. An audit of the participant data was not performed. We have relied on all the information provided as complete and accurate. In my opinion, these data are adequate and complete for the purposes of this valuation.

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

Matthew M. Smith, FCA, EA, MAAA  
State Actuary

## 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 employees (actives/future retirees) and current retirees of the employers participating in the Public Employees Benefits Board (PEBB) plan. 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, whereas the GASB Statement No. 45 (GASB 45) liability is the present value of all subsidies expected to be paid out that have already been earned.

The table to the right shows the PVFB as of January 1, 2013, split among PEBB plan employers by major category, grouped by current active and inactive members, and shows what portions are attributable to the explicit subsidy and implicit subsidy for medical insurance; the table is broken into gross costs (total cost), cost sharing (member contributions), and net subsidy (cost minus member contributions).

Present Value of Future Benefits (PVFB)				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
<b>Gross Costs</b>				
<b>Active Members</b>				
Explicit Medical Subsidy	\$9,468,230	\$8,401,110	\$1,072,660	\$18,942,001
Implicit Medical Subsidy	3,069,656	2,372,866	327,321	5,769,843
<b>Total Active</b>	<b>12,537,886</b>	<b>10,773,976</b>	<b>1,399,981</b>	<b>24,711,843</b>
<b>Inactive Members</b>				
Explicit Medical Subsidy	2,629,369	2,872,090	122,458	5,623,917
Implicit Medical Subsidy	244,453	168,514	18,679	431,646
<b>Total Inactive</b>	<b>2,873,822</b>	<b>3,040,604</b>	<b>141,137</b>	<b>6,055,563</b>
<b>Gross Costs Total</b>	<b>15,411,708</b>	<b>13,814,580</b>	<b>1,541,118</b>	<b>30,767,406</b>
<b>Cost Sharing (Retiree Contributions)</b>				
<b>Active Members</b>				
Explicit Medical Subsidy	5,423,635	4,927,651	614,140	10,965,426
Implicit Medical Subsidy	2,104,866	1,621,865	221,278	3,948,010
<b>Total Active</b>	<b>7,528,501</b>	<b>6,549,517</b>	<b>835,418</b>	<b>14,913,436</b>
<b>Inactive Members</b>				
Explicit Medical Subsidy	1,488,999	1,658,407	70,796	3,218,202
Implicit Medical Subsidy	166,722	113,298	12,760	292,779
<b>Total Inactive</b>	<b>1,655,721</b>	<b>1,771,704</b>	<b>83,556</b>	<b>3,510,982</b>
<b>Cost Sharing Total</b>	<b>9,184,222</b>	<b>8,321,221</b>	<b>918,974</b>	<b>18,424,417</b>
<b>Net Subsidy (Gross Costs - Cost-Sharing)</b>				
<b>Active Members</b>				
Explicit Medical Subsidy	4,044,595	3,473,459	458,520	7,976,575
Implicit Medical Subsidy	964,790	751,001	106,042	1,821,833
<b>Total Active</b>	<b>5,009,385</b>	<b>4,224,460</b>	<b>564,563</b>	<b>9,798,408</b>
<b>Inactive Members</b>				
Explicit Medical Subsidy	1,140,370	1,213,683	51,662	2,405,714
Implicit Medical Subsidy	77,731	55,217	5,919	138,867
<b>Total Inactive</b>	<b>1,218,101</b>	<b>1,268,900</b>	<b>57,581</b>	<b>2,544,581</b>
<b>Net PVFB (1/1/2013)</b>	<b>\$6,227,486</b>	<b>\$5,493,360</b>	<b>\$622,144</b>	<b>\$12,342,989</b>

## GASB Statement No. 45 Liability (AAL)

The GASB Statement No. 45 (GASB 45) liabilities are employer's total accrued liability from the medical insurance subsidies offered through the PEBB plan. It is the present value of future subsidies paid on behalf of current employees (actives/future retirees) and current retirees. The GASB 45 liabilities are based on all service currently earned. 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, 2013, split among the PEBB plan employees by major category by current active and inactive members and shows what portions are attributable to the explicit subsidy and implicit subsidy for medical insurance; the table is broken into gross costs (total cost), cost sharing (member contributions), and net subsidy (cost minus member contributions).

GASB 45 Actuarial Accrued Liability (AAL)				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
<b>Gross Costs</b>				
<b>Active Members</b>				
Explicit Medical Subsidy	\$4,760,560	\$4,145,641	\$547,657	\$9,453,858
Implicit Medical Subsidy	1,447,804	1,095,384	155,960	2,699,149
<b>Total Active</b>	<b>6,208,364</b>	<b>5,241,026</b>	<b>703,618</b>	<b>12,153,007</b>
<b>Inactive Members</b>				
Explicit Medical Subsidy	2,629,369	2,872,090	122,458	5,623,917
Implicit Medical Subsidy	244,453	168,514	18,679	431,646
<b>Total Inactive</b>	<b>2,873,822</b>	<b>3,040,604</b>	<b>141,137</b>	<b>6,055,563</b>
<b>Gross Costs Total</b>	<b>9,082,186</b>	<b>8,281,630</b>	<b>844,754</b>	<b>18,208,570</b>
<b>Cost Sharing (Retiree Contributions)</b>				
<b>Active Members</b>				
Explicit Medical Subsidy	2,731,138	2,429,310	314,962	5,475,410
Implicit Medical Subsidy	988,471	747,393	105,180	1,841,045
<b>Total Active</b>	<b>3,719,609</b>	<b>3,176,703</b>	<b>420,143</b>	<b>7,316,455</b>
<b>Inactive Members</b>				
Explicit Medical Subsidy	1,488,999	1,658,407	70,796	3,218,202
Implicit Medical Subsidy	166,722	113,298	12,760	292,779
<b>Total Inactive</b>	<b>1,655,721</b>	<b>1,771,704</b>	<b>83,556</b>	<b>3,510,982</b>
<b>Cost Sharing Total</b>	<b>5,375,331</b>	<b>4,948,407</b>	<b>503,699</b>	<b>10,827,436</b>
<b>Net Subsidy (Gross Costs - Cost-Sharing)</b>				
<b>Active Members</b>				
Explicit Medical Subsidy	2,029,422	1,716,331	232,695	3,978,448
Implicit Medical Subsidy	459,333	347,991	50,780	858,104
<b>Total Active</b>	<b>2,488,755</b>	<b>2,064,323</b>	<b>283,475</b>	<b>4,836,552</b>
<b>Inactive Members</b>				
Explicit Medical Subsidy	1,140,370	1,213,683	51,662	2,405,714
Implicit Medical Subsidy	77,731	55,217	5,919	138,867
<b>Total Inactive</b>	<b>1,218,101</b>	<b>1,268,900</b>	<b>57,581</b>	<b>2,544,581</b>
<b>Net AAL (1/1/2013)</b>	<b>\$3,706,856</b>	<b>\$3,333,222</b>	<b>\$341,056</b>	<b>\$7,381,134</b>

## ARC, Annual OPEB Cost, and NOO

The Annual Required Contribution (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 made up of the normal cost plus the thirty-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 as of January 1, 2013. The components are split among the largest employers and broken down by active and inactive members. The table also shows what portions are attributable to the explicit subsidy and the implicit subsidy.

Annual Required Contribution (ARC)				
(Dollars in Thousands)	State	K-12	Political Subdivisions	Total
<b>Normal Cost</b>				
Active Members				
Explicit Subsidy	\$156,025	\$140,940	\$18,138	\$315,103
Implicit Subsidy	34,592	28,415	3,880	66,886
<b>Total Normal Cost</b>	<b>190,617</b>	<b>169,355</b>	<b>22,018</b>	<b>381,989</b>
<b>Amortization of UAAL</b>				
Inactive Members				
Explicit Subsidy	124,143	113,385	11,449	248,977
Implicit Subsidy	27,523	22,859	2,449	52,832
<b>Total Amortization*</b>	<b>151,666</b>	<b>136,245</b>	<b>13,898</b>	<b>301,809</b>
<b>ARC</b>	<b>\$342,283</b>	<b>\$305,599</b>	<b>\$35,916</b>	<b>\$683,798</b>

\*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 Net OPEB Obligation (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 has accrued since the ARC 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 January 1, 2013.

Annual OPEB Cost				
<i>(Dollars in Thousands)</i>	Political			Total
	State	K-12	Subdivisions	
ARC	\$342,283	\$305,599	\$35,916	\$683,798
Interest on NOO	53,434	49,485	6,859	109,778
Amortization of NOO*	(48,684)	(45,140)	(6,261)	(100,086)
<b>Annual OPEB Cost</b>	<b>\$347,033</b>	<b>\$309,943</b>	<b>\$36,513</b>	<b>\$693,490</b>

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

Net OPEB Obligation				
<i>(Dollars in Thousands)</i>	Political			Total
	State	K-12	Subdivisions	
<b>NOO (6/30/2011)</b>	<b>\$1,027,767</b>	<b>\$956,914</b>	<b>\$134,901</b>	<b>\$2,119,582</b>
Annual OPEB Cost	398,584	361,218	41,129	800,930
(7/1/2011 - 6/30/2012) Contributions	(90,494)	(81,018)	(4,558)	(176,070)
<b>NOO (6/30/2012)*</b>	<b>\$1,335,857</b>	<b>\$1,237,114</b>	<b>\$171,472</b>	<b>\$2,744,443</b>
Annual OPEB Cost	347,033	309,943	36,513	693,490
(7/1/2012 - 6/30/2013) Contributions**	(69,114)	(63,544)	(3,071)	(135,729)
<b>NOO (6/30/2013)**</b>	<b>\$1,613,775</b>	<b>\$1,483,513</b>	<b>\$204,915</b>	<b>\$3,302,203</b>

*\*OSA prepared an estimated 6/30/2012 State NOO as part of the disclosures in the State's 2012 CAFR. The final results differ from those we estimated and are presented above. A 2012 adjustment has been added to the 2013 CAFR.*

*\*\*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 what makes up this year's amortization of the UAAL and NOO separately for the state, K-12, and political subdivisions.

