Yuba Community College District

Actuarial Study of
Retiree Health Liabilities Under GASB 74/75
Valuation Date: June 30, 2017
Measurement Date: June 30, 2017

Prepared by:
Total Compensation Systems, Inc.

Date: October 3, 2018

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Yuba Community College District
Actuarial Study of Retiree Health Liabilities

PART I: EXECUTIVE SUMMARY

A. Introduction

Yuba Community College District engaged Total Compensation Systems, Inc. (TCS) to analyze liabilities associated with its current retiree health program as of June 30, 2017 (the measurement date). The numbers in this report are based on the assumption that they will first be used to determine accounting entries for the fiscal year ending June 30, 2017. If the report will first be used for a different fiscal year, the numbers may need to be adjusted accordingly.

This report does not reflect any cash benefits paid unless the retiree is required to provide proof that the cash benefits are used to reimburse the retiree's cost of health benefits. Costs and liabilities attributable to cash benefits paid to retirees are reportable under applicable Governmental Accounting Standards Board (GASB) Standards.

This actuarial study is intended to serve the following purposes:

- To provide information to enable Yuba CCD to manage the costs and liabilities associated with its retiree health benefits.
- To provide information to enable Yuba CCD to communicate the financial implications of retiree health benefits to internal financial staff, the Board, employee groups and other affected parties.
- To provide information needed to comply with Governmental Accounting Standards Board Accounting Standards 74 and 75 related to "other postemployment benefits" (OPEB's).

Because this report was prepared in compliance with GASB 74 and 75, Yuba CCD should not use this report for any other purpose without discussion with TCS. This means that any discussions with employee groups, governing Boards, etc. should be restricted to the implications of GASB 74 and 75 compliance.

This actuarial report includes several estimates for Yuba CCD's retiree health program. In addition to the tables included in this report, we also performed cash flow adequacy tests as required under Actuarial Standard of Practice 6 (ASOP 6). Our cash flow adequacy testing covers a twenty-year period. We would be happy to make this cash flow adequacy test available to Yuba CCD in spreadsheet format upon request.

We calculated the following estimates separately for active employees and retirees. As requested, we also separated results by the following employee classifications: Certificated, Classified, Management and Police Officers. We estimated the following:

- the total liability created. (The actuarial present value of projected benefits or APVPBP)
- twenty years of projected benefit payments.
- the "total OPEB liability (TOL)." (The TOL is the portion of the APVPBP attributable to employees' service prior to the measurement date.)

- the "net OPEB liability" (NOL). For plans funded through a trust, this represents the unfunded portion of the liability.
- the service cost (SC). This is the value of OPEB benefits earned for one year of service.
- deferred inflows and outflows of resources attributable to the OPEB plan.
- "OPEB expense." This is the amount recognized in accrual basis financial statements as the current period expense. The OPEB expense includes service cost, interest and certain changes in the OPEB liability, adjusted to reflect deferred inflows and outflows. This amount may need to be adjusted to reflect any contributions received after the Measurement Date.
- Amounts to support financial statement Note Disclosures and Required Supplementary Information (RSI) schedules.

We summarized the data used to perform this study in Appendix A. No effort was made to verify this information beyond brief tests for reasonableness and consistency.

All cost and liability figures contained in this study are estimates of future results. Future results can vary dramatically and the accuracy of estimates contained in this report depends on the actuarial assumptions used. Service costs and liabilities could easily vary by 10 - 20% or more from estimates contained in this report.

B. General Findings

We estimate the "pay-as-you-go" cost of providing retiree health benefits in the year beginning July 1, 2017 to be $2,725,450 (see Section IV.A.). The "pay-as-you-go" cost is the cost of benefits for current retirees.

For current employees, the value of benefits "accrued" in the year beginning July 1, 2017 (the service cost) is $150,401. This service cost would increase each year based on covered payroll. Had Yuba CCD begun accruing retiree health benefits when each current employee and retiree was hired, a substantial liability would have accumulated. We estimate the amount that would have accumulated to be $47,809,628. This amount is called the "Total OPEB Liability" (TOL). Yuba CCD has set aside funds to cover retiree health liabilities in a GASB 75 qualifying trust. The Fiduciary Net Position of this trust at June 30, 2017 was $0. This leaves a Net OPEB Liability (NOL) of $47,809,628.

Based on the information we were provided, the OPEB Expense for the fiscal year ending June 30, 2017 is $3,354,910. As noted in this report adjustments may be needed – particularly if the reporting date is not the same as the measurement date.

