June 30, 2017

Ms. Cathy Orme
Finance Director
Central Marin Police Authority
400 Magnolia Ave
Larkspur, CA 94939

Re: July 1, 2015 Actuarial Report on GASB 45 Retiree Benefit Valuation

Dear Ms. Orme:

We are pleased to enclose our report providing the results of the July 1, 2015 actuarial valuation of other post-employment benefit (OPEB) liabilities for the Central Marin Police Authority (the Authority). The report's text describes our analysis and assumptions in detail.

The primary purposes of the report are to develop: (1) the value of future OPEB expected to be provided by the Authority and annual required contributions (ARCs) for the fiscal years ending June 30, 2017 and 2018; and (2) the current OPEB liability and the annual OPEB expense to be reported in the Authority's financial statements for the fiscal year ending June 30, 2017.

This valuation was prepared with the understanding that the Authority will:

- Invest in CERBT Asset Allocation Strategy 2. The assumed rate of return on plan assets used in this report is 6.5%.
- Contribute $100,000 to the trust each year, in addition to paying retiree benefits.

We applied two different discount rates to develop the OPEB liability: a "blended" rate of 4.62% for the explicit subsidy, reflecting the partial prefunding of this liability; and a 4.0% discount rate to value the implicit subsidy liability, reflecting our assumption that this would not be prefunded.

The benefits expected to be provided to retirees are described in Table 3A of the report. Please review this summary to be certain we have correctly described these benefits.

This report introduces the "implicit subsidy" liability required to be valued by the Authority for the first time. This report also includes an estimated liability for projected excise taxes for retiree coverage in high cost plans as provided under the Affordable Care Act and 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 Authority 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

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

Enclosure

Bickmore

Central Marin Police Authority

Actuarial Valuation of the Other Post-Employment Benefit Programs As of July 1, 2015

Submitted June 2017

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A. Executive Summary

This report presents the results of the July 1, 2015 actuarial valuation of the Central Marin Police Authority (the Authority) other post-employment benefit (OPEB) programs. The purpose of this valuation is to assess the OPEB liabilities and provide disclosure information as required by Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). This report reflects the valuation of two distinct types of OPEB liability, described further in Section C.

- An "explicit subsidy" exists when the employer contributes directly toward retiree healthcare premiums. In this program, benefits include a monthly subsidy toward medical 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 liability under GASB 45. *This is the first valuation required to include the implicit subsidy liability relating to retiree medical coverage.*

How much the Authority contributes each year affects the calculation of liabilities. The Authority recently established an OPEB trust with CERBT and indicates that it will continue making contributions greater than the current year retiree benefit payments but less than 100% of the Annual Required Contribution (ARC) each year. When this type of partial prefunding approach is taken, a "blended" discount rate is developed reflecting the relative portions of future benefits expected to be financed out of the trust assets and those expected to be financed directly from Authority assets. Trust assets are currently invested in the CERBT with Asset Allocation Strategy 2. With the Authority's approval, we have assumed a long term expected rate of return on trust assets of 6.5%.

In this report, we assume the Authority will contribute $100,000 per year to the trust commencing with the fiscal year beginning July 1, 2017, in addition to paying its portion of retiree medical premiums. We assumed that all trust assets will be allocated toward projected explicit subsidy (direct benefit) costs. We developed a blended discount rate of 4.62% to value the projected explicit subsidy liability (see Appendix 1 for details). We assumed there would be no prefunding of the implicit subsidy, and developed this liability using a 4.0% discount rate. Neither rate should be considered a guarantee of future investment performance, but an assumption of the expected long term rates of return on assets expected to be used to pay future retiree benefits.

Exhibits presented in this report reflect our understanding that the results of this July 1, 2015 valuation will be applied in determining the annual OPEB expense for the fiscal years ending June 30, 2017 and 2018. The Actuarial Accrued Liability and Assets as of July 1, 2015 are shown below:

Subsidy	Explicit	Implicit	Total
Discount Rate	4.62%	4.00%	4.52%
Actuarial Accrued Liability	$ 13,585,671	$ 3,073,293	$ 16,658,964
Actuarial Value of Assets	-	-	-
Unfunded Actuarial Accrued Liability	13,585,671	3,073,293	16,658,964
Funded Ratio	0.0%	0.0%	0.0%

Liabilities shown in this report reflect assumptions regarding continued future employment, rates of retirement, survival, and elections by future retirees to continue coverage in retirement.

Executive Summary
(Concluded)

We also 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.

The following summarizes results applicable to the fiscal year ending June 30, 2017. Detailed calculations for the fiscal years ending June 30, 2017 and 2018 begin on page 14; additional information to facilitate OPEB reporting is provided in Appendix 4.

Subsidy	Explicit	Implicit	Total
Annual Required Contribution (ARC) for FYE 2017	$ 1,099,075	$ 297,058	$ 1,396,133
Expected employer paid benefits for retirees	511,309	-	511,309
Current year's implicit subsidy credit	-	100,841	100,841
Expected contribution to OPEB trust	100,000	-	100,000
Expected net OPEB obligation at June 30, 2017	4,214,942	196,217	4,411,159

An exhibit comparing current valuation results to those from the prior valuation is provided on page 7, followed by a brief 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 Authority 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 contributions to and/or returns on plan assets than were assumed; and
- Implementation of GASB 75, the new OPEB accounting standard, which should be not later than the Authority's fiscal year ending June 30, 2018. One key change moves reporting of the unfunded OPEB liability from a footnote to the balance sheet.

Details of our valuation process and the various disclosures required by GASB 45 are provided on the succeeding pages. The date of the next actuarial valuation should be reviewed for suitability with GASB 75 requirements, and would most likely be July 1, 2017. We would be happy to review this with the Authority on request. 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 Authority's financial statements and to provide the annual contribution information with respect to the Authority'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 Authority 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 Authority 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. We understand that the Authority implemented GASB 45 for the fiscal year ended June 30, 2010.

For agencies with fewer than 200 members covered by or eligible for plan benefits, GASB 45 requires that a valuation be prepared no less frequently than every three years. Participation in CERBT, however, currently requires that valuations be performed 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 Authority's OPEB contributions had been equal to the ARC each year, the net OPEB obligation would equal $0.
- If the Authority'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 Tables 1B and 1D).