State Amortization of UAAL						
(Dollars in Thousands)	Beginning UAAL	Previous Amortization	Accrued Interest	Current UAAL	Years Remaining	Amortization
	(a)	(b)	(c)	(d) (a - b + c)	(e)	(d / e)
2008	\$3,799,530	\$699,568	\$828,585	\$3,928,547	25	\$157,142
2009	118,829	16,820	18,469	120,478	26	4,634
2010	(244,154)	(25,405)	(28,427)	(247,176)	27	(9,155)
2011	(305,268)	(20,758)	(23,656)	(308,166)	28	(11,006)
2013	\$213,172	\$0	\$0	\$213,172	30	\$7,106
<b>Total</b>						\$148,721
<b>Interest on Contributions</b>						\$2,945
<b>Total UAAL Amortization</b>						\$151,666

K-12 Amortization of UAAL						
(Dollars in Thousands)	Beginning UAAL	Previous Amortization	Accrued Interest	Current UAAL	Years Remaining	Amortization
	(a)	(b)	(c)	(d) (a - b + c)	(e)	(d / e)
2008	\$3,355,826	\$617,873	\$731,824	\$3,469,777	25	\$138,791
2009	101,266	14,334	15,739	102,671	26	3,949
2010	(100,788)	(10,487)	(11,735)	(102,036)	27	(3,779)
2011	(328,294)	(22,324)	(25,441)	(331,410)	28	(11,836)
2013	\$194,220	\$0	\$0	\$194,220	30	\$6,474
<b>Total</b>						\$133,599
<b>Interest on Contributions</b>						\$2,646
<b>Total UAAL Amortization</b>						\$136,245

Political Subdivision Amortization of UAAL						
(Dollars in Thousands)	Beginning UAAL	Previous Amortization	Accrued Interest	Current UAAL	Years Remaining	Amortization
	(a)	(b)	(c)	(d) (a - b + c)	(e)	(d / e)
2008	\$339,972	\$62,595	\$74,140	\$351,516	25	\$14,061
2009	(7,777)	(1,101)	(1,209)	(7,885)	26	(303)
2010	33,534	3,489	3,904	33,949	27	1,257
2011	(70,332)	(4,783)	(5,450)	(71,000)	28	(2,536)
2013	\$34,475	\$0	\$0	\$34,475	30	\$1,149
<b>Total</b>						\$13,628
<b>Interest on Contributions</b>						\$270
<b>Total UAAL Amortization</b>						\$13,898

State Amortization of NOO						
(Dollars in Thousands)	Beginning NOO	Previous Amortization	Accrued Interest	Current NOO	Years Remaining	Amortization
	(a)	(b)	(c)	(d) (a - b + c)	(e)	(d / e)
2008	\$0	\$0	\$0	\$0	0	\$0
2009	245,855	35,490	43,838	254,203	26	9,777
2010	241,490	25,835	38,940	254,596	27	9,429
2011	271,944	18,882	32,824	285,885	28	10,210
2012	235,362	7,845	18,892	246,409	29	8,497
2013	\$294,764	\$0	\$0	\$294,764	30	\$9,825
<b>Total</b>						\$47,739
<b>Interest on Contributions</b>						\$945
<b>Total NOO Amortization</b>						\$48,684

K-12 Amortization of NOO						
(Dollars in Thousands)	Beginning NOO	Previous Amortization	Accrued Interest	Current NOO	Years Remaining	Amortization
	(a)	(b)	(c)	(d) (a - b + c)	(e)	(d / e)
2008	\$0	\$0	\$0	\$0	0	\$0
2009	228,570	32,995	40,756	236,331	26	9,090
2010	244,602	26,167	39,442	257,877	27	9,551
2011	242,563	16,842	29,277	254,998	28	9,107
2012	209,844	6,995	16,843	219,692	29	7,576
2013	\$268,215	\$0	\$0	\$268,215	30	\$8,941
<b>Total</b>						\$44,264
<b>Interest on Contributions</b>						\$877
<b>Total NOO Amortization</b>						\$45,140

Political Subdivision Amortization of NOO						
(Dollars in Thousands)	Beginning NOO	Previous Amortization	Accrued Interest	Current NOO	Years Remaining	Amortization
	(a)	(b)	(c)	(d) (a - b + c)	(e)	(d / e)
2008	\$0	\$0	\$0	\$0	0	\$0
2009	31,258	4,512	5,574	32,319	26	1,243
2010	33,180	3,550	5,350	34,981	27	1,296
2011	37,758	2,622	4,557	39,693	28	1,418
2012	28,218	941	2,265	29,542	29	1,019
2013	\$34,936	\$0	\$0	\$34,936	30	\$1,165
<b>Total</b>						\$6,140
<b>Interest on Contributions</b>						\$122
<b>Total NOO Amortization</b>						\$6,261

## 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 has gains and losses smoothed 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 date of valuation, January 1, 2013.

Assets as of January 1, 2013	
(Dollars in Thousands)	
Market Value of Assets	\$0
Amortization of Gains/(Losses)	0
Actuarial Value of Assets	\$0

## Funded Ratio

The funded ratio is the ratio of the present value of contributions that have been made for current members (and associated investment return, if applicable) to the present value of the liability that has already been accrued (as defined by the funding method), also known as the Actuarial Accrued Liability (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 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, 2013				
<i>(Dollars in Thousands)</i>	Political			Total
	State	K-12	Subdivisions	
Actuarial Accrued Liability	\$3,706,856	\$3,333,222	\$341,056	\$7,381,134
Assets	0	0	0	0
Unfunded Liability (1/1/2013)	\$3,706,856	\$3,333,222	\$341,056	\$7,381,134
Funded Ratio				
1/1/2013	0.00%	0.00%	0.00%	0.00%
1/1/2011	0.00%	0.00%	0.00%	0.00%
1/1/2009	0.00%	0.00%	0.00%	0.00%
1/1/2008	0.00%	0.00%	0.00%	0.00%
1/1/2007	0.00%	0.00%	0.00%	0.00%

## Covered Payroll

The covered payroll is the total payroll of all current members that are eligible to receive subsidies from PEBB plan employers. 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 at 3.75 percent per year. The state's current ARC is \$342,283,000. This represents 5.9 percent of the state's current annual payroll for all eligible members.

Covered Payroll				
<i>(Dollars in Thousands)</i>	Political			Total
	State	K-12	Subdivisions	
Total Payroll	\$5,786,960	\$5,771,688	\$636,322	\$12,194,970

## 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				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
Unfunded Liability (1/1/2013)	\$3,706,856	\$3,333,222	\$341,056	\$7,381,134
Total Payroll	\$5,786,960	\$5,771,688	\$636,322	\$12,194,970
Unfunded Liability as a % of Covered Payroll	64.06%	57.75%	53.60%	60.53%

## Percentage of ARC Contributed

The following table shows the estimated percentage of the state's ARC contributed during the fiscal year ending June 30, 2013, 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				
<i>(Dollars in Thousands)</i>	State	K-12	Political Subdivisions	Total
(7/1/2012 - 6/30/2013) Contributions*	\$69,114	\$63,544	\$3,071	\$135,729
ARC	\$342,283	\$305,599	\$35,916	\$683,798
Percentage of ARC Contributed*	20.19%	20.79%	8.55%	19.85%

\*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 last year's valuation 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. The second table shows the difference between the prior liability and this year's liability by major source.

Expected Change in Projected Unit Credit (PUC) Liability			
(Dollars in Thousands)	State	K-12	Political Subdivisions
<b>2011 PUC Liability</b>	\$3,491,970	\$3,137,252	\$306,527
Normal Cost	182,916	163,420	20,293
Interest	161,254	144,853	14,250
Disbursements	(80,424)	(73,116)	(3,426)
<b>2012 Expected PUC Liability</b>	3,755,716	3,372,409	337,645
Normal Cost	213,086	192,799	23,797
Interest	173,802	156,096	15,729
Disbursements	(92,508)	(82,821)	(4,659)
<b>2013 Expected PUC Liability</b>	4,050,096	3,638,483	372,512
<b>Expected Change in PUC Liability</b>	<b>\$558,126</b>	<b>\$501,231</b>	<b>\$65,985</b>

Change in PUC Liability by Source			
(Dollars in Thousands)	State	K-12	Political Subdivisions
<b>2011 PUC Liability</b>	\$3,491,970	\$3,137,252	\$306,527
Expected Change in Liability	\$558,126	\$501,231	\$65,985
Liability (Gain) / Loss			
Termination	(\$109,671)	(\$18,827)	(\$25,782)
Retirement	(21,230)	(25,708)	3,216
Mortality	(39,394)	(34,327)	(5,002)
Disability	(6,262)	(3,540)	(845)
New Entrants	157,264	49,461	45,398
Other Liabilities*	(34,444)	13,456	(33,691)
<b>Total Liability (Gains) / Losses</b>	<b>(\$53,738)</b>	<b>(\$19,485)</b>	<b>(\$16,705)</b>
Incremental Changes			
Plan Changes	\$0	\$0	\$0
Method Changes	0	0	0
Medical Assumption Changes	(679,264)	(623,431)	(54,997)
Excise Tax Assumption Change	41,424	32,456	4,693
Discount Rate Assumption Change	348,337	305,199	35,553
Correction Changes	0	0	0
<b>Total Incremental Changes</b>	<b>(\$289,502)</b>	<b>(\$285,776)</b>	<b>(\$14,751)</b>
<b>Total Change</b>	<b>\$214,886</b>	<b>\$195,970</b>	<b>\$34,529</b>
<b>2013 PUC Liability</b>	<b>\$3,706,856</b>	<b>\$3,333,222</b>	<b>\$341,056</b>

\*Includes members who changed medical plans and/or family coverage.