We based all of the above estimates on employees as of June, 2017. Over time, liabilities and cash flow will vary based on the number and demographic characteristics of employees and retirees.

C. Description of Retiree Benefits

Following is a description of the current retiree benefit plan:

	Faculty	Classified	Academic Management	Classified Management/ Confidential
Applies to	Regardless of hire date	Regardless of hire date	Hired prior to 7/1/02	Hired prior to 7/1/02
Benefit types provided	Medical only*	Medical only	Medical and Life	Medical only
Duration of Benefits	To age 65^^	To Age 65***	Lifetime	Lifetime
Required Service	20 years**	20 years+	10 years	10 years
Minimum Age	55	55	55	60~
Dependent Coverage	No*	Yes	Yes	Yes
College Contribution %	100%**	100%	One-third^	One-third~~
College Cap	None	$1000 per year++	None	None

*Those hired prior to July 1, 2002 also receive dental, vision and life coverage. Dependents also covered.
**Those hired prior to April 1, 1986 need only 10 years. Those hired April 1, 1986 to June 30, 2002 need 10 years of service for one-third payment and 20 years for 100% payment
***Those hired prior to 7/1/08 receive lifetime coverage
+Ten years for those hired prior to January 27, 1986
++No cap for those hired prior to January 1, 2003
^100% for those hired before April 1, 1986
^^Those hired prior to July 1, 2009 receive lifetime coverage
~Age 55 for those hired prior to January 1, 1991
~~ 100% for those hired prior to January 1, 1991

D. Recommendations

It is outside the scope of this report to make specific recommendations of actions Yuba CCD should take to manage the liability created by the current retiree health program. Total Compensation Systems, Inc. can assist in identifying and evaluating options once this report has been studied. The following recommendations are intended only to allow the District to get more information from this and future studies. Because we have not conducted a comprehensive administrative audit of Yuba CCD's practices, it is possible that Yuba CCD is already complying with some or all of our recommendations.

- We recommend that Yuba CCD maintain an inventory of all benefits and services provided to retirees – whether contractually or not and whether retiree-paid or not. For each, Yuba CCD should determine whether the benefit is material and subject to GASB 74 and/or 75.

- We recommend that Yuba CCD conduct a study whenever events or contemplated actions significantly affect present or future liabilities, but no less frequently than every two years, as required under GASB 74/75.

- Under GASB 75, it is important to isolate the cost of retiree health benefits. Yuba CCD should have all premiums, claims and expenses for retirees separated from active employee premiums, claims, expenses, etc. To the extent any retiree benefits are made available to

retirees over the age of 65 – ***even on a retiree-pay-all basis*** – all premiums, claims and expenses for post-65 retiree coverage should be segregated from those for pre-65 coverage. Furthermore, Yuba CCD should arrange for the rates or prices of all retiree benefits to be set on what is expected to be a self-sustaining basis.

- Yuba CCD should establish a way of designating employees as eligible or ineligible for future OPEB benefits. Ineligible employees can include those in ineligible job classes; those hired after a designated date restricting eligibility; those who, due to their age at hire cannot qualify for District-paid OPEB benefits; employees who exceed the termination age for OPEB benefits, etc.

- Several assumptions were made in estimating costs and liabilities under Yuba CCD's retiree health program. Further studies may be desired to validate any assumptions where there is any doubt that the assumption is appropriate. (See Appendices B and C for a list of assumptions and concerns.) For example, Yuba CCD should maintain a retiree database that includes – in addition to date of birth, gender and employee classification – retirement date and (if applicable) dependent date of birth, relationship and gender. It will also be helpful for Yuba CCD to maintain employment termination information – namely, the number of OPEB-eligible employees in each employee class that terminate employment each year for reasons other than death, disability or retirement.

Respectfully submitted,

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PART II: BACKGROUND

A. Summary

Accounting principles provide that the cost of retiree benefits should be "accrued" over employees' working lifetime. For this reason, the Governmental Accounting Standards Board (GASB) issued in June of 2015 Accounting Standards 74 and 75 for retiree health benefits. These standards apply to all public employers that pay any part of the cost of retiree health benefits for current or future retirees (including early retirees), whether they pay directly or indirectly (via an "implicit rate subsidy"),

B. Actuarial Accrual

To actuarially accrue retiree health benefits requires determining the amount to expense each year so that the liability accumulated at retirement is, on average, sufficient (with interest) to cover all retiree health expenditures without the need for additional expenses. There are many different ways to determine the annual accrual amount. The calculation method used is called an "actuarial cost method."

