

MacLeod Watts

January 23, 2020

Wesley A. Maffei
Manager
Napa County Mosquito Abatement District
P.O. Box 10053
American Canyon, CA 94503

Re: June 30, 2019 Biennial Actuarial Valuation &
Calculation of Actuarially Determined Contributions and OPEB Funding Contributions

Dear Mr. Maffei:

We are pleased to enclose our report providing the results of the June 30, 2019 actuarial funding valuation of other post-employment benefit (OPEB) liabilities for the Napa County Mosquito Abatement District (the District). The report's text describes our analysis and assumptions in detail.

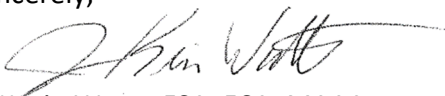
The primary purposes of this report are to:

1. Value plan liabilities as of June 30, 2019, and reconcile plan liabilities to those in the District's prior 2017 valuation;
2. Develop Actuarially Determined Contributions for FYE 2020 and 2021 to be reported in the District's financial statements in compliance with GASB 75;
3. Develop annual amounts to be contributed to the plan trust for fiscal years ending June 30, 2020 and June 30, 2021 in accordance with the District's prefunding strategy.
4. Provide a report to be submitted to the California Employers' Retiree Benefit Trust (CERBT) to satisfy filing requirements for the trust.

The District's current OPEB Funding Policy anticipates contributing 100% or more of the ADC each year. We assumed OPEB trust assets remain in CERBT Asset Allocation Strategy 2 and that the future long-term rate of return on trust assets will be 4.5%. We have based our valuation on employee data and plan information provided by the District, including the most recent bargaining agreements and PEMHCA resolutions on file with CalPERS. Please review Table 3A to ensure that we have summarized the plan's benefit provisions correctly.

We appreciate the opportunity to work on this analysis and acknowledge the efforts of District 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,



J. Kevin Watts, FSA, FCA, MAAA
Principal & Consulting Actuary



Napa County Mosquito Abatement District

Actuarial Valuation of Other
Post- Employment Benefit Programs
As of June 30, 2019

Development of OPEB Contribution Levels

Submitted January 2020

MacLeod Watts

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A. Executive Summary

This report presents the results of the June 30, 2019 actuarial valuation of the Napa County Mosquito Abatement District (the District) other post-employment benefit (OPEB) programs. The primary purpose of this valuation is to assess the OPEB liabilities of the District and develop contribution levels for the funding of these benefits. OPEB information relevant to reporting in the District’s financial statements will be provided in a separate report.

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

- An “explicit subsidy” exists when the employer contributes directly toward retiree healthcare premiums. In this program, benefits include a monthly subsidy toward medical and dental premiums for eligible retirees.
- An “implicit subsidy” exists when the premiums charged for retiree coverage are lower than the expected retiree claims for that coverage. The District’s OPEB program includes implicit subsidy liabilities for retiree medical coverage prior to coverage under Medicare.

Trust assets are currently invested in the CERBT with Asset Allocation Strategy 2 and the District expects these funds to yield 4.5% per year over the long term. Therefore, this valuation was prepared using a 4.5% discount rate, slightly lower than the 5% rate assumed in the prior valuation. Please recognize that use of this rate is an assumption and is not a guarantee of future investment performance.

Exhibits presented in this report apply the results of this June 30, 2019 valuation to develop the Actuarially Determined Contributions (“ADC”) for the District’s fiscal years ending June 30, 2020 and 2021. The ADC is calculated as the sum of the current year’s Normal Cost plus amortization of the Unfunded Actuarial Accrued Liability over a remaining fixed period, adjusted with interest to fiscal year end.

The Actuarial Accrued Liability and Plan Assets as of June 30, 2019 are shown below:

Subsidy	Explicit	Implicit	Total
Discount Rate	4.5%	4.5%	4.5%
Actuarial Accrued Liability	\$ 1,915,266	\$ 325,632	\$ 2,240,898
Actuarial Value of Assets			4,086,958
Unfunded Actuarial Accrued Liability			(1,846,060)
Funded Ratio			182.4%

The chart above indicates that the trust is extraordinarily well funded from conventional points of view. First, the District’s view of potential future trust earnings (4.5%) is well below earnings expected by CERBT for Asset Allocation Strategy 2 (5.22% over the next 10 years and 6.35% over the long-term). Second, even using those conservative assumptions, trust assets currently exceed the Actuarial Accrued Liability by 82%. With that cushion the trust could absorb substantial adverse experience and still remain well funded. Of course, nobody can ensure that any particular level of funding will with certainty be sufficient to cover all future benefits.



Executive Summary

(Concluded)

The Actuarially Determined Contribution for the fiscal years ending June 30, 2020 and June 30, 2021 are shown below. Illustrations of the alternate funding approaches requested by the District are shown on pages 12 & 13. Detailed results are shown in tables beginning on page 11 and some historical information is provided in the Appendix.

Fiscal Year End	6/30/2020	6/30/2021	6/30/2022
Actuarially Determined Contribution (ADC)	\$ -	\$ -	\$ -
Expected employer paid benefits for retirees	66,564	77,429	86,954
Current year's implicit subsidy credit	19,882	26,804	25,342
Expected contribution to OPEB trust	125,000	(104,233)	(112,296)
Total Expected OPEB Contributions	\$ 211,446	\$ -	\$ -

Current valuation results are compared to prior valuation results on page 5, followed by a discussion of changes. An actuarial valuation is a complex, long term projection and to the extent that our assumptions are not realized, future results will be different. Future differences may arise for many reasons, including but not limited to the following:

- A significant change in the number of covered or eligible plan members;
- A significant increase or decrease in the future medical premium rates;
- A change in the subsidy provided by the District 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; and/or
- Higher or lower returns on plan assets or contribution levels other than were assumed.

Details of our valuation process are provided on the following pages. Key terms used in the report are described briefly in Section C on page 4 and in the Glossary. We want to point out that certain key actuarial terms used for plan funding have parallel terms with different names when used for GASB 75 reporting. This can be confusing when comparing results from an actuarial report providing funding information compared to one prepared for accounting purposes.

The next actuarial valuation is scheduled to be prepared as of June 30, 2021. 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 the District's other postemployment benefits and to provide the annual contribution information with respect to the District's current OPEB funding policy. The results of this report may not be appropriate for other purposes, including financial reporting purposes under GASB 75, where other assumptions, methodology and/or actuarial standards of practice may be required or more suitable. Some issues in this report may involve analysis of applicable law or regulations. The District should consult counsel on these matters; MacLeod Watts does not practice law and does not intend anything in this report to constitute legal advice.



B. 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 (unless converted to defined benefit OPEB), or other direct retiree payments.

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. Actuarial Standards of Practice generally require an implicit subsidy of retiree premium rates be valued as an OPEB liability.

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

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

OPEB Obligations of the District

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

- **Explicit subsidy liabilities:** The District contributes directly toward retiree medical and dental plan premiums as described in Table 3A. Liabilities for these benefits have been included in this valuation. The Patient Protection and Affordable Care Act (ACA) included a 40% excise tax on high-cost employer-sponsored health coverage. The tax was repealed on December 20, 2019.
- **Implicit subsidy liabilities:** Employees are covered by the CalPERS medical program, where the same monthly premiums are charged for active employees and for pre-Medicare retirees. In addition to whatever portion of retiree premiums are paid directly by the District, we valued the difference between projected retiree claims and the premiums projected to be charged for retiree coverage. To develop this difference with respect to medical (and prescription drug) coverage, we followed the methodology outlined in Table 4 and described further in Addendum 1: MacLeod Watts 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 cover the expected claims of these retirees and believe that there is no implicit subsidy of premiums for these members by active employees. Also, we believe no implicit subsidy exists with respect to dental coverage made available to retirees, or that it is insignificant.



C. Valuation Process

The valuation has been based on employee census data and benefits initially submitted to us by the District in July 2019 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 District as to its accuracy. The valuation described below has been performed in accordance with the actuarial methods and assumptions described in Table 4.

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

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

We then calculate a present value of these benefits by discounting the value of each future expected benefit payment, multiplied by the assumed expectation that it will be paid, back to the valuation date using the discount rate. These benefit projections and liabilities have a very long time horizon. Final payments for currently active employees may not be made for 60 years or more.

The resulting *present value of projected benefits* 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 person then summed to get the results for the entire plan. This creates a cost expected to increase each year as payroll increases. Amounts attributed to prior fiscal years form the *actuarial accrued liability* (AAL). The amount of future OPEB cost allocated for active employees in the current year is referred to as the *normal cost*. The remaining active cost to be assigned to future years is called the *present value of future normal costs*.

In summary:

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

Where contributions have been made to an irrevocable OPEB trust, the accumulated value of trust assets is applied to offset the AAL. In this valuation, we set the Actuarial Value of Assets equal to the (unaudited) market value of assets invested in in the District’s CERBT account. The June 30, 2019 market value of assets in this report was \$4,087,656. The portion of the AAL not covered by assets is referred to as the *unfunded actuarial accrued liability* (UAAL).



D. Basic Valuation Results

The following chart compares the results of the June 30, 2019 valuation of OPEB liabilities to the results of the July 1, 2017 valuation.

Funding Policy	Prefunding Basis					
	7/1/2017			6/30/2019		
Valuation date	Explicit	Implicit	Total	Explicit	Implicit	Total
Subsidy						
Discount rate	5.00%	5.00%	5.00%	4.50%	4.50%	4.50%
Number of Covered Employees						
Actives	8	8	8	9	9	9
Retirees	5	2	5	5	1	5
Total Participants	13	10	13	14	10	14
Actuarial Present Value of Projected Benefits						
Actives	\$ 1,980,392	\$ 416,436	\$ 2,396,828	\$ 2,324,644	\$ 442,561	\$ 2,767,205
Retirees	718,234	106,297	824,531	684,603	86,569	771,172
Total APVPB	2,698,626	522,733	3,221,359	3,009,247	529,130	3,538,377
Actuarial Accrued Liability (AAL)						
Actives	1,250,770	272,222	1,522,992	1,230,663	239,063	1,469,726
Retirees	718,234	106,297	824,531	684,603	86,569	771,172
Total AAL	1,969,004	378,519	2,347,523	1,915,266	325,632	2,240,898
Actuarial Value of Assets			2,962,231			4,086,958
Unfunded AAL (UAAL)			(614,708)			(1,846,060)
Normal Cost	96,749	20,436	117,185	123,346	23,234	146,580
Percent of ABVBP funded			92.0%			115.5%
Percent of AAL funded			126.2%			182.4%
Reported covered payroll			716,477			880,131
UAAL as percent of payroll			-85.8%			-209.7%



Basic Valuation Results

(Concluded)

Changes Since the Prior Valuation

The District continued to aggressively fund the trust over the two-year period 2017-2019 making direct contributions to the trust of \$705,000 in addition to paying retiree benefits. These contributions combined with trust earnings of \$420,000 increased trust assets \$1,125,000 (over 38% increase).

Plan liabilities generally increase over time as active employees get closer to the date their benefits are expected to begin. Given the uncertainties involved and the long-term nature of these projections, prior assumptions are not likely ever to be exactly realized. Nonetheless, it is helpful to review why results are different than may have been anticipated. In comparing results shown in the exhibit on the preceding page, we can see that the Actuarial Accrued Liability (AAL) decreased by \$106,625 between July 1, 2017 and June 30, 2019, from \$2,347,523 to \$2,240,898. Some of this difference was expected based on the passage of time and assumptions made in the prior valuation. Some of the difference was not anticipated, such as premium changes, unexpected demographic changes, or employee decisions affecting coverage that were different than previously assumed (collectively “plan experience”). The balance of the difference is due to changes in actuarial methodology or assumptions. No benefit changes were reported to us since the prior valuation.

The chart below summarizes the primary sources of the difference between the actual and expected Actuarial Accrued Liability:

Source of Change	Increase (decrease) in AAL
Discount rate decreased from 5.0% to 4.5%	\$ 131,302
Expected change due to passage of time	333,383
Change to maximum assumed age at retirement (from 75 to 65)	71,749
Updated demographic assumptions	(47,360)
Update to scale used to project future mortality improvement	(15,260)
Release of liability due to death of one active employee	(287,717)
Other favorable plan experience	(292,722)
Change from July 2017 to June 2019	\$ (106,625)

Passage of time refers to expected changes in the AAL between valuation dates.