# Projections

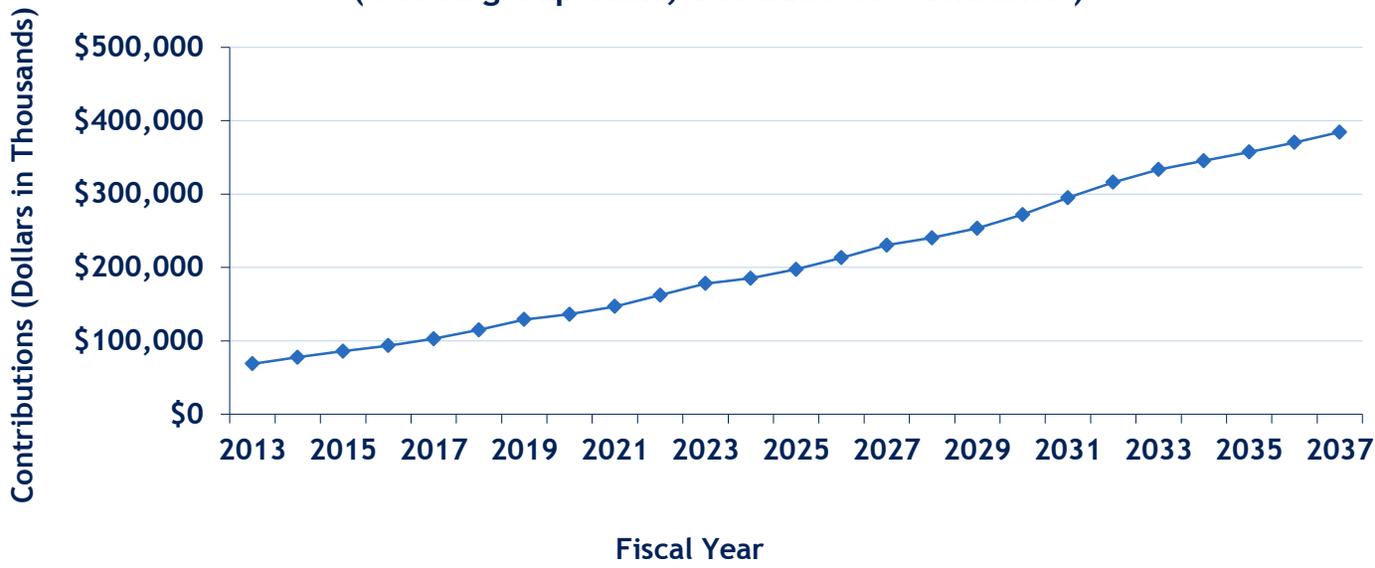
It is important to look at the projections of the contributions and the liability in order to determine if the contributions are manageable and whether the liabilities will be funded within a reasonable period of time. Projections allow policy decision makers to determine the best funding policy for the state and their constituents while providing investors and stakeholders the knowledge of what lies ahead. Bond rating agencies will look at these projections to determine whether a

well formulated plan is in place, or is necessary.

First, we observe what the stream of payments will look like with a pay-as-you-go funding policy for the current participants. Twenty-five years is a good time frame for projections since it is enough time to show trends in the future. Over the next 25 years, as the large number of current members and high assumed medical inflation dominate in the early years,

the annual contributions (or benefit payments) increase. After 25 years, as projected medical inflation slows down and the closed current active population starts to dwindle, the annual payments will reach a peak and decrease to zero in the long-run. The next graph shows what we expect the contributions to look like for the first twenty-five years under the current pay-as-you-go funding policy.

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

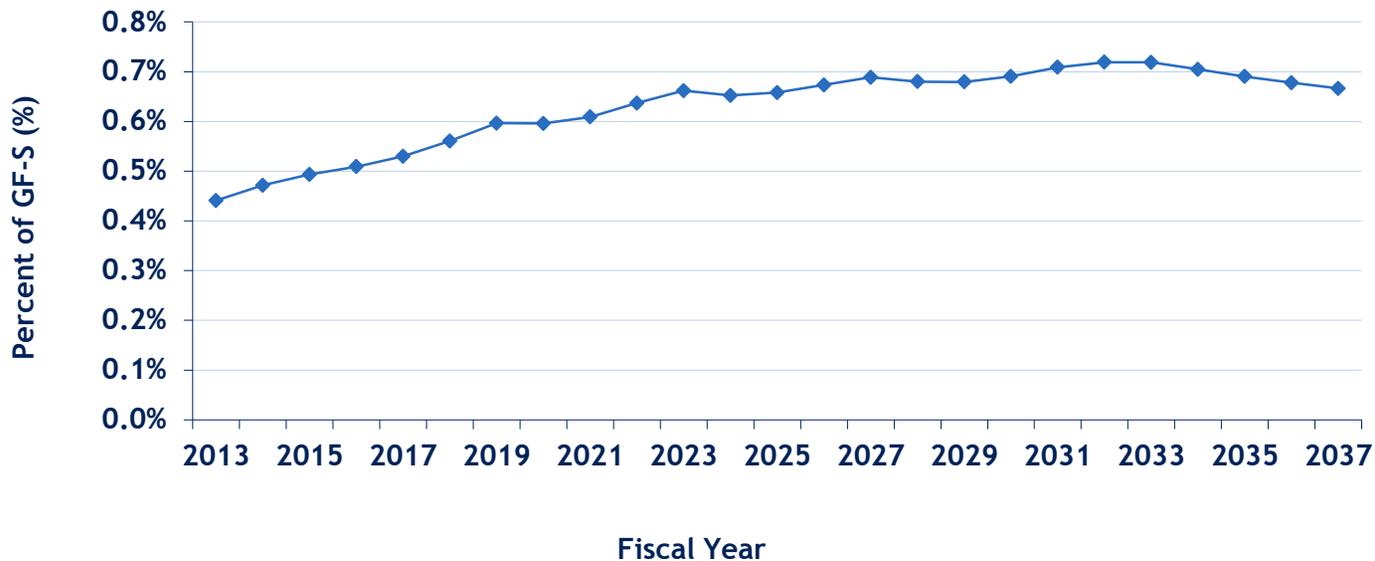


While the expected stream of future contributions is informative, it is only helpful when put in perspective. A good comparison for the state's obligation is to look at the projected contributions as a percentage of the General Fund-State (GF-S) operating budget. The following graph shows the percentage of the contributions relative to the GF-S operating budget. Note that while the contributions seem to drop off

in later years, it is because these are based on a closed membership group using pay-as-you-go funding. In other words, these benefits are not becoming more affordable, there are just fewer members alive to receive them since we are not considering new entrants to the plan in this projection. The following graph shows the percentage of the contributions relative to the GF-S operating budget. Note that the

GF-S budget is not the sole funding source for these contributions, nor is the entire GF-S budget available to fund these contributions; this is intended to show relative magnitude. We increased the budgeted general fund expenditures for 2013 by 5.6 percent per year to estimate future general fund expenditures.

**State Contributions as a Percent of GF-S Operating Budget  
(Closed group basis; excludes new entrants.)**

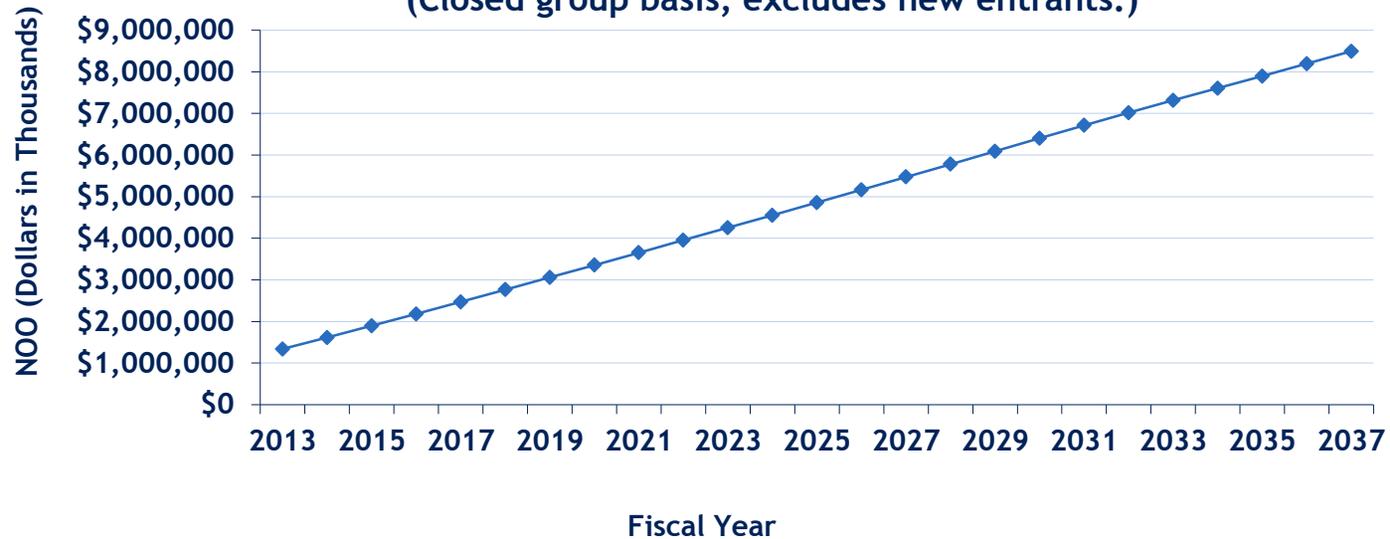


The last projection we considered was the Net OPEB Obligation (NOO) over the same time period. Remember, the NOO grows as long as contributions continue to be less than the Annual OPEB Cost. The NOO is a balance sheet item that

shows the cumulative difference between the Annual OPEB Cost and actual contributions made. The following graph shows the NOO; the Annual OPEB Cost is larger than the contributions in the years that the NOO increases, while the

Annual OPEB Cost is smaller than the contributions in the years that the NOO decreases. In this graph we see that the NOO increases in each year, meaning that projected contributions are less than the projected Annual OPEB Cost every year.