The actuarial cost method mandated by GASB 75 is the "entry age actuarial cost method". Under this method, there are two components of actuarial cost – a "service cost" (SC) and the "Total OPEB Liability" (TOL). GASB 75 allows certain changes in the TOL to be deferred (i.e. deferred inflows and outflows of resources).

The service cost can be thought of as the value of the benefit earned each year if benefits are accrued during the working lifetime of employees. Under the entry age actuarial cost method, the actuary determines the annual amount needing to be expensed from hire until retirement to fully accrue the cost of retiree health benefits. This amount is the service cost. Under GASB 75, the service cost is calculated to be a level percentage of each employee's projected pay.

The service cost is determined using several key assumptions:

- The current ***cost of retiree health benefits*** (often varying by age, Medicare status and/or dependent coverage). The higher the current cost of retiree benefits, the higher the service cost.

- The ***"trend" rate*** at which retiree health benefits are expected to increase over time. A higher trend rate increases the service cost. A "cap" on District contributions can reduce trend to zero once the cap is reached thereby dramatically reducing service costs.

- ***Mortality rates*** varying by age and sex. (Unisex mortality rates are not often used as individual OPEB benefits do not depend on the mortality table used.) If employees die prior to retirement, past contributions are available to fund benefits for employees who live to retirement. After retirement, death results in benefit termination or reduction. Although higher mortality rates reduce service costs, the mortality assumption is not likely to vary from employer to employer.

- ***Employment termination rates*** have the same effect as mortality inasmuch as higher termination rates reduce service costs. Employment termination can vary considerably between public agencies.

- The ***service requirement*** reflects years of service required to earn full or partial retiree benefits. While a longer service requirement reduces costs, cost reductions are not usually substantial unless the service period exceeds 20 years of service.

- ***Retirement rates*** determine what proportion of employees retire at each age (assuming employees reach the requisite length of service). Retirement rates often vary by employee classification and implicitly reflect the minimum retirement age required for eligibility. Retirement rates also depend on the amount of pension benefits available. Higher retirement rates increase service costs but, except for differences in minimum retirement age, retirement rates tend to be consistent between public agencies for each employee type.

- ***Participation rates*** indicate what proportion of retirees are expected to elect retiree health benefits if a significant retiree contribution is required. Higher participation rates increase costs.

- The ***discount rate*** estimates investment earnings for assets earmarked to cover retiree health benefit liabilities. The discount rate depends on the nature of underlying assets for funded plans. The rate used for a funded plan is the real rate of return expected for plan assets plus long term inflation assumption. For an unfunded plan, the discount rate is based on an index of 20 year General Obligation municipal bonds. For partially funded plans, the discount rate is a blend of the funded and unfunded rates.

The assumptions listed above are not exhaustive, but are the most common assumptions used in actuarial cost calculations. If all actuarial assumptions are exactly met and an employer expensed the service cost every year for all past and current employees and retirees, a sizeable liability would have accumulated (after adding interest and subtracting retiree benefit costs). The liability that would have accumulated is called the Total OPEB Liability (TOL). The excess of TOL over the value of plan assets is called the Net OPEB Liability (NOL). Under GASB 74 and 75, in order for assets to count toward offsetting the TOL, the assets have to be held in an irrevocable trust that is safe from creditors and can only be used to provide OPEB benefits to eligible participants.

The total OPEB liability (TOL) can arise in several ways - e.g., as a result of plan changes or changes in actuarial assumptions. TOL can also arise from actuarial gains and losses. Actuarial gains and losses result from differences between actuarial assumptions and actual plan experience.

Under GASB 74 and 75, a portion of actuarial gains and losses can be deferred as follows:

- Investment gains and losses can be deferred five years

- Experience gains and losses can be deferred over the expected average remaining service lives (EARSL) of plan participants. In calculating the EARSL, terminated employees (primarily retirees) are considered to have a working lifetime of zero. This often makes the EARSL quite short.

- Liability changes resulting from changes in economic and demographic assumptions are also deferred based on the average working lifetime

- Liability changes resulting from plan changes, for example, cannot be deferred.

PART III: LIABILITIES AND COSTS FOR RETIREE BENEFITS

A. Introduction.

We calculated the actuarial present value of projected benefit payments (APVPBP) separately for each employee. We determined eligibility for retiree benefits based on information supplied by Yuba CCD. We then selected assumptions for the factors discussed in the above Section that, based on plan provisions and our training and experience, represent our best prediction of future plan experience. For each employee, we applied the appropriate factors based on the employee's age, sex, length of service, and employee classification.

We summarized actuarial assumptions used for this study in Appendix C.