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. 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 Authority, as are the manner and term for paying down the unfunded actuarial accrued liability. Once a funding policy has been established, however, the Authority'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 Authority'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 leave[1] 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". 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 claims for pre-Medicare retirees

<table>
<tr><td colspan="3">Expected retiree claims</td></tr>
<tr><td colspan="2">Premium charged for retiree coverage</td><td>Covered by higher active premiums</td></tr>
<tr><td>Retiree portion of premium</td><td>Agency portion of premium
Explicit subsidy</td><td>Implicit subsidy</td></tr>
</table>

For actuarial valuations dated prior to March 31, 2015, an exception allowed plan employers with a very small membership in a large "community-rated" healthcare program to avoid reporting of implicit subsidy liability. Following a change in Actuarial Standards of Practice, GASB no longer offers this exception. *This change had a significant impact on this valuation of the Authority's OPEB liability*.

OPEB Obligations of the Authority

The Authority provides continuation of medical to its retiring employees, which may create one or more of the following types OPEB liabilities:

- **Explicit subsidy liabilities**: The Authority contributes directly to the cost of retiree medical coverage, as described in Table 3A. Liabilities relating to these benefits are included in this valuation.
- **Implicit subsidy liabilities**: Employees are covered by the CalPERS medical program. The same monthly premiums are charged for active employees and for pre-Medicare retirees; CalPERS has confirmed that the claims experience of these members is considered together in setting these premium rates. We determine the implicit rate subsidy for pre-Medicare retirees as the projected difference between (a) retiree medical claim costs by age and (b) premiums charged for retiree coverage. See Table 4 and Addendum 1: Bickmore Healthcare Claims Age Rating Methodology.

  Different monthly premiums are charged for Medicare-eligible members and CalPERS has confirmed that only the claims experience of these Medicare eligible members is considered in setting these premium rates. We have assumed that this premium structure is adequate to

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

Sources of OPEB Liability (Concluded)

Implicit Subsidy Liability - continued

cover the expected claims of these retirees and believe that there is no implicit subsidy of premiums for these members by active employees.

- **Excise tax liability for "high cost" plans:** For those current and future retirees assumed to retain coverage in the Authority'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 Authority or a combination of the Authority and plan participants. To the extent that the excise tax is reflected as an addition to premiums, at least part of the retiree tax will be borne by the Authority (somewhat analogous to the implicit subsidy). If the Authority 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 Authority. *This report assumes that 100% of any excise tax liability for high cost retiree coverage will be borne by the Authority*.

D. Valuation Process

The valuation has been based on employee census data and benefits initially submitted to us by the Authority in December 2016 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 3A. 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 Authority as to its accuracy. The valuation described below has been performed in accordance with the actuarial methods and assumptions described in Table 4.

In developing the projected 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 Authority to receive benefits.
- To the extent assumed to retire from the Authority, the probability of when such retirement will occur 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 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
plus Normal Cost	Current Year's Cost Allocation	Actives only
plus Present Value of Future Normal Costs	Future Years' Cost Allocations	Actives only
equals 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. It is our understanding that the Authority's plans had not yet been funded and no assets have been set aside in an irrevocable trust as of the July 1, 2015 valuation date. We did, however, recognize the contribution made to the trust in June 2016 prior to developing results for the fiscal year ending June 30, 2017. 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, 2015 valuation of OPEB liabilities to the results of the July 1, 2013 valuation.

Funding Policy	**Pay-As-You-Go Basis**			
Valuation date	**7/1/2013**	**7/1/2015**		
Subsidy	Explicit	Explicit	Implicit	Total
Discount rate	4.00%	4.62%	4.00%	4.52%
Number of Covered Employees				
Actives	57	48	48	48
Retirees	36	43	24	43
Total Participants	93	91	72	91
Actuarial Present Value of Projected Benefits				
Actives	$ 11,692,785	$ 8,307,316	$ 3,006,120	$ 11,313,436
Retirees	8,057,279	9,157,204	1,667,227	10,824,431
Total APVPB	19,750,064	17,464,520	4,673,347	22,137,867
Actuarial Accrued Liability (AAL)				
Actives	5,565,629	4,428,467	1,406,066	5,834,533
Retirees	8,057,279	9,157,204	1,667,227	10,824,431
Total AAL	13,622,908	13,585,671	3,073,293	16,658,964
Actuarial Value of Assets	-	-	-	-
Unfunded AAL (UAAL)	13,622,908	13,585,671	3,073,293	16,658,964
Normal Cost	548,562	322,983	125,003	447,986
Percent funded	0.0%	0.0%	0.0%	0.0%
Reported covered payroll	5,246,221	4,971,960	4,971,960	4,971,960
UAAL as percent of payroll	259.7%	273.2%	61.8%	335.1%

Note: The Explicit Subsidy AAL as of July 1, 2015 include approximately $94,000 in projected excise tax liability for retirees expected to be covered by "high cost" plans under the Affordable Care Act.

Changes Since the Prior Valuation

Even if all of our previous assumptions were met exactly as projected, liabilities often 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 were not and are likely never to be exactly realized. Nonetheless, it is helpful to review why results are different than we anticipated.

In comparing results shown in the exhibit above, we can see that the Unfunded Actuarial Accrued Liability (UAAL) increased by roughly $3,036,000 (from $13,623,000 to $16,659,000) between July 1, 2013 and July 1, 2015. During this two year period, however, we anticipated changes, such as additional cost accruals for active employees, increased values from the passage of time and benefit payments to retirees. From this activity, we expected the UAAL to increase from $13,623,000 to $15,155,000. Thus, the actual UAAL of $16,659,000 is $1,504,000 higher than expected.

Basic Valuation Results
(Concluded)

The $1,504,000 difference between actual and expected UAAL is primarily a result of the following factors:

- A $3,073,000 increase in the AAL to begin recognizing the implicit subsidy of medical coverage for current and future retirees prior to becoming eligible for Medicare; in developing this liability, we added assumptions regarding expected claims cost by age and gender;
- A $1,447,000 decrease in the AAL due to a change in discount rates used to develop the explicit subsidy portion of the OPEB liability, from 4.0% to 4.62%; this discount rate change follows the Authority's decision to begin partially prefunding the OPEB liability);
- A $22,000 decrease in the AAL due to revised assumptions for future disability and service retirements, terminations prior to retirement and mortality before and after retirement, including changes in the projection of improvements (decreases) in future mortality rates, based on the most recent CalPERS retirement plan experience study covering Authority employees;
- A $1,700,000 increase in the AAL from reflecting the benefit levels provided to current retirees under the agreements in effect at each employee's date of retirement rather than those described by the current MOUs and from reflecting earlier employment dates for those initially joining CMPA on January 1, 2013;
- A $44,000 decrease in the AAL due to a decrease in the percentage of employees assumed to cover a spouse on a Authority medical plan in retirement, from 70% for all recipients to 50% for MEC only recipients; and
- A $1,756,000 decrease in the UAAL from favorable plan experience relative to prior assumptions. Plan experience includes factors such as changes in plan membership, retiree elections and changes in medical premiums and limits on benefits other than previously projected as well as the addition of new employees hired since July 1, 2013.