**Projected State NOO on a Pay-As-You-Go-Basis  
(Closed group basis; excludes new entrants.)**





## Section Three – Sensitivity Analysis



A single point estimate is only the start of understanding the Governmental Accounting Standards Board (GASB) Statement No. 45 (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. In this section we determined how much the state's liability would change due to small changes in the medical trend assumption. We also look at open-group (reflects assumed new entrants) projections to determine how estimated contributions would look in the future.

### Medical Trend Assumption

The medical cost inflation trend assumption varies by medical plan and Medicare coverage, starting at approximately 8 percent in 2013 and decreasing to an ultimate rate of 5.0 percent in 2083. The ultimate rate means the expected rate for 2093 and beyond is 5.0 percent. With the adoption of lower explicit subsidies beginning in 2012, the medical premium inflation assumptions for Medicare plans differ from the cost inflation assumptions for the first two years into the future, then match the cost inflation assumptions each year thereafter. The medical premium inflation assumptions for non-Medicare plans match the medical cost inflation assumptions in all years.

For the detailed medical trend assumptions, refer to the Appendices. Although this is our best estimate, it is reasonable that the medical inflation trend could be higher or lower. We will look at a medical inflation trend 1.0 percent higher or lower in each year to determine how sensitive the results are to medical inflation. The table at the right shows the results of changing the medical trend assumption by 100 basis points, or 1.0 percent per year for the state, as a PEBB plan employer.

Sensitivity Analysis (State) - Medical Trend			
<i>(Dollars in Thousands)</i>	High (+1.0%)	Expected*	Low (-1.0%)
PVFB	\$8,088,885	\$6,227,486	\$4,883,019
<b>GASB 45 Liability (AAL)</b>	<b>\$4,555,135</b>	<b>\$3,706,856</b>	<b>\$3,060,411</b>
Normal Cost	250,851	190,617	147,006
Amortization	180,502	151,666	129,691
<b>ARC</b>	<b>\$431,353</b>	<b>\$342,283</b>	<b>\$276,697</b>
Interest on NOO	53,434	53,434	53,434
Amortization of NOO	(48,684)	(48,684)	(48,684)
<b>Annual OPEB Cost</b>	<b>\$436,103</b>	<b>\$347,033</b>	<b>\$281,447</b>
Beginning NOO (6/30/2012)	1,335,857	1,335,857	1,335,857
Contributions**	(69,114)	(69,114)	(69,114)
<b>Ending NOO**</b>	<b>\$1,702,845</b>	<b>\$1,613,775</b>	<b>\$1,548,189</b>

\*Cost Inflation begins at approximately 8.0% in 2013 and decreases to an ultimate rate of about 5.0% in 2093. Premium inflation starts higher than cost inflation for the first two years.

\*\*Estimated.

## 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 Patient Protection and Affordable Care Act (PPACA) excise taxes.

Sensitivity Analysis (State) - Discount Rate			
<i>(Dollars in Thousands)</i>	High (+0.5%)	Expected	Low (-0.5%)
PVFB	\$5,481,465	\$6,227,486	\$7,117,453
GASB 45 Liability (AAL)	\$3,350,826	\$3,706,856	\$4,120,087

Sensitivity Analysis (State) - Impact of Excise Tax		
<i>(Dollars in Thousands)</i>	w/o Excise Tax	Expected
PVFB	\$6,080,880	\$6,227,486
GASB 45 Liability (AAL)	\$3,665,431	\$3,706,856

It is important to realize that economic assumptions, such as medical 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.

## Stochastic Modeling of Medical Inflation

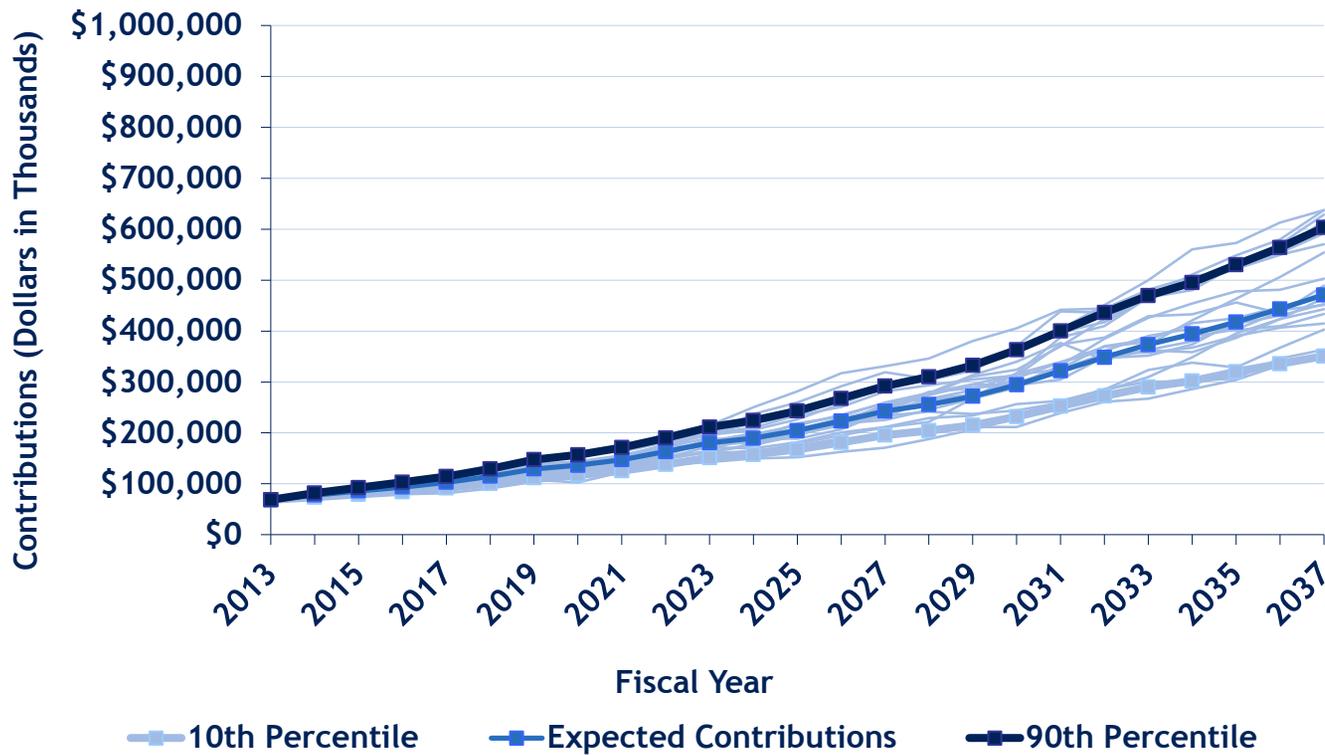
Medical inflation is the main driver of future pay-as-you-go costs. Thus far we have only looked at the best-estimate for future contributions and the accounting results if medical inflation is plus or minus 1 percent in the future. But, how likely are those scenarios to happen?

In order to determine the likelihood of future events, we ran a stochastic simulation. Essentially, we determined the variability of medical inflation in the future, using a standard deviation of 4.5 percent. We then simulated 2,000 random streams of contributions for the state based on varying medical inflation. The light blue lines in the next graph show a sample of these 2,000 simulations. We then rank the simulations in order to determine how many will be above or below a given dollar amount for each future year.

Finally, we can estimate the distribution of the pay-as-you-go costs. For example, the upper blue line is the 90th percentile, which means that 90 percent of the cost simulations fell below that amount in a given year. Similarly, the bottom blue line is the 10th percentile,

which means that 90 percent of the cost simulations were above that amount in a given year. There is an 80 percent chance that the costs will be between the two blue lines in a given year.

**Variability of Annual State Contributions  
on Pay-As-You-Go Basis  
Based on Variable Rates of Medical Inflation  
(Open group basis; includes new entrants.)**



## Open Group Forecast

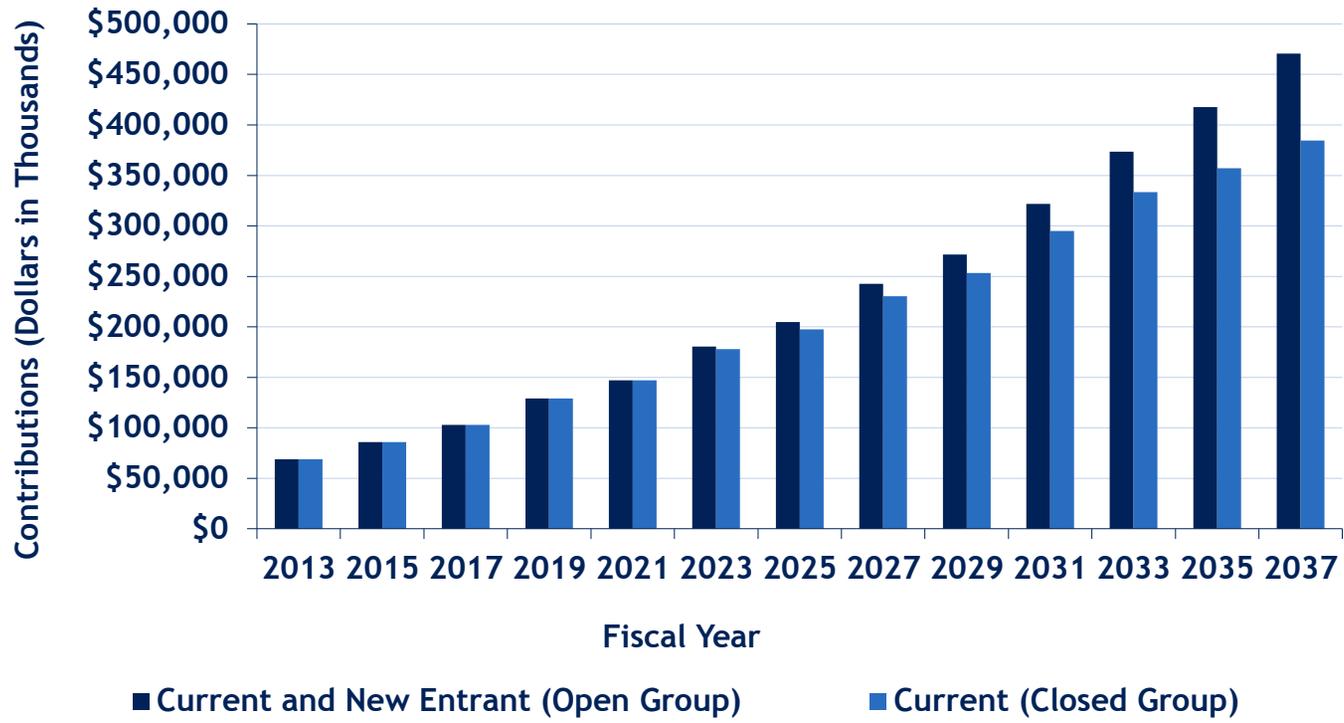
Thus far, we have only looked at contributions for a closed group. In other words, we have only looked at the contributions that would pay the benefits of the current population of active and inactive members. However, new entrants will likely enter the plan, which would result in steady contribution 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.