B. Liability for Retiree Benefits.

For each employee, we projected future premium costs using an assumed trend rate (see Appendix C). We multiplied each year's benefit payments by the probability that benefits will be paid; i.e. based on the probability that the employee is living, has not terminated employment, has retired and remains eligible. The probability that benefit will be paid is zero if the employee is not eligible. The employee is not eligible if s/he has not met minimum service, minimum age or, if applicable, maximum age requirements.

The product of each year's benefit payments and the probability the benefit will be paid equals the expected cost for that year. We discounted the expected cost for each year to the measurement date June 30, 2017 at 7% interest. Finally, we multiplied the above discounted expected cost figures by the probability that the retiree would elect coverage. A retiree may not elect to be covered if retiree health coverage is available less expensively from another source (e.g. Medicare risk contract) or the retiree is covered under a spouse's plan.

For any ***current retirees***, the approach used was similar. The major difference is that the probability of payment for current retirees depends only on mortality and age restrictions (i.e. for retired employees the probability of being retired and of not being terminated are always both 1.0000).

We added the APVPBP for all employees to get the actuarial present value of projected benefit payments (APVPBP) for all participants. The APVPBP is the estimated present value of all future retiree health benefits for all **current** employees and retirees. The APVPBP is the amount on June 30, 2017 that, if all actuarial assumptions are exactly right, would be sufficient to expense all promised benefits until the last current employee or retiree dies or reaches the maximum eligibility age.

Actuarial Present Value of Projected Benefit Payments at June 30, 2017

	Total	*Certificated*	*Classified*	*Management*	*Police Officers*
Active: Pre-65	$6,190,634	$4,051,634	$1,938,361	$197,003	$3,636
Post-65	$13,292,646	$8,963,049	$3,662,582	$662,923	$4,092
Subtotal	$19,483,280	$13,014,683	$5,600,943	$859,926	$7,728
Retiree: Pre-65	$1,733,946	$209,922	$756,724	$767,300	$0
Post-65	$27,529,238	$12,870,082	$8,473,814	$6,185,342	$0
Subtotal	$29,263,184	$13,080,004	$9,230,538	$6,952,642	$0
Grand Total	$48,746,464	$26,094,687	$14,831,481	$7,812,568	$7,728
Subtotal Pre-65	$7,924,580	$4,261,556	$2,695,085	$964,303	$3,636
Subtotal Post-65	$40,821,884	$21,833,131	$12,136,396	$6,848,265	$4,092

The APVPBP should be accrued over the working lifetime of employees. At any time much of it has not been "earned" by employees. The APVPBP is used to develop expense and liability figures. To do so, the APVPBP is divided into two parts: the portions attributable to service rendered prior to the measurement date (the past service liability or Total OPEB Liability (TOL) under GASB 74 and 75) and to service after the measurement date but prior to retirement (the future service liability).

The past service and future service liabilities are each accrued in a different way. We will start with the future service liability which is funded by the service cost.

C. Cost to Prefund Retiree Benefits

1. Service Cost

The average hire age for eligible employees is 36. To accrue the liability by retirement, the District would accrue the retiree liability over a period of about 25 years (assuming an average retirement age of 61). We applied an "entry age" actuarial cost method to determine funding rates for active employees. The table below summarizes the calculated service cost.

Service Cost Year Beginning June 30, 2017

	Total	*Certificated*	*Classified*	*Management*	*Police Officers*
# of Employees	252	112	120	15	5
Per Capita Service Cost					
Pre-65 Benefit	N/A	$1,183	$18	$316	$41
Post-65 Benefit	N/A	$0	$0	$720	$0
First Year Service Cost					
Pre-65 Benefit	$139,601	$132,496	$2,160	$4,740	$205
Post-65 Benefit	$10,800	$0	$0	$10,800	$0
Total	$150,401	$132,496	$2,160	$15,540	$205

Accruing retiree health benefit costs using service costs levels out the cost of retiree health benefits over time and more fairly reflects the value of benefits "earned" each year by employees. This service cost would increase each year based on covered payroll.

2. Total OPEB Liability (TOL) and Net OPEB Liability (NOL)

If actuarial assumptions are borne out by experience, the District will fully accrue retiree benefits by expensing an amount each year that equals the service cost. If no accruals had taken place in the past, there would be a shortfall of many years' accruals, accumulated interest and forfeitures for terminated or deceased employees. This shortfall is called the Total OPEB Liability (TOL). We calculated the TOL as the APVPBP minus the present value of future service costs. To the extent that benefits are funded through a GASB 74 qualifying trust, the trust's Fiduciary Net Position (FNP) is subtracted to get the NOL. The FNP is the value of assets adjusted for any applicable payables and receivables.