  Much of this favorable plan experience relates to actual 2017 Kaiser Bay Area premiums which are substantially lower than projected from the prior valuation; in fact, the 2017 premiums are actually slightly *lower* than the 2014 premium rates. If Kaiser plan premiums increase more than assumed in future years, the opposite result would occur.

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 6.5%.
2. *Pay-As-You-Go funding* – contributing only the amounts needed to pay retiree benefits in the current year; generally requires a lower discount rate, such as the 4.0% rate used in this report.
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 not.

Determination of the ARC

The Annual Required Contribution (ARC) consists of two basic components, adjusted with interest:

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

ARCs for the fiscal years ending June 30, 2017 and June 30, 2018 are developed in Tables 1B and 1D.

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 Authority's pay-as-you-go policy includes amortization of the unfunded AAL over a closed 30-year period initially effective July 1, 2009; the remaining period applicable in determining the ARC for the fiscal year ending June 30, 2017 is 23 years. Amortization payments are determined on a level percent of pay basis.[2]

[2] With a pay-as-you-go funding policy and/or one where the UAAL is amortized on a level percent of pay basis, if all assumptions are met, the UAAL will increase, rather than decrease, over time.

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 Authority 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 the portion of this year's premium payment attributable to the implicit subsidy and recommend netting this amount against the funding requirement for the implicit subsidy (see Tables 1B and 1D).

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	$ 908,000	$ 460,000	$ 1,368,000
Current Year's Implicit Subsidy Adjustment	$ (82,000)	$ 82,000	$ -
Adjusted contributions reported in Financial Stmts	$ 826,000	$ 542,000	$ 1,368,000

While total Authority 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 ARC.

There is a larger question about whether or not the Authority will want to prefund the implicit subsidy liability. Some possible options include:

- Prefunding 100% of the ARC relating to both the explicit subsidy and implicit subsidy liabilities.
- Prefunding 100% of the ARC relating to both the explicit subsidy and implicit subsidy liabilities, but intentionally allocate the entire trust contribution to more quickly pay-off the explicit subsidy liability, rather than allocating any toward the implicit subsidy liability.
- Split funding, by (1) partially prefunding the explicit subsidy ARC, contributing more than retiree benefits but less than 100% of the ARC (using the 4.62% blended discount rate developed in Appendix 1) and (2) financing the implicit subsidy liability strictly on a pay-as-you-go basis (using the 4.0% discount rate). ***Exhibits shown in this report reflect our understanding that the Authority will follow this approach.***

We are available to review these and other options further with the Authority.

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.

Factors Affecting the Selection of Assumptions

Special considerations apply to the selection of actuarial funding methods and assumptions for the Authority. 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 valuation of the retirement plan covering Authority employees. Other assumptions, such as 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. *For purposes of this draft report*, *we have assumed that*:

- The Authority will make contributions of $100,000 per year, commencing with the fiscal year beginning July 1, 2016, to its OPEB trust with CERBT toward funding the explicit subsidy liability. Based on the asset allocation strategy (#2) selected by the Authority, we developed a blended discount rate of 4.62% to develop the explicit subsidy liability (see Appendix 1).
- The Authority will make no contributions to the OPEB trust toward prefunding of the implicit subsidy liability; thus it will effectively be financed with Authority assets with a lower long term expected return. A 4.0% discount rate was assumed to develop the implicit subsidy liability.

H. Certification

This report presents the results of our actuarial valuation of the other post-employment benefits provided by the Central Marin Police Authority. The purpose of this valuation was to provide the actuarial information required for the Authority'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 Authority. 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: June 30, 2017

Catherine L. MacLeod

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

Francis M. Schauer, Jr.

Francis M. Schauer Jr., FSA, FCA, EA, MAAA

Table 1

Results for fiscal year ending 2016: The Annual Required Contribution for the Authority's fiscal year ending June 30, 2016 was developed as part of the July 1, 2013 valuation, but the financial statement for that period has not yet been finalized. We have illustrated what we anticipate will be reported for OPEB under GASB 45 as of June 30, 2016 and included this information in Appendix 2. We use the net OPEB asset projected from this Appendix as the starting point for developing the net OPEB asset as of June 30, 2017, shown in Table 1B.

Results for fiscal years 2017 and 2018: The basic results of our July 1, 2015 valuation of OPEB liabilities for the Authority 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) to be reported by the Authority for its fiscal years ending June 30, 2017 and June 30, 2018.

As noted earlier in this report, the development of the ARC reflects the assumption that the Authority will contribute as follows:

- Direct payments by the District to healthcare providers toward retiree medical premiums,
- Each current year's implicit subsidy, and
- Contributions of $100,000 annually to the OPEB trust.

GASB 75 will change the development of the OPEB liability and expense information to be reported by the Authority in its financial statements for the fiscal year ending June 30, 2018. That information will need to be developed at a later date and is outside the scope of this report.

Employees reflected in future years' costs: The counts of active employees and retirees shown in Tables 1A and 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 already 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. However, because this valuation has been prepared on a closed group basis, no potential future employees are included. We will incorporate any new employees in the next valuation, in the same way we included new employees hired after July 2013 in this July 2015 valuation.

We also note that the number of active and retired employees expected to create an implicit subsidy OPEB liability are lower than the number of those which create an explicit subsidy liability. CalPERS medical premiums for retirees over age 65 and covered by Supplemental Medicare plans are not subsidized by active employee medical premiums, so do not create an implicit subsidy liability.

Table 1A
Summary of Valuation Results and ARC Calculation for FYE 2017

This table provides separate valuation results for Explicit and Implicit OPEB benefits determined on a “split” funding basis (i.e., partial prefunding of the explicit liability and pay-as-you-go financing of the implicit liability. Some of these values have been adjusted from the basic valuation results presented in Section E to reflect accruals for the fiscal years to which the costs are being assigned.