Note that the contributions in this graph are higher than those in the Projections section because they include contributions for

new entrants. We assumed that 20 percent of the new entrants are age 24; 20 percent are age 30; 20 percent are age 37; 10 percent are age 42; 10 percent are age 43; 10 percent are age 52; and 10 percent are age 53. Further, we assumed that the total active population will grow by 0.95 percent per year.

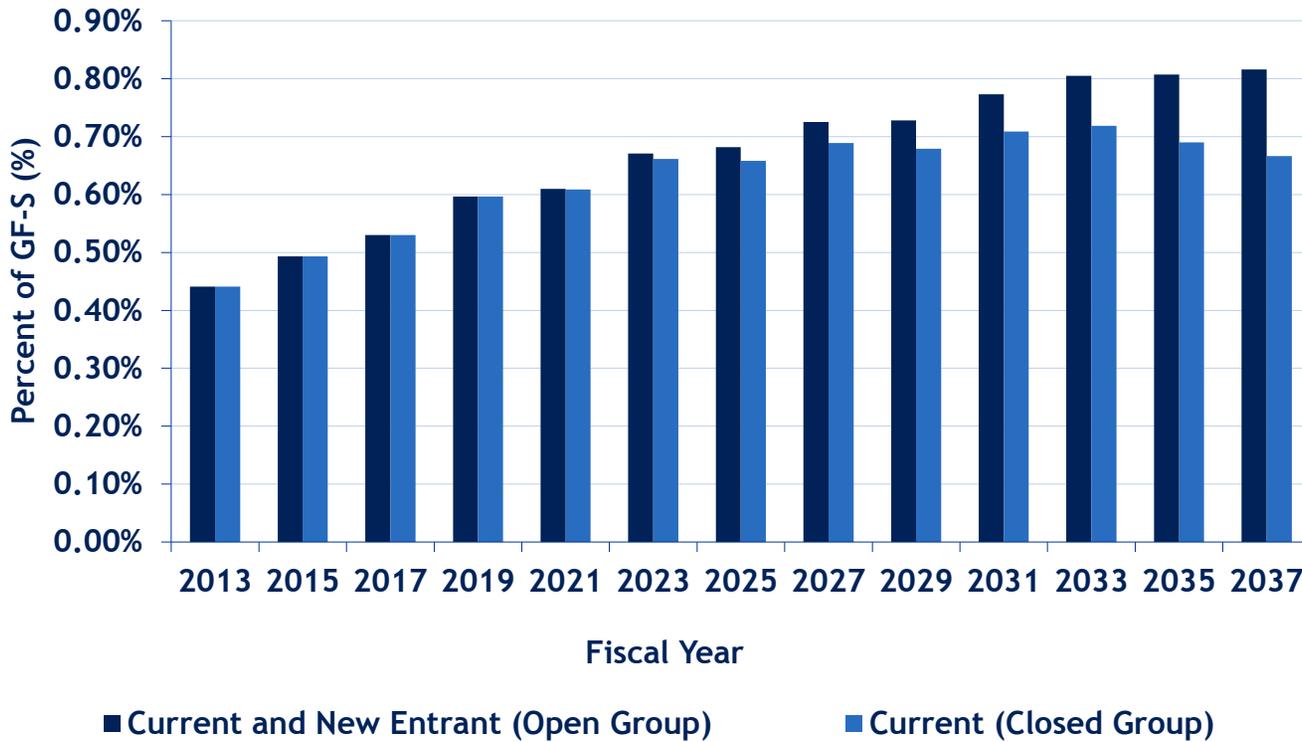
**State Contributions on an Open and Closed Group  
Pay-As-You-Go Basis**



The magnitude of the contributions for both the closed and open groups will increase significantly due to assumed inflation (especially beyond 25 years); however, when measured against something else, its relative size can be taken into perspective. We will again turn to the percentage of GF-S operating budget to look at the relative size of contributions to help policy makers determine if they

are manageable. The estimated contributions as a percent of GF-S operating budget remain relatively stable over time, even if the nominal amount of contributions increases significantly. Again, note that the GF-S budget is not the sole funding source for these contributions, nor is the entire GF-S budget available to fund these contributions; this is intended to show relative magnitude.

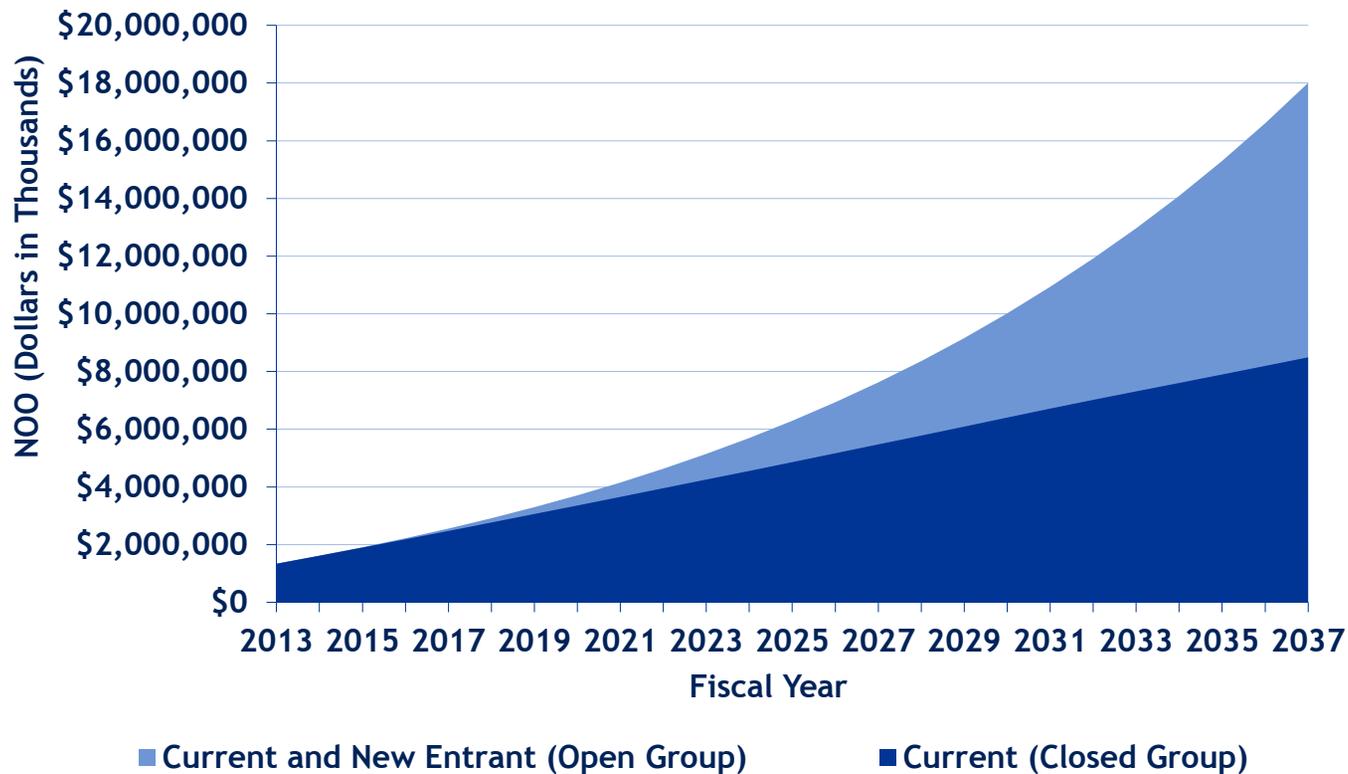
**State Contributions on an Open and Closed Group as a Percent of GF-S Operating Budget  
Pay-As-You-Go Basis**



A twenty-five-year look at pay-as-you-go contributions for new entrants is only so helpful since the new entrants typically take many years to get to retirement and start collecting subsidies. Instead, a look at the twenty-five-year NOO shows how the state's balance sheet liability will grow if pay-as-you-go funding continues. Under a closed group, the NOO increases to a point and then

decreases back to zero in the long run since all of the active members retire and eventually stop receiving subsidies after their death. However, under an open group projection, the NOO continues to grow as new members enter the system. The following graph shows the NOO for both the open and closed groups.

**State NOO on an Open and Closed Group Pay-As-You-Go Basis**



# Section Four – Participant Data



## Overview of PEBB Membership

The HCA administers Public Employees Benefits Board (PEBB) benefits for eligible active and inactive members. At the right is a table that 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). Dependents 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.