Total OPEB Liability (TOL) and Net OPEB Liability (NOL) as of June 30, 2017

	Total	*Certificated*	*Classified*	*Management*	*Police Officers*
Active: Pre-65	$5,304,895	$3,205,272	$1,923,095	$174,577	$1,951
Active: Post-65	$13,241,549	$8,963,049	$3,662,582	$611,826	$4,092
Subtotal	$18,546,444	$12,168,321	$5,585,677	$786,403	$6,043
Retiree: Pre-65	$1,733,946	$209,922	$756,724	$767,300	$0
Retiree: Post-65	$27,529,238	$12,870,082	$8,473,814	$6,185,342	$0
Subtotal	$29,263,184	$13,080,004	$9,230,538	$6,952,642	$0
Subtotal: Pre-65	$7,038,841	$3,415,194	$2,679,819	$941,877	$1,951
Subtotal: Post-65	$40,770,787	$21,833,131	$12,136,396	$6,797,168	$4,092
Total OPEB Liability (TOL)	$47,809,628	$25,248,325	$14,816,215	$7,739,045	$6,043
Fiduciary Net Position as of June 30, 2017	$0				
Net OPEB Liability (NOL)	$47,809,628				

Because Yuba CCD concluded that it would be too expensive and time-consuming to rerun prior valuations under GASB 75, we invoked Paragraph 244 of GASB 75 for the transition. Consequently, in order to determine the beginning NOL, we used a "roll-back" technique. The following table shows the results of the roll-back. Yuba CCD should restate its June 30, 2016 NOL accordingly.

Changes in Net OPEB Liability as of June 30, 2017

	TOL	*FNP*	*NOL*
Roll back balance at June 30, 2016	$47,075,343	$0	$47,075,343
Service Cost	$146,376	$0	$146,376
Interest on TOL	$3,208,534	$0	$3,208,534
Employer Contributions	$0	$2,620,625	($2,620,625)
Employee Contributions	$0	$0	$0
Actual Investment Income	$0	$0	$0
Administrative Expense	$0	$0	$0
Benefit Payments	($2,620,625)	($2,620,625)	$0
Other	$0	$0	$0
Net Change during 2016-17	$734,285	$0	$734,285
Balance at June 30, 2017 *	$47,809,628	$0	$47,809,628

***** May include a slight rounding error.

3. Preliminary OPEB Expense

Under GASB 74 and 75, OPEB expense includes service cost, interest cost, change in TOL due to plan changes; all adjusted for deferred inflows and outflows. Yuba CCD determined that it was not reasonable to rerun prior valuations under GASB 75. Therefore, we used the transition approach provided in GASB 75, Paragraph 244. That means that there are no deferred inflows/outflows in the first year (with the possible exception of contributions after the measurement date).The OPEB expense shown below is considered to be preliminary because there can be employer specific deferred items (e.g., contributions made after the measurement date, and active employee contributions toward the OPEB plan).

Preliminary OPEB Expense Fiscal Year Ending June 30, 2017

	Total
Service Cost	$146,376
Interest on Total OPEB Liability (TOL)	$3,208,534
Employee Contributions	$0
Recognized Actuarial Gains/Losses	$0
Recognized Assumption Changes	$0
Actual Investment Income	$0
Recognized Investment Gains/Losses	$0
Contributions After Measurement Date*	$0
Liability Change Due to Benefit Changes	$0
Administrative Expense	$0
Preliminary OPEB Expense**	$3,354,910

***** Should be added by Yuba CCD if reporting date is after the measurement date.
****** May include a slight rounding error.

The above OPEB expense does not include an estimated $2,620,625 in employer contributions.

4. Deferred Inflows and Outflows

Certain types of TOL changes are subject to deferral, as are investment gains/losses. To qualify for deferral, gains and losses must be based on GASB 74/75 compliant valuations. Since the District's prior valuation was performed in accordance with GASB 43/45, it is not possible to calculate compliant gains and losses. (Please see Appendix E, Paragraph 244 for more information.) Therefore, valuation-based deferred items will not begin until the next valuation. However, there could be employer-specific deferred items that need to be reflected, as mentioned earlier.

PART IV: "PAY AS YOU GO" FUNDING OF RETIREE BENEFITS

We used the actuarial assumptions shown in Appendix C to project the District's twenty year retiree benefit outlay, including any implicit rate subsidy. Because these cost estimates reflect average assumptions applied to a relatively small number of employees, estimates for individual years are **certain** to be ***in***accurate. However, these estimates show the size of cash outflow.