Plan experience includes differences between actual and expected employee behavior, such as ending employment prior to retirement, the timing of new retirements, plan selection and/or coverage of dependents, medical premium increases different than assumed, etc.



E. Funding Policy

Actuarially Determined Contributions and District Funding Policy

The Actuarially Determined Contribution (ADC) consists of two basic components, which have been adjusted with interest to the District’s fiscal year end:

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

The ADC developed in this report includes amortization of the unfunded AAL over 15 years. This amortization period will be adjusted when the trust starts requiring contributions. The District’s Funding Policy is to contribute 100% or more of the ADC each year. As of this valuation, the amortized surplus exceeds the normal cost resulting in an ADC of \$0 for 2021-2022. We assumed the District will be contributing \$125,000 in addition to benefit payments for 2020. The amounts calculated for the fiscal years ending June 30, 2019 and June 30, 2020 are shown in Table 1A.

Paying Down the UAAL

Once an entity decides to prefund, a decision must be made about how to pay for benefits related to service to date that have not yet been funded (the UAAL). This is most often, though not always, handled through structured amortization payments. The period and method chosen for amortizing this unfunded liability can significantly affect the Actuarially Determined Contribution.

Much like paying off a mortgage, choosing a longer amortization period to pay off the UAAL means initial payments will be smaller, but the payments will be required for a longer period. In general, the longer the amortization period, the less time investments will work toward helping reduce required contribution levels.

There are several ways the amortization payment can be determined. The most common methods are calculating the amortization payment as a level dollar amount or as a level percentage of payroll.

Funding of the Implicit Subsidy

The implicit subsidy liability created when expected retiree medical claims exceed the retiree premiums was described earlier in Section B. In practical terms, when the District 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 and is illustrated in the example below.

Hypothetical Illustration Of Implicit Subsidy Recognition	For Active Employees	For Retired Employees	Total
Annual Agency Contribution Toward Premiums	\$ 162,000	\$ 46,000	\$ 208,000
Current Year's Implicit Subsidy Adjustment	\$ (15,000)	\$ 15,000	\$ -
Adjusted contributions reported in Financial Stmts	\$ 147,000	\$ 61,000	\$ 208,000

Please see the Expected Employer Contributions Section in Table 1A for the implicit subsidy amounts which should be applied to offset against the ADC for the years shown.



F. 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.

Factors Impacting the Selection of a Cost Allocation Method

While the goal is to match recognition of retiree medical expense with the periods during which the benefit is earned, cost allocation methods differ because they focus on different financial measures in attempting to level the incidence of cost. Appropriate selection of a cost allocation method for funding purposes contributes to creating intergenerational equity between generations of taxpayers.

We believe it is most appropriate for the plan sponsor to adopt a theory of funding and consistently apply the best cost allocation 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 was one of the most commonly used of the cost allocation methods permitted by GASB 45. It is the only cost allocation method permitted for financial reporting purposes under GASB 75.

Factors Affecting the Selection of Assumptions

Special considerations apply to the selection of actuarial funding methods and assumptions for the District. The “demographic” actuarial assumptions used in this report were chosen, for the most part, to be the same as the actuarial assumptions used for the most recent actuarial valuations of the retirement plans covering District employees. Other assumptions, such as healthcare trend, age related healthcare claims, retiree participation rates and spouse/dependent 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 an appropriate discount rate for funding the plan, it is most common to use the expected long-term yield on investments likely to be deployed to pay the benefits. Other strategies could include using a long-term debt rate to calculate contribution levels even if the District hopes their long-term investment strategy will yield higher returns. In this way, required contributions may be reduced *if* those higher returns are realized, but only *as* they are actually realized. If higher returns are not realized to the degree expected, then the difference between the debt rate and the actual earnings rate acts as a safety margin so that larger contributions than planned are less likely to occur.

CalPERS most recent projected annual returns for CERBT Allocation Strategy 2 anticipate 5.12% for the next 10 years and about 7.4% for the following 50 years, net of investment-related expenses. Over a 60-year period, CalPERS reports an average expected net rate of return of 7.0%. Volatility in returns will likely lessen this average. The District has chosen to fund based on a discount rate of 4.5%, which the District assumes will be the long-term return of trust assets. Differences in the District’s benefit and contribution cash flows and timeline relative to CERBT will also impact actual returns.



G. Certification

The purpose of this report is to provide actuarial information and potential contribution levels in conformity with the Napa County Mosquito Abatement District (the District) funding policy for the District's other post-employment benefits. The District is not required to contribute the contributions developed in this report and we make no representation that the District will in fact fund the OPEB trust at any particular level.

In preparing this report we relied without audit on information provided by the District. This information includes, but is not limited to, plan provisions, census data, and financial information. We summarized the benefits in this report and our calculations were based on our understanding of the benefits as described herein. A limited review of this data was performed, and we found the information to be reasonably consistent. The accuracy of this report is dependent on this information and if any of the information we relied on is incomplete or inaccurate, then the results reported herein will be different from any report relying on more accurate information.

We consider the actuarial assumptions and methods used herein to be individually reasonable taking into account reasonable expectations of plan experience and the funding methodology adopted by the District. Expected returns used to develop the valuation discount rate were provided by CERBT. The results, and the assumptions on which they depend, provide an estimate of the plan's financial condition at one point in time. Future actuarial results may be significantly different due to a variety of reasons including, but not limited to, demographic and economic assumptions differing from future plan experience, changes in plan provisions, changes in applicable law, or changes in the value of plan benefits relative to other alternatives available to plan members.

Alternative assumptions may also be reasonable; however, demonstrating the range of potential plan funding patterns based on alternative assumptions was beyond the scope of our assignment. Results based on other assumptions or funding strategies may be materially different and present materially different funding patterns.

This report is prepared solely for the use and benefit of the District and may not be provided to third parties without prior written consent of MacLeod Watts. Exceptions: The District may provide copies of this report to their professional accounting and legal advisors who are subject to a duty of confidentiality, to CERBT, and to any party if required by law or court order. No part of this report should be used as the basis for any representations or warranties in any contract or agreement without the written consent of MacLeod Watts.

The undersigned actuaries are unaware of any relationship that might impair the objectivity of this work. Nothing within this report is intended to be a substitute for qualified legal or accounting counsel. Both actuaries are members of the American Academy of Actuaries and meet the qualification standards for rendering this opinion.

Signed: January 23, 2020



J. Kevin Watts, FSA, FCA, MAAA



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



Table 1

Actuarially Determined Contributions for fiscal years 2020 and 2021: The basic results of our June 30, 2019 valuation of OPEB liabilities for the District were summarized in Section D. Those results are applied to develop the actuarially determined contribution (ADC) for the fiscal years ending June 30, 2020 and June 30, 2021. We have also included an estimate of the ADC for the fiscal year ending June 30, 2022.

As noted earlier in this report, the development of the ADC reflects the assumption that the District will contribute at least 100% of this amount each year. Contributions credited toward meeting the ADC will be comprised of: 1) Direct payments to insurers toward retiree premiums; 2) Each year's implicit subsidy payment; and 3) Contributions to the OPEB trust.

Alternate Funding Illustrations: Table 1B illustrates an alternative funding strategy in which the District targets funding 120% of the projected Actuarial Present Value of Projected Benefits (APVPB). Table 1C provides contribution information at a funding target of 150% of the APVPB. The District's funding goal is to achieve a substantial adverse experience cushion in the trust so that substantial shocks to assets or liabilities could be absorbed while remaining fully funded. The District is targeting trust assets to remain between 120-150% of Actuarial Present Value of Projected Benefits. This level of target funding exceeds any conventional actuarial methodology used to prefund benefits.

GASB 75 Calculations: GASB Statement 75 will impact the liabilities and/or expenses developed for reporting in the District's financial statements. GASB 75 calculations are outside the scope of this report.

Employees reflected in future years' costs: The counts of active employees and retirees shown in Table 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, except for one new entrant assumed to be hired in 2020 to replace a retiring employee. We will incorporate any other new employees in the next valuation, in the same way we included new employees hired after July 2017 in this June 2019 valuation.

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
Actuarially Determined Contribution for Fiscal Years Ending 2020-2022

This table develops Actuarially Determined Contributions for the District's fiscal years ending June 30, 2020, 2021 and 2022, based on the June 30, 2019 valuation results and funding policy described earlier.

Funding Policy	100% of Actuarially Determined Contribution		
Valuation date	6/30/2019		
	6/30/2020	6/30/2021	6/30/2022
For fiscal year ending	6/30/2020	6/30/2021	6/30/2022
Expected long-term return on assets	4.50%	4.50%	4.50%
Discount rate	4.50%	4.50%	4.50%
Number of Covered Employees			
Actives	9	9	9
Retirees	5	5	5
Total Participants	14	14	14
Actuarial Present Value of Projected Benefits			
Actives	\$ 2,767,205	\$ 2,860,827	\$ 2,946,544
Retirees	771,172	748,386	718,505
Total APVPB	3,538,377	3,609,213	3,665,049
Actuarial Accrued Liability (AAL)			
Actives	1,469,726	1,658,138	1,847,889
Retirees	771,172	748,386	718,505
Total AAL	2,240,898	2,406,524	2,566,394
Actuarial Value of Assets	4,086,958	4,398,684	4,490,047
Unfunded AAL (UAAL)	(1,846,060)	(1,992,160)	(1,923,653)
UAAL Amortization method	Level Dollar	Level Dollar	Level Dollar
Remaining amortization period (years)	15	15	15
Amortization Factor	11.2228	11.2228	11.2228
Actuarially Determined Contribution (ADC)			
a. Normal Cost	\$ 146,580	\$ 151,344	\$ 156,263
b. Amortization of UAAL	(164,492)	(177,510)	(171,405)
c. Interest to fiscal year end	(806)	(1,177)	(681)
Total ADC (a. + b. + c. but not less than \$0)	-	-	-
Expected Employer OPEB Contributions			
Estimated payments on behalf of retirees	\$ 66,564	\$ 77,429	\$ 86,954
Estimated current year's implicit subsidy	19,882	26,804	25,342
Estimated contribution to OPEB trust	* 125,000	(104,233)	(112,296)
Total Expected Employer Contribution	211,446	-	-
% of AAL Funded	182.4%	182.8%	175.0%
% of APVBP Funded	115.5%	121.9%	122.5%

* The District budgeted a \$125,000 trust contribution for FYE 2020.



Table 1B
120% APVPB Funding for Fiscal Years Ending 2020-2022

We calculated trust contributions assuming the District desires to prefund 120% of the Actuarial Present Value of Projected Benefits. Funding at this level would allow all future benefit payments for current employees and retirees to be made from the trust without any future trust contributions required while allowing some margin for adverse plan and investment experience.

Funding Policy	120% of APVPB		
Valuation date	6/30/2019		
For fiscal year ending	6/30/2020	6/30/2021	6/30/2022
Expected long-term return on assets	4.50%	4.50%	4.50%
Discount rate	4.50%	4.50%	4.50%
Number of Covered Employees			
Actives	9	9	9
Retirees	5	5	5
Total Participants	14	14	14
Actuarial Present Value of Projected Benefits (APVPB)			
Actives	\$ 2,767,205	\$ 2,860,827	\$ 2,946,544
Retirees	771,172	748,386	718,505
Total APVPB	3,538,377	3,609,213	3,665,049
Actuarial Accrued Liability (AAL)			
Actives	1,469,726	1,658,138	1,847,889
Retirees	771,172	748,386	718,505
Total AAL	2,240,898	2,406,524	2,566,394
Actuarial Value of Assets	4,086,958	4,398,684	4,490,047
% of APVPB Funded	115.5%	121.9%	122.5%
Contribution Targeting 120% of APVPB			
Funding Goal at Beginning of FY (120% of APVPB)	\$ 4,246,052	\$ 4,331,056	\$ 4,398,059
Actuarial Value of Assets at Beginning of FY	4,086,958	4,398,684	4,490,047
Target Funding Deficit (Surplus) at Beginning of FY	159,094	(67,628)	(91,988)
10 Year Amortization of Target Funding Deficit	19,240	(8,179)	(11,125)
Interest to fiscal year end	866	(26,704)	(4,139)
Total Targeted OPEB Contributions	\$ 20,106	\$ (34,883)	\$ (15,264)
Expected Employer OPEB Contributions			
a. Estimated payments on behalf of retirees	\$ 66,564	\$ 77,429	\$ 86,954
b. Estimated current year's implicit subsidy	19,882	26,804	25,342
c. Estimated contribution to OPEB trust at end of FY	* 125,000	(104,233)	(112,296)
Total Expected Employer Contribution (a. + b. + c. but not less than \$0)	211,446	-	-

* The District budgeted a \$125,000 trust contribution for FYE 2020.



Table 1C
150% APVPB Funding for Fiscal Years Ending 2020-2022

The table below develops the trust contributions assuming the District desires to prefund 150% of the Actuarial Present Value of Projected Benefits over the next 10 years. Funding at this level would allow all future benefit payments to current employees and retirees to be made from the trust without any future trust contributions required while allowing significant margin for adverse plan and investment experience.

Funding Policy	150% of APVPB		
Valuation date	6/30/2019		
For fiscal year ending	6/30/2020	6/30/2021	6/30/2022
Expected long-term return on assets	4.50%	4.50%	4.50%
Discount rate	4.50%	4.50%	4.50%
Number of Covered Employees			
Actives	9	9	9
Retirees	5	5	5
Total Participants	14	14	14
Actuarial Present Value of Projected Benefits (APVPB)			
Actives	\$ 2,767,205	\$ 2,860,827	\$ 2,946,544
Retirees	771,172	748,386	718,505
Total APVPB	3,538,377	3,609,213	3,665,049
Actuarial Accrued Liability (AAL)			
Actives	1,469,726	1,658,138	1,847,889
Retirees	771,172	748,386	718,505
Total AAL	2,240,898	2,406,524	2,566,394
Actuarial Value of Assets	4,086,958	4,398,684	4,638,091
% of APVPB Funded	115.5%	121.9%	126.5%
Contribution Targeting 150% of APVPB			
Funding Goal at Beginning of FY (150% of APVPB)	\$ 5,307,566	\$ 5,413,820	\$ 5,497,574
Actuarial Value of Assets at Beginning of FY	4,086,958	4,398,684	4,638,091
Target Funding Deficit (Surplus) at Beginning of FY	1,220,608	1,015,136	859,483
10 Year Amortization of Target Funding Deficit	147,616	122,767	103,943
Interest to fiscal year end	6,643	22,020	38,677
Total Targeted OPEB Contributions	\$ 154,259	\$ 144,787	\$ 142,620
Expected Employer OPEB Contributions			
a. Estimated payments on behalf of retirees	\$ 66,564	\$ 77,429	\$ 86,954
b. Estimated current year's implicit subsidy	19,882	26,804	25,342
c. Estimated contribution to OPEB trust at end of FY	* 125,000	40,554	30,324
Total Expected Employer Contribution (a. + b. + c. but not less than \$0)	211,446	144,787	142,620

* The District budgeted a \$125,000 trust contribution for FYE 2020.



Table 2
Summary of Employee Data

Active employees: The District reported 9 active employees in the data provided to us for the June 30, 2019 valuation. All are currently enrolled in the medical program.

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							0	0%
25 to 29	1						1	11%
30 to 34							0	0%
35 to 39	1						1	11%
40 to 44			1				1	11%
45 to 49							0	0%
50 to 54		2				1	3	33%
55 to 59					1	1	2	22%
60 to 64					1		1	11%
65 to 69							0	0%
70 & Up							0	0%
Total	2	2	1	0	2	2	9	100%
Percent	22%	22%	11%	0%	22%	22%	100%	

<u>Valuation</u>	<u>July 2017</u>	<u>June 2019</u>
Average Attained Age for Actives	52.3	50.0
Average Years of Service	11.5	10.4

Retired members: There are also 3 retirees and 2 survivors currently receiving benefits under this program as of the June 30, 2019 valuation date. Their ages are summarized in the chart below.

Retirees by Age		
Current Age	Number	Percent
Below 50	0	0%
50 to 54	0	0%
55 to 59	1	20%
60 to 64	0	0%
65 to 69	1	20%
70 to 74	1	20%
75 to 79	1	20%
80 & up	1	20%
Total	5	100%
Average Age:		
On 6/30/2019	72.6	
At retirement	59.0	

Census changes after the valuation date: One active employee retired between the June 30, 2019 valuation date and the date this report was issued. The liabilities shown in the report reflect the known retirement and include estimated liabilities for one new employee who will be hired to fill the resulting vacancy.



Table 2- Summary of Employee Data
(Concluded)

The chart below reconciles the number of actives and retirees included in the July 1, 2017 valuation of the District plan with those included in the June 30, 2019 valuation:

Reconciliation of District Plan Members Between Valuation Dates				
Status	Covered Actives	Covered Retirees	Covered Surviving Spouses	Total
Number reported as of July 1, 2017	8	3	2	13
New employees	2	-	-	2
Deceased	(1)	-	-	(1)
Number reported as of June 30, 2019	9	3	2	14

Overall, the number of active plan members increased by 1, from 8 to 9, representing a 12.5% increase in active employees included in the valuation. The number of covered retired plan participants remained fixed at 5. As noted on the prior page, one active employee retired after the valuation date and elected District medical plan coverage. The District anticipates filling the vacancy created by this retirement in early 2020, bringing the total of active employees back to 9.

The following chart separates active and retired employees by medical plan election:

Counts By Medical Plan			
Medical Plan	Actives	Retirees	Total
Kaiser	8	3	11
PERS Choice	1	2	3
PERSCare	0	0	0
Total	9	5	14

The following chart separates active and retired employees by medical coverage level and type:

Employee Counts by Coverage Level				
Coverage Type	Actives	Pre- Medicare Retirees	Post- Medicare Retirees	Total
Employee only	3	-	3	6
Employee + Spouse	1	-	1	2
Employee + Child(ren)	-	-	-	0
Employee+ Family	5	1	-	6
Total	9	1	4	14



Table 3A
Summary of Retiree Benefit Provisions

OPEB provided: The District reported the following OPEB: retiree medical and dental 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 benefit within 120 days of terminating employment with the District to be eligible to continue medical coverage through the agency and be entitled to the benefits described below. If an eligible employee is not already enrolled in the medical plan, he or she may enroll within 60 days of retirement, during any future open enrollment period or with a qualifying life event. *In other words, it is the timing of initiating retirement benefits and not timing of enrollment in the medical program which determines whether or not a District retiree qualifies for lifetime medical coverage and any benefits defined in the PEMHCA resolution.* Once eligible, 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

Medical benefits provided: As a PEMHCA employer, the District is obligated to contribute toward the cost of retiree medical coverage for the retiree’s lifetime or until coverage is discontinued. As defined in a resolution with CalPERS, the District currently contributes 100% of the medical premium for active and retired employees and their dependents, not to exceed an amount which varies by coverage level. The maximum benefit provided in 2019 is the pre-Medicare premium level for single, two-party or family coverage, as applicable, for the highest CalPERS plan in the Bay area region offered to District employees. In 2019, the available plans are Kaiser, PERS Care and PERS Choice.

Dental benefits provided: The District also pays 100% of the dental premiums for retired management employees and their eligible dependents. The monthly dental premiums as of June 2019 are: \$71.90 (single coverage rate), \$138.00 (two party rate) and \$205.50 (family coverage rate).

Current premium rates: The 2019 CalPERS monthly medical plan rates in the Bay Area rate selected by District employees are shown in the table below.

Bay Area 2019 Health Plan Rates						
	Actives and Pre-Med Retirees			Medicare Eligible Retirees		
Plan	Ee Only	Ee & 1	Ee & 2+	Ee Only	Ee & 1	Ee & 2+
Kaiser HMO	\$ 768.25	\$ 1,536.50	\$ 1,997.45	\$ 323.74	\$ 647.48	\$ 1,108.43
PERS Choice PPO	866.27	1,732.54	2,252.30	360.41	720.82	1,240.58
PERSCare PPO	1,131.68	2,263.36	2,942.37	394.83	789.66	1,468.67

Note that the additional CalPERS administration fee is not included in this valuation.

Plan changes after the valuation date: The District implemented a PEMHCA Section 22893 vesting resolution that will first apply to employees hired on or after January 1, 2020. This change had no impact on this valuation of the District’s OPEB liability. Employees hired prior to January 1, 2020, can choose to be subject to the new PEMHCA vesting resolution pursuant to Section 22893(a)(6).



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, 2016, issued January 2017, 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	June 30, 2019
Funding Method	Entry Age Normal Cost, level percent of pay ¹
Asset Valuation Method	Market value of assets
Long Term Return on Assets	4.50%, net of plan investment expenses and including inflation
Discount Rate	4.50%
Participants Valued	Only current active employees and retired participants and covered dependents are valued. No future entrants are considered in this valuation. ²
Salary Increase	3.25% per year; since benefits do not depend on pay, this is used only to allocate the cost of benefits between service years
General Inflation Rate	2.75% per year

Demographic actuarial assumptions used in this valuation are based on the 2017 experience study of the California Public Employees Retirement System using data from 1997 to 2015, 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 adjusted to back out 15 years of Scale MP 2016 to central year 2015.

Mortality Improvement MacLeod Watts Scale 2018 applied generationally from 2015 (see Addendum 2)

Mortality Before Retirement
(before improvement applied)

CalPERS Public Agency Miscellaneous Non- Industrial Deaths		
Age	Male	Female
15	0.00019	0.00004
20	0.00027	0.00008
30	0.00044	0.00018
40	0.00070	0.00040
50	0.00135	0.00090
60	0.00288	0.00182
70	0.00693	0.00438
80	0.01909	0.01080

¹ 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.

² Except for one new entrant assumed to be hired in January 2020 to fill a retiring employee's position.



Table 4 - Actuarial Methods and Assumptions

(Continued)

Mortality After Retirement
(before improvement applied)

Healthy Lives			Disabled Miscellaneous		
CalPERS Public Agency Miscellaneous, Police & Fire Post Retirement Mortality			CalPERS Public Agency Disabled Miscellaneous Post-Retirement Mortality		
Age	Male	Female	Age	Male	Female
40	0.00070	0.00040	20	0.00027	0.00008
50	0.00431	0.00390	30	0.00044	0.00018
60	0.00758	0.00524	40	0.00070	0.00040
70	0.01490	0.01044	50	0.01371	0.01221
80	0.04577	0.03459	60	0.02447	0.01545
90	0.14801	0.11315	70	0.03737	0.02462
100	0.35053	0.30412	80	0.07218	0.05338
110	1.00000	1.00000	90	0.16585	0.14826

Termination Rates

Miscellaneous Employees: Sum of Vested Terminated & Refund Rates From CalPERS Experience Study Report Issued December 2017						
Attained	Years of Service					
Age	0	3	5	10	15	20
15	0.1812	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.1742	0.1193	0.0654	0.0000	0.0000	0.0000
25	0.1674	0.1125	0.0634	0.0433	0.0000	0.0000
30	0.1606	0.1055	0.0615	0.0416	0.0262	0.0000
35	0.1537	0.0987	0.0567	0.0399	0.0252	0.0184
40	0.1468	0.0919	0.0519	0.0375	0.0243	0.0176
45	0.1400	0.0849	0.0480	0.0351	0.0216	0.0168

Service Retirement Rates

The following miscellaneous retirement formulas apply:

If hired prior to 1/1/2013, or later with prior PERS service: 2.7% @ 55
If hired on or after 1/1/2013, PEPR: 2% @ 62

The rates in this valuation have been modified from the rates published by CalPERS to reflect a 100% probability of retirement by age 65.

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



Table 4 - Actuarial Methods and Assumptions

(Continued)

Service retirement rates
(concluded)

Miscellaneous Employees: 2.7% at 55 formula From CalPERS Experience Study Report Issued December 2017 <i>Modified to assume 100% retirement by age 65</i>						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0030	0.0100	0.0160	0.0340	0.0330	0.0450
55	0.0330	0.0550	0.0780	0.1130	0.1560	0.2340
60	0.0600	0.0860	0.1120	0.1500	0.1820	0.2380
65 & 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 December 2017 <i>Modified to assume 100% retirement by age 65</i>						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.0100	0.0190	0.0280	0.0360	0.0610	0.0960
60	0.0310	0.0510	0.0710	0.0910	0.1110	0.1380
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Disability Retirement Rates

No disability retirements assumed.

Healthcare Trend

Medical plan premiums, benefit caps 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
2018	Actual	2022	6.00%
2019	7.50%	2023	5.50%
2020	7.00%	2024	5.00%
2021	6.50%	2025 & later	5.00%

Dental premiums are assumed to increase by 3.0% annually.

Participation Rate

Active employees: 100% are assumed to continue their current plan election in retirement.

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



Table 4 - Actuarial Methods and Assumptions

(Continued)

Spouse Coverage	<p><i>Active employees:</i> 85% of future retirees are assumed to be married and elect coverage for their spouse in retirement. Surviving spouses are assumed to continue coverage until their death. Husbands are assumed to be 3 years older than their wives.</p> <p><i>Retired participants:</i> Existing elections for spouse coverage are assumed to continue until the spouse's death. Actual spouse ages are used, where known; if not, husbands are assumed to be 3 years older than their wives.</p>
Dependent Coverage	<p><i>Active employees:</i> 60% of future retirees are assumed to cover at least one dependent other than a spouse. This dependent coverage is assumed to end at age 64.</p> <p><i>Retired participants:</i> Coverage for dependent children of current retirees is assumed to end when the youngest currently covered dependent reaches age 26.</p>
Medicare Eligibility	<p>Absent contrary data, all individuals are assumed to be eligible for Medicare Parts A and B at age 65.</p>
Excise tax on high-cost plans	<p>The Affordable Care Act (ACA) imposed a 40% excise tax on "high cost" plans. That tax was repealed on December 20, 2019.</p>



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 MacLeod Watts’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 are shown below.

Expected Monthly Claims by Medical Plan for Selected Ages						
Region	Medical Plan	Male				
		50	53	56	59	62
Bay Area	Kaiser	\$ 761	\$ 897	\$1,042	\$ 1,195	\$ 1,358
Bay Area	PERS Choice	751	885	1,028	1,179	1,340
Bay Area	PERSCare	967	1,141	1,325	1,518	1,726
Region	Medical Plan	Female				
		50	53	56	59	62
Bay Area	Kaiser	\$ 943	\$ 1,036	\$ 1,114	\$ 1,204	\$ 1,328
Bay Area	PERS Choice	931	1,022	1,100	1,188	1,310
Bay Area	PERSCare	1,199	1,317	1,417	1,531	1,688

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.

Changes Since the Prior Valuation:

Discount rates

Decreased from 5.5% to 4.5% at the District’s request, following CERBT’s reduction of the expected short-term rate of return for Strategy 2.

Demographic assumptions

Rates of assumed mortality, termination and retirement were updated from those provided in the CalPERS 2014 experience study report to those provided in the CalPERS 2017 experience study report. Rates of retirement were adjusted to reflect a 100% probability of retirement by age 65, based on a review of the District’s experience.

Mortality Improvement

Updated from MacLeod Watts Scale 2017 to MacLeod Watts Scale 2018 (see Addendum 2 for details).

Excise tax on High-cost Coverage

The tax was repealed on December 20, 2019.



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 District. 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	
2020	\$ 45,999	\$ 20,565	\$ 66,564	\$ 10,225	\$ 9,657	\$ 19,882	\$ 86,446
2021	49,833	27,596	77,429	12,327	14,477	26,804	104,233
2022	51,914	35,040	86,954	14,252	11,090	25,342	112,296
2023	47,062	48,725	95,787	16,363	17,683	34,046	129,833
2024	48,343	58,084	106,427	18,656	24,945	43,601	150,028
2025	42,470	69,610	112,080	8,964	27,999	36,963	149,043
2026	43,255	79,434	122,689	10,162	35,552	45,714	168,403
2027	43,969	85,304	129,273	11,490	44,433	55,923	185,196
2028	36,516	81,663	118,179	-	32,918	32,918	151,097
2029	36,725	91,150	127,875	-	42,163	42,163	170,038
2030	36,845	104,716	141,561	-	49,936	49,936	191,497
2031	36,863	104,958	141,821	-	43,653	43,653	185,474
2032	36,785	103,098	139,883	-	34,828	34,828	174,711
2033	36,614	103,599	140,213	-	27,863	27,863	168,076
2034	36,339	104,114	140,453	-	19,728	19,728	160,181

The amounts shown in the Explicit Subsidy section reflect the expected payment by the District toward retiree medical and dental 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”).

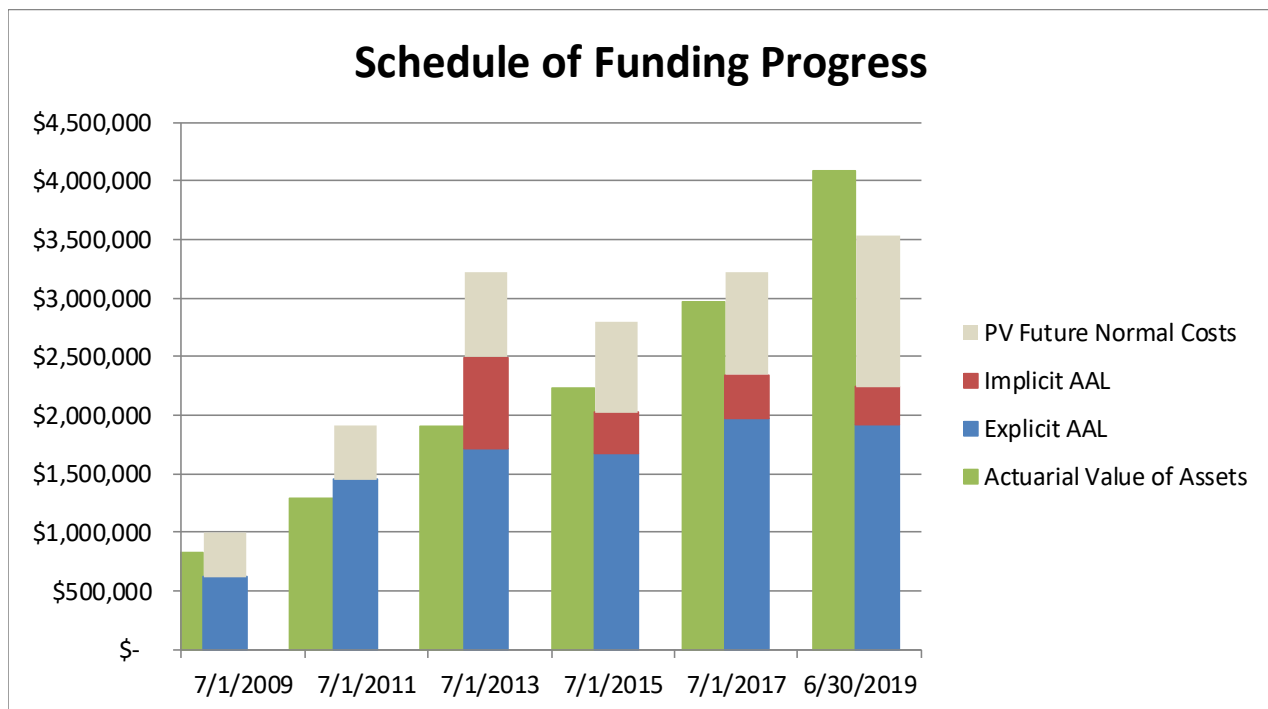
The amounts shown in the Implicit Subsidy section reflect the expected excess of retiree medical (and prescription drug) claims over the premiums expected to be charged during the year for retirees’ coverage. These amounts are also shown separately and in total for those currently retired on the valuation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



Appendix 1 Historical Information

In this section, we provide a review of key components of valuation results from 2009 through 2019.

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	\$ 825,391	\$ 622,074	\$ (203,317)	132.7%	\$ 685,534	-29.7%
7/1/2011	\$ 1,288,250	\$ 1,449,495	\$ 161,245	88.9%	\$ 617,960	26.1%
7/1/2013	\$ 1,906,731	\$ 2,492,395	\$ 585,664	76.5%	\$ 680,305	86.1%
7/1/2015	\$ 2,236,164	\$ 2,023,381	\$ (212,783)	110.5%	\$ 693,147	-30.7%
7/1/2017	\$ 2,962,231	\$ 2,347,523	\$ (614,708)	126.2%	\$ 716,477	-85.8%
6/30/2019	\$ 4,086,958	\$ 2,240,898	\$(1,846,060)	182.4%	\$ 880,131	-209.7%



Note: The sum of PV Future normal costs, Implicit AAL and Explicit AAL equals the APV of Projected Benefits.

Significant changes during this period include:

- July 1, 2011: Discount rate decreased from 7.75% to 6.0%; reflected dependent coverage and increased % of retirees assumed to cover a spouse; updated demographic assumptions.
- July 1, 2013: First time recognition of the implicit subsidy liability
- July 1, 2015: Decrease in discount rate from 6.0% to 5.5%
- July 1, 2017: Decrease in discount rate from 5.5% to 5.0%; increase in assumed healthcare trend.
- June 30, 2019: Decrease in discount rate from 5.0% to 4.5%; favorable plan experience.



Addendum 1: MacLeod Watts Age Rating Methodology

Both accounting standards (e.g., GASB 75) 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: MacLeod Watts 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 **MacLeod Watts Scale 2018** was developed from a blending of data and methodologies found in two published sources: (1) the Society of Actuaries Mortality Improvement Scale MP-2017 Report, published in October 2017 and (2) the demographic assumptions used in the 2017 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, published July 2017.

MacLeod Watts Scale 2018 is a two-dimensional mortality improvement scale reflecting both age and year of mortality improvement. The underlying base scale is Scale MP-2017 which has two segments – (1) historical improvement rates for the period 1951-2013 and (2) an estimate of future mortality improvement for years 2014-2016 using the Scale MP-2017 methodology but utilizing the assumptions obtained from Scale MP-2015. The MacLeod Watts scale then transitions from the 2016 improvement rate to the Social Security Administration (SSA) Intermediate Scale linearly over the 10-year period 2017-2026. After this transition period, the MacLeod Watts Scale uses the constant mortality improvement rate from the SSA Intermediate Scale from 2026-2040. The SSA's Intermediate Scale has a final step down in 2041 which is reflected in the MacLeod Watts scale for years 2041 and thereafter. Over the ages 95 to 115, the SSA improvement rate is graded to zero.

Scale MP-2017 can be found at the SOA website and the projection scales used in the 2017 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.

Actuarially Determined Contribution (ADC) – A contribution level determined by an actuary that is sufficient, assuming all assumptions are realized, to (1) fully fund new employee’s expected benefits by their expected retirement date(s), (2) pay off over a sufficiently short period any unfunded liabilities current as of the date funding commences, and (3) adequately fund the trust so that the trust can meet benefit payment obligations.

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.

Discount Rate – The rate of return that could be earned on an investment in the financial markets; typically, the discount rate is 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 was repealed December 20, 2019.

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.



Glossary

(Continued)

Funding Policy Contribution (FPC)– The contributions determined in accordance with the entity’s adopted funding policy. The FPC may range from “pay-go” (i.e. only paying benefits as they come due), to prefunding all projected liabilities expected for current and former employees. An entity’s FPC may be: (1) less than the Actuarially Determined Contribution (ADC) indicating that the entity has chosen not to prefund part of the liabilities reflected in the ADC; (2) more than the ADC indicating that the entity wants to prefund benefits faster than a typical ADC; or (3) based on contributions equal to 100% of an ADC, indicating that the entity desires to prefund over the period indicated by the ADC.

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.

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, (a) the assets should be segregated and restricted in a trust or similar arrangement, (b) employer contributions to the trust should be irrevocable, (c) the assets should be dedicated to providing benefits to retirees and their beneficiaries, and (d) that the assets should be legally protected from creditors of the employer and/or plan administrator. See also “Actuarial Value of Assets”.



Glossary
(Concluded)

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.

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