Retirees’ access to PEBB depends on the retirement eligibility of their respective retirement system. 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 table on the next page shows the active and inactive member counts by retirement system.

Membership By Employer			
Active Members	Subscribers	Eligible	% Subscribing
State*	106,214	116,152	91%
K-12	2,209	116,915	2%
Political Subdivision*	11,336	17,440	65%
<b>Total Active Members</b>	<b>119,759</b>	<b>250,507</b>	<b>48%</b>
Inactive Members			
State	33,308	33,308	100%
K-12	24,394	24,394	100%
Political Subdivision	1,171	1,171	100%
<b>Total Inactive Members</b>	<b>58,873</b>	<b>58,873</b>	<b>100%</b>
<b>Total</b>	<b>178,632</b>	<b>309,380</b>	<b>58%</b>

*\*Eligible counts were estimated.*

Eligible Membership By Retirement System						
	Active		Inactive		Total	
	Subscribers	Eligible	Subscribers	Eligible	Subscribers	Eligible
<b>PERS</b>						
PERS 1	3,252	3,252	19,523	19,523	22,775	22,775
PERS 2	61,271	61,271	6,740	6,740	68,011	68,011
PERS 3	16,748	16,748	542	542	17,290	17,290
<b>Total PERS</b>	<b>81,271</b>	<b>81,271</b>	<b>26,805</b>	<b>26,805</b>	<b>108,076</b>	<b>108,076</b>
<b>TRS</b>						
TRS 1	125	3,019	19,146	19,146	19,271	22,165
TRS 2	162	10,849	1,209	1,209	1,371	12,058
TRS 3	798	51,489	1,601	1,601	2,399	53,090
<b>Total TRS</b>	<b>1,085</b>	<b>65,357</b>	<b>21,956</b>	<b>21,956</b>	<b>23,041</b>	<b>87,313</b>
<b>SERS</b>						
SERS 2	488	20,846	1,345	1,345	1,833	22,191
SERS 3	636	30,712	1,093	1,093	1,729	31,805
<b>Total SERS</b>	<b>1,124</b>	<b>51,558</b>	<b>2,438</b>	<b>2,438</b>	<b>3,562</b>	<b>53,996</b>
<b>PSERS</b>						
<b>Total PSERS</b>	<b>2,330</b>	<b>4,250</b>	<b>4</b>	<b>4</b>	<b>2,334</b>	<b>4,254</b>
<b>WSPRS</b>						
WSPRS 1	692	692	571	571	1,263	1,263
WSPRS 2	346	346	0	0	346	346
<b>Total WSPRS</b>	<b>1,038</b>	<b>1,038</b>	<b>571</b>	<b>571</b>	<b>1,609</b>	<b>1,609</b>
<b>Judicial</b>						
<b>Total Judicial</b>	<b>2</b>	<b>2</b>	<b>88</b>	<b>88</b>	<b>90</b>	<b>90</b>
<b>Higher Education</b>						
<b>Total Higher Education*</b>	<b>26,227</b>	<b>40,349</b>	<b>5,587</b>	<b>5,587</b>	<b>31,814</b>	<b>45,937</b>
<b>Other</b>						
<b>Total Other</b>	<b>6,682</b>	<b>6,682</b>	<b>1,424</b>	<b>1,424</b>	<b>8,106</b>	<b>8,106</b>
<b>Total Membership</b>	<b>119,759</b>	<b>250,507</b>	<b>58,873</b>	<b>58,873</b>	<b>178,632</b>	<b>309,380</b>

\*Eligible counts were estimated.

## 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
<b>Active Members</b>				
Number	116,152	116,915	17,440	250,507
Total Salary (in thousands, 000)	\$5,786,960	\$5,771,688	\$636,322	\$12,194,970
Average Age	47.3	48.4	48.0	47.8
Average Service	12.5	12.4	12.5	12.4
Average Salary	\$49,822	\$49,367	\$36,486	\$48,681
<b>Inactive Members</b>				
Number	33,308	24,394	1,171	58,873
Average Age	72.6	71.0	68.3	71.9
Average Monthly Subsidy (current year)	\$173	\$217	\$219	\$192



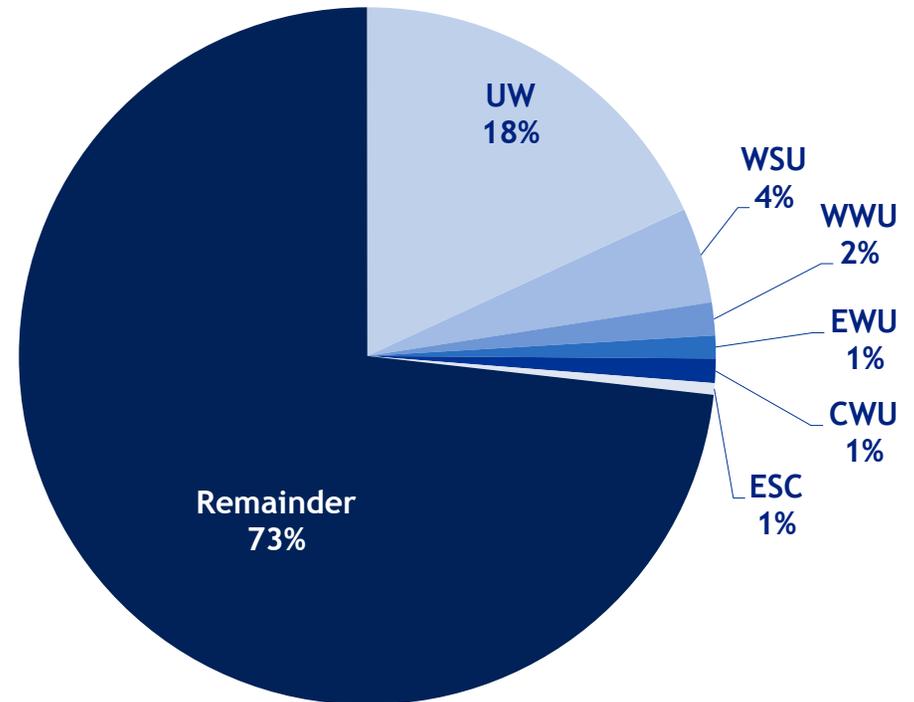
# Section Five – Appendices



## 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 to the right shows the portion of the state's liability attributable to the four-year institutions.

Makeup of State's Liability



The next table shows each of the six four-year college's GASB 45 liability (AAL), ARC, Annual OPEB Cost, and NOO.

We estimated the liabilities for the active members covered under the higher education institutions' retirement plans (non-PERS eligible)

based on the liabilities for the active members in higher education covered under PERS. This estimated liability is approximately 2.2 percent of each higher education institution's individual liability. It is approximately 0.7 percent of the state's total liability.

Higher Education GASB 45 Measurements						
	University of Washington	Washington State University	Western Washington University	Eastern Washington University	Central Washington University	Evergreen State College
<i>(Dollars in Thousands)</i>						
<b>PVFB</b>	\$1,366,200	\$295,459	\$94,411	\$66,789	\$70,099	\$33,328
<b>GASB 45 Liability (AAL)</b>	\$671,060	\$164,561	\$56,628	\$38,761	\$41,619	\$19,746
Normal Cost	45,973	9,800	3,327	2,300	2,419	1,171
Amortization	26,999	6,692	2,288	1,570	1,683	803
<b>ARC</b>	\$72,972	\$16,492	\$5,615	\$3,870	\$4,102	\$1,975
Interest on NOO	12,546	2,815	917	642	664	350
Amortization of NOO	(11,413)	(2,567)	(837)	(586)	(605)	(320)
<b>Annual OPEB Cost</b>	\$74,104	\$16,740	\$5,695	\$3,926	\$4,160	\$2,005
Beginning NOO (6/30/2011)	238,328	54,593	18,004	12,581	12,940	6,885
Annual OPEB Cost	85,097	19,044	5,950	4,243	4,455	2,190
(7/1/2011 - 6/30/2012) Contributions	(9,785)	(3,250)	(1,031)	(772)	(802)	(329)
NOO (6/30/2012)	313,639	70,387	22,923	16,052	16,593	8,747
Annual OPEB Cost	74,104	16,740	5,695	3,926	4,160	2,005
(7/1/2012 - 6/30/2013) Contributions*	(6,791)	(2,299)	(739)	(529)	(566)	(256)
<b>Ending NOO (6/30/2013)*</b>	\$380,952	\$84,828	\$27,879	\$19,449	\$20,187	\$10,496

\*Estimated.

## 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.

<b>L&amp;I GASB 45 Measurements</b>	
<i>(Dollars in Thousands)</i>	
<b>PVFB</b>	<b>\$156,519</b>
<b>GASB 45 Liability</b>	<b>100,571</b>
Normal Cost	4,577
Amortization	3,782
<b>ARC</b>	<b>\$8,359</b>
Interest on NOO	769
Amortization of NOO	677
<b>Annual OPEB Cost</b>	<b>\$8,451</b>
Beginning NOO (6/30/2011)	12,240
Annual OPEB Cost	9,454
(7/1/2011 - 6/30/2012) Contributions	(2,457)
NOO (6/30/2012)	19,237
Annual OPEB Cost	8,451
(7/1/2012 - 6/30/2013) Contributions*	(1,926)
<b>Ending NOO (6/30/2013)*</b>	<b>\$25,763</b>
<i>*Estimated.</i>	
<b>Other L&amp;I Information</b>	
Active Members	2,531
Inactive Members	775
<b>Total Members</b>	<b>3,306</b>
Average Implicit Subsidy Per Retiree (Under 65)	\$323
Average Explicit Subsidy Per Retiree (65 and Older)	\$176

## 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 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"<sup>1</sup> in Washington State, this is reasonable to do because it allows for the realization of the assumptions before most payments are made.

<sup>1</sup>Noncontractual liabilities, highly sensitive to assumption changes.

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 thirty-year period as a level percent of payroll. GASB also allows for the selection of the amortization period (not to exceed thirty 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-medical and medical economic assumptions. The non-medical economic assumptions specify how we expect membership and salaries to grow. We also used the interest discount rate in order to convert future cash flows into today's dollars. Aside from the interest discount rate these are consistent with the assumptions used in the *June 30, 2012, Actuarial Valuation Report (AVR)*.

The interest 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 have determined that an expected long-term yield of 4 percent is reasonable for purposes of this report.

The medical 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 medical trend rates.

Non-Medical Economic Assumptions		
	State and Political	
	Subdivisions	K-12
Annual Growth in Membership <sup>2</sup>	0.95%	0.80% <sup>1</sup>
Return on Investment Earnings <sup>3</sup>	4.00%	4.00%
Inflation <sup>4</sup>	3.00%	3.00%
General Salary Increases (due to inflation) <sup>5</sup>	3.75%	3.75%

<sup>1</sup> Only applies to K-12 members in TRS.

<sup>2</sup> 0.0% for GASB requirements.

<sup>3</sup> Annual rate, compounded annually.

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

<sup>5</sup> Excludes longevity, merit, or step increases that usually apply to members in the early part of their careers.

Medical Inflation Trend - Claims Costs with Excise Tax					
Calendar Year(s)	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2013	7.0%	6.3%	9.7%	8.8%	8.8%
2014	5.8%	6.1%	6.7%	6.6%	6.6%
2015	6.1%	6.1%	6.1%	6.0%	6.0%
2016	6.1%	6.1%	6.4%	6.3%	6.3%
2017	6.4%	6.1%	6.4%	6.1%	6.1%
2018	6.0%	5.9%	6.0%	5.9%	5.9%
2019	6.0%	5.5%	5.9%	5.2%	5.1%
2020-2021	6.0%	5.9%	6.0%	5.9%	5.9%
2022	6.0%	5.9%	5.9%	5.9%	5.9%
2023	5.9%	5.9%	6.0%	5.9%	5.9%
2024	5.9%	5.9%	6.0%	5.8%	5.8%
2025	6.1%	5.8%	6.0%	5.8%	5.8%
2026-2027	6.2%	5.8%	6.1%	5.8%	5.8%
2028	6.2%	5.8%	6.0%	5.8%	5.8%
2029	6.1%	5.8%	6.0%	5.8%	5.8%
2030	6.1%	5.8%	6.3%	5.8%	5.8%
2031	6.2%	5.8%	6.3%	5.8%	5.8%
2032	6.9%	5.8%	6.4%	5.8%	5.8%
2033-2035	6.8%	5.8%	6.5%	5.8%	5.8%
2036	6.6%	5.7%	6.2%	5.7%	5.7%
2037	6.5%	5.6%	6.2%	5.6%	5.6%
2038	6.4%	5.6%	6.1%	5.5%	5.5%
2039	6.3%	5.5%	6.3%	5.5%	5.5%
2040	6.2%	5.5%	6.3%	5.5%	5.5%
2041	6.2%	5.8%	6.2%	5.4%	5.4%
2042	6.1%	5.8%	6.2%	5.4%	5.4%
2043	6.1%	5.7%	6.1%	5.4%	5.4%
2044-2045	6.0%	5.7%	6.1%	5.4%	5.4%
2046	6.0%	5.7%	6.0%	5.4%	5.4%
2047	6.0%	5.6%	6.0%	5.4%	5.4%

**Medical Inflation Trend - Claims Costs with Excise Tax**  
(Continued)

Calendar Year(s)	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2048	5.9%	5.6%	6.0%	5.3%	5.3%
2049	5.9%	5.8%	5.9%	5.3%	5.3%
2050	5.9%	6.2%	5.9%	5.3%	5.3%
2051	5.9%	6.1%	5.9%	5.4%	5.3%
2052	5.8%	6.1%	5.8%	5.4%	5.3%
2053-2054	5.8%	6.1%	5.8%	5.7%	5.3%
2055-2056	5.8%	6.0%	5.8%	5.7%	5.3%
2057-2058	5.7%	6.0%	5.7%	5.7%	5.3%
2059-2060	5.7%	5.9%	5.7%	5.6%	5.3%
2061-2062	5.7%	5.9%	5.7%	5.7%	5.3%
2063	5.6%	5.8%	5.6%	5.7%	5.6%
2064	5.6%	5.8%	5.6%	5.7%	5.7%
2065	5.6%	5.8%	5.6%	5.6%	5.7%
2066	5.6%	5.7%	5.6%	5.8%	5.6%
2067	5.6%	5.7%	5.6%	6.0%	5.6%
2068-2070	5.5%	5.7%	5.5%	5.9%	5.6%
2071	5.5%	5.6%	5.5%	5.9%	5.6%
2072-2073	5.5%	5.6%	5.5%	5.8%	5.5%
2074	5.4%	5.5%	5.4%	5.7%	5.4%
2075	5.3%	5.5%	5.3%	5.6%	5.4%
2076	5.3%	5.4%	5.3%	5.6%	5.3%
2077	5.2%	5.3%	5.2%	5.5%	5.4%
2078	5.2%	5.3%	5.2%	5.4%	5.6%
2079	5.1%	5.2%	5.1%	5.4%	5.5%
2080	5.1%	5.2%	5.1%	5.3%	5.4%
2081	5.0%	5.1%	5.0%	5.2%	5.4%
2082	5.0%	5.0%	5.0%	5.2%	5.3%
2083-2090	4.9%	5.0%	4.9%	5.1%	5.2%
2091-2092	4.9%	5.0%	4.9%	5.0%	5.1%
2093+	4.9%	4.9%	4.9%	5.0%	5.1%

Medical Inflation Trend - Subscriber Premiums with Excise Tax					
Calendar Year(s)	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2013	7.0%	10.7%	9.7%	9.2%	8.8%
2014	5.8%	10.0%	6.7%	7.1%	6.6%
2015	6.1%	6.1%	6.1%	6.0%	6.0%
2016	6.1%	6.1%	6.4%	6.3%	6.3%
2017	6.4%	6.1%	6.4%	6.1%	6.1%
2018	6.0%	5.9%	6.0%	5.9%	5.9%
2019	6.0%	5.5%	5.9%	5.2%	5.1%
2020-2021	6.0%	5.9%	6.0%	5.9%	5.9%
2022	6.0%	5.9%	5.9%	5.9%	5.9%
2023	5.9%	5.9%	6.0%	5.9%	5.9%
2024	5.9%	5.9%	6.0%	5.8%	5.8%
2025	6.1%	5.8%	6.0%	5.8%	5.8%
2026-2027	6.2%	5.8%	6.1%	5.8%	5.8%
2028	6.2%	5.8%	6.0%	5.8%	5.8%
2029	6.1%	5.8%	6.0%	5.8%	5.8%
2030	6.1%	5.8%	6.3%	5.8%	5.8%
2031	6.2%	5.8%	6.3%	5.8%	5.8%
2032	6.9%	5.8%	6.4%	5.8%	5.8%
2033-2035	6.8%	5.8%	6.5%	5.8%	5.8%
2036	6.6%	5.7%	6.2%	5.7%	5.7%
2037	6.5%	5.6%	6.2%	5.6%	5.6%
2038	6.4%	5.6%	6.1%	5.5%	5.5%
2039	6.3%	5.5%	6.3%	5.5%	5.5%
2040	6.2%	5.5%	6.3%	5.5%	5.5%
2041	6.2%	5.8%	6.2%	5.4%	5.4%
2042	6.1%	5.8%	6.2%	5.4%	5.4%
2043	6.1%	5.7%	6.1%	5.4%	5.4%
2044-2045	6.0%	5.7%	6.1%	5.4%	5.4%
2046	6.0%	5.7%	6.0%	5.4%	5.4%
2047	6.0%	5.6%	6.0%	5.4%	5.4%

Medical Inflation Trend - Subscriber Premiums with Excise Tax (Continued)					
Calendar Year(s)	UMP		Insured Medical		
	Non- Medicare	Medicare	Non- Medicare	Medicare	Medicare Supplement
2048	5.9%	5.6%	6.0%	5.3%	5.3%
2049	5.9%	5.8%	5.9%	5.3%	5.3%
2050	5.9%	6.2%	5.9%	5.3%	5.3%
2051	5.9%	6.1%	5.9%	5.4%	5.3%
2052	5.8%	6.1%	5.8%	5.4%	5.3%
2053-2054	5.8%	6.1%	5.8%	5.7%	5.3%
2055-2056	5.8%	6.0%	5.8%	5.7%	5.3%
2057-2058	5.7%	6.0%	5.7%	5.7%	5.3%
2059-2060	5.7%	5.9%	5.7%	5.6%	5.3%
2061-2062	5.7%	5.9%	5.7%	5.7%	5.3%
2063	5.6%	5.8%	5.6%	5.7%	5.6%
2064	5.6%	5.8%	5.6%	5.7%	5.7%
2065	5.6%	5.8%	5.6%	5.6%	5.7%
2066	5.6%	5.7%	5.6%	5.8%	5.6%
2067	5.6%	5.7%	5.6%	6.0%	5.6%
2068-2070	5.5%	5.7%	5.5%	5.9%	5.6%
2071	5.5%	5.6%	5.5%	5.9%	5.6%
2072-2073	5.5%	5.6%	5.5%	5.8%	5.5%
2074	5.4%	5.5%	5.4%	5.7%	5.4%
2075	5.3%	5.5%	5.3%	5.6%	5.4%
2076	5.3%	5.4%	5.3%	5.6%	5.3%
2077	5.2%	5.3%	5.2%	5.5%	5.4%
2078	5.2%	5.3%	5.2%	5.4%	5.6%
2079	5.1%	5.2%	5.1%	5.4%	5.5%
2080	5.1%	5.2%	5.1%	5.3%	5.4%
2081	5.0%	5.1%	5.0%	5.2%	5.4%
2082	5.0%	5.0%	5.0%	5.2%	5.3%
2083-2090	4.9%	5.0%	4.9%	5.1%	5.2%
2091-2092	4.9%	5.0%	4.9%	5.0%	5.1%
2093+	4.9%	4.9%	4.9%	5.0%	5.1%

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.

Medical Inflation Trend - Claims Costs without Excise Tax					
Calendar Year(s)	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2013	7.0%	6.3%	9.7%	8.8%	8.8%
2014	5.8%	6.1%	6.7%	6.6%	6.6%
2015	6.1%	6.1%	6.1%	6.0%	6.0%
2016	6.1%	6.1%	6.4%	6.3%	6.3%
2017	6.4%	6.1%	6.4%	6.1%	6.1%
2018	6.0%	5.9%	6.0%	5.9%	5.9%
2019	6.0%	5.5%	5.9%	5.2%	5.1%
2020-21	6.0%	5.9%	6.0%	5.9%	5.9%
2022	6.0%	5.9%	5.9%	5.9%	5.9%
2023	5.9%	5.9%	5.9%	5.9%	5.9%
2024	5.9%	5.9%	5.9%	5.8%	5.8%
2025-30	5.9%	5.8%	5.9%	5.8%	5.8%
2031-32	5.9%	5.8%	5.8%	5.8%	5.8%
2033-35	5.8%	5.8%	5.8%	5.8%	5.8%
2036	5.7%	5.7%	5.7%	5.7%	5.7%
2037	5.6%	5.6%	5.6%	5.6%	5.6%
2038	5.6%	5.6%	5.6%	5.5%	5.5%
2039-40	5.5%	5.5%	5.5%	5.5%	5.5%
2041	5.5%	5.5%	5.5%	5.4%	5.4%
2042	5.5%	5.4%	5.5%	5.4%	5.4%
2043	5.5%	5.4%	5.4%	5.4%	5.4%
2044-47	5.4%	5.4%	5.4%	5.4%	5.4%
2048-50	5.4%	5.3%	5.4%	5.3%	5.3%
2051-52	5.4%	5.3%	5.3%	5.3%	5.3%
2053-64	5.3%	5.3%	5.3%	5.3%	5.3%
2065-66	5.3%	5.2%	5.3%	5.2%	5.2%
2067	5.3%	5.2%	5.2%	5.2%	5.2%
2068-73	5.2%	5.2%	5.2%	5.2%	5.2%
2074	5.2%	5.1%	5.1%	5.1%	5.1%
2075	5.1%	5.1%	5.1%	5.1%	5.1%
2076	5.1%	5.0%	5.0%	5.0%	5.0%
2077	5.0%	5.0%	5.0%	5.0%	5.0%
2078	5.0%	4.9%	5.0%	4.9%	4.9%
2079	4.9%	4.9%	4.9%	4.9%	4.9%
2080	4.9%	4.9%	4.9%	4.8%	4.8%
2081-82	4.8%	4.8%	4.8%	4.8%	4.8%
2083+	4.7%	4.7%	4.7%	4.7%	4.7%

Medical Inflation Trend - Subscriber Premiums without Excise Tax					
Calendar Year(s)	UMP		Insured Medical		
	Non-Medicare	Medicare	Non-Medicare	Medicare	Medicare Supplement
2013	7.0%	10.7%	9.7%	9.2%	8.8%
2014	5.8%	10.0%	6.7%	7.1%	6.6%
2015	6.1%	6.1%	6.1%	6.0%	6.0%
2016	6.1%	6.1%	6.4%	6.3%	6.3%
2017	6.4%	6.1%	6.4%	6.1%	6.1%
2018	6.0%	5.9%	6.0%	5.9%	5.9%
2019	6.0%	5.5%	5.9%	5.2%	5.1%
2020-21	6.0%	5.9%	6.0%	5.9%	5.9%
2022	6.0%	5.9%	5.9%	5.9%	5.9%
2023	5.9%	5.9%	5.9%	5.9%	5.9%
2024	5.9%	5.9%	5.9%	5.8%	5.8%
2025-30	5.9%	5.8%	5.9%	5.8%	5.8%
2031-32	5.9%	5.8%	5.8%	5.8%	5.8%
2033-35	5.8%	5.8%	5.8%	5.8%	5.8%
2036	5.7%	5.7%	5.7%	5.7%	5.7%
2037	5.6%	5.6%	5.6%	5.6%	5.6%
2038	5.6%	5.6%	5.6%	5.5%	5.5%
2039-40	5.5%	5.5%	5.5%	5.5%	5.5%
2041	5.5%	5.5%	5.5%	5.4%	5.4%
2042	5.5%	5.4%	5.5%	5.4%	5.4%
2043	5.5%	5.4%	5.4%	5.4%	5.4%
2044-47	5.4%	5.4%	5.4%	5.4%	5.4%
2048-50	5.4%	5.3%	5.4%	5.3%	5.3%
2051-52	5.4%	5.3%	5.3%	5.3%	5.3%
2053-64	5.3%	5.3%	5.3%	5.3%	5.3%
2065-66	5.3%	5.2%	5.3%	5.2%	5.2%
2067	5.3%	5.2%	5.2%	5.2%	5.2%
2068-73	5.2%	5.2%	5.2%	5.2%	5.2%
2074	5.2%	5.1%	5.1%	5.1%	5.1%
2075	5.1%	5.1%	5.1%	5.1%	5.1%
2076	5.1%	5.0%	5.0%	5.0%	5.0%
2077	5.0%	5.0%	5.0%	5.0%	5.0%
2078	5.0%	4.9%	5.0%	4.9%	4.9%
2079	4.9%	4.9%	4.9%	4.9%	4.9%
2080	4.9%	4.9%	4.9%	4.8%	4.8%
2081-82	4.8%	4.8%	4.8%	4.8%	4.8%
2083+	4.7%	4.7%	4.7%	4.7%	4.7%

Robert Schmidt, a healthcare actuary in Milliman's Boise office provided us with the age 65 medical cost and aging factors. The age 65 medical cost is 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.

We use aging factors to determine the average claims cost at different ages. For example, to determine the average claims cost for a 66-year-old male in UMP (not covered by Medicare), the aging factor of 2.71 percent would be applied to the 65-year-old male UMP cost [ $\$11,328 * (1 + 0.0274)$ ]. This formula results in a 66-year-old UMP male retiree cost of \$11,638. The aging factors can be seen below.

Age 65 Annual Medical Cost				
Medical Plan	Non-Medicare		Medicare	
	Males	Females	Males	Females
Group Health Classic	\$14,920	\$13,289	\$2,717	\$2,759
Group Health CDHP	9,165	8,163	N/A	N/A
Group Health Medicare	N/A	N/A	2,532	2,574
Group Health Value	11,140	9,922	2,817	2,860
Kaiser Permanente Classic	12,798	11,399	2,836	2,879
Kaiser Permanente CDHP	7,981	7,108	N/A	N/A
Uniform Medical Plan Classic	11,328	10,089	3,396	3,448
Uniform Medical Plan CDHP	\$8,856	\$7,888	N/A	N/A
Supplements				
	Non-Medicare		Medicare	
	Males	Females	Males	Females
Plan F Retired	N/A	N/A	\$1,902	\$1,931
Plan F Disabled	N/A	N/A	\$3,233	\$3,282

Aging Factors		
Age	Males	Females
0-26	12.19%	18.45%
27-31	4.62%	(2.18%)
32-36	7.39%	4.98%
37-41	3.11%	1.40%
42-46	(2.98%)	(1.99%)
47-51	(0.08%)	(1.21%)
52-56	3.13%	1.40%
57-61	5.03%	3.63%
62-64	6.80%	3.93%
65-71	2.74%	2.38%
72-76	2.16%	1.76%
77-81	1.30%	1.03%
82-88	0.70%	0.41%
89+	0.00%	0.00%

## 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, 2012, 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 PEBB as a retiree. Percentage of spouses covered and Medicare coverage refer to how many current active members will cover their spouse or be Medicare eligible as a retiree. 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%

## 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
	5	60
	25	55
TRS 1	30	Any
	5	65
	20	55
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 tables on the following page show the 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 please visit [HCA's website](#).

2013 Non-Medicare Retiree Monthly Rates				
Medical Plans	Retiree	Retiree & Spouse or SSDP*	Retiree & Children	Full Family
Group Health Classic	\$584.66	\$1,163.14	\$1,018.52	\$1,597.00
Group Health Value	535.22	1,064.26	932.00	1,461.04
Group Health CDHP	513.77	1,018.40	906.83	1,353.13
Kaiser Permanente Classic	567.06	1,127.94	987.72	1,548.60
Kaiser Permanente CDHP	498.95	988.26	880.52	1,311.50
Uniform Medical Plan Classic	545.83	1,085.48	950.57	1,490.22
Uniform Medical Plan CDHP	\$499.95	\$990.26	\$882.27	\$1,314.25

\* State-Registered Domestic Partner.

2013 Medicare Retiree Monthly Rates									
Medical Plans	Retiree	Retiree & Spouse or SSDP*		Retiree & Children			Full Family		
		Number Eligible for Medicare							
		1	2	1	2	1	2	3	
Group Health Medicare Plan	\$135.60	N/A	\$265.02	N/A	\$265.02	N/A	N/A	\$394.44	
Group Health Classic	N/A	714.08	N/A	596.46	N/A	1,147.94	698.88	N/A	
Group Health Value	N/A	664.64	N/A	532.38	N/A	1,061.42	661.80	N/A	
Kaiser Permanente Classic	151.67	712.55	297.16	572.33	297.16	1,133.21	717.82	442.65	
Uniform Medical Plan Classic	\$219.24	\$758.89	\$432.30	\$623.98	\$432.30	\$1,163.63	\$837.04	\$645.36	

\* State-Registered Domestic Partner.

# 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.

## ARC

Annual required contribution: 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 EANC 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.

### 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.





## Office of the State Actuary

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