The following table shows a projection of annual amounts needed to pay the District's share of retiree health costs, including any implicit rate subsidy.

Year Beginning July 1	*Total*	*Certificated*	*Classified*	*Management*	*Police Officers*
2017	$2,725,450	$1,279,731	$818,400	$627,319	$0
2018	$2,762,151	$1,323,956	$826,546	$611,649	$0
2019	$2,927,872	$1,439,477	$868,992	$619,403	$0
2020	$3,041,718	$1,525,770	$879,011	$636,937	$0
2021	$3,174,830	$1,608,285	$924,384	$642,161	$0
2022	$3,267,757	$1,650,442	$982,773	$634,542	$0
2023	$3,400,691	$1,715,747	$1,052,404	$632,540	$0
2024	$3,525,267	$1,774,208	$1,122,766	$628,194	$99
2025	$3,586,003	$1,830,395	$1,148,835	$606,665	$108
2026	$3,654,455	$1,919,271	$1,130,819	$604,142	$223
2027	$3,707,691	$1,959,276	$1,157,989	$590,170	$256
2028	$3,828,452	$2,045,415	$1,194,105	$588,612	$320
2029	$3,878,464	$2,082,739	$1,213,522	$581,796	$407
2030	$3,862,933	$2,096,321	$1,191,791	$574,289	$532
2031	$3,943,458	$2,136,632	$1,241,292	$564,844	$690
2032	$3,972,088	$2,159,960	$1,252,897	$558,376	$855
2033	$4,055,016	$2,252,494	$1,259,058	$542,449	$1,015
2034	$4,092,002	$2,307,826	$1,254,254	$528,756	$1,166
2035	$4,118,102	$2,329,892	$1,277,384	$509,527	$1,299
2036	$4,131,766	$2,353,923	$1,283,772	$492,611	$1,460

PART V: RECOMMENDATIONS FOR FUTURE VALUATIONS

To effectively manage benefit costs, an employer must periodically examine the existing liability for retiree benefits as well as future annual expected premium costs. GASB 74/75 require biennial valuations. In addition, a valuation should be conducted whenever plan changes, changes in actuarial assumptions or other employer actions are likely to cause a material change in accrual costs and/or liabilities.

Following are examples of actions that could trigger a new valuation.

- An employer should perform a valuation whenever the employer considers or puts in place an early retirement incentive program.
- An employer should perform a valuation whenever the employer adopts a retiree benefit plan for some or all employees.
- An employer should perform a valuation whenever the employer considers or implements changes to retiree benefit provisions or eligibility requirements.
- An employer should perform a valuation whenever the employer introduces or changes retiree contributions.
- An employer should perform a valuation whenever the employer forms a qualifying trust or changes its investment policy.
- An employer should perform a valuation whenever the employer adds or terminates a group of participants that constitutes a significant part of the covered group.

We recommend Yuba CCD take the following actions to ease future valuations.

- We have used our training, experience and information available to us to establish the actuarial assumptions used in this valuation. We have no information to indicate that any of the assumptions do not reasonably reflect future plan experience. However, the District should review the actuarial assumptions in Appendix C carefully. If the District has any reason to believe that any of these assumptions do not reasonably represent the expected future experience of the retiree health plan, the District should engage in discussions or perform analyses to determine the best estimate of the assumption in question.

PART VI: APPENDICES

APPENDIX A: MATERIALS USED FOR THIS STUDY

We relied on the following materials to complete this study.

- We used paper reports and digital files containing employee demographic data from the District personnel records.
- We used relevant sections of collective bargaining agreements provided by the District.

APPENDIX B: EFFECT OF ASSUMPTIONS USED IN CALCULATIONS

While we believe the estimates in this study are reasonable overall, it was necessary for us to use assumptions which inevitably introduce errors. We believe that the errors caused by our assumptions will not materially affect study results. If the District wants more refined estimates for decision-making, we recommend additional investigation.

APPENDIX C: ACTUARIAL ASSUMPTIONS AND METHODS

Following is a summary of actuarial assumptions and methods used in this study. The District should carefully review these assumptions and methods to make sure they reflect the District's assessment of its underlying experience. It is important for Yuba CCD to understand that the appropriateness of all selected actuarial assumptions and methods are Yuba CCD's responsibility. Unless otherwise disclosed in this report, TCS believes that all methods and assumptions are within a reasonable range based on the provisions of GASB 74 and 75, applicable actuarial standards of practice, Yuba CCD's actual historical experience, and TCS's judgment based on experience and training.

ACTUARIAL METHODS AND ASSUMPTIONS:

ACTUARIAL COST METHOD: GASB 74/75 require use of the entry age actuarial cost method.

Entry age is based on the age at hire for eligible employees. The attribution period is determined as the difference between the expected retirement age and the age at hire. The APVPBP and present value of future service costs are determined on an employee by employee basis and then aggregated.

To the extent that different benefit formulas apply to different employees of the same class, the service cost is based on the benefit plan applicable to the most recently hired employees (including future hires if a new benefit formula has been agreed to and communicated to employees). This greatly simplifies administration and accounting; as well as resulting in the correct service cost for new hires.

SUBSTANTIVE PLAN: As required under GASB 74 and 75, we based the valuation on the substantive plan. The formulation of the substantive plan was based on a review of written plan documents as well as historical information provided by Yuba CCD regarding practices with respect to employer and employee contributions and other relevant factors.

ECONOMIC ASSUMPTIONS:

Economic assumptions are set under the guidance of Actuarial Standard of Practice 27 (ASOP 27). Among other things, ASOP 27 provides that economic assumptions should reflect a consistent underlying rate of general inflation. For that reason, we show our assumed long-term inflation rate below.

INFLATION: We assumed 2.75% per year used for pension purposes. Actuarial standards require using the same rate for OPEB that is used for pension.

INVESTMENT RETURN / DISCOUNT RATE: We assumed 7% per year net of expenses. This is based on assumed long-term return on plan assets assuming 100% funding through CERBT. We used the "Building Block Method". (See Appendix E, Paragraph 53 for more information).

TREND: We assumed 4% per year. Our long-term trend assumption is based on the conclusion that, while medical trend will continue to be cyclical, the average increase over time cannot continue to outstrip general inflation by a wide margin. Trend increases in excess of general inflation result in dramatic increases in unemployment, the number of uninsured and the number of underinsured. These effects are nearing a tipping point which will inevitably result in fundamental changes in health care finance and/or delivery which will bring increases in health care costs more closely in line with general inflation. We do not believe it is reasonable to project historical trend vs. inflation differences several decades into the future.

PAYROLL INCREASE: We assumed 2.75% per year. Since benefits do not depend on salary (as they do for pensions), using an aggregate payroll assumption for the purpose of calculating the service cost results in a negligible error.

FIDUCIARY NET POSITION (FNP): The following table shows the beginning and ending FNP numbers that were provided by Yuba CCD.

Fiduciary Net Position as of June 30, 2017

	06/30/2016	*06/30/2017*
Cash and Equivalents	$0	$0
Contributions Receivable	$0	$0
Total Investments	$0	$0
Capital Assets	$0	$0
Total Assets	$0	$0
Benefits Payable	$0	$0
Fiduciary Net Position	$0	$0

NON-ECONOMIC ASSUMPTIONS:

Economic assumptions are set under the guidance of Actuarial Standard of Practice 35 (ASOP 35). See Appendix E, Paragraph 52 for more information.

MORTALITY

Employee Type	*Mortality Tables*
Certificated	2009 CalSTRS Mortality
Classified	2014 CalPERS Active Mortality for Miscellaneous Employees
Police	2014 CalPERS Mortality for Active Safety Employees

RETIREMENT RATES

Employee Type	*Retirement Rate Tables*
Certificated	2009 CalSTRS Retirement Rates
Classified	Hired prior to 2013: 2009 CalPERS Retirement Rates for School Employees Hired after 2012: 2009 CalPERS 2% at 60 Retirement Rates for Miscellaneous Employees adjusted to reflect minimum retirement age of 52
Management	2009 CalPERS Retirement Rates for School Employees
Police Officers	Hired prior to 2013: 2009 CalPERS 2%@50 Rates for Sworn Police Hired after 2012: 2009 CalPERS 3%@55 Rates for Sworn Police adjusted to reflect minimum retirement age of 52

SERVICE REQUIREMENT

Employee Type	*Vesting Rate Tables*
Certificated	Hired before 4/1/86: 100% at 10 Years of Service Hired 4/1/86 to 6/30/02: 100% at 20 Years of Service Hired after 6/30/02: 33% at 10 years; 100% at 20 years
Classified	100% at 20 Years of Service
Management	100% at 10 Years of Service
Police	100% at 20 Years of Service

COSTS FOR RETIREE COVERAGE

Actuarial Standard of Practice 6 (ASOP 6) Section 3.7.7(c)(3) provides that unadjusted premium may be used as the basis for retiree liabilities if retiree premium rates are not subsidized by active premium rates. We evaluated active and retiree rates and determined that there is not likely to be a subsidy between active and retiree rates. Therefore, retiree liabilities are based on actual employer contributions. Liabilities for active participants are based on the first year costs shown below. Subsequent years' costs are based on first year costs adjusted for trend and limited by any District contribution caps.

Employee Type	*Future Retirees Pre-65*	*Future Retirees Post-65*
Certificated	Hired after 6/30/09: $11,136 Hired before 7/1/09: $22,875	Hired after 6/30/09: $9,639 Hired before 7/1/09: $10,710
Classified	Hired after 12/31/02: $1,000 Hired before 1/1/03: $15,867	Hired after 12/31/02: $1,000 Hired before 1/1/03: $8,646
Management	One-third benefit: $6,448 Full benefit: $19,345	One-third benefit: $3,490 Full benefit: $10,469
Police Officers	Hired after 12/31/02: $1,000	Hired after 12/31/02: $1,000

PARTICIPATION RATES

Employee Type	*<65 Non-Medicare Participation %*	*65+ Medicare Participation %*
Certificated	100%	100%
Classified	$1,000 Benefit: 60% Otherwise: 100%	$1,000 Benefit: 60% Otherwise: 100%
Management	One-third benefit: 80% Otherwise: 100%	One-third benefit: 80% Otherwise: 100%
Police	60%	60%

TURNOVER

Employee Type	*Turnover Rate Tables*
Certificated	2009 CalSTRS Termination Rates
Classified	2009 CalPERS Turnover for Miscellaneous Employees
Police	2009 CalPERS Rates for Sworn Police

SPOUSE PREVALENCE

To the extent not provided and when needed to calculate benefit liabilities, 80% of retirees assumed to be married at retirement. After retirement, the percentage married is adjusted to reflect mortality.

SPOUSE AGES

To the extent spouse dates of birth are not provided and when needed to calculate benefit liabilities, female spouse assumed to be three years younger than male.

APPENDIX D: DISTRIBUTION OF ELIGIBLE PARTICIPANTS BY AGE

ELIGIBLE ACTIVE EMPLOYEES

Age	*Total*	*Certificated*	*Classified*	*Management*	*Police Officers*
Under 25	3	0	3	0	0
25-29	12	3	9	0	0
30-34	23	6	17	0	0
35-39	28	10	14	2	2
40-44	35	15	19	1	0
45-49	30	16	9	2	3
50-54	35	18	15	2	0
55-59	40	18	18	4	0
60-64	29	17	11	1	0
65 and older	17	9	5	3	0
Total	252	112	120	15	5

ELIGIBLE RETIREES

Age	*Total*	*Certificated*	*Classified*	*Management*	*Police Officers*
Under 50	0	0	0	0	0
50-54	0	0	0	0	0
55-59	8	1	3	4	0
60-64	23	4	13	6	0
65-69	52	25	20	7	0
70-74	51	27	13	11	0
75-79	45	25	11	9	0
80-84	29	13	7	9	0
85-89	25	12	10	3	0
90 and older	9	3	4	2	0
Total	242	110	81	51	0

APPENDIX E: GASB 74/75 ACCOUNTING ENTRIES AND DISCLOSURES

This report does not necessarily include the entire accounting values. As mentioned earlier, there are certain deferred items that are employer-specific. The District should consult with its auditor if there are any questions about what, if any, adjustments may be appropriate.

GASB 74/75 include a large number of items that should be included in the Note Disclosures and Required Supplementary Information (RSI) Schedules. Many of these items are outside the scope of the actuarial valuation. However, following is information to assist the District in complying with GASB 74/75 disclosure requirements:

Paragraph 50: **Information about the OPEB Plan**

Most of the information about the OPEB plan should be supplied by Yuba CCD. Following is information to help fulfill Paragraph 50 reporting requirements.

50.c: Following is a table of plan participants

	Number of Participants
Inactive Employees Receiving Benefits	242
Inactive Employees Entitled to But Not Receiving Benefits*	0
Participating Active Employees	252
Total Number of participants	494

*We were not provided with information about any terminated, vested employees

Paragraph 51: **Significant Assumptions and Other Inputs**

shown in Appendix C.

Paragraph 52: **Information Related to Assumptions and Other Inputs**

The following information is intended to assist Yuba CCD in complying with the requirements of Paragraph 52.

52.b: Mortality Assumptions Following are the tables the mortality assumptions are based upon. Inