

American River Flood Control District



Retiree Medical Actuarial Valuation
September 1, 2016

November 28, 2017

American River Flood Control District (“ARFCD”)
165 Commerce Circle, Suite D
Sacramento, CA 95815

CERTIFICATION LETTER

In response to the reporting requirements of Statement Number 45 of the Government Accounting Standards Board (“GASB 45”), this report documents the results of an actuarial valuation of employer-provided Other Post Employment Benefits (“OPEB”). The purpose of this valuation is to provide an assessment of OPEB liability relating to retiree medical benefits provided by ARFCD. The actuarial valuation determines the liability for retiree medical and the Annual Required Contribution (“ARC”) needed to fully fund said liability (although full funding is not required).

In preparing the valuation, we relied on electronic data and verbal information supplied by ARFCD. If any element of the demographic or benefit summaries are incorrect, we should be notified immediately.

We deeply appreciate the cooperation of Malane Chapman in providing us with information and explaining the benefit provisions, as well as her input into our report draft.

Sincerely,

Rick Roeder, MAAA, FSA
Roeder Financial

BACKGROUND

GASB Statement #45 requires government entities to record expense and report unfunded OPEB liabilities on their annual financial statements. Prior to the implementation of GASB 45, this benefit was not qualified, reported or funded. Accrual accounting is meant to match the timing between incurred cost and when it is reported. OPEB liabilities reflect an accrual accounting approach and should match the year(s) in which the benefits are earned. Prior to GASB 45, most agencies used pay-as-you-go reporting, only accounting for the cost when there was a cash outlay (i.e. the premium paid after retirement). GASB 45 was created in an attempt to:

- *Create improved financial transparency;*
- *Create better alignment between public and private sector accounting;*
- *Provide clarity among bargaining groups to show their true cost of benefits*
- *Provide employers knowledge of the true cost of benefits over time;*
- *Provide investors knowledge of the true long-term liabilities; and,*
- *Show the decision makers a cost that should be recognized.*
- *Assist bond rating agencies to more accurately provide ratings.*

Rating agencies may utilize OPEB liabilities of government agencies in their bond rating evaluation. This analysis will not necessarily have any negative impact. Rating agencies will consider whether a plan is in place to manage liabilities and whether an agency has the ability to meet annual costs. **Management of OPEB benefits is desirable. Prior to the issuance of GASB 45, many governmental entities traditionally have chosen not to actuarially fund their OPEB obligations.** Subsequently, many entities have either considered or implemented some degree of actuarial funding to minimize the amount of recorded OPEB expense.

An actuarial estimate is required to determine the ARC and liability associated with an OPEB. An actuarial valuation is a mechanism to estimate the present value, timing and magnitude of payments made in the future.

The actuarial valuation incorporates inputs such as the benefit provisions, participant data, demographic assumptions and economic assumptions. A valuation results with needed financial information. For entities with fewer than 200 participants, such as ARFCD, this valuation does not need to be completed more often than triennially as long as the “substantive plan” does not change.

-2-

If ARFCD elects to fully or partially fund OPEB obligations at some future time, a logical place to fund the plan is through the retiree medical trust (“CBERT”) sponsored by CalPERS. This trust does have some requirements for the actuarial and funding assumptions used by entities who use the trust. We believe that this valuation complies with all requirements imposed by CalPERS.

If ARFCD continues to not fund OPEB obligations, in addition to the recorded expense mandated by OPEB, a Net OPEB Obligation (“NOO”) will accrue as the annual actual contributions fall short of the ARC.

The term “ARC” is unfortunate and needs clarification. A better term than “Annual Required Contribution” would be “Annual Required Expense” since GASB 45 does not require plan sponsors to actuarially fund their OPEB program.

ACTUARIAL VALUATION

In order to determine the Annual Required Contribution (“ARC”) and the GASB 45 liability, an actuarial valuation must periodically be performed. An actuarial valuation is a snapshot to estimate the present value, timing and amount of future benefits to be paid. To complete a valuation, demographic data is needed for current and potential future benefit recipients. Benefits must be fully understood by the actuary to be properly valued. Last, assumptions must be made on future activity in a wide variety of areas: monthly health premiums, degree of usage, future anticipated employment levels, assumed investment returns and participant longevity are some of the key assumptions. Assumed investment returns and anticipated future medical inflation seem to defy reliable prediction. Thus, it is important to recognize that two actuaries can reasonably come up with different results.

The ARC and liability will also depend on the actuarial method selected. The method chosen will allocate costs differently for active employees between past and anticipated future service. There are six permitted funding methods. Entry Age Normal is the funding method most commonly used. We have selected this method for ARFCD.

ARFCD has not actuarially funded OPEB liabilities. Thus, the discount rate selected will reflect the anticipated long-term yield on a cash portfolio.

-3-

We again are using an assumed investment return assumption of 3.5%. ARFCD has the opportunity to significantly lower the ARC in future valuations. If ARFCD has an irrevocable, written policy to fund the ARC, a significantly higher discount rate could be used if the invested assets support a higher rate. For example, the retiree medical trust established in 2007 by CalPERS would permit a plan sponsor to use an assumption or roughly 7% if ARFCD makes full annual, actuarial contributions to their trust vehicle. Using an assumed discount rate of 7% would reduce the ARC by somewhere in the 40-50% range.

SELECTION OF ACTUARIAL METHOD

The Entry Age Normal Cost method determines an individual level cost as a percent of payroll. In other words, if an individual's pay is assumed to increase by 4% per year, the dollar amount of the normal cost also increases by 4%.

Selection of Discount Rate Used to Calculate Pension Expense

An important assumption in determining the expense is the selection of the discount rate. Simply, the discount rate reflects the reality that \$1 in the future is not as valuable as \$1 today. A critical element in determining such rate is the assumed yield that today's dollar can be invested.

The CBERT medical trust, established by CalPERS in 2007, enables a plan sponsor to use the same 7.5% discount rate as is used in your pension funding. Such an assumed rate is based on billions of dollars that are fully invested, much of it in equities, with the promise of future annual, actuarially determined contributions being made.

GASB 45 dictates that a lower discount rate will apply if a plan is not actuarially funded and/or is invested in an asset mix with lower expected yields. Absent a binding, formal policy by the ARFCD to **fully** fund the actuarially required contribution ("ARC"), the starting point to determine a discount rate would be 3.5%.

-4-

We believe 3.5% is a reasonable long-term rate for a plan with no advance actuarial funding that solely makes year pay-as-you-go reimbursements. This rate is based, in part, on a 20-year municipal bond index. This rate is slightly higher than the inflation assumption used by CalPERS in ARFCD's valuation for pension benefits. We do take a long-term view in setting this rate since the liabilities associated with retiree medical obligations extend out numerous decades in the future. In recent years, short-term cash pools have earned much less than 3.5%. However, such earnings remain low from a historical perspective. The impact of using a 3.5% rate, compared to a 7.0% discount rate, is pronounced. For a 40-year-old active member, the Entry Age Normal Cost can easily double when using a 3.5% rate compared to 7.0%.

ARFCD should realize the strong motivation to set up a strong funding program so that the highest reasonable discount rate can be used. A higher discount rate can dramatically reduce both the liability shown on your financial statements and the Annual Required Contribution ("ARC"). From the retirees' perspective, it is also best that ARFCD will, in fact, adhere to a formal policy of robust actuarial funding.

For ARFCD to benefit from use of a higher discount rate, there needs to be advance actuarial funding with monies put into an irrevocable benefit trust pursuant to a formal written agreement which ratifies such advance funding. Partial pre-funding can occur if the near-term contributions, associated with full actuarial funding, are deemed to be too much of a burden. In the event of partial pre-funding, an appropriate discount rate between 3.5% and 7.25% would be selected.

SELECTION OF AMORTIZATION PERIOD

ARFCD has the option of selecting both the methodology and the financing period used to recognize the financing of unfunded accrued liabilities ("UAL"). ARFCD expressed the desire to continue to use the longest permitted amortization period, 30 years, and level percent of payroll financing, will have such impact.

We did use 30-year amortization period to minimize the ARC, as requested by ARFCD. From a purist's perspective, it would be best to amortize unfunded liabilities over a much shorter period -- the average remaining future working lifetime of the active members. By so doing, one does not run into the issue of continuing to expense for employees well after the end of their working career. In this way, there is a much closer correlation between the end of an employee's working career and the completion of expensing the benefit. Typically, such period is 11-15 years.

-5-

SUMMARY OF DEMOGRAPHIC DATA

Summary of Active Member Data

The ages at the valuation date of the 7 valued active employees (10 in the 2013 valuation) is as follows:

65+	0	40-44	1
60-64	0	35-39	2
55-59	0	30-34	1
50-54	2	25-29	0
45-49	0	Under 25	2

Average Age: 41.9 years (45.0 years in 2013 valuation)

Average Service: 5.3 years (14.4 years in 2013 valuation)

Average Annual Pay: \$74,850 (\$70,464 in the 2013 valuation)

Summary of Benefit Recipient Data

The ages at the valuation date of the eight benefit recipients by attained age are as follows:

50-54	1	65-69	1
55-59	1	70-74	0
60-64	3	75-79	2

Average Age: 63.8 years
70.7 years in 2013 valuation (3 retirants)

-6-

ARFCD Actuarial Exhibits
Fiscal Year End June 30, 2016

GASB 45 Actuarial Accrued Liability (“AAL”)

This reflects the portion of the actuarial present value of retiree medical benefit attributed to past service. For retirants, there is no difference between the present value of benefits and the actuarial value of their actuarial accrued liability.

	AAL	Subsidy
Retired	\$ 3,248,844	\$ 372,757
Active	476,538	67,154
Total	\$ 3,725,382	\$ 439,911

Average AAL per Active: \$ 77,670 (292,159 in 2013 valuation)
Average AAL per Retired: \$ 452,700 (221,024 in 2013 valuation)

Annual Required Contribution (ARC)

	Retired	Active	Total
Normal Cost Component			
Normal Cost	---	\$ 63,379	\$ 63,379
Interest	---	2,219	2,219
Total	---	\$ 65,598	\$65,598
Amortization Component			
AAL	\$3,621,601	\$ 534,692	\$4,156,293
Less: Assets	-0-	-0-	-0-
Unfunded AAL	\$3,621,601	\$ 534,692	\$4,156,293
Divided by Present Value Factor	27.9903	27.9903	27.9903
Amortization Payment	\$125,619	\$18,859	\$ 144,478
Interest	4,397	660	5,057
Total	\$ 130,016	\$19,519	\$ 149,535
Annual Required Contribution	\$ 130,016	\$85,117	\$215,133

-7-

**ARFCD ARC Expense as Percent of Active Participant Payroll
September 1, 2016**

It is useful to reflect the calculated ARC expense as a percent of the valuation payroll of active employees who are potential recipients of retiree medical reimbursements.

	2016	2013
Normal Cost Rate	12.52%	18.55%
Amortization Rate:	<u>28.54%</u>	<u>18.22%</u>
Total Rate of Payroll	41.06%	36.77%
Annual Valuation Payroll	\$523,951	\$704,638
Average Participant Pay	\$ 74,850	\$ 70,464

COMMENTS on VALUATION RESULTS

COMMENT A: The reason for the increase in the rate, as a percentage of active member payroll, relates to a change in an actuarial standard in regard to the “implicit rate subsidy.” In a community-rated plan, the premiums for retirants, less than age 65, is the same as for actives. Since there is higher costs associated with the under-age-65 population than the average for the active members, recent actuarial standards mandate that we recalculate the “true” rate at each age and then apply such recalculation to your retiree population.

As a result, ARFCD’s actuarial required expense increased by \$23,126 due to the implicit rate subsidy. If ARFCD wishes to deduct an offsetting expense for active members, your auditors may wish consider this approach which offsets the added imputed costs associated with your retirants under age 65.

COMMENT B: We strongly recommend that ARFCD start a formal funding program. One of the benefits of doing so would be to reduce the ARC by roughly 40-50%.

COMMENT C: The significant lowering of the normal cost in this valuation and future valuations is the result of two factors. The impact of the vesting schedule for post-2006 hires significantly reduces cost. Further, recent hires are subject to the PEPRA provisions for smaller retirement benefits. These smaller benefits result in later assumed retirement ages. Later retirements have a pronounced impact on OPEB cost especially since pre-age-65 benefits are greater than for those on or after age 65.

-9-

Summary of Significant Benefit Provisions

BENEFIT SUMMARY

For Employees Hired Prior to November 15, 2006:

For full-time employees, same benefits as for active members, inclusive of spouse and dependent benefits.

For qualifying part-time employees, same benefits as for an employee-only benefit.

Qualifying surviving spouses will receive a reimbursement equal to 50% of the two-spouse rate.

The Following Changes For Employees Hired After November 15, 2006:

The husband and wife premium rates for full-time employees. For qualifying part-time employees, only the employee-only rate. Premium reimbursement is subject to a vesting schedule.

BENEFIT ELIGIBILITY

For active members, full-time employees and those regular part-time employees who annually work at least 1,000 hours. For service retirants, completion of at least five years of continuous full-time service with ARFCD and retiring directly from ARFCD service. For disability retirants, upon eligibility for a disability pension.

If Medicare eligible, the retiree must pay for Medicare Part A and Part B coverage.

-10-

VESTING

For those retirees hired after November 15, 2006, the following vesting schedule will apply:

<u>Years of Vesting Service</u>	<u>Percent</u>
Less than Five	0%
5-10	25%
11-19	25% + 2.5% of the excess of Years of Vesting service over 10
20+	50%

Valuation Date

September 1, 2016

Eligible Spouse

Must be married to an active member at time of retirement

-11-

Summary of Significant Actuarial Assumptions and Provisions

Medical Rate Inflation

4% per annum, compounded.

Discount Rate

3.5% per annum, compounded annually. (5% was used in the 2010 valuation)

Amortization Period

30 years. Level Percent of Pay, using 3% annual overall payroll inflation

Surviving Spouse/Domestic Partner

85% of qualifying retirees were assumed to have a surviving spouse/domestic partner at time of retirement (80% was used in the 2010 valuation). We assumed males to be three years older than females.

Mortality Rates

Samples of pre-retirement mortality probabilities of dying in the next year:

<u>AGE</u>	<u>MALE</u>	<u>FEMALE</u>
25	.00047	.00030
30	.00059	.00035
35	.00069	.00047
40	.00088	.00063
45	.00120	.00085
50	.00170	.00115
55	.00244	.00154
60	.00325	.00199
65	.00418	.00275

-12-

Samples of post-retirement mortality probabilities of dying in the next year:

AGE	MALE	FEMALE
55	.0060	.0042
60	.0071	.0044
65	.0083	.0053
70	.0130	.0099
75	.0220	.0172
80	.0390	.0290
85	.0697	.0524
90	.1297	.0989
95	.2244	.1849

Disability Assumptions

Based upon rates used in the 2014 CalPERS valuation.

Withdrawal Assumptions

Sample rates used, which include vested terminations:

<u>Years of Service</u>	----- GENERAL -----		
	<u>20</u>	Entry Age <u>30</u>	<u>40</u>
0	17.42%	16.06%	14.68%
1	15.45	14.09	12.71
2	13.48	12.12	10.74
3	11.51	10.15	8.77
4	9.54	8.18	6.80
5	8.68	7.01	5.54
10	6.68	5.07	0.71
15	5.03	3.47	0.23
20	3.67	0.21	0.05
25	0.17	0.05	0.01
30	0.05	0.01	0.01

-13-

Retirement Assumptions

Retirement assumptions assume service retirement. Rates of retirement will depend, in part, on age at hire. Sample probabilities follow:

GENERAL "CLASSIC"

ENTRY AGE:	25	40		ENTRY AGE:	25	40
50	5.5%	3.3%		59	16.7%	10.2%
51	4.3%	2.6%		60	19.6%	11.9%
52	4%	2.5%		61	18.4%	11.2%
53	5.2%	3.2%		62	26.5%	16.1%
54	8.1%	4.9%		63	23%	14%
55	17.3%	10.5%		64	23%	14%
56	11.5%	7%		65	31.1%	18.9%
57	12.7%	7.7%		66	23%	14%
58	15%	9.1%		67	23%	14%

GENERAL "PEPRA"

ENTRY AGE:	30	50		ENTRY AGE:	30	50
50	N/A	N/A		59	13.7%	5.8%
51	N/A	N/A		60	14.6%	6.2%
52	2.4%	N/A		61	14.6%	6.2%
53	3.1%	N/A		62	22.9%	9.7%
54	5.0%	N/A		63	21.0%	8.9%
55	10.4%	4.4%		64	22.2%	9.4%
56	7.2%	3.0%		65	30.4%	12.9%
57	8.6%	3.6%		66	24.7%	10.5%
58	11.0%	4.6%		67	24.7%	10.5%

Pay Increase Assumptions

Varies with entry age; eventually grading down to 3% annually

Implicit Rate Subsidy

In completing our implicit rate subsidy analysis, the following assumptions were made:

Average Age For Under Age 65 Members: 43
 Average Annual "True" Increases in Rate: Ages 43-54: 2%
 Ages 55-64: 2.5%

We did not assume the implicit rate subsidy would apply to post-age-65 retirants.