



September 8, 2017

Mr. Eric Erickson
Finance & Human Resource Director
City of Mill Valley
26 Corte Madera Avenue
Mill Valley, CA 94941

Re: July 1, 2016 Actuarial Report on GASB 45 Retiree Benefit Valuation

Dear Mr. Erickson:

We are pleased to enclose our report providing the results of the July 1, 2016 actuarial valuation of other post-employment benefit (OPEB) liabilities for the City of Mill Valley (the City). The report's text describes our analysis and assumptions in detail.

The primary purpose of the report is to develop the expected value of future OPEB to be provided by the City, and the current OPEB liability and the annual OPEB expense to be reported in financial statements for the City's fiscal year ending June 30, 2017. The report also develops the actuarially determined contribution (ADC) for the fiscal year ending June 30, 2018. Please note that financial reporting results for the fiscal year ending June 30, 2018, as required by GASB 75, will be provided in a separate report.

Items of note in this valuation are:

- The City is transitioning its OPEB trust assets from ICMA-RC to CERBT and intends to invest in CERBT Strategy 2. Plan liabilities were calculated based on a 6.0% discount rate.
- Following the valuation date, the City closed the OPEB program for all future hires (closure dates vary by employee group). This change did not affect the results of the current valuation.
- We updated our model for developing age-related medical premiums used in developing the implicit subsidy liability. We have also included an estimated liability for the excise tax relating to retiree coverage in high cost plans as provided under the Affordable Care Act, which is currently scheduled to take effect in 2020. Discussion of these changes is included in the report.

We appreciate the opportunity to work on this analysis and acknowledge the efforts of City employees who provided valuable information and assistance to enable us to perform this valuation. Please let us know if we can be of further assistance.

Sincerely,

Catherine L. MacLeod, FSA, FCA, EA, MAAA
Director, Postemployment Benefit Actuarial Services

Enclosure



Bickmore

City of Mill Valley

Actuarial Valuation of the Other
Post-Employment Benefit Programs
As of July 1, 2016

Submitted September 2017



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A. Executive Summary

This report presents the results of the July 1, 2016 actuarial valuation of the City of Mill Valley (the City) other post-employment benefit (OPEB) programs. The purposes of this valuation are to assess the OPEB liabilities and provide disclosure information as required by Statement No. 45 of the Governmental Accounting Standards Board (GASB 45) and to provide targeted OPEB contribution levels for the City’s fiscal years ending June 30, 2017 and June 30, 2018.

This report reflects the valuation of two distinct types of OPEB liability.

- An “explicit subsidy” exists when the employer contributes directly toward retiree healthcare premiums. In this program, benefits include a monthly subsidy toward medical and dental premiums for eligible retirees. Future excise taxes expected to be paid for “high cost” coverage are also explicit costs and are included with explicit liabilities.
- An “implicit subsidy” exists when the premiums charged for retiree coverage are lower than the expected retiree claims for that coverage. Pre-Medicare retirees able to continue medical coverage at the same premium rates as are charged for active employees creates an implicit benefit subsidy under GASB 45.

How much the City contributes each year affects the calculation of liabilities. The City is prefunding its OPEB obligations by consistently making contributions greater than or equal to the Annual Required Contribution (ARC) each year. Trust assets are being transitioned from ICMA-RC to the California Employers’ Retiree Benefit Trust (CERBT) in Asset Allocation Strategy 2. As requested by the City, this valuation was prepared assuming trust assets earn 6.0% per year over the long term and liabilities were developed based on this rate. Please recognize that use of this rate is an assumption and not a guarantee of future investment performance.

Exhibits in this report reflect our understanding that the results of this valuation will be applied to determine the annual OPEB contribution levels for the fiscal years ending June 30, 2017 and 2018. The July 1, 2016 Actuarial Accrued Liability and Assets (combined for the City and SASM) are shown below:

Subsidy	Explicit	Implicit	Total
Discount Rate	6.0%	6.0%	6.0%
Actuarial Accrued Liability	\$ 26,669,789	\$ 4,775,026	\$ 31,444,815
Actuarial Value of Assets	7,313,073	756,187	8,069,260
Unfunded Actuarial Accrued Liability	19,356,716	4,018,839	23,375,555
Funded Ratio	27.4%	15.8%	25.7%

Combined results for the City and SASM for the fiscal year ending June 30, 2017 are shown below:

Subsidy	Explicit	Implicit	Total
Annual Required Contribution (ARC) for FYE 2017	\$ 1,935,591	\$ 432,364	\$ 2,367,955
Expected employer paid benefits for retirees	902,137	-	902,137
Current year's implicit subsidy credit	-	266,034	266,034
Expected contribution to OPEB trust	1,033,454	142,793	1,176,247
Expected net OPEB obligation at June 30, 2017	7,689,573	1,094,016	8,783,589

Detailed results are shown in tables beginning on page 14, with additional information in Appendices.

Executive Summary (Concluded)

The liabilities shown in the report reflect assumptions regarding continued future employment, rates of retirement and survival, and elections by future retirees to elect coverage for themselves and their dependents. Please note that this valuation has been prepared on a closed group basis; no provision is generally made for new employees until the valuation date following their employment.

An exhibit comparing current valuation results to those from the prior valuation is provided on page 7, followed by a description of changes. An actuarial valuation is by its nature a projection and to the extent that actual experience is not what we assumed, future results will be different. Some possible sources of future differences may include:

- A significant change in the number of covered or eligible plan members;
- A significant increase or decrease in the future medical premium rates or in the subsidy provided by the City toward retiree medical premiums;
- Longer life expectancies of retirees;
- Significant changes in expected retiree healthcare claims by age, relative to healthcare claims for active employees and their dependents;
- Higher or lower returns on plan assets or contribution levels other than were assumed; and
- Implementation of GASB 75, the new OPEB accounting standard, for the City's fiscal year ending June 30, 2018.

Details of our valuation process are provided on the succeeding pages. Information required for financial reporting under GASB 75 will be provided in a separate report once the data needed to develop those results becomes available. The next actuarial valuation is scheduled to be prepared as of July 1, 2018. If there are any significant changes in the employee data, benefits provided or the funding policy, please contact us to discuss whether an earlier valuation is appropriate.

Important Notices

This report is intended to be used only to present the actuarial information relating to other postemployment benefits for the City's financial statements and to provide the annual contribution information with respect to the City's current OPEB funding policy. The results of this report may not be appropriate for other purposes, where other assumptions, methodology and/or actuarial standards of practice may be required or more suitable. We note that various issues in this report may involve legal analysis of applicable law or regulations. The City should consult counsel on these matters; Bickmore does not practice law and does not intend anything in this report to constitute legal advice. In addition, we recommend the City consult with their internal accounting staff or external auditor or accounting firm about the accounting treatment of OPEB liabilities.

B. Requirements of GASB 45

The Governmental Accounting Standards Board (GASB) issued GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*. This Statement establishes standards for the measurement, recognition, and display of OPEB expense/expenditures and related liabilities (assets), note disclosures, and, if applicable, required supplementary information (RSI) in the financial reports of state and local governmental employers. The underlying intent of GASB 45 is to systematically recognize the projected cost of OPEB during the years employees are working, rather than over the years when the benefits would be paid.

We understand that the City implemented GASB 45 for the fiscal year ended June 30, 2009. For agencies with 200 or more members covered by or eligible for plan benefits, GASB 45 requires that a valuation be prepared no less frequently than every two years. GASB 45 disclosures include the determination of an annual OPEB cost. For the first year, the annual OPEB cost is equal to the annual required contribution (ARC) as determined by the actuary.

- If the City's OPEB contributions had been equal to the ARC each year, the net OPEB obligation would equal \$0.
- If the City's actual contribution is less than (greater than) the ARC, then a net OPEB obligation (asset) amount is established. In subsequent years, the annual OPEB expense will reflect adjustments made to the net OPEB obligation, in addition to the ARC (see Table 1B).

GASB 45 provides for recognition of payments as contributions if they are made (a) directly to retirees or beneficiaries, (b) to an insurer, e.g., for the payment of premiums, or (c) to an OPEB fund set aside toward the cost of future benefits. Funds set aside for future benefits should be considered contributions to an OPEB plan only if the vehicle established is one that is capable of building assets that are separate from and independent of the control of the employer and legally protected from its creditors. Furthermore, the sole purpose of the assets should be to provide benefits under the plan. These conditions generally require the establishment of a legal trust, such as that established by the City. Earmarked assets or reserves may be an important step in financing future benefits, but they may not be recognized as an asset for purposes of reporting under GASB 45.

We reiterate that GASB 45 applies only to the expense to be charged to an agency's income statements and to providing other related liability disclosures. While the Annual Required Contribution typically comprises the majority of the annual OPEB expense, it is a theoretical, not a required contribution amount. The decision whether or not to prefund, and at what level, is at the discretion of the City, as are the manner and term for paying down the unfunded actuarial accrued liability. Once a funding policy has been established, however, the City's auditor may have an opinion as to the timing and manner of any change to such policy in future years. The level of prefunding also affects the selection of the discount rate used for valuing the liabilities.

New GASB Statement 75, issued in June 2015, will impact the liabilities and/or expenses developed in future valuations and require changes beginning with the City's fiscal year end 2018 reporting. Those calculations are outside the scope of this report.

C. Sources of OPEB Liabilities

General Types of OPEB

Post-employment benefits other than pensions (OPEB) comprise a part of compensation that employers offer for services received. The most common OPEB are medical, prescription drug, dental, vision, and/or life insurance coverage. Other OPEB may include outside group legal, long-term care, or disability benefits outside of a pension plan. OPEB does not generally include COBRA, vacation, sick leave¹ or other direct retiree payments which fall under other GASB accounting statements.

A direct employer payment toward the cost of OPEB benefits is referred to as an “explicit subsidy”. Upcoming excise tax exposure under the Affordable Care Act for retirees covered by high cost plans is another potential source of explicit subsidy liability for the City.

In addition, if claims experience of employees and retirees are pooled when determining premiums, the retirees pay a premium based on a pool of members that, on average, are younger and healthier. For certain types of coverage, such as medical insurance, this results in an “implicit subsidy” of retiree premiums by active employee premiums since the retiree premiums are lower than they would have been if retirees were insured separately. Paragraph 13.a. of GASB 45 generally requires an implicit subsidy of retiree premium rates be valued as an OPEB liability.

This chart shows the sources of funds needed to cover expected medical insurance claims for pre-

Expected retiree claims		
Premium charged for retiree coverage		<i>Covered by higher active premiums</i>
Retiree portion of premium	Agency portion of premium Explicit subsidy	Implicit subsidy

Medicare retirees. From this illustration, we can see that regardless of how much or little of the premium is paid by the City, this does not impact the amount of the implicit subsidy.

OPEB Obligations of the City

The City provides continuation of medical and dental coverage to qualifying retirees, which may create one or more of the following types OPEB liabilities:

- **Explicit subsidy liabilities:** The City contributes directly toward retiree medical and/or dental premiums, as described in Table 3. Corresponding liabilities are included in this valuation.
- **Implicit subsidy liabilities:** In addition to whatever portion of retiree premiums are paid directly by the City, we also valued the difference between projected retiree claims and the premiums expected to be charged for retiree coverage. To develop this difference with respect to medical (and prescription drug) coverage, we followed the methodology outlined in Table 4 and described further in Addendum 1: Bickmore Age Rating Methodology.

We assumed no implicit subsidy will result from medical coverage for Medicare-eligible retirees and their dependents, based on our understanding that (a) claims experience under Kaiser Senior Advantage is considered separately from the experience of active and pre-Medicare retirees and (b) that the separate, higher premiums for retirees over age 65 in Health Net plans is sufficient to cover claims of these retirees. We assumed no implicit subsidy exists for retiree dental premiums.

¹ Unless unused sick leave credits are converted to provide or enhance a defined benefit OPEB.

Sources of OPEB Liability (Concluded)

- **Excise tax liability for “high cost” plans:** For those current and future retirees assumed to retain coverage in the City’s medical plan, we determined the excess, if any, of projected annual plan premiums for the retiree and his or her covered dependents over the projected applicable excise tax threshold beginning in the year 2020. The excise tax burden will ultimately fall on either the City or a combination of the City and plan participants. If the City is able to and ultimately does pass the retiree tax burden to retirees, then no part of the excise tax reflected in this report would be retained by the City. *For financial reporting purposes only, this report assumes that 100% of any excise tax liability for high cost retiree coverage will be borne by the City.* No legal obligation with regard to the City’s current or future liability to absorb this potential tax is to be construed from this treatment established solely for accounting purposes and it is understood that this allocation may be subject to future labor negotiations and/or adjustment.

D. Valuation Process

The valuation has been based on employee census data and benefits initially submitted to us by the City in April 2017 and clarified in various related communications. A summary of the employee data is provided in Table 2 and a summary of the benefits provided under the Plan is provided in Table 3. While individual employee records have been reviewed to verify that they are reasonable in various respects, the data has not been audited and we have otherwise relied on the City as to its accuracy. The valuation described below has been performed in accordance with the actuarial methods and assumptions described in Table 4.

In projecting benefit values and liabilities, we first determine an expected premium or benefit stream over the employee's future retirement. Benefits may include both direct employer payments (explicit subsidies) and/or an implicit subsidy, arising when retiree premiums are expected to be subsidized by active employee premiums. The projected benefit streams reflect assumed trends in the cost of those benefits and assumptions as to the expected date(s) when benefits will end. We then apply assumptions regarding:

- The probability that each individual employee will or will not continue in service with the City to receive benefits.
- To the extent assumed to retire from the City, the probability of various possible retirement dates for each retiree, based on current age, service and employee type; and
- The likelihood that future retirees will or will not elect retiree coverage (and benefits) for themselves and/or their dependents.

We then calculate a present value of these benefits by discounting the value of each future expected benefit payment, multiplied by the assumed expectation that it will be paid, back to the valuation date using the discount rate. These benefit projections and liabilities have a very long time horizon. The final payments for currently active employees may not be made for 70 years or more.

The resulting present value for each employee is allocated as a level percent of payroll each year over the employee's career using the entry age normal cost method and the amounts for each individual are then summed to get the results for the entire plan. This creates a cost expected to increase each year as payroll increases. Amounts attributed to prior fiscal years form the "actuarial accrued liability" (AAL). The amount of future OPEB cost allocated for active employees in the current year is referred to as the "normal cost". The remaining active cost to be assigned to future years is called the "present value of future normal costs". In summary:

Actuarial Accrued Liability	Past Years' Cost Allocations	Actives and Retirees
<i>plus</i> Normal Cost	Current Year's Cost Allocation	Actives only
<u><i>plus</i> Present Value of Future Normal Costs</u>	<u>Future Years' Cost Allocations</u>	<u>Actives only</u>
<i>equals</i> Present Value of Projected Benefits	Total Benefit Costs	Actives and Retirees

Where contributions have been made to an irrevocable OPEB trust, the accumulated value of trust assets is applied to offset the AAL. In this valuation, we set the Actuarial Value of Assets equal to the market value of assets invested in in the City's OPEB trust account on the valuation date. The market value reported as of June 30, 2016 was \$8,069,260. The portion of the AAL not covered by assets is referred to as the unfunded actuarial accrued liability (UAAL).

E. Basic Valuation Results

The following chart compares the results of the July 1, 2016 valuation of OPEB liabilities to the results of the July 1, 2014 valuation. Note that the July 2014 valuation results combine information for the City and SASM, though their information was previously reported in separate exhibits.

Funding Policy	Prefunding Basis					
	7/1/2014			7/1/2016		
Valuation date	Explicit	Implicit	Total	Explicit	Implicit	Total
Subsidy						
Discount rate	6.50%	6.50%	6.50%	6.00%	6.00%	6.00%
Number of Covered Employees						
Actives	146	146	146	126	126	126
Retirees	64	33	65	76	36	76
Total Participants	210	179	211	202	162	202
Actuarial Present Value of Projected Benefits						
Actives	\$ 17,076,641	\$ 2,666,079	\$ 19,742,720	\$ 17,409,993	\$ 4,444,284	\$ 21,854,277
Retirees	12,251,195	1,215,634	13,466,829	16,062,560	2,088,342	18,150,902
Total APVPB	29,327,836	3,881,713	33,209,549	33,472,553	6,532,626	40,005,179
Actuarial Accrued Liability (AAL)						
Actives	10,706,531	1,726,464	12,432,995	10,607,229	2,686,684	13,293,913
Retirees	12,251,195	1,215,634	13,466,829	16,062,560	2,088,342	18,150,902
Total AAL	22,957,726	2,942,098	25,899,824	26,669,789	4,775,026	31,444,815
Actuarial Value of Assets	5,098,971	644,365	5,743,336	7,313,073	756,187	8,069,260
Unfunded AAL (UAAL)	17,858,755	2,297,733	20,156,488	19,356,716	4,018,839	23,375,555
Normal Cost	678,158	99,185	777,343	656,127	164,996	821,123
Percent funded	22.2%	21.9%	22.2%	27.4%	15.8%	25.7%
Reported covered payroll	11,964,617	11,964,617	11,964,617	12,281,782	12,281,782	12,281,782
UAAL as percent of payroll	149.3%	19.2%	168.5%	157.6%	32.7%	190.3%

Note: The Explicit Subsidy AAL as of July 1, 2016 includes about \$1,364,000 in projected excise tax liability for retirees expected to be covered by "high cost" plans under the Affordable Care Act.

Basic Valuation Results (Concluded)

Changes Since the Prior Valuation

Even if all of our previous assumptions were met exactly as projected, liabilities generally increase over time as active employees get closer to the date their benefits are expected to begin. Given the uncertainties involved and the long term nature of these projections, our prior assumptions are not likely ever to be exactly realized. Nonetheless, it is helpful to review why results are different than we anticipated.

Comparing the expected UAAL as of July 1, 2016, projected from the prior valuation, with the actual UAAL as of July 1, 2016, we see the following differences:

As of July 1, 2016	Unfunded Actuarial Accrued Liability
Actual	\$ 23,375,555
Expected	20,464,659
Difference	\$ 2,910,896

The principal reasons for the differences from what we projected are:

Source of difference	Increase (Decrease)
Change in discount rate used (from 6.5% to 6%)	\$ 1,972,000
Change in model for developing age related retiree medical claim costs	1,051,000
Updated demographic assumptions to most recent CalPERS experience study, including change in mortality projection scale	71,000
Update to assumed healthcare trend (medical & prescription drug costs)	1,013,000
Added excise tax on high cost ("Cadillac") plans	1,364,000
Increase in assumed participation by actives currently waiving coverage	80,000
Plan Experience - medical premiums lower than expected	(1,821,000)
Other Plan Experience and other miscellaneous changes*	(819,000)
Total (All Differences from Expected)	\$ 2,911,000

* *Other plan experience* includes changes in plan membership and retiree elections other than previously projected as well as the addition of new employees hired since July 1, 2014. Plan experience also includes asset performance relative to the expected contributions and rate of return. Actual plan assets were less than projected, primarily because the return on trust assets appears to be lower than expected.

Other miscellaneous changes not specifically quantified but believed to be immaterial were (a) a change in our assumption about medical plan selection in retirement for "Tier 2 benefit" employees and (b) the elimination of benefit liability for 5 management employees hired after July 1, 2014.

F. Funding Policy

The specific calculation of the ARC and annual OPEB expense for an employer depends on how the employer elects to fund these benefits. The funding levels can generally be categorized as follows:

1. *Prefunding* - contributing an amount greater than or equal to the ARC each year. Prefunding generally allows the employer to have the liability calculated using a higher discount rate, which in turn lowers the liability. In addition, following a prefunding policy does not build up a net OPEB obligation (or gradually reduces it to \$0). Prefunding results in this report were developed using a discount rate of 6.0%.
2. *Pay-As-You-Go financing* – contributing only the amounts needed to pay retiree benefits in the current year; usually requires a lower discount rate.
3. *Partial prefunding* – contributing more than the current year’s retiree payments but less than 100% of the ARC; requires that liabilities be developed using a discount rate that “blends” the relative portions of benefits that are prefunded and those which are not.

Determination of the ARC

The Annual Required Contribution (ARC) and Actuarially Determined Contribution (ADC) consist of two basic components, which have been adjusted with interest to the City’s fiscal year end:

- The amounts attributed to service performed in the current fiscal year (the normal cost) and
- Amortization of the unfunded actuarial accrued liability (UAAL).

The ARC or ADC for the fiscal years ending June 30, 2017 and 2018 are developed in Tables 1A and 1C.

Decisions Affecting the Amortization Payment

The period and method for amortizing the AAL can significantly affect the ARC. GASB 45:

- Prescribes a maximum amortization period of 30 years and requires no minimum amortization period (except 10 years for certain actuarial gains). Immediate full funding of the liability is also permitted.
- Allows amortization payments to be determined (a) as a level percentage of payroll, designed to increase over time as payroll increases, or (b) as a level dollar amount much like a conventional mortgage, so that this component of the ARC does not increase over time. Where a plan is closed and has no ongoing payroll base, a level percent of payroll basis is not permitted.
- Allows the amortization period to decrease annually by one year (closed basis) or to be maintained at the same number of years (open basis).

Funding Policy Illustrated in This Report

It is our understanding that the City’s prefunding policy includes amortization of the unfunded AAL over a closed 30-year period initially effective July 1, 2009; the remaining period applicable in developing the ARC for the fiscal year ending June 30, 2017 is 22 years. Amortization payments are determined on a level percent of pay basis.²

² Where the UAAL is amortized on a level percent of pay basis, if all assumptions are met, the UAAL may increase, rather than decrease, in the earlier years of the amortization period.

**Funding Policy
(Concluded)**

Funding of the Implicit Subsidy

The implicit subsidy liability created when expected retiree medical claims exceed the retiree premiums was described earlier in Section C. In practical terms, when the City pays the premiums for active employees each year, their premiums include an amount expected to be transferred to cover the portion of the retirees' claims not covered by their premiums. This transfer represents the current year's implicit subsidy. Paragraph 13.g. of GASB 45 allows for recognition of payments to an irrevocable trust *or directly to the insurer* as an employer's contribution to the ARC. We have estimated each current year's implicit subsidy and recommend netting this amount against the funding requirement for the implicit subsidy (see Tables 1B and 1C).

The following hypothetical example illustrates this treatment:

Hypothetical Illustration Of Implicit Subsidy Recognition	For Active Employees	For Retired Employees	Total
Annual Agency Contribution Toward Premiums	\$ 2,000,000	\$ 902,000	\$ 2,902,000
Current Year's Implicit Subsidy Adjustment	\$ (266,000)	\$ 266,000	\$ -
Adjusted contributions reported in Financial Stmts	\$ 1,734,000	\$ 1,168,000	\$ 2,902,000

While total City contributions paid toward active and retired employee healthcare premiums in this example are the same, by shifting the recognition of the current year's implicit subsidy from actives to retirees, this amount may be recognized as a contribution toward the OPEB expense.

At some point in the future, e.g., when the Actuarial Present Value of Projected Explicit Subsidy Benefits (currently \$33.5 million) has been fully funded, the City may want to consider its posture toward continued prefunding of the remaining implicit subsidy liability. At present, however, it is our understanding that the City intends to contribute 100% of the ARC/ADC each year relating to both the explicit subsidy and implicit subsidy liabilities. Exhibits in this report reflect our assumption that the City will follow this approach.

G. Choice of Actuarial Funding Method and Assumptions

The ultimate real cost of an employee benefit plan is the value of all benefits and other expenses of the plan over its lifetime. These expenditures are dependent only on the terms of the plan and the administrative arrangements adopted, and as such are not affected by the actuarial funding method. The actuarial funding method attempts to spread recognition of these expected costs on a level basis over the life of the plan, and as such sets the “incidence of cost”. Methods that produce higher initial annual (prefunding) costs will produce lower annual costs later. Conversely, methods that produce lower initial costs will produce higher annual costs later relative to the other methods. GASB 45 allows the use of any of six actuarial funding methods; a brief description of each is in the glossary.

Factors Impacting the Selection of Funding Method

While the goal of GASB 45 is to match recognition of retiree medical expense with the periods during which the benefit is earned, the funding methods differ because they focus on different financial measures in attempting to level the incidence of cost. Appropriate selection of a funding method contributes to creating intergenerational equity between generations of taxpayers. The impact of potential new employees entering the plan may also affect selection of a funding method, though this is not a factor in this plan.

We believe it is most appropriate for the plan sponsor to adopt a theory of funding and consistently apply the funding method representing that theory. This valuation was prepared using the entry age normal cost method with normal cost determined on a level percent of pay basis. The entry age normal cost method often produces initial contributions between those of the other more common methods and is generally regarded by pension actuaries as the most stable of the funding methods and is one of the most commonly used methods for GASB 45 compliance. It is also the only actuarial funding method permitted to be used under GASB 75.

Factors Affecting the Selection of Assumptions

Special considerations apply to the selection of actuarial funding methods and assumptions for the City. The actuarial assumptions used in this report were chosen, for the most part, to be the same as the actuarial assumptions used for the most recent actuarial valuations of the retirement plans covering City employees. CalPERS has previously issued a set of standardized actuarial methods and assumptions to be used by entities participating in CERBT and many assumptions used in this report for GASB 45 analysis are also consistent with that assumption model. Other assumptions, such as healthcare trend, age related healthcare claims, retiree participation rates and spouse coverage, were selected based on demonstrated plan experience and/or our best estimate of expected future experience. We will continue to gather information and monitor these assumptions for future valuations, as more experience develops.

In selecting appropriate discount rate(s), GASB states that the rate(s) should be based on the expected long-term yield of investments used to finance the benefits. We considered information provided to us by the City regarding recent actual contributions made and future OPEB contributions planned to the trust. For purposes of this report, we have assumed that the City will contribute 100% or more of the total ARC or ADC each year. Based on the expected contribution level, and the assumed returns on OPEB trust described earlier, we used a 6.0% discount to determine the total OPEB liability.

H. Certification

This report presents the results of our actuarial valuation of the other post-employment benefits provided by the City of Mill Valley. The purpose of this valuation was to provide the actuarial information required for the City's reporting under Statement 45 of the Governmental Accounting Standards Board. The calculations were focused on determining the plan's funded status as of the valuation date, developing the Annual Required Contribution and projecting the Net OPEB Obligations for the years to which this report is expected to be applied.

We certify that this report has been prepared in accordance with our understanding of GASB 45. To the best of our knowledge, the report is complete and accurate, based upon the data and plan provisions provided to us by the City. We believe the assumptions and method used are reasonable and appropriate for purposes of the financial reporting required by GASB 45. The results may not be appropriate for other purposes.

Each of the undersigned individuals is a Fellow in the Society of Actuaries and Member of the American Academy of Actuaries who satisfies the Academy Qualification Standards for rendering this opinion.

Signed: September 8, 2017



Catherine L. MacLeod, FSA, FCA, EA, MAAA



J. Kevin Watts, FSA, FCA, MAAA

Table 1

GASB 45 results for the fiscal year ending 2017: The basic results of our July 1, 2016 valuation of OPEB liabilities for the City calculated under GASB 45 were summarized in Section E. Those results are applied to develop the annual required contribution (ARC), annual OPEB expense (AOE) and the net OPEB obligation (NOO) or net OPEB asset (NOA) to be reported by the City under GASB 45 for its fiscal years ending June 30, 2017.

The development of the ARC reflects the assumption that the City will contribute at least 100% of the total ARC each year, with contributions comprised of:

- Direct payments to healthcare providers to be applied toward retiree medical premiums,
- Each current year's implicit subsidy, plus
- Contributions to the OPEB trust.

If this understanding is incorrect or if actual City contributions differ by more than an immaterial amount, some of the results in this report will need to be revised.

GASB 75 results for the fiscal year ending 2018: The liability and expense to be reported in financial statements for the City's fiscal year ending June 30, 2018 will be developed under GASB 75. Because plan assets and the discount rate needed for that developing the liability must be based on a rate as of the Measurement Date of June 30, 2017 or later, results for fiscal year end 2018 will be provided in a separate report.

Employees reflected in future years' costs: The counts of active employees and retirees shown in Table 1C are the same as the counts of active and retired employees on the valuation date. While we do not adjust these counts between valuation dates, the liabilities and costs developed for those years do anticipate the likelihood that some active employees may leave employment forfeiting benefits, some may retire and elect benefits and coverage for some of the retired employees may cease.

We also note that the number of retired employees expected to create an implicit subsidy OPEB liability are lower than the number of those which create an explicit subsidy liability. Medical premiums for Medicare-eligible retirees are not, or are assumed not to be, subsidized by active employee medical premiums, so do not create an implicit subsidy liability.

Table 1A
ARC Calculation for FYE 2017

This table develops the ARC for the fiscal year ending June 30, 2017. Calculations, which include both the City and SASM, are shown separately, and in total, relating to Explicit and Implicit OPEB benefits.

Funding Policy Valuation date	Prefunding Basis		
	7/1/2016		
	Explicit	Implicit	Total
Subsidy			
For fiscal year beginning	7/1/2016	7/1/2016	7/1/2016
For fiscal year ending	6/30/2017	6/30/2017	6/30/2017
Expected long-term return on trust assets	6.00%	6.00%	6.00%
Discount rate	6.00%	6.00%	6.00%
Number of Covered Employees			
Actives	126	126	126
Retirees	76	36	76
Total Participants	202	162	202
Actuarial Present Value of Projected Benefits			
Actives	\$ 17,409,993	\$ 4,444,284	\$ 21,854,277
Retirees	16,062,560	2,088,342	18,150,902
Total APVPB	33,472,553	6,532,626	40,005,179
Actuarial Accrued Liability (AAL)			
Actives	10,607,229	2,686,684	13,293,913
Retirees	16,062,560	2,088,342	18,150,902
Total AAL	26,669,789	4,775,026	31,444,815
Actuarial Value of Assets	7,313,073	756,187	8,069,260
Unfunded AAL (UAAL)	19,356,716	4,018,839	23,375,555
Amortization method	Level % of Pay	Level % of Pay	Level % of Pay
Initial amortization period (in years)	30	30	30
Remaining period (in years)	22	22	22
Determination of Amortization Payment			
UAAL	\$ 19,356,716	\$ 4,018,839	\$ 23,375,555
Factor	16.5456	16.5456	16.5456
Payment	1,169,902	242,895	1,412,797
Annual Required Contribution (ARC)			
Normal Cost	656,127	164,996	821,123
Amortization of UAAL	1,169,902	242,895	1,412,797
Interest to fiscal year end	109,562	24,473	134,035
Total ARC at fiscal year end	1,935,591	432,364	2,367,955
Projected covered payroll	\$ 12,281,782	\$ 12,281,782	\$ 12,281,782
Normal Cost as a percent of payroll	5.3%	1.3%	6.7%
ARC as a percent of payroll	15.8%	3.5%	19.3%

The portion of the ARC for fiscal year end 2017 attributable to the estimated excise tax liability is \$120,971.

Table 1B
Expected OPEB Disclosures for FYE 2017

The table below develops the annual OPEB expense, estimates the expected OPEB contributions and projects the net OPEB obligation as of June 30, 2017 reflecting the assumed prefunding policy described in this report. Results presented below combine both City and SASM; separate results are provided in Appendix 1.

Fiscal Year End	Prefunding Basis		
	6/30/2017	6/30/2017	6/30/2017
Subsidy	Explicit	Implicit	Total
1. Calculation of the Annual OPEB Expense			
a. ARC for current fiscal year	\$ 1,935,591	\$ 432,364	\$ 2,367,955
b. Interest on Net OPEB Obligation (Asset)	463,258	64,491	527,749
c. Adjustment to the ARC	(494,646)	(68,861)	(563,507)
d. Annual OPEB Expense (a. + b. + c.)	1,904,203	427,994	2,332,197
2. Calculation of Expected Contribution			
a. Estimated payments on behalf of retirees	902,137	-	902,137
b. Estimated current year's implicit subsidy	-	266,034	266,034
c. Estimated contribution to OPEB trust	1,033,454	142,793	1,176,247
d. Total Expected Employer Contribution	1,935,591	408,827	2,344,418
3. Change in Net OPEB Obligation (1.d. minus 2.d.)	(31,388)	19,167	(12,221)
Net OPEB Obligation (Asset), beginning of fiscal year	7,720,961	1,074,849	8,795,810
Net OPEB Obligation (Asset) at fiscal year end	7,689,573	1,094,016	8,783,589

In the table above, we have reflected actual contributions reported by the City, specifically:

- \$902,137 in retiree medical and dental benefits paid; and
- \$1,176,247 contributed to the OPEB trust (CERBT).
- We also assumed that the City will take credit for the \$266,034 current year's implicit subsidy as an OPEB contribution by shifting recognition of this amount from an active healthcare expense to a retiree healthcare benefit expense.

Additional notes on the calculations above:

- Interest on the net OPEB obligation (or asset), shown above in item 1.b. is equal to the applicable discount rate (6.0%) multiplied by the net OPEB obligation (or asset) at the beginning of the year.
- The Adjustment to the ARC, shown above in item 1.c., is always the opposite sign of the net OPEB obligation or asset and exists to avoid double-counting of the amounts previously expensed but imbedded in the current ARC. This adjustment is calculated as *the opposite of* the net OPEB obligation (or asset) at the beginning of the year, plus interest on that amount (item 1.b.) with the sum then divided by the same amortization factor used to determine the ARC for this year (see the prior page for these factors).

Table 1C
ADC Calculation for FYE 2018

In this table, the July 1, 2016 valuation results have been adjusted (rolled forward) one year based on the underlying actuarial assumptions. These results, combined for the City and SASM, are used to develop the actuarially determined contribution (ADC) for the fiscal year ending June 30, 2018.

Funding Policy	Prefunding Basis		
Valuation date	7/1/2017		
Subsidy	Explicit	Implicit	Total
For fiscal year ending	6/30/2018	6/30/2018	6/30/2018
Expected long-term return on trust assets	6.00%	6.00%	6.00%
Discount rate	6.00%	6.00%	6.00%
Number of Covered Employees			
Actives	126	126	126
Retirees	76	36	76
Total Participants	202	162	202
Actuarial Present Value of Projected Benefits			
Actives	\$ 18,429,499	\$ 4,699,598	\$ 23,129,097
Retirees	16,182,424	1,958,952	18,141,376
Total APVPB	34,611,923	6,658,550	41,270,473
Actuarial Accrued Liability (AAL)			
Actives	11,914,063	3,011,438	14,925,501
Retirees	16,182,424	1,958,952	18,141,376
Total AAL	28,096,487	4,970,390	33,066,877
Actuarial Value of Assets	8,785,311	944,351	9,729,662
Unfunded AAL (UAAL)	19,311,176	4,026,039	23,337,215
UAAL Amortization method	Level % of Pay	Level % of Pay	Level % of Pay
Remaining amortization period (years)	21	21	21
Amortization Factor	15.9984	15.9984	15.9984
Actuarially Determined Contribution (ADC)			
Normal Cost	677,451	170,358	847,809
Amortization of UAAL	1,207,071	251,653	1,458,724
Interest to fiscal year end	113,071	25,321	138,392
Total ADC	1,997,593	447,332	2,444,925
Projected covered payroll	\$ 12,680,940	\$ 12,680,940	\$ 12,680,940
Normal Cost as a percent of payroll	5.3%	1.3%	6.7%
ADC as a percent of payroll	15.8%	3.5%	19.3%
Expected Employer OPEB Contributions			
Estimated payments on behalf of retirees	\$ 915,198	\$ -	\$ 915,198
Estimated current year's implicit subsidy	-	295,827	295,827
Estimated contribution to OPEB trust	1,082,395	151,505	1,233,900
Total Expected Employer Contribution	1,997,593	447,332	2,444,925

The portion of the ADC for fiscal year end 2018 attributable to the estimated excise tax liability is \$132,699.

Table 2
Summary of Employee Data

The City reported 126 active, OPEB-eligible employees in the data provided to us for the July 2016 valuation. Of these, 116 were shown as currently participating in the medical program while 10 employees were waiving coverage.

Distribution of Benefits-Eligible Active Employees								
Current Age	Years of Service						Total	Percent
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 & Up		
Under 25		1					1	1%
25 to 29	4	10	1				15	12%
30 to 34	1	8	8	3			20	16%
35 to 39	3	5	6	4	2		20	16%
40 to 44		1	7	1	2		11	9%
45 to 49		6	6	4	2	6	24	19%
50 to 54			3	2	4	5	14	11%
55 to 59		1	1	2	1		5	4%
60 to 64		2	3	2	2		9	7%
65 to 69		1	2	3			6	5%
70 & Up			1				1	1%
Total	8	35	38	21	13	11	126	100%
Percent	6%	28%	30%	17%	10%	9%	100%	

<u>Valuation</u>	<u>July 2014</u>	<u>July 2016</u>
Annual Covered Payroll	\$11,964,617	\$12,281,782
Average Attained Age for Actives	43.9	43.7
Average Years of Service	8.6	9.4

There are also 73 retirees and 3 surviving spouses currently receiving benefits under this program. Their ages are summarized in the chart below.

Retirees by Age					
Current Age	Misc	Police	Fire	Total	Percent
Below 50				0	0%
50 to 54	4	3	2	9	12%
55 to 59	4	3	5	12	16%
60 to 64	18	1	2	21	28%
65 to 69	12	1	3	16	21%
70 to 74	6	3	1	10	13%
75 to 79	3			3	4%
80 & up	3	1	1	5	7%
Total	50	12	14	76	100%
Average Age:					
On 7/1/2017	65.9	63.3	62.2		
At retirement	58.1	51.9	54.7		

**Table 2- Summary of Employee Data
(Concluded)**

The chart below reconciles the number of actives and retirees included in the July 1, 2014 valuation of the City plan with those included in the July 1, 2016 valuation:

Reconciliation of City Plan Members Between Valuation Dates						
Status	Covered Actives	Waiving Actives	Covered Retirees	Covered Disabled Retirees	Covered Surviving Spouses	Total
Number reported as of July 1, 2014	133	13	49	14	2	211
New employees	9	-	-	-	-	9
Terminated employees	(10)	-	-	-	-	(10)
New retiree, elected coverage	(14)	-	14	-	-	0
New retiree, waiving coverage	-	-	-	-	-	0
Previously covered, now waiving	-	-	(1)	-	-	(1)
Previously waiving, now covered	1	(1)	-	-	-	0
Deceased	-	-	(3)	-	1	(2)
Ineligible for benefits	(3)	(2)	-	-	-	(5)
Number reported as of July 1, 2016	116	10	59	14	3	202

From this chart, we can see that the total population currently or potentially eligible for OPEB has decreased by 9 members. The number of current retirees has increased by 11, while the number of active members covered by this program has decreased by 20. The latter decrease is due, in part, to recent elimination of coverage for certain recently hired Management employees.

Focusing on the retirees, we observe 14 new retirements since July 1, 2014; all qualified for retiree health benefits and elected to continue coverage in the City's medical plans. There were 3 retiree deaths, with one surviving spouse continuing to receive coverage and benefits.

Separate age and service statistics are provided below for miscellaneous and safety employees comparing information from the July 2016 and July 2014 valuations. These counts and averages include both City and SASM plan members.

2016 Status	Active City Employees			Retired City Employees		
Employee Type	Misc	Safety	Total	Misc	Safety	Total
Count	81	45	126	50	26	76
Average current age	46.9	37.9	43.7	65.9	62.7	65.0
Average service years	9.2	9.6	9.4	21.0	25.3	22.2
Average retirement age	Not applicable			58.1	53.4	57.5
2014 Status	Active City Employees			Retired City Employees		
Employee Type	Misc	Safety	Total	Misc	Safety	Total
Count	100	46	146	43	22	65
Average current age	46.7	38	43.9	66.5	62.1	65.0
Average service years	8.3	9.4	8.6	20.6	25.9	22.4
Average retirement age	Not applicable			58.2	53.3	56.5

**Table 2- Summary of Employee Data
(Concluded)**

There are two benefit tiers defining OPEB eligibility and the amount of subsidy provided by the City. The following chart shows the total number of active and retired employees in each unit by benefit tier. Counts include both City and SASM plan members.

Unit	Actives		Retirees	
	Tier I	Tier II	Tier I	Tier II
AFSCME	28	9	15	-
Battalion Chief	2	-	-	-
Management	34	8	25	-
Management - Dept Head	6	-	13	-
MVFFA	11	7	12	-
MVPOA	17	4	11	-
Total	98	28	76	0

The City's OPEB liability is dependent, to some extent, on the health plan and coverage level selected by retirees. The following chart summarizes current health plan enrollment for all actives and retirees (including both City Plan and SASM Plan members). Experience shows an inclination to move from the Health Net plans to Kaiser coverage in retirement, almost universally so for married retirees. We considered this experience in setting our assumptions regarding retiree coverage elections.

Employees by Medical Plan Coverage				
	Active	Pre-65 Retirees	Post-65 Retirees	Total
Health Net HMO				
Employee Only	10	4	2	16
Employee & Spouse	5	1	1	7
Employee & Children	3	-	-	3
Employee & Family	1	1	-	2
<i>Total</i>	19	6	3	28
Health Net PPO				
Employee Only	6	2	1	9
Employee & Spouse	-	-	-	0
Employee & Children	-	-	-	0
Employee & Family	-	-	-	0
<i>Total</i>	6	2	1	9
Kaiser				
Employee Only	28	5	14	47
Employee & Spouse	17	23	13	53
Employee & Children	9	-	-	9
Employee & Family	37	-	-	37
<i>Total</i>	91	28	27	146
Outside Coverage	0	6	3	9

Table 3 Summary of Retiree Benefit Provisions

OPEB provided: The City reported that the only OPEB provided are medical and dental coverage.

Access to coverage: This coverage is available for employees who retire with PERS and satisfy certain additional service requirements, which are described on the following page. Retirees who do not meet the minimum eligibility criteria on the following page are not allowed to participate in the City's healthcare plans, other than as temporarily available under COBRA.

Dependent Coverage: Tier I retirees may not cover dependent children on City health plans. Spouses covered at time of a Tier 1 retiree's death may continue coverage in the City's plans for life. Tier II retirees may not enroll spouses or dependent children in the City's health plans.

Current premium rates: The monthly healthcare premium rates in effect for the period October 1, 2016 – September 30, 2017 are shown below:

Monthly Medical Premiums	Actives and Non-Medicare Retirees		
Plan	Ee Only	Ee & 1	Ee & 2+
Health Net PPO	\$ 1,245.58	\$ 2,677.96	\$ 3,674.43
Health Net HMO	982.30	2,111.94	2,897.84
Kaiser HMO	637.44	1,274.88	1,803.96
	Medicare Eligible Retirees		
Plan	Ee Only	Ee & 1	Ee & 2+
Health Net PPO	1,455.02	2,910.04	
Health Net HMO	1,258.89	2,517.78	
Kaiser Senior Advantage	269.49	579.49	

Delta Dental Rates	
Employee Only	\$ 59.50
Employee + Spouse	106.30
Family	150.40

This overview of benefits is continued on the following page.

**Summary of Retiree Benefit Provisions
(Concluded)**

		Hired After	Hired Before	Eligibility	Medical Benefit	Dental Benefit	Term of Benefits
Tier I	AFSCME	n/a	4/1/2013	Retire directly from the City with 15 years of City service ^{1, 2}	City pays retiree and spouse premiums up to the pre-Medicare two party Kaiser premium rate (up to \$1,274.88 in 2016)	None	Lifetime of retiree & spouse
	Non-Represented		4/15/2013			City pays 100% of retiree and spouse dental premiums (up to \$106.30 in 2016)	
	Police						
	Fire						
	Battalion Chief						
Tier II	AFSCME	3/31/2013	1/1/2017	Retire directly from the City with 20 years of City service ³	City pays retiree premiums up to 2/3 of the pre-Medicare employee only Kaiser premium rate (up to \$424.96 in 2016)		None
	Non-Represented	4/14/2013	2/21/2017			City pays up to 2/3 of the employee only dental premium (up to \$39.67 in 2016)	
	Police		5/15/2017				
	Fire		5/1/2017				
	Battalion Chief		5/6/2013				1/1/2017

¹ Different service requirements apply to three current AFSCME employees.

² Department Heads qualify with only 7.5 years of City service.

³ Department Heads qualify with only 10 years of City service.

Retirees who do not meet the eligibility requirements for Tier I or II are not eligible for OPEB (including access to coverage in retirement).

Table 4
Actuarial Methods and Assumptions

Valuation Date	July 1, 2016
Funding Method	Entry Age Normal Cost, level percent of pay ³
Asset Valuation Method	Market value of assets
Long Term Return on Assets	6.0%
Discount Rate	6.0%
Participants Valued	Only current active employees and retired participants and covered dependents are valued. No future entrants are considered in this valuation.
Salary Increase	3.25% per year, used only to allocate the cost of benefits between service years
Assumed Wage Inflation	3.0% per year; used to determine amortization payments if developed on a level percent of pay basis
General Inflation Rate	2.75% per year

To value the OPEB benefits provided by the City, we make many assumptions about the likelihood of various events occurring that will affect *eligibility for* and/or *the amount of* benefits expected to be paid to each individual employee, retiree and their potentially eligible dependents. We assign specific probabilities each year for mortality (before and after retirement), termination (withdrawal) of employment and for service or disability retirement. These assumptions are generally referred to as “demographic assumptions”. The demographic actuarial assumptions used in this valuation, with the exception of projected mortality improvements, are based on the (demographic) January 2014 experience study of the California Public Employees Retirement System, using data from 1997 to 2011. We believe these assumptions are reasonable and relevant to the City’s employee population.

CalPERS chose to reflect mortality improvements “statically”. Static mortality projections choose a constant number of years (e.g. 16) to improve mortality with the number of years chosen typically representing some measure of the duration of liabilities. Since a typical medical OPEB liability has a longer duration we projected mortality “generationally”. A generational projection projects mortality to each future year that the valuation encounters potential payments and then discounts those payments by the projected mortality. We believe this better reflects CalPERS intent to reflect improving mortality, but can do so over a wider range of potential liability durations. Details of our methodology are provided in Addendum 2: Bickmore Mortality Projection Methodology.

Rates for selected age and service are shown on the following pages and express the likelihood that the event (e.g., death, retirement or termination of employment) will occur in a twelve-month period.

³ The level percent of pay aspect of the funding method refers to how the normal cost is determined. Use of level percent of pay cost allocations in the funding method is separate from and has no effect on a decision regarding use of a level percent of pay or level dollar basis for determining amortization payments.

**Table 4 - Actuarial Methods and Assumptions
(Continued)**

Mortality Improvement Bickmore Scale 2017 applied generationally.

Mortality Before Retirement (before improvement applied):

The following charts show a selection of rates of mortality prior to retirement. The rates vary by gender and by type of employee (miscellaneous or safety) and each rate represents the likelihood that a current employee would die during each twelve-month period after the valuation date. The representative mortality rates shown below were those published by CalPERS in their 2014 study, adjusted to back out 20 years of Scale BB to central year 2008.

CalPERS Public Agency Miscellaneous Non-Industrial			CalPERS Public Agency Police & Fire Combined Industrial & Non-Industrial		
Age	Male	Female	Age	Male	Female
20	0.00033	0.00021	20	0.00036	0.00025
30	0.00052	0.00027	30	0.00062	0.00036
40	0.00080	0.00053	40	0.00094	0.00068
50	0.00165	0.00106	50	0.00181	0.00122
60	0.00354	0.00223	60	0.00372	0.00241
70	0.00709	0.00467	70	0.00731	0.00489
80	0.01339	0.01036	80	0.01363	0.01060

Mortality After Retirement (before improvement applied):

Death after retirement signals the end of benefits for the retiree, though benefits may continue for a surviving spouse. As above, rates vary by gender but also vary based on whether the employee took a service or a disability retirement and represent the likelihood that a retiree or beneficiary will die during each twelve-month period after the valuation date.

Rates in the tables below and at the top of the following page were those published by CalPERS in their 2014 study, adjusted to back out 20 years of Scale BB to central year 2008.

CalPERS Public Agency Healthy Miscellaneous, Police & Fire			CalPERS Public Agency Disabled Miscellaneous		
Age	Male	Female	Age	Male	Female
40	0.00117	0.00097	20	0.00641	0.00395
50	0.00532	0.00495	30	0.00736	0.00455
60	0.00817	0.00533	40	0.01008	0.00642
70	0.01766	0.01264	50	0.01784	0.01230
80	0.05275	0.03695	60	0.02634	0.01510
90	0.16186	0.12335	70	0.03890	0.02815
100	0.34551	0.31876	80	0.08230	0.06015
110	1.00000	1.00000	90	0.18469	0.16082

Table 4 - Actuarial Methods and Assumptions (Continued)

Mortality After Retirement (continued)

CalPERS Public Agency Disabled Fire			CalPERS Public Agency Disabled Police		
Age	Male	Female	Age	Male	Female
20	0.00515	0.00323	20	0.00641	0.00395
30	0.00357	0.00239	30	0.00212	0.00157
40	0.00330	0.00252	40	0.00273	0.00219
50	0.00610	0.00541	50	0.00582	0.00524
60	0.00921	0.00660	60	0.00925	0.00662
70	0.02250	0.01800	70	0.02262	0.01807
80	0.06654	0.04995	80	0.06669	0.05005
90	0.16222	0.12394	90	0.16245	0.12430

Termination (Withdrawal) Rates

Whether voluntary or involuntary, if an individual ends his or her employment with the City for reasons other than death and does not meet the requirements necessary to qualify for benefits, those benefits will not be paid. We make assumptions about the likelihood that an employee will leave service in every year between the valuation date and the earliest expected date of retirement. These rates vary based on the employee's age, prior years of CalPERS membership and whether the employee is a safety or miscellaneous employee.

For example, assuming a new miscellaneous employee, hired at age 25, does not die or become disabled, he or she is assumed to have about a 20% chance of continuing in service with the City to age 55.

A safety employee hired at the same age is assumed to have roughly a 60% chance of continuing in service with the City to age 55.

Miscellaneous Employees: Sum of Vested Terminated & Refund Rates From CalPERS Experience Study Report Issued January 2014						
Attained Age	Years of Service					
	0	3	5	10	15	20
15	0.1812	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.1742	0.1193	0.0946	0.0000	0.0000	0.0000
25	0.1674	0.1125	0.0868	0.0749	0.0000	0.0000
30	0.1606	0.1055	0.0790	0.0668	0.0581	0.0000
35	0.1537	0.0987	0.0711	0.0587	0.0503	0.0450
40	0.1468	0.0919	0.0632	0.0507	0.0424	0.0370
45	0.1400	0.0849	0.0554	0.0427	0.0347	0.0290

Fire Safety Employees: Sum of Vested Terminated & Refund Rates From CalPERS Experience Study Report Issued January 2014						
Attained Age	Years of Service					
	0	3	5	10	15	20
15	0.0710	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0710	0.0242	0.0191	0.0000	0.0000	0.0000
25	0.0710	0.0242	0.0191	0.0070	0.0000	0.0000
30	0.0710	0.0242	0.0191	0.0070	0.0064	0.0000
35	0.0710	0.0242	0.0191	0.0070	0.0064	0.0058
40	0.0710	0.0242	0.0191	0.0070	0.0064	0.0058
45	0.0710	0.0242	0.0191	0.0070	0.0064	0.0058

Table 4 - Actuarial Methods and Assumptions (Continued)

Termination Rates (Concluded)

Police Safety Employees: Sum of Vested Terminated & Refund Rates From CalPERS Experience Study Report Issued January 2014						
Attained Age	Years of Service					
	0	3	5	10	15	20
15	0.1013	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.1013	0.0258	0.0249	0.0000	0.0000	0.0000
25	0.1013	0.0258	0.0249	0.0179	0.0000	0.0000
30	0.1013	0.0258	0.0249	0.0179	0.0109	0.0000
35	0.1013	0.0258	0.0249	0.0179	0.0109	0.0082
40	0.1013	0.0258	0.0249	0.0179	0.0109	0.0082
45	0.1013	0.0258	0.0249	0.0179	0.0109	0.0082

Retirement Rates

To the extent that an individual’s employment is not assumed to end through termination or death prior to retirement, we make assumptions about the likelihood each employee will retire in each future year. The likelihood of retirement in any year is dependent up several factors, including the employee’s current age, prior years of CalPERS membership and the retirement plan in which the employee participates.

Service Retirement Rates:

The following miscellaneous retirement formulas apply:

- For “Classic” employees hired prior to 3/25/2011: 2.5% @ 55
- For “Classic” employees hired after 3/24/2011: 2.0% @ 55
- For “PEPRA” employees: 2.0% @ 62

The following safety retirement formulas apply:

- For “Classic” employees: 3.0% @ 55
- For “PEPRA” employees: 2.7% @ 55

Sample rates of assumed future retirements for each of these retirement benefit formulas are shown in the table below and on the top of the following page. Rates shown reflect the probability that an employee at that age and service will retire in the next 12 months.

Miscellaneous Employees: 2.5% at 55 formula						
From CalPERS Experience Study Report Issued January 2014						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0040	0.0090	0.0190	0.0290	0.0490	0.0940
55	0.0660	0.0880	0.1150	0.1420	0.1790	0.2410
60	0.0660	0.0880	0.1150	0.1420	0.1790	0.2410
65	0.1220	0.1600	0.2020	0.2450	0.2970	0.3740
70	0.1270	0.1650	0.2090	0.2530	0.3060	0.3850
75 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table 4 - Actuarial Methods and Assumptions (Continued)

Service Retirement Rates
(Continued)

Miscellaneous Employees: 2% at 55 formula						
From CalPERS Experience Study Report Issued January 2014						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0140	0.0180	0.0210	0.0250	0.0270	0.0310
55	0.0480	0.0610	0.0740	0.0880	0.1000	0.1170
60	0.0670	0.0860	0.1030	0.1230	0.1390	0.1640
65	0.1550	0.1970	0.2380	0.2850	0.3250	0.3860
70	0.1300	0.1650	0.2000	0.2400	0.2720	0.3230
75 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Miscellaneous "PEPRA" Employees: 2% at 62 formula						
From CalPERS Experience Study Report Issued January 2014						
Current Age	Years of Service					
	5	10	15	20	25	30
52	0.0103	0.0132	0.0160	0.0188	0.0216	0.0244
55	0.0440	0.0560	0.0680	0.0800	0.0920	0.1040
60	0.0616	0.0784	0.0952	0.1120	0.1288	0.1456
65	0.1287	0.1638	0.1989	0.2340	0.2691	0.3042
70	0.1254	0.1596	0.1938	0.2280	0.2622	0.2964
75 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Fire Safety Employees: 3.0% at 55 formula						
From CalPERS Experience Study Report Issued January 2014						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0010	0.0010	0.0010	0.0060	0.0160	0.0690
53	0.0320	0.0320	0.0320	0.0490	0.0850	0.1490
56	0.0640	0.0640	0.0640	0.0970	0.1610	0.2380
59	0.0880	0.0880	0.0880	0.1310	0.2130	0.2990
62	0.0870	0.0870	0.0870	0.1280	0.2100	0.2950
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Fire Safety Employees: 2.7% at 57 formula						
From CalPERS Experience Study Report Issued January 2014						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0065	0.0065	0.0065	0.0065	0.0101	0.0151
53	0.0065	0.0065	0.0065	0.0065	0.0101	0.0151
56	0.0442	0.0442	0.0442	0.0442	0.0680	0.1018
59	0.0740	0.0740	0.0740	0.0740	0.1140	0.1706
62	0.0729	0.0729	0.0729	0.0729	0.1123	0.1681
65	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
68 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table 4 - Actuarial Methods and Assumptions (Continued)

Service Retirement Rates
(Concluded)

Police Safety Employees: 3.0% at 55 formula						
From CalPERS Experience Study Report Issued January 2014						
Current	Years of Service					
Age	5	10	15	20	25	30
50	0.0040	0.0040	0.0040	0.0040	0.0150	0.0860
53	0.0380	0.0380	0.0380	0.0380	0.0830	0.1880
56	0.0720	0.0720	0.0720	0.0720	0.1530	0.2950
59	0.1180	0.1180	0.1180	0.1180	0.2470	0.4370
62	0.1080	0.1080	0.1080	0.1080	0.2260	0.4050
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Police Safety Employees: 2.7% at 57 formula						
From CalPERS Experience Study Report Issued January 2014						
Current	Years of Service					
Age	5	10	15	20	25	30
50	0.0138	0.0138	0.0138	0.0138	0.0253	0.0451
53	0.0497	0.0497	0.0497	0.0497	0.0909	0.1621
56	0.0606	0.0606	0.0606	0.0606	0.1108	0.1975
59	0.1396	0.1396	0.1396	0.1396	0.1735	0.2544
62	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Disability Retirement Rates:

The following 3 charts provide sample rates showing the likelihood of an employee's retirement on disability in the following 12 months. For example, in the first chart below, we can see that an active male miscellaneous employee, now exactly age 40, is assumed to have a .122% chance of retiring from the City due to approved disability before his 41st birthday.

CalPERS Public Agency Miscellaneous Disability From Jan 2014 Experience Study Report			CalPERS Public Agency Fire Combined Disability From Jan 2014 Experience Study Report		CalPERS Public Agency Police Combined Disability From Jan 2014 Experience Study Report	
Age	Male	Female	Age	Unisex	Age	Unisex
20	0.00017	0.00010	20	0.00017	20	0.00010
25	0.00017	0.00010	25	0.00035	25	0.00175
30	0.00019	0.00024	30	0.00084	30	0.00496
35	0.00049	0.00081	35	0.00168	35	0.00818
40	0.00122	0.00155	40	0.00310	40	0.01140
45	0.00191	0.00218	45	0.00550	45	0.01461
50	0.00213	0.00229	50	0.02821	50	0.01925
55	0.00221	0.00179	55	0.04184	55	0.04909
60	0.00222	0.00135	60	0.05974	60	0.06212

**Table 4 - Actuarial Methods and Assumptions
(Continued)**

Healthcare Trend

The schedule of future increases in medical premium rates is one of the most challenging assumptions the actuary makes in an OPEB valuation. In selecting the trend used below, we considered information provided in national surveys⁴, observed healthcare trend increases in California, the City’s experience over the prior decade and assumptions used in the actuarial valuation of the California State employees OPEB liabilities.

Medical plan premiums and claims costs by age are assumed to increase once each year. The increases over the prior year’s levels are assumed to be effective on the dates shown below:

Effective October 1	Premium Increase	Effective October 1	Premium Increase
2016	Actual	2022	6.25%
2017	7.50%	2023	6.00%
2018	7.25%	2024	5.75%
2019	7.00%	2025	5.50%
2020	6.75%	2026	5.25%
2021	6.50%	2027 & later	5.00%

Dental premiums are assumed to increase by 3.5% annually.

Participation Rate

Active employees: All (100%) are assumed to continue coverage in retirement if expected to qualify for City-paid premiums upon retirement. Future retirees not qualifying for the City-paid subsidy are no longer eligible to continue in the City’s medical plans, except as permitted under COBRA.

Retired participants: Existing medical plan elections are assumed to be continued until the retiree’s death.

Spouse Coverage

Tier I Active employees: The employees’ marital status at the time of retirement is assumed to be the same as it is on the valuation date. Surviving spouses are assumed to retain coverage until their death. Husbands are assumed to be 3 years older than their wives.

Tier II Actives: Not applicable; spouses of Tier II retirees are not eligible for healthcare coverage in the City’s plans.

Retired Tier I members: Existing elections for spouse coverage are assumed continue until the spouse’s death. Actual spouse ages are used, where known; if not, husbands are assumed to be 3 years older than their wives.

⁴ Including the Pension/OPEB 2017 Assumption and Disclosure Survey released by PricewaterhouseCoopers, LLP.

**Table 4 - Actuarial Methods and Assumptions
(Continued)**

Other Dependent Coverage	No dependents may continue coverage in the City’s healthcare plans in retirement (other the spouses of Tier 1 retirees; see above), except as permitted under COBRA.
Medicare Eligibility	Absent contrary data, all individuals are assumed to be eligible for Medicare Parts A and B at age 65.
Medical plan selection	Members are assumed to select medical plans in retirement as follows and to retain this coverage until their death: <ul style="list-style-type: none"> (a) <i>All current retirees</i>: Current medical plan (b) <i>Unmarried Tier 1 active employees</i>: Current medical plan (c) <i>Married Tier 1 active employees</i>: Kaiser HMO/Sr. Advantage (d) <i>All Tier 2 active employees and all actives currently waiving coverage through the City</i>: Kaiser HMO/Sr. Advantage

Excise tax on high-cost plans

The expected value of excise taxes for high cost plan coverage for retirees, now expected to be effective in the year 2020, was included in this valuation. Annual threshold amounts for 2018 under the Affordable Care Act (ACA) were assumed to increase at the General Inflation Rate. A 40% excise tax rate was applied to the portion of premiums projected to exceed the threshold.

2018 Thresholds	Ages 55-64	All Other Ages
Single	11,850	10,200
Other than Single	30,950	27,500

Note: Thresholds for disability retirements are assumed to be set at a level high enough to prevent taxation on disabled retiree benefits.

The actual 2018 limits may be higher, depending on cost increases prior to the effective date. These thresholds are scheduled to increase by CPI plus 1% in 2019 and by CPI annually thereafter.

Development of Age-related Medical Premiums

Actual premium rates for retirees and their spouses were adjusted to an age-related basis by applying medical claim cost factors developed from the data presented in the report, “Health Care Costs – From Birth to Death”, sponsored by the Society of Actuaries. A description of the use of claims cost curves can be found in Bickmore’s Age Rating Methodology provided in Addendum 1 to this report.

Representative claims costs by age for retirees not currently covered or not expected to be eligible for Medicare are shown in a chart on the following page.

**Table 4 - Actuarial Methods and Assumptions
(Continued)**

Age-related medical premiums- continued

Retiree Age	Kaiser HMO		Health Net HMO		Health Net PPO	
	Males	Females	Males	Females	Males	Females
45	\$ 489	\$ 676	\$ 684	\$ 944	\$ 802	\$ 1,108
48	568	735	794	1,028	932	1,206
51	674	816	942	1,141	1,105	1,338
54	790	889	1,104	1,243	1,296	1,458
57	914	955	1,277	1,335	1,498	1,566
60	1,043	1,038	1,458	1,451	1,711	1,703
63	1,186	1,151	1,657	1,608	1,944	1,887

In developing these factors we assumed there were 1.7 children per participant covering children with an average age of 13.4. Actual spouse ages were used if available. Otherwise husbands were assumed to be 3 years older than their wives.

We valued actual rather than age-adjusted premiums for retirees covered by or expected to qualify for Medicare. The Kaiser plan available to Medicare retirees is a Senior Advantage plan based solely on the experience of Medicare retirees. While Health Net premiums are developed based on the commingled claims experience of actives, pre-Medicare retirees, and Medicare retirees, higher premium rates are charged for retirees over age 65 and we expect that the premiums charged for these members will be sufficient to cover their claims.

Changes Since the Prior Valuation:

Return on assets/Discount Rate	Decreased from 6.5% to 6.0%
Assumed Wage Inflation	Decreased from 3.25% to 3.0%
General Inflation Rate	Decreased from 3.0% to 2.75%
Demographic assumptions	Assumed mortality, termination, disability and retirement rates were updated from those provided in the CalPERS 2010 experience study report to those provided in the CalPERS 2014 experience study report. Rates of mortality were updated to the rates in the midpoint year of the CalPERS 2014 experience study (2008), then projected on a generational basis by Bickmore Scale 2017.
Healthcare trend	Medical plan premium rates are assumed to increase by 0.5% higher rates between 2017 and 2025 than assumed in the prior valuation, reflecting generally observed increases in short term healthcare trend occurring in the past 12 to 24 months.

**Table 4 - Actuarial Methods and Assumptions
(Concluded)**

Participation Rate	The assumed percentage of active employees currently waiving City medical coverage who are assumed to elect coverage through the City in retirement was increased from 80% to 100%.
Age-Related Medical Premiums	We updated our methodology for developing age-related medical premiums based on updated research and data sponsored by the Society of Actuaries.
Excise Tax Impact	We reflected the potential impact of the excise tax attributable to retirees for high cost healthcare plans for retirees, as provided by the Affordable Care Act. Such excise taxes were developed only for retirees covered by (or assumed to be covered by) a medical plan offered by the City.

Table 5
Projected Benefit Payments

The following is an estimate of other post-employment benefits to be paid on behalf of current retirees and current employees expected to retire from the City. Expected annual benefits have been projected on the basis of the actuarial assumptions outlined in Table 4.

These projections do not include any benefits expected to be paid on behalf of current active employees *prior to* retirement, nor do they include any benefits for potential *future employees* (i.e., those who might be hired in future years).

Projected Annual Benefit Payments							
Fiscal Year Ending June 30	Explicit Subsidy			Implicit Subsidy			Total
	Current Retirees	Future Retirees	Total	Current Retirees	Future Retirees	Total	
2017	\$ 902,137	\$ -	\$ 902,137	\$254,691	\$11,343	\$266,034	\$1,168,171
2018	857,114	58,084	915,198	266,762	29,065	295,827	1,211,025
2019	900,059	101,558	1,001,617	255,201	52,821	308,022	1,309,639
2020	939,234	145,644	1,084,878	261,786	60,834	322,620	1,407,498
2021	964,214	198,812	1,163,026	256,387	89,943	346,330	1,509,356
2022	977,453	259,056	1,236,509	248,888	112,995	361,883	1,598,392
2023	998,721	331,086	1,329,807	245,632	155,785	401,417	1,731,224
2024	1,009,451	411,900	1,421,351	216,768	200,034	416,802	1,838,153
2025	1,034,069	499,187	1,533,256	199,722	241,023	440,745	1,974,001
2026	1,057,999	576,906	1,634,905	176,321	274,191	450,512	2,085,417
2027	1,044,946	672,119	1,717,065	137,019	338,375	475,394	2,192,459
2028	1,050,665	749,401	1,800,066	115,325	366,608	481,933	2,281,999
2029	1,026,326	821,108	1,847,434	60,269	365,231	425,500	2,272,934
2030	1,041,736	905,932	1,947,668	54,382	373,816	428,198	2,375,866
2031	1,046,191	990,488	2,036,679	31,332	403,124	434,456	2,471,135

The amounts shown in the Explicit Subsidy section reflect the expected payment by the City toward retiree medical premiums in each of the years shown. The amounts are shown separately, and in total, for those retired on the valuation date (“current retirees”) and those expected to retire after the valuation date (“future retirees”).

The amounts shown in the Implicit Subsidy section reflect the expected excess of retiree medical (and prescription drug) claims over the premiums expected to be charged during the year for retirees’ coverage. These amounts are also shown separately and in total for those currently retired on the valuation date and for those expected to retire in the future.

Appendix 1: Breakout of Valuation Results Between the City and SASM

The charts on the following two pages break out the valuation results for the City and SASM for the fiscal years ending June 30, 2017 and June 30, 2018. Amortization of the unfunded actuarial accrued liability is on the same basis as described in Section F.

In order to allocate trust assets between groups and between explicit and implicit liabilities, the July 1, 2014 assets were projected to July 1, 2016 based on the expected rate of return and on contributions expected to be credited to the trust account prior to that date. This projected July 1, 2016 asset value was allocated between group/liability type in proportion to the assets allocated by group/liability type on July 1, 2014 plus actual contributions reported to Bickmore since that date.

Appendix 1: Breakout of Valuation Results Between the City and SASM (continued)

City Plan:

Fiscal Year End	Prefunding Basis					
	6/30/2017			6/30/2018		
	Explicit	Implicit	Total	Explicit	Implicit	Total
Subsidy						
Determination of Amortization Payment						
UAAL	\$ 17,073,232	\$ 3,525,052	\$ 20,598,284	\$ 17,035,494	\$ 3,556,243	\$ 20,591,737
Factor	16.5456	16.5456	16.5456	15.9984	15.9984	15.9984
Payment	1,031,890	213,051	1,244,941	1,064,826	222,288	1,287,114
Annual Required Contribution (ARC)/ Actuarially Determined Contribution (ADC)						
Normal Cost	608,909	153,636	762,545	628,698	158,629	787,327
Amortization of UAAL	1,031,890	213,051	1,244,941	1,064,826	222,288	1,287,114
Interest to fiscal year end	98,448	22,001	120,449	101,611	22,855	124,466
Total ARC/ADC at fiscal year end	1,739,247	388,688	2,127,935	1,795,135	403,772	2,198,907
1. Calculation of the Annual OPEB Expense						
a. ARC/ADC for current fiscal year	\$ 1,739,247	\$ 388,688	\$ 2,127,935	\$ 1,795,135	\$ 403,772	\$ 2,198,907
b. Interest on Net OPEB Obligation (Asset)	417,106	57,662	474,768			
c. Adjustment to the ARC	(445,367)	(61,570)	(506,937)			
d. Annual OPEB Expense (a. + b. + c.)	1,710,986	384,780	2,095,766			
2. Calculation of Expected Contribution						
a. Estimated payments on behalf of retirees	795,924	-	795,924	805,199	-	805,199
b. Estimated current year's implicit subsidy	-	216,963	216,963	-	238,732	238,732
c. Estimated contribution to OPEB trust	943,323	126,203	1,069,526	989,936	165,040	1,154,976
d. Total Expected Employer Contribution	1,739,247	343,166	2,082,413	1,795,135	403,772	2,198,907
3. Change in Net OPEB Obligation (1.d. minus 2.d.)	(28,261)	41,614	13,353			
Net OPEB Obligation (Asset), beginning of fiscal year	6,951,757	961,040	7,912,797			
Net OPEB Obligation (Asset) at fiscal year end	6,923,496	1,002,654	7,926,150			

Appendix 1: Breakout of Valuation Results Between the City and SASM (concluded)

SASM Plan:

Fiscal Year End	Prefunding Basis					
	6/30/2017			6/30/2018		
	Explicit	Implicit	Total	Explicit	Implicit	Total
Subsidy						
Determination of Amortization Payment						
UAAL	\$ 2,283,484	\$ 493,787	\$ 2,777,271	\$ 2,275,682	\$ 469,796	\$ 2,745,478
Factor	16.5456	16.5456	16.5456	15.9984	15.9984	15.9984
Payment	138,012	29,844	167,856	142,245	29,365	171,610
Annual Required Contribution (ARC)/ Actuarially Determined Contribution (ADC)						
Normal Cost	47,218	11,360	58,578	48,753	11,729	60,482
Amortization of UAAL	138,012	29,844	167,856	142,245	29,365	171,610
Interest to fiscal year end	11,114	2,472	13,586	11,460	2,466	13,926
Total ARC/ADC at fiscal year end	196,344	43,676	240,020	202,458	43,560	246,018
1. Calculation of the Annual OPEB Expense						
a. ARC/ADC for current fiscal year	\$ 196,344	\$ 43,676	\$ 240,020	\$ 202,458	\$ 43,560	\$ 246,018
b. Interest on Net OPEB Obligation (Asset)	46,152	6,829	52,981			
c. Adjustment to the ARC	(49,279)	(7,291)	(56,570)	Not applicable under GASB 75		
d. Annual OPEB Expense (a. + b. + c.)	193,217	43,214	236,431			
2. Calculation of Expected Contribution						
a. Estimated payments on behalf of retirees	106,213	-	106,213	109,999	-	109,999
b. Estimated current year's implicit subsidy	-	49,071	49,071	-	57,095	57,095
c. Estimated contribution to OPEB trust	90,131	16,590	106,721	92,459	(13,535)	78,924
d. Total Expected Employer Contribution	196,344	65,661	262,005	202,458	43,560	246,018
3. Change in Net OPEB Obligation (1.d. minus 2.d.)	(3,127)	(22,447)	(25,574)			
Net OPEB Obligation (Asset), beginning of fiscal year	769,204	113,809	883,013	Not applicable under GASB 75		
Net OPEB Obligation (Asset) at fiscal year end	766,077	91,362	857,439			

Appendix 2: Comparison of Results at 3 Discount Rates for the Fiscal Year Ending June 30, 2017

The exhibit below compares the basic valuation results developed at a discount rate of 6.0% (as shown in the body of this report) against results developed at 7.0% and 6.5% discount rates. The amortization payment is calculated on the same basis as described in Table 1B.

Discount Rate	6.00%	7.00%	Change from 6.0%	6.50%	Change from 6.0%
Actuarial Present Value of Future Benefits					
Actives	\$ 21,854,277	\$ 17,415,618	-20%	\$ 19,468,273	-11%
Retirees	18,150,902	16,230,594	-11%	17,144,204	-6%
Total	40,005,179	33,646,212	-16%	36,612,477	-8%
Actuarial Accrued Liability					
Actives	13,293,913	11,237,774	-15%	12,208,284	-8%
Retirees	18,150,902	16,230,594	-11%	17,144,204	-6%
Total	31,444,815	27,468,368	-13%	29,352,488	-7%
Actuarial Value of Assets	8,069,260	8,069,260		8,069,260	
Unfunded Actuarial Accrued Liability (UAAL)	23,375,555	19,399,108	-17%	21,283,228	-9%
Amortization factor	16.5456	15.1809		15.8401	
Normal Cost	821,123	639,012	-22%	723,597	-12%
Amortization of UAAL	1,412,797	1,277,863	-10%	1,343,628	-5%
Interest to fiscal year end	134,035	134,181	0%	134,370	0%
Annual Required Contribution (ARC)	2,367,955	2,051,056	-13%	2,201,595	-7%
Retiree benefits	902,137	902,137		902,137	
Current year's implicit subsidy	266,034	266,034		266,034	
Contribution to OPEB trust	1,176,247	1,176,247		1,176,247	
Total Contributions	2,344,418	2,344,418		2,344,418	

Appendix 2A: Breakout of Discount Rate Sensitivity Between the City and SASM

The exhibit below compares the basic valuation results developed at a discount rate of 6.0% (as shown in the body of this report) against results developed at 7.0% and 6.5% discount rates. The amortization payment is calculated on the same basis as described in Table 1B.

City Plan:

Discount Rate	6.00%	7.00%	Change from 6.0%	6.50%	Change from 6.0%
Actuarial Present Value of Future Benefits					
Actives	\$ 20,357,599	\$ 16,211,967	-20%	\$ 18,128,679	-11%
Retirees	16,075,172	14,359,076	-11%	15,175,291	-6%
Total	36,432,771	30,571,043	-16%	33,303,970	-9%
Actuarial Accrued Liability					
Actives	12,351,851	10,439,378	-15%	11,341,973	-8%
Retirees	16,075,172	14,359,076	-11%	15,175,291	-6%
Total	28,427,023	24,798,454	-13%	26,517,264	-7%
Actuarial Value of Assets	7,828,740	7,828,740		7,828,740	
Unfunded Actuarial Accrued Liability (UAAL)	20,598,283	16,969,714	-18%	18,688,524	-9%
Amortization factor	16.5456	15.1809		15.8401	
Normal Cost	762,545	593,181	-22%	671,839	-12%
Amortization of UAAL	1,244,941	1,117,833	-10%	1,179,822	-5%
Interest to fiscal year end	120,449	119,771	-1%	120,358	0%
Annual Required Contribution (ARC)	2,127,935	1,830,785	-14%	1,972,019	-7%
Retiree benefits	795,924	795,924		795,924	
Current year's implicit subsidy	216,963	216,963		216,963	
Contribution to OPEB trust	1,069,526	1,069,526		1,069,526	
Total Contributions	2,082,413	2,082,413		2,082,413	

Appendix 2B: Breakout of Discount Rate Sensitivity Between the City and SASM (Concluded)

The exhibit below compares the basic valuation results developed at a discount rate of 6.0% (as shown in the body of this report) against results developed at 7.0% and 6.5% discount rates. The amortization payment is calculated on the same basis as described in Table 1B.

SASM Plan:

Discount Rate	6.00%	7.00%	Change from 6.0%	6.50%	Change from 6.0%
Actuarial Present Value of Future Benefits					
Actives	\$ 1,496,678	\$ 1,203,651	-20%	\$ 1,339,594	-10%
Retirees	2,075,731	1,871,518	-10%	1,968,913	-5%
Total	3,572,409	3,075,169	-14%	3,308,507	-7%
Actuarial Accrued Liability					
Actives	942,060	798,396	-15%	866,311	-8%
Retirees	2,075,731	1,871,518	-10%	1,968,913	-5%
Total	3,017,791	2,669,914	-12%	2,835,224	-6%
Actuarial Value of Assets	240,520	240,520		240,520	
Unfunded Actuarial Accrued Liability (UAAL)	2,777,271	2,429,394	-13%	2,594,704	-7%
Amortization factor	16.5456	15.1809		15.8401	
Normal Cost	58,578	45,831	-22%	51,758	-12%
Amortization of UAAL	167,856	160,030	-5%	163,806	-2%
Interest to fiscal year end	13,586	14,410	6%	14,012	3%
Annual Required Contribution (ARC)	240,020	220,271	-8%	229,576	-4%
Retiree benefits	106,213	106,213		106,213	
Current year's implicit subsidy	49,071	49,071		49,071	
Contribution to OPEB trust	106,721	106,721		106,721	
Total Contributions	262,005	262,005		262,005	

Appendix 3: Medical Trend Sensitivity for the Fiscal Year Ending June 30, 2017

The exhibit below compares the basic valuation results (as presented in the body of this report) with the results calculated assuming healthcare trend rates 1% higher and 1% lower for all years. The amortization payment is calculated on the same basis as described in Table 1B.

		Option 1		Option 2	
Med Trend	Current Healthcare Trend	Current +1%	Change from Current	Current -1%	Change from Current
Actuarial Present Value of Future Benefits					
Actives	\$ 21,854,277	\$ 28,089,868	29%	\$ 17,458,574	-20%
Retirees	18,150,902	20,392,475	12%	16,305,908	-10%
Total	40,005,179	48,482,343	21%	33,764,482	-16%
Actuarial Accrued Liability					
Actives	13,293,913	16,610,355	25%	10,885,583	-18%
Retirees	18,150,902	20,392,475	12%	16,305,908	-10%
Total	31,444,815	37,002,830	18%	27,191,491	-14%
Actuarial Value of Assets	8,069,260	8,069,260		8,069,260	
Unfunded Actuarial Accrued Liability (UAAL)	23,375,555	28,933,570	24%	19,122,231	-18%
Amortization factor	16.5456	16.5456		16.5456	
Normal Cost	821,123	1,073,125	31%	646,684	-21%
Amortization of UAAL	1,412,797	1,748,717	24%	1,155,729	-18%
Interest to fiscal year end	134,035	183,420	37%	117,157	-13%
Annual Required Contribution (ARC)	2,367,955	3,005,262	27%	1,919,570	-19%
Retiree benefits	902,137	902,137		902,137	
Current year's implicit subsidy	266,034	266,034		266,034	
Contribution to OPEB trust	1,176,247	1,176,247		1,176,247	
Total Contributions	2,344,418	2,344,418		2,344,418	

Appendix 3A: Breakout of Medical Trend Sensitivity Between the City and SASM

The exhibit below compares the basic valuation results (as presented in the body of this report) with the results calculated assuming healthcare trend rates 1% higher and 1% lower for all years. The amortization payment is calculated on the same basis as described in Table 1B.

City Plan:

Med Trend	Current Healthcare Trend	Option 1		Option 2	
		Current +1%	Change from Current	Current -1%	Change from Current
Actuarial Present Value of Future Benefits					
Actives	\$ 20,357,599	\$ 26,162,002	29%	\$ 16,261,427	-20%
Retirees	16,075,172	18,082,623	12%	14,424,615	-10%
Total	36,432,771	44,244,625	21%	30,686,042	-16%
Actuarial Accrued Liability					
Actives	12,351,853	15,431,617	25%	10,113,100	-18%
Retirees	16,075,172	18,082,623	12%	14,424,615	-10%
Total	28,427,025	33,514,240	18%	24,537,715	-14%
Actuarial Value of Assets	7,828,740	7,828,740		7,828,740	
Unfunded Actuarial Accrued Liability (UAAL)	20,598,285	25,685,500	25%	16,708,975	-19%
Amortization factor	16.5456	16.5456		16.5456	
Normal Cost	762,543	995,197	31%	601,179	-21%
Amortization of UAAL	1,244,941	1,552,407	25%	1,009,875	-19%
Interest to fiscal year end	120,449	165,594	37%	104,719	-13%
Annual Required Contribution (ARC)	2,127,933	2,713,198	28%	1,715,773	-19%
Retiree benefits	795,924	795,924		795,924	
Current year's implicit subsidy	216,963	216,963		216,963	
Contribution to OPEB trust	1,069,526	1,069,526		1,069,526	
Total Contributions	2,082,413	2,082,413		2,082,413	

Appendix 3B: Breakout of Medical Trend Sensitivity Between the City and SASM

The exhibit below compares the basic valuation results (as presented in the body of this report) with the results calculated assuming healthcare trend rates 1% higher and 1% lower for all years. The amortization payment is calculated on the same basis as described in Table 1B.

SASM Plan:

Med Trend	Current Healthcare Trend	Current +1%	Change from Current	Current -1%	Change from Current
Actuarial Present Value of Future Benefits					
Actives	\$ 1,496,678	\$ 1,927,866	29%	\$ 1,197,147	-20%
Retirees	2,075,731	2,309,851	11%	1,881,292	-9%
Total	3,572,409	4,237,717	19%	3,078,439	-14%
Actuarial Accrued Liability					
Actives	942,060	1,178,738	25%	772,483	-18%
Retirees	2,075,731	2,309,851	11%	1,881,292	-9%
Total	3,017,791	3,488,589	16%	2,653,775	-12%
Actuarial Value of Assets	240,520	240,520		240,520	
Unfunded Actuarial Accrued Liability (UAAL)	2,777,271	3,248,069	17%	2,413,255	-13%
Amortization factor	16.5456	16.5456		16.5456	
Normal Cost	58,578	77,928	33%	45,505	-22%
Amortization of UAAL	167,856	196,310	17%	145,855	-13%
Interest to fiscal year end	13,586	17,825	31%	12,438	-8%
Annual Required Contribution (ARC)	240,020	292,063	22%	203,798	-15%
Retiree benefits	106,213	106,213		106,213	
Current year's implicit subsidy	49,071	49,071		49,071	
Contribution to OPEB trust	106,721	106,721		106,721	
Total Contributions	262,005	262,005		262,005	

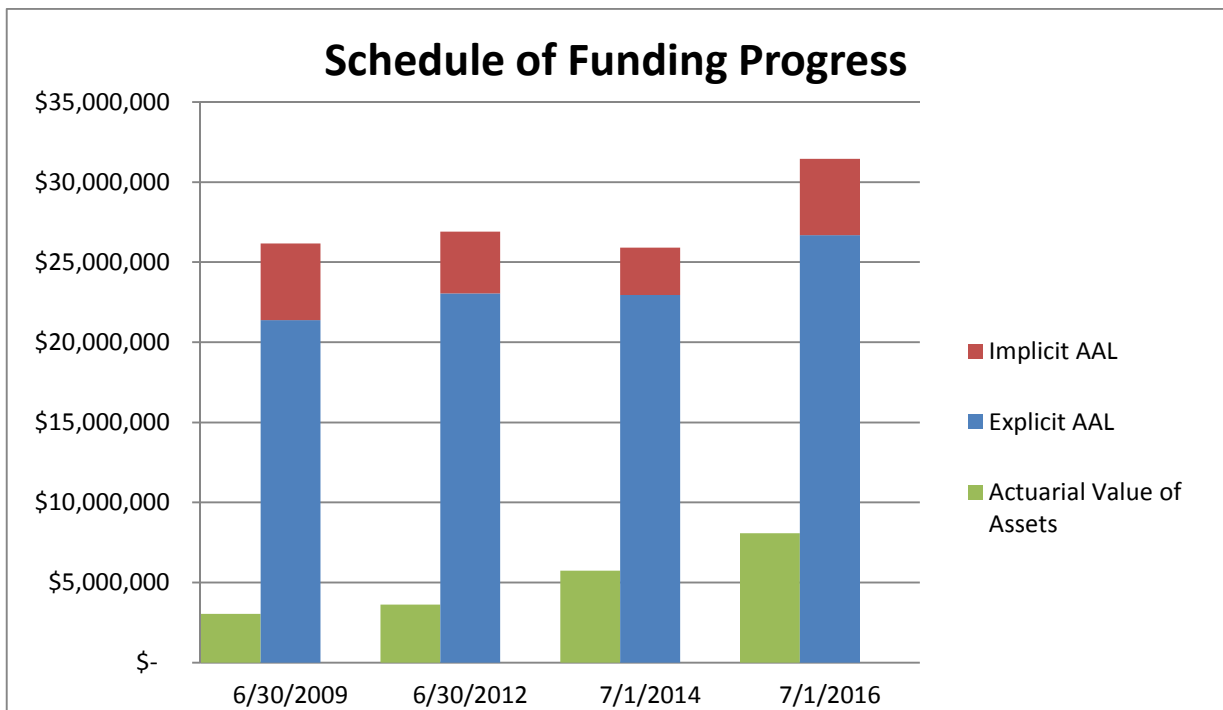
Appendix 4 General OPEB Disclosure and Required Supplementary Information

The information necessary to complete the OPEB footnote in the City’s financial reports is summarized below, or we note the location of the information contained elsewhere in this report:

- Summary of Plan Provisions: See Table 3
- OPEB Funding Policy: See Section F; details provided in Table 1
- Annual OPEB Cost and Net OPEB Obligation: See Table 1B
- Actuarial Methods and Assumptions: See Table 4
- Funding Status and Funding Progress: See Section E – Basic Valuation Results

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
6/30/2009	\$ 3,044,000	\$ 26,158,000	\$ 23,114,000	11.6%	\$ 10,334,000	223.7%
6/30/2012	\$ 3,617,703	\$ 26,895,131	\$ 23,277,428	13.5%	\$ 10,510,729	221.5%
7/1/2014	\$ 5,743,336	\$ 25,899,824	\$ 20,156,488	22.2%	\$ 11,964,617	168.5%
7/1/2016	\$ 8,069,260	\$ 31,444,815	\$ 23,375,555	25.7%	\$ 12,281,782	190.3%

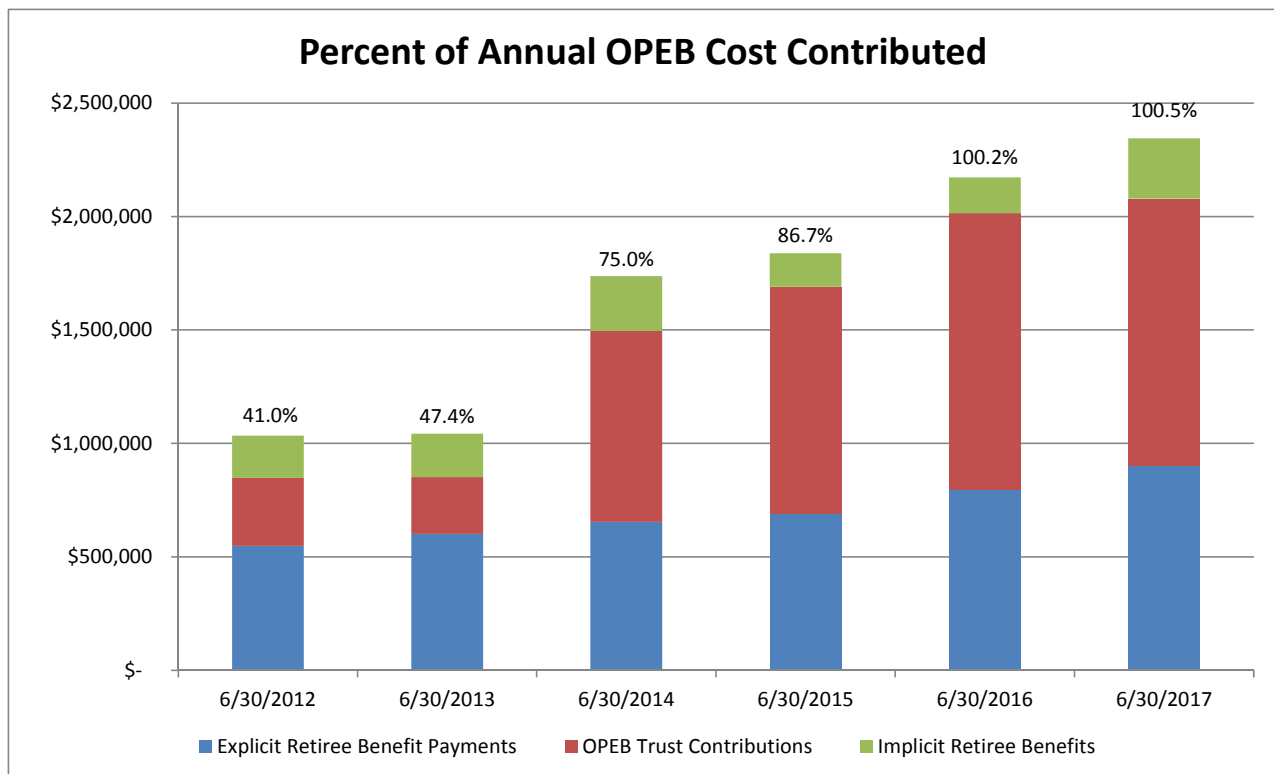


Appendix 4 – General OPEB Disclosures and Required Supplementary Information (Concluded)

Required Supplementary Information: Recent History of Amounts Funded; see chart below

OPEB Cost Contributed				
Fiscal Year Ended	Annual OPEB Cost	Employer OPEB Contributions	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation (Asset)
6/30/2012	\$ 2,522,845	\$ 1,034,559	41.0%	\$ 6,814,610
6/30/2013	\$ 2,199,373	\$ 1,042,705	47.4%	\$ 7,971,278
6/30/2014	\$ 2,316,378	\$ 1,737,009	75.0%	\$ 8,550,647
6/30/2015	\$ 2,119,704	\$ 1,838,621	86.7%	\$ 8,799,591
6/30/2016	\$ 2,168,878	\$ 2,172,659	100.2%	\$ 8,795,810
6/30/2017	\$ 2,332,197	\$ 2,344,418	100.5%	\$ 8,783,589

Italicized values above are estimates which may change if contributions are other than projected.



Addendum 1: Bickmore Age Rating Methodology

Both accounting standards (e.g. GASB 45) and actuarial standards (e.g. ASOP 6) require that expected retiree claims, not just premiums paid, be reflected in most situations where an actuary is calculating retiree healthcare liabilities. Unfortunately the actuary is often required to perform these calculations without any underlying claims information. In most situations, the information is not available, but even when available, the information may not be credible due to the size of the group being considered.

Actuaries have developed methodologies to approximate healthcare claims from the premiums being paid by the plan sponsor. Any methodology requires adopting certain assumptions and using general studies of healthcare costs as substitutes when there is a lack of credible claims information for the specific plan being reviewed.

Premiums paid by sponsors are often uniform for all employee and retiree ages and genders, with a drop in premiums for those participants who are Medicare-eligible. While the total premiums are expected to pay for the total claims for the insured group, on average, the premiums charged would not be sufficient to pay for the claims of older insureds, and would be expected to exceed the expected claims of younger insureds. An age-rating methodology takes the typically uniform premiums paid by plan sponsors and spreads the total premium dollars to each age and gender intended to better approximate what the insurer might be expecting in actual claims costs at each age and gender.

The process of translating premiums into expected claims by age and gender generally follows the steps below.

1. *Obtain or Develop Relative Medical Claims Costs by Age, Gender, or other categories that are deemed significant.* For example, a claims cost curve might show that, if a 50 year old male has \$1 in claims, then on average a 50 year old female has claims of \$1.25, a 30 year male has claims of \$0.40, and an 8 year old female has claims of \$0.20. The claims cost curve provides such relative costs for each age, gender, or any other significant factor the curve might have been developed to reflect. Table 4 provides the source of information used to develop such a curve and shows sample relative claims costs developed for the plan under consideration.
2. *Obtain a census of participants, their chosen medical coverage, and the premium charged for their coverage.* An attempt is made to find the group of participants that the insurer considered in setting the premiums they charge for coverage. That group includes the participant and any covered spouses and children. When information about dependents is unavailable, assumptions must be made about spouse age and the number and age of children represented in the population. These assumptions are provided in Table 4.
3. *Spread the total premium paid by the group to each covered participant or dependent based on expected claims.* The medical claims cost curve is used to spread the total premium dollars paid by the group to each participant reflecting their age, gender, or other relevant category. After this step, the actuary has a schedule of expected claims costs for each age and gender for the current premium year. It is these claims costs that are projected into the future by medical cost inflation assumptions when valuing expected future retiree claims.

The methodology described above is dependent on the data and methodologies used in whatever study might be used to develop claims cost curves for any given plan sponsor. These methodologies and assumptions can be found in the referenced paper cited as a source in the valuation report.

Addendum 2: Bickmore Mortality Projection Methodology

Actuarial standards of practice (e.g., ASOP 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations, and ASOP 6, Measuring Retiree Group Benefits Obligations) indicate that the actuary should reflect the effect of mortality improvement (i.e., longer life expectancies in the future), both before and after the measurement date. The development of credible mortality improvement rates requires the analysis of large quantities of data over long periods of time. Because it would be extremely difficult for an individual actuary or firm to acquire and process such extensive amounts of data, actuaries typically rely on large studies published periodically by organizations such as the Society of Actuaries or Social Security Administration.

As noted in a recent actuarial study on mortality improvement, key principals in developing a credible mortality improvement model would include the following:

- (1) Short-term mortality improvement rates should be based on recent experience.
- (2) Long-term mortality improvement rates should be based on expert opinion.
- (3) Short-term mortality improvement rates should blend smoothly into the assumed long-term rates over an appropriate transition period.

The **Bickmore Scale 2017** was developed from a blending of data and methodologies found in two published sources: (1) the Society of Actuaries Mortality Improvement Scale MP-2016 Report, published in October 2016 and (2) the demographic assumptions used in the 2016 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, published June 2016.

Bickmore Scale 2017 is a two-dimensional mortality improvement scale reflecting both age and year of mortality improvement. The underlying base scale is Scale MP-2016 which has two segments – (1) historical improvement rates for the period 1951-2012 and (2) an estimate of future mortality improvement for years 2013-2015 using the Scale MP-2016 methodology but utilizing the assumptions obtained from Scale MP-2015. The Bickmore scale then transitions from the 2015 improvement rate to the Social Security Administration (SSA) Intermediate Scale linearly over the 10 year period 2016-2025. After this transition period, the Bickmore Scale uses the constant mortality improvement rate from the SSA Intermediate Scale from 2025-2039. The SSA's Intermediate Scale has a final step down in 2040 which is reflected in the Bickmore scale for years 2040 and thereafter. Over the ages 100 to 115, the SSA improvement rate is graded to zero.

Scale MP-2016 can be found at the SOA website and the projection scales used in the 2016 Social Security Administrations Trustees Report at the Social Security Administration website.

Glossary

Actuarial Accrued Liability (AAL) – Total dollars required to fund all plan benefits attributable to service rendered as of the valuation date for current plan members and vested prior plan members; see “Actuarial Present Value”

Actuarial Funding Method – A procedure which calculates the actuarial present value of plan benefits and expenses, and allocates these expenses to time periods, typically as a normal cost and an actuarial accrued liability

Actuarial Present Value Projected Benefits (APVPB) – The amount presently required to fund all projected plan benefits in the future, it is determined by discounting the future payments by an appropriate interest rate and the probability of nonpayment.

Actuarial Value of Assets – The actuarial value of assets is the value used by the actuary to offset the AAL for valuation purposes. The actuarial value of assets may be the market value of assets or may be based on a methodology designed to smooth out short-term fluctuations in market values.

Aggregate – An actuarial funding method under which the excess of the actuarial present value of projected benefits over the actuarial accrued liability is levelly spread over the earnings or service of the group forward from the valuation date to the assumed exit date, based not on individual characteristics but rather on the characteristics of the group as a whole

Annual Required Contribution (ARC) – The amount the employer would contribute to a defined benefit OPEB plan for a given year, it is the sum of the normal cost and some amortization (typically 30 years) of the unfunded actuarial accrued liability

Annual OPEB Expense – The OPEB expense reported in the Agency’s financial statement, which is comprised of three elements: the ARC, interest on the net OPEB obligation at the beginning of the year and an ARC adjustment.

Attained Age Normal Cost (AANC) – An actuarial funding method where, for each plan member, the excess of the actuarial present value of benefits over the actuarial accrued liability (determined under the unit credit method) is levelly spread over the individual’s projected earnings or service forward from the valuation date to the assumed exit date

CalPERS – Many state governments maintain a public employee retirement system; CalPERS is the California program, covering all eligible state government employees as well as other employees of other governments within California who have elected to join the system

Defined Benefit (DB) – A pension or OPEB plan which defines the monthly income or other benefit which the plan member receives at or after separation from employment

Defined Contribution (DC) – A pension or OPEB plan which establishes an individual account for each member and specifies how contributions to each active member’s account are determined and the terms of distribution of the account after separation from employment

Glossary (Continued)

Discount Rate – The rate of return that could be earned on an investment in the financial markets; for GASB 45 purposes, the discount rate should be based on the expected long-term yield of investments used to finance the benefits. The discount rate is used to adjust the dollar value of future projected benefits into a present value equivalent as of the valuation date.

Entry Age Normal Cost (EANC) – An actuarial funding method where, for each individual, the actuarial present value of benefits is levelly spread over the individual’s projected earnings or service from entry age to the last age at which benefits can be paid

Excise Tax – The Affordable Care Act created a 40% excise tax on the value of “employer sponsored coverage” that exceeds certain thresholds. The tax is first effective is 2020.

Explicit Subsidy – The projected dollar value of future retiree healthcare costs expected to be paid directly by the Employer, e.g., the Employer’s payment of all or a portion of the monthly retiree premium billed by the insurer for the retiree’s coverage

Frozen Attained Age Normal Cost (FAANC) – An actuarial funding method under which the excess of the actuarial present value of projected benefits over the actuarial accrued liability (determined under the unit credit method) is levelly spread over the earnings or service of the group forward from the valuation date to the assumed exit date, based not on individual characteristics but rather on the characteristics of the group as a whole

Frozen Entry Age Normal Cost (FEANC) – An actuarial funding method under which the excess of the actuarial present value of projected benefits over the actuarial accrued liability (determined under the entry age normal cost method) is levelly spread over the earnings or service of the group forward from the valuation date to the assumed exit date, based not on individual characteristics but rather on the characteristics of the group as a whole

Financial Accounting Standards Board (FASB) – A private, not-for-profit organization designated by the Securities and Exchange Commission (SEC) to develop generally accepted accounting principles (GAAP) for U.S. public corporations

Government Accounting Standards Board (GASB) – A private, not-for-profit organization which develops generally accepted accounting principles (GAAP) for U.S. state and local governments; like FASB, it is part of the Financial Accounting Foundation (FAF), which funds each organization and selects the members of each board

Health Care Trend – The assumed rate(s) of increase in future dollar values of premiums or healthcare claims, attributable to increases in the cost of healthcare; contributing factors include medical inflation, frequency or extent of utilization of services and technological developments.

Implicit Subsidy – The projected difference between future retiree claims and the premiums to be charged for retiree coverage; this difference results when the claims experience of active and retired employees are pooled together and a ‘blended’ group premium rate is charged for both actives and retirees; a portion of the active employee premiums subsidizes the retiree premiums.

Glossary (Concluded)

Net OPEB Obligation (Asset) - The net OPEB obligation (NOO) represents the accumulated shortfall of OPEB funding since GASB 45 was implemented. If cumulative contributions have exceeded the sum of the prior years' annual OPEB expenses, then a net OPEB asset results.

Non-Industrial Disability (NID) – Unless specifically contracted by the individual Agency, PAM employees are assumed to be subject to only non-industrial disabilities.

Normal Cost – Total dollar value of benefits expected to be earned by plan members in the current year, as assigned by the chosen funding method; also called current service cost

Other Post-Employment Benefits (OPEB) – Post-employment benefits other than pension benefits, most commonly healthcare benefits but also including life insurance if provided separately from a pension plan

Pay-As-You-Go (PAYGO) – Contributions to the plan are made at about the same time and in about the same amount as benefit payments and expenses coming due

PEMHCA – The Public Employees' Medical and Hospital Care Act, established by the California legislature in 1961, provides community-rated medical benefits to participating public employers. Among its extensive regulations are the requirements that a contracting Agency contribute toward medical insurance premiums for retired annuitants and that a contracting Agency file a resolution, adopted by its governing body, with the CalPERS Board establishing any new contribution.

Plan Assets – The value of cash and investments considered as 'belonging' to the plan and permitted to be used to offset the AAL for valuation purposes. To be considered a plan asset, GASB 45 requires (a) the assets to be segregated and restricted in a trust or similar arrangement, (b) employer contributions to the trust to be irrevocable, (c) the assets be dedicated to providing benefits to retirees and their beneficiaries, and (d) that the assets be legally protected from creditors of the employer and/or plan administrator. See also "Actuarial Value of Assets"

Projected Unit Credit (PUC) – An actuarial funding method where, for each individual, the projected plan benefit is allocated by a consistent formula from entry date to assumed exit date

Public Agency Miscellaneous (PAM) – Non-safety public employees.

Select and Ultimate – Actuarial assumptions which contemplate rates which differ by year initially (the select period) and then stabilize at a constant long-term rate (the ultimate rate)

Unfunded Actuarial Accrued Liability (UAAL) – The excess of the actuarial accrued liability over the actuarial value of plan assets

Unit Credit (UC) -- An actuarial funding method where, for each individual, the unprojected plan benefit is allocated by a consistent formula from entry date to assumed exit date

Vesting – As defined by the plan, requirements which when met make a plan benefit nonforfeitable on separation of service before retirement eligibility