Funding Policy	**Split Funding Basis**		
Valuation date	**7/1/2015**		
Subsidy	Explicit	Implicit	Total
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 assets	6.50%	6.50%	6.50%
Discount rate	4.62%	4.00%	4.52%
Number of Covered Employees			
Actives	48	48	48
Retirees	43	24	43
Total Participants	91	72	91
Actuarial Present Value of Projected Benefits			
Actives	$ 8,680,849	$ 3,124,711	$ 11,805,560
Retirees	9,104,765	1,653,958	10,758,723
Total APVPB	17,785,614	4,778,669	22,564,283
Actuarial Accrued Liability (AAL)			
Actives	4,960,702	1,590,658	6,551,360
Retirees	9,104,765	1,653,958	10,758,723
Total AAL	14,065,467	3,244,616	17,310,083
Actuarial Value of Assets	100,000	-	100,000
Unfunded AAL (UAAL)	13,965,467	3,244,616	17,210,083
Amortization method	Level % of Pay	Level % of Pay	Level % of Pay
Initial amortization period (in years)	30	30	30
Remaining period (in years)	23	23	23
Determination of Amortization Payment			
UAAL	$ 13,965,467	$ 3,244,616	$ 17,210,083
Factor	19.4760	20.7235	19.6996
Payment	717,060	156,567	873,627
Annual Required Contribution (ARC)			
Normal Cost	333,480	129,066	462,546
Amortization of UAAL	717,060	156,567	873,627
Interest to fiscal year end	48,535	11,425	59,960
Total ARC at fiscal year end	1,099,075	297,058	1,396,133
Projected covered payroll	$ 5,133,548	$ 5,133,548	$ 5,133,548
Normal Cost as a percent of payroll	6.5%	2.5%	9.0%
ARC as a percent of payroll	21.4%	5.8%	27.2%
ARC per active ee	22,897	6,189	29,086

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 "split" funding policy described in this report.

	Split Funding Basis		
Fiscal Year End	**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	$ 1,099,075	$ 297,058	$ 1,396,133
b. Interest on Net OPEB Obligation (Asset)	173,500	-	173,500
c. Adjustment to the ARC	(201,731)	-	(201,731)
d. **Annual OPEB Expense (a. + b. + c.)**	1,070,844	297,058	1,367,902
2. Calculation of Expected Contribution			
a. Estimated payments on behalf of retirees	511,309	-	511,309
b. Estimated current year's implicit subsidy	-	100,841	100,841
c. Estimated contribution to OPEB trust	100,000	-	100,000
d. **Total Expected Employer Contribution**	611,309	100,841	712,150
3. Change in Net OPEB Obligation *(1.d. minus 2.d.)*	459,535	196,217	655,752
Net OPEB Obligation (Asset), beginning of fiscal year	3,755,407	-	3,755,407
Net OPEB Obligation (Asset) at fiscal year end	4,214,942	196,217	4,411,159

In the table above, we assumed the Authority would report the following contributions totaling $712,150 for this fiscal year, comprised of:

- Retiree medical premiums paid by the Authority totaling $511,309;
- Plus $100,841, the calculated implicit subsidy for this year, by shifting recognition of this amount from an active healthcare expense to a retiree healthcare benefit expense;
- Plus $100,000 in contributions made to CERBT during the fiscal year.

Notes on calculations above:

- Interest on the net OPEB obligation (or asset), shown above in item 1.b. is equal to the applicable discount rate (4.62% or 4%, as appropriate) 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
ARC Calculation for FYE 2018

In this table, the July 1, 2015 valuation results have been adjusted (rolled forward) one year based on the underlying actuarial assumptions. These results are used to develop the amortization payment and the annual required contribution (ARC) for the fiscal year ending June 30, 2018.

Funding Policy	**Split Funding Basis**		
Valuation date	**7/1/2015**		
Subsidy	Explicit	Implicit	Total
For fiscal year beginning	7/1/2017	7/1/2017	7/1/2017
For fiscal year ending	6/30/2018	6/30/2018	6/30/2018
Expected long-term return on assets	6.50%	6.50%	6.50%
Discount rate	4.62%	4.00%	4.52%
Number of Covered Employees			
Actives	48	48	48
Retirees	43	24	43
Total Participants	91	72	91
Actuarial Present Value of Projected Benefits			
Actives	$ 9,058,204	$ 3,244,494	$ 12,302,698
Retirees	9,053,281	1,624,480	10,677,761
Total APVPB	18,111,485	4,868,974	22,980,459
Actuarial Accrued Liability (AAL)			
Actives	5,515,073	1,783,308	7,298,381
Retirees	9,053,281	1,624,480	10,677,761
Total AAL	14,568,354	3,407,788	17,976,142
Actuarial Value of Assets	206,500	-	206,500
Unfunded AAL (UAAL)	14,361,854	3,407,788	17,769,642
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	$ 14,361,854	$ 3,407,788	$ 17,769,642
Factor	18.7666	19.9149	18.9764
Payment	765,288	171,117	936,405
Annual Required Contribution (ARC)			
Normal Cost	344,318	133,261	477,579
Amortization of UAAL	765,288	171,117	936,405
Interest to fiscal year end	51,264	12,175	63,439
Total ARC at fiscal year end	1,160,870	316,553	1,477,423
Projected covered payroll	$ 5,300,389	$ 5,300,389	$ 5,300,389
Normal Cost as a percent of payroll	6.5%	2.5%	9.0%
ARC as a percent of payroll	21.9%	6.0%	27.9%
ARC per active ee	24,185	6,595	30,780

Table 1D
Expected OPEB Disclosures for FYE 2018

The table below develops the annual OPEB expense, estimates the expected OPEB contributions and projects the net OPEB obligation as of June 30, 2018 reflecting the assumed “split” funding policy described earlier in this report.

	Split Funding Basis		
Fiscal Year End	**6/30/2018**	**6/30/2018**	**6/30/2018**
Subsidy	Explicit	Implicit	Total
1. Calculation of the Annual OPEB Expense			
a. ARC for current fiscal year	$ 1,160,870	$ 316,553	$ 1,477,423
b. Interest on Net OPEB Obligation (Asset)	194,730	7,849	202,579
c. Adjustment to the ARC	(234,975)	(10,247)	(245,222)
d. **Annual OPEB Expense (a. + b. + c.)**	1,120,625	314,155	1,434,780
2. Calculation of Expected Contribution			
a. Estimated payments on behalf of retirees	513,887	-	513,887
b. Estimated current year's implicit subsidy	-	115,606	115,606
c. Estimated contribution to OPEB trust	100,000	-	100,000
d. **Total Expected Employer Contribution**	613,887	115,606	729,493
3. Change in Net OPEB Obligation *(1.d. minus 2.d.)*	506,738	198,549	705,287
Net OPEB Obligation (Asset), beginning of fiscal year	4,214,942	196,217	4,411,159
Net OPEB Obligation (Asset) at fiscal year end	4,721,680	394,766	5,116,446

In the table above, we assumed the Authority would report the following contributions totaling $729,493 for this fiscal year, comprised of:

- Retiree medical premiums paid by the Authority totaling $513,877;
- Plus $115,606, the calculated implicit subsidy for this year, by shifting recognition of this amount from an active healthcare expense to a retiree healthcare benefit expense;
- Plus $100,000 in contributions made to CERBT during the fiscal year.

Notes on calculations above:

- Interest on the net OPEB obligation (or asset), shown above in item 1.b. is equal to the applicable discount rate (4.62% or 4%, as appropriate) 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 2
Summary of Employee Data

The Authority reported 48 active employees, all of whom are participating in the medical program as of the valuation date. Age and service information for the reported individuals is provided below:

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	2%
25 to 29	3	1					4	8%
30 to 34	1	8	6				15	31%
35 to 39		5	2		1		8	17%
40 to 44	1	2	1	2	1	1	8	17%
45 to 49		1	2		1	1	5	10%
50 to 54		1		1		4	6	13%
55 to 59		1					1	2%
60 to 64							0	0%
65 to 69							0	0%
70 & Up							0	0%
Total	5	20	11	3	3	6	**48**	**100%**
Percent	10%	42%	23%	6%	6%	13%	**100%**	

Valuation	July 2013	July 2015
Annual Covered Payroll	$5,246,221	$4,971,960
Average Attained Age for Actives	41.4	39.2
Average Years of Service	11.8	14.6

There are also 43 retirees or their beneficiaries receiving benefits. The following chart summarizes the ages of current retirees in the Authority plan.

Retirees by Age				
Current Age	**Misc**	**Police**	**Total**	**Percent**
Below 50		8	8	19%
50 to 54	2	2	4	9%
55 to 59	1	8	9	21%
60 to 64	2	1	3	7%
65 to 69	2	9	11	26%
70 to 74	2	2	4	9%
75 to 79		2	2	5%
80 & up		2	2	5%
Total	9	34	43	100%
Average Age:				
On 7/1/2015	62.4	61.7	61.8	
At Retirement	57.6	49.11	50.9	

Table 2- Summary of Employee Data (Concluded)

The chart below reconciles the number of actives and retirees included in the July 1, 2013 valuation of the Authority plan with those included in the July 1, 2015 valuation:

Reconciliation of Authority Plan Members Between Valuation Dates						
Status	Covered Actives	Waiving Actives	Covered Retirees	Disabled Retirees	Covered Surviving Spouses	Total
Number reported as of July 1, 2013	56	1	15	18	3	93
New employees	9	-	-	-	-	9
Terminated employees	(6)	-	-	-	-	(6)
New retiree, elected coverage	(10)	-	6	4	-	0
New retiree, waiving coverage	(1)	(1)	-	-	-	(2)
Deceased	-	-	-	(2)	(1)	(3)
Number reported as of July 1, 2015	**48**	**0**	**21**	**20**	**2**	**91**

Monthly benefits payable in retirement vary based on the date of employment, employee group, years of Authority service and medical plan coverage level. The following charts breaks out active and retired employees based on the appropriate benefit group & coverage level and show how these counts have changed since the prior valuation.

Active Employees: Counts by Benefit Level		
Maximum Possible Benefit	**2013 Count****	**2015 Count**
100% Retiree & Spouse premium, up to Kaiser Bay rate	32	28 *
100% Retiree premium only, up to Kaiser Bay rate	17	10
PEMHCA MEC Only	8	10
Total	**57**	**48**

Retirees & Survivors: Counts by Benefit Level		
Current Benefit	**2013 Count****	**2015 Count**
100% Retiree & Family premium, up to Kaiser Bay rate	4	6 ***
100% Retiree & Spouse premium, up to Kaiser Bay rate	16	17
100% Retiree premium only, up to Kaiser Bay rate	14	18
PEMHCA MEC Only	2	2
Total	**36**	**43**

* Of the 28 remaining active employees potentially eligible for spouse benefits, 18 are currently married; 12 have completed the 15 years of service required to qualify for this benefit.

** Changed from prior report, based on corrected information provided by CMPA.

*** 9 other retirees are also eligible for family benefits, however, 4 of these retirees elected single coverage while 5 have a spouse but no children on the plan. These 9 retirees are counted on the lines corresponding to their current coverage levels (not maximum possible).

Table 3A
Summary of Retiree Benefit Provisions

OPEB provided: The Authority reported that the only OPEB is medical insurance coverage.

Access to coverage: Medical coverage is currently provided through CalPERS as permitted under the Public Employees' Medical and Hospital Care Act (PEMHCA). This coverage requires the employee to satisfy the requirements for retirement under CalPERS: either (a) attainment of age 50 (age 52, if a miscellaneous employee new to PERS on or after January 1, 2013) with 5 years of State or public agency service or (b) an approved disability retirement.

The employee must begin his or her retirement warrant within 120 days of terminating employment with the Authority to be eligible to continue medical coverage through the Authority and be entitled to the employer subsidy described below. If an eligible employee is not already enrolled in the medical plan, he or she may enroll within 60 days of retirement or during any future open enrollment period. Coverage may be continued at the retiree's option for his or her lifetime. A surviving spouse and other eligible dependents may also continue coverage.

Benefits provided: As a PEMHCA employer, the Authority is obligated to contribute toward the cost of retiree medical coverage for the retiree's lifetime or until coverage is discontinued. In addition, the Authority provides higher benefits by agreement for retirees meeting certain eligibility requirements. The benefit grid below summarizes the OPEB structure for employees who retire after June 30, 2007:

Date of Hire	Eligibility Requirements	Contribution from the Authority	Term of Benefit	Spouse Benefit
Before 7/1/2007	Age 50 & 5 years of PERS Service	MEC* Only.	Lifetime	MEC*, if spouse eligible for survivor pension
	Age 50 & 10 Authority years of service	**100% of the Employee Only** premium up to the applicable Employee Only Kaiser pre- or post Medicare premium.	Lifetime	MEC*, if spouse eligible for survivor pension
	Age 50 & 15 Authority years of service	**100% of the Employee plus Spouse** premium up to the applicable Employee Only or Employee plus Spouse Kaiser pre- or post Medicare premium.	Lifetime	100% of premium, up to the applicable Kaiser pre- or post-Medicare premium
Between 7/1/2007 and 1/1/2013	Age 50 & 5 years of PERS Service	**MEC* Only.**	Lifetime	MEC*, if spouse eligible for survivor pension
	Age 50 & 10 Authority years of service	**100% of the Employee Only Coverage** up to the applicable Employee Only Kaiser pre- or post Medicare premium.	Lifetime	MEC*, if spouse eligible for survivor pension
On or after 1/1/2013	Age 50 & 5 years of PERS Service	**MEC* Only.**	Lifetime	MEC*, if spouse eligible for survivor pension
	10 years of Authority Service	Contributions are made for active employees to a Retiree Health Savings Account (RHSA). After 10 years of Authority Service, an employee is vested in the RHSA. ***RHSA contributions for active employees are not a defined benefit OPEB and have not been considered in this valuation.***	Not Applicable	Not Applicable

*MEC is the PEMHCA Minimum Employer Contribution, i.e., the minimum amount that must be paid by the Authority to retirees. This amount is updated annually by CalPERS and is $128 in 2017.

Table 3A- Summary of Retiree Benefit Provisions (Concluded)

In the chart on the preceding page, where benefits paid by the Authority are described as being limited to the Kaiser rate, this means that the Authority pays no more than the Kaiser premium:

- For the *type* of coverage provided for the retiree (i.e., Basic, Supplemental or Combination); and
- For the *level* of subsidized coverage (i.e., single or retiree and spouse) for which the retiree qualifies.

Benefits for earlier retirees: Employees who retired prior to July 1, 2007 are eligible for benefits provided by the bargaining agreement in effect at the time of their retirement. For many of these retirees, the benefit provided is 100% of the premium for the retiree, spouse and/or other eligible dependents, not to exceed the monthly Kaiser premium for family coverage.

Current premium rates: The 2017 CalPERS monthly medical plan rates in the Bay Area rate group are shown in the table below. If different rates apply where the member resides outside of this area, those rates are reflected in the valuation, but not listed here. The additional CalPERS administration fee is assumed to be separately expensed each year and has not been projected as an OPEB liability in this valuation.

Bay Area 2017 Health Plan Rates						
	Actives and Pre-Med Retirees			Medicare Eligible Retirees		
Plan	Ee Only	Ee & 1	Ee & 2+	Ee Only	Ee & 1	Ee & 2+
Anthem HMO Traditional	$ 990.05	$ 1,980.10	$ 2,574.13	*Not Available*		
Blue Shield Access+ HMO	1,024.85	2,049.70	2,664.61	*Not Available*		
Kaiser HMO	733.39	1,466.78	1,906.81	300.48	600.96	1,040.99
UnitedHealthcare HMO	1,062.26	2,124.52	2,761.88	324.21	648.42	1,285.78
PERS Select PPO	736.27	1,472.54	1,914.30	353.63	707.26	1,149.02
PERSCare PPO	932.39	1,864.78	2,424.21	389.76	779.52	1,338.95
PORAC Association Plan	699.00	1,467.00	1,876.00	464.00	924.00	1,333.00

Table 3B
General CalPERS Annuitant Eligibility Provisions

The content of this section has been drawn from Section C, Summary of Plan Provisions, of the State of California OPEB Valuation as of June 30, 2015, issued January 2016, to the State Controller from Gabriel Roeder & Smith. It is provided here as a brief summary of general annuitant and survivor coverage.

Health Care Coverage

Retired Employees

A member is eligible to enroll in a CalPERS health plan if he or she retires within 120 days of separation from employment and receives a monthly retirement allowance. If the member meets this requirement, he or she may continue his or her enrollment at retirement, enroll within 60 days of retirement, or enroll during any Open Enrollment period. If a member is currently enrolled in a CalPERS health plan and wants to continue enrollment into retirement, the employee will notify CalPERS and the member's coverage will continue into retirement.

Eligibility Exceptions*:* Certain family members are not eligible for CalPERS health benefits:

- Children age 26 or older
- Children's spouses
- Former spouses
- Disabled children over age 26 who were never enrolled or were deleted from coverage
- Grandparents
- Parents
- Children of former spouses
- Other relatives

Coordination with Medicare

CalPERS retired members who qualify for premium-free Part A, either on their own or through a spouse (current, former, or deceased), must sign up for Part B as soon as they qualify for Part A. A member must then enroll in a CalPERS sponsored Medicare plan. The CalPERS-sponsored Medicare plan will pay for costs not paid by Medicare, by coordinating benefits.

Survivors of an Annuitant

If a CalPERS annuitant satisfied the requirement to retire within 120 days of separation, the survivor may be eligible to enroll within 60 days of the annuitant's death or during any future Open Enrollment period. Note: A survivor cannot add any new dependents; only dependents that were enrolled or eligible to enroll at the time of the member's death qualify for benefits.

Surviving registered domestic partners who are receiving a monthly annuity as a surviving beneficiary of a deceased employee or annuitant on or after January 1, 2002, are eligible to continue coverage if currently enrolled, enroll within 60 days of the domestic partner's death, or enroll during any future Open Enrollment period.

Surviving enrolled family members who do not qualify to continue their current coverage are eligible for continuation coverage under COBRA.

Table 4
Actuarial Methods and Assumptions

Valuation Date	July 1, 2015
Funding Method	Entry Age Normal Cost, level percent of pay[3]
Asset Valuation Method	Market value of assets ($0; no OPEB trust has been established)
Long Term Return on Assets	6.5%
Discount Rate	4.62% (blended) for explicit subsidy; 4.0% for implicit subsidy Single equivalent rate: 4.52%
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

Demographic actuarial assumptions used in this valuation are those used in the June 30, 2015 valuation of the retirement plans covering Authority employees, and are based on the 2014 experience study of the California Public Employees Retirement System using data from 1997 to 2011, except for a different basis used to project future mortality improvements. Rates for selected age and service are shown below and on the following pages. The representative mortality rates were those published by CalPERS in their 2014 study, adjusted to back out 20 years of Scale BB to central year 2008.

Mortality Improvement — Bickmore Scale 2017 applied generationally.

Mortality Before Retirement
(before improvement applied)

CalPERS Public Agency Miscellaneous Non-Industrial		
Age	Male	Female
20	0.00033	0.00021
30	0.00052	0.00027
40	0.00080	0.00053
50	0.00165	0.00106
60	0.00354	0.00223
70	0.00709	0.00467
80	0.01339	0.01036

CalPERS Public Agency Police & Fire Combined Industrial & Non-Industrial		
Age	Male	Female
20	0.00036	0.00025
30	0.00062	0.00036
40	0.00094	0.00068
50	0.00181	0.00122
60	0.00372	0.00241
70	0.00731	0.00489
80	0.01363	0.01060

[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 After Retirement (before improvement applied)

CalPERS Public Agency Healthy Miscellaneous, Police & Fire		
Age	Male	Female
40	0.00117	0.00097
50	0.00532	0.00495
60	0.00817	0.00533
70	0.01766	0.01264
80	0.05275	0.03695
90	0.16186	0.12335
100	0.34551	0.31876
110	1.00000	1.00000

CalPERS Public Agency Disabled Police		
Age	Male	Female
20	0.00641	0.00395
30	0.00212	0.00157
40	0.00273	0.00219
50	0.00582	0.00524
60	0.00925	0.00662
70	0.02262	0.01807
80	0.06669	0.05005
90	0.16245	0.12430

Termination Rates

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

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

Table 4 - Actuarial Methods and Assumptions (Continued)

Service Retirement Rates

The following miscellaneous retirement formulas apply:

If hired prior to 1/1/2013:	2.5% @ 55
If hired on or after 1/1/2013, with prior PERS Service	2.5% @ 55
If hired on or after 1/1/2013, PEPRA:	2.0% @ 62

The following police safety retirement formulas apply:

If hired prior to 1/1/2013:	3.0% @ 55
If hired on or after 1/1/2013, with prior PERS Service	3.0% @ 55
If hired on or after 1/1/2013, PEPRA:	2.7% @ 57

Sample rates of assumed future retirements for each of these retirement benefit formulas are shown in the tables to the right 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

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

Police 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	0.0040	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

Table 4 - Actuarial Methods and Assumptions (Continued)

Retirement Rates (Concluded)

Police 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	0.0138	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

CalPERS Public Agency Miscellaneous Disability From Jan 2014 Experience Study Report		
Age	Male	Female
20	0.00017	0.00010
25	0.00017	0.00010
30	0.00019	0.00024
35	0.00049	0.00081
40	0.00122	0.00155
45	0.00191	0.00218
50	0.00213	0.00229
55	0.00221	0.00179
60	0.00222	0.00135

CalPERS Public Agency Police Combined Disability From Jan 2014 Experience Study Report	
Age	Unisex
20	0.00010
25	0.00175
30	0.00496
35	0.00818
40	0.01140
45	0.01461
50	0.01925
55	0.04909
60	0.06212

Healthcare Trend

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 January 1	Premium Increase	Effective January 1	Premium Increase
2016	Actual	2020	6.00%
2017	Actual	2021	5.50%
2018	7.00%	2022	5.00%
2019	6.50%	2023 & later	4.50%

The PEMHCA minimum required contribution (MEC) is assumed to increase annually by 4.5%.

Medicare Eligibility

Absent contrary data, all individuals are assumed to be eligible for Medicare Parts A and B at age 65.

Table 4 - Actuarial Methods and Assumptions (Continued)

Participation Rate

Active employees: 100% of those eligible for subsidized premiums in excess of the PEMHCA MEC are assumed to continue their current plan election in retirement. However, for future retirees who will receive only the PEMHCA MEC, we assume a 50% likelihood that they will elect to continue their medical coverage through the Authority in retirement.

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

Spouse Coverage

Active employees:

(a) For those employees eligible for subsidized coverage in retirement in excess of the PEMHCA MEC, 70% are assumed to be married and elect coverage for their spouse in retirement.

(b) For those employees who do not qualify for subsidized coverage in retirement in excess of the PEMHCA MEC, 50% are assumed to be married and elect coverage for their spouse in retirement.

Spouses are assumed to continue coverage until their death. Husbands are assumed to be 3 years older than their wives.

Retired participants: Existing elections for spouse coverage are assumed to be maintained 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.

Dependent Coverage

Future retirees do not receive benefits for dependent children. To the extent that a current retiree is receiving a subsidy toward the premium for dependent children, the subsidy is assumed to end when the youngest currently covered dependent reaches age 26.

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.

Table 4 - Actuarial Methods and Assumptions (Continued)

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 derived from the dataset provided by CalPERS for retirees not currently covered or not expected to be eligible for Medicare appear below.

All current and future Medicare-eligible retirees are assumed to be covered by plans that are rated based solely on the experience of Medicare retirees. Therefore, no implicit subsidy is calculated for Medicare-eligible retirees.

Expected Monthly Claims by Medical Plan for Selected Ages					
	Male				
Medical Plan	50	53	56	59	62
Blue Shield Access+ Bay Area	$ 947	$ 1,116	$ 1,296	$ 1,486	$ 1,689
Blue Shield Access+ State Employer	708	835	970	1,112	1,264
Blue Shield NetValue Sacramento	905	1,068	1,240	1,421	1,616
Kaiser Bay Area	732	863	1,002	1,149	1,306
Kaiser Los Angeles	550	648	753	863	981
Kaiser Out of State	707	834	969	1,110	1,262
Kaiser State Employer	638	752	874	1,002	1,139
PERS Choice Los Angeles	540	637	740	848	964
PERS Choice Other Southern California	585	690	802	919	1,044
PERS Select Los Angeles	586	691	803	920	1,046
PERS Select Other Southern California	677	798	927	1,063	1,208
PERSCare Los Angeles	513	605	702	805	915
	Female				
Medical Plan	50	53	56	59	62
Blue Shield Access+ Bay Area	$ 1,173	$ 1,288	$ 1,386	$ 1,498	$ 1,651
Blue Shield Access+ State Employer	878	964	1,037	1,121	1,236
Blue Shield NetValue Sacramento	1,122	1,232	1,326	1,433	1,579
Kaiser Bay Area	907	996	1,072	1,158	1,277
Kaiser Los Angeles	681	748	805	870	959
Kaiser Out of State	876	962	1,036	1,119	1,234
Kaiser State Employer	791	868	934	1,010	1,113
PERS Choice Los Angeles	669	735	791	855	942
PERS Choice Other Southern California	725	797	857	926	1,021
PERS Select Los Angeles	726	798	859	928	1,023
PERS Select Other Southern California	839	921	992	1,071	1,181
PERSCare Los Angeles	636	698	751	812	895

Table 4 - Actuarial Methods and Assumptions (Concluded)

Changes Since the Prior Valuation:

Discount rate	Increased from 4.0% to 4.62% for partial prefunding of the explicit subsidy liability (4.0% rate continued for developing implicit subsidy liability)
Assumed Wage Inflation	Decreased from 3.25% to 3.0%
General Inflation Rate	Decreased from 3.0% to 2.75%
Demographic assumptions	Rates of 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 at a slightly lower rate in 2025 and later years than was assumed in the prior valuation, the result of a change in our methodology for estimating the potential impact of the excise tax for high cost plans under the Affordable Care Act.
Spouse Coverage	The percentage of active employees who are assumed to elect coverage for their spouse in retirement if eligible only for the PEMHCA minimum benefit was decreased to 50%, from 70%.
Age-Related Medical Premiums	We introduced methodology for developing age-related medical premiums based on updated research and data sponsored by the Society of Actuaries. We added an implicit subsidy analysis for pre-Medicare retirees covered by the CalPERS medical program.
Excise Tax Impact	We directly 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.

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 Authority. 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	
2016	$ 460,464	$ -	$ 460,464	*Not Required to Recognize*			$ 460,464
2017	511,309	-	511,309	100,841	-	100,841	612,150
2018	475,599	38,288	513,887	105,478	10,128	115,606	629,493
2019	492,042	55,328	547,370	121,475	16,997	138,472	685,842
2020	510,018	73,959	583,977	142,117	25,042	167,159	751,136
2021	516,039	95,240	611,279	150,264	36,473	186,737	798,016
2022	519,750	121,567	641,317	147,009	51,039	198,048	839,365
2023	514,869	148,844	663,713	132,044	63,494	195,538	859,251
2024	519,854	173,924	693,778	137,436	74,327	211,763	905,541
2025	517,127	207,937	725,064	121,358	95,656	217,014	942,078
2026	525,137	244,795	769,932	130,236	120,715	250,951	1,020,883
2027	532,395	268,961	801,356	139,911	125,332	265,243	1,066,599
2028	530,655	296,711	827,366	136,928	132,456	269,384	1,096,750
2029	521,278	325,456	846,734	145,218	133,021	278,239	1,124,973
2030	513,710	362,663	876,373	144,272	157,038	301,310	1,177,683

The amounts shown in the Explicit Subsidy section reflect the expected payment by the Authority 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
Determination of Blended Discount Rate for Explicit Subsidy Liability

The exhibit below shows the calculation used to determine the partial prefunding discount rate for developing the explicit subsidy liability. This blended rate is based on the assumed 6.5% long term rate of return on trust assets as the discount rate for 100% explicit ARC prefunding, and uses 4.0% as the discount rate for pay-as-you-go financing. The two-part process reflects both the value of funds already accumulated in an irrevocable OPEB trust as well as the expected level of future annual Authority contributions to the trust.

As noted earlier in the report, we assumed the Authority preferred to deploy all current trust assets and future contributions against liabilities for explicit benefits, since these represent direct benefit payment obligations to retirees.

Step 1 - Calculation of Blended Discount Rate for Explicit Liabilities Based on Funded Ratio	
Trust assets, 7/1/2016	100,000
Assumed pay-as-you-go discount rate	4.00%
Assumed prefunding discount rate	6.50%
APVPB on 7/1/2016 determined using pre-funding rate	12,715,614
Assets as % of prefunding APVPB	0.79%
Blended discount rate based on funded ratio:	
a. 6.50% times 0.79%	0.05%
b. (100% - 0.79%) times 4.00%	3.97%
c. Sum of a. plus b.	4.02%

Step 2 - Determination of Blended Discount Rate Based on Expected Contribution for Fiscal Year End June 30, 2017			
Basis for contribution	**Pay-As-You-Go**	**Prefunding**	**Additional**
Contribution	$ 495,824	$ 911,775	$ 100,000
Additional contribution as % of the difference between the contributions for Pay-As-You-Go and Pre-Funding			24.04%
Discount rate from Step 1			4.02%
Blended discount rate:			
a. 6.50% times 24.04%			1.56%
b. (100% - 24.04%) times 4.02%			3.05%
c. Sum of a. plus b.			4.62%

Appendix 2: Breakout of Valuation Results by Group for FYE 2017

The chart below breaks out the valuation results for 4 employee groups for the fiscal year ending June 30, 2017. Amortization of the unfunded actuarial accrued liability is on the same basis as described in Section F. The actuarial value of assets was allocated to each group in proportion to the Explicit AAL for each group.

Group	Misc	Sworn	Sworn PEPRA	Total
Approach	Split Funding Basis			
Discount Rate (single equivalent rate)	4.52%	4.52%	4.52%	4.52%
Amortization method	Level % of Pay	Level % of Pay	Level % of Pay	Level % of Pay
Remaining amortization period (in years)	23	23	23	23
Number of Covered Employees				
Actives	4	37	7	48
Retirees	9	34	-	43
Total Participants	13	71	7	91
Actuarial Present Value of Projected Benefits				
Actives	$ 711,264	$ 10,769,113	$ 325,183	$ 11,805,560
Retirees	1,469,231	9,289,492	-	10,758,723
Total APVPB	2,180,496	20,058,604	325,183	22,564,283
Actuarial Accrued Liability				
Actives	484,115	6,037,932	29,313	6,551,360
Retirees	1,469,231	9,289,492	-	10,758,723
Total AAL	1,953,346	15,327,424	29,313	17,310,083
Actuarial Value of Assets	13,404	86,570	26	100,000
Unfunded Actuarial Accrued Liability	1,939,942	15,240,854	29,287	17,210,083
Annual Required Contribution (ARC)				
Normal Cost	$ 26,157	$ 416,028	$ 20,361	$ 462,546
Amortization of UAAL	99,300	772,874	1,453	873,627
Interest to 6/30	5,728	53,300	932	59,960
ARC at Fiscal Year End	131,186	1,242,202	22,746	1,396,133

Appendix 3
General OPEB Disclosure and Required Supplementary Information

The information necessary to complete the OPEB footnote in the Authority'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 3A

OPEB Funding Policy: See Section F; details provided in Tables 1A and 1C

Annual OPEB Cost and Net OPEB Obligation: See Tables 1B and 1D

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)
7/1/2009	$ -	$ 7,254,699	$ 7,254,699	0.0%	$ 5,022,895	149.2%
7/1/2013	$ -	$ 13,622,908	$ 13,622,908	0.0%	$ 5,246,221	259.7%
7/1/2015	$ -	$ 16,658,964	$ 16,658,964	0.0%	$ 4,971,960	335.1%

Values as of July 1, 2015 are shown separately for explicit and implicit subsidy liabilities in Section E.

Required Supplementary Information: Recent History of Amounts Funded

OPEB Cost Contributed

Fiscal Year Ended	Annual OPEB Cost	Employer OPEB Contributions	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation (Asset)
6/30/2014	$ 1,160,850	$ 390,073	33.6%	$ 2,191,954
6/30/2015	$ 1,228,570	$ 402,630	32.8%	$ 3,017,894
6/30/2016	$ 1,299,540	$ 562,027	43.2%	$ 3,755,407
6/30/2017	$ 1,367,902	$ 712,150	52.1%	$ 4,411,159
6/30/2018	*$ 1,434,780*	*$ 729,493*	*50.8%*	*$ 5,116,446*

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

Values for FYE's 2017 and 2018 are shown separately for explicit and implicit subsidy liabilities in Tables 1B and 1D.

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 principles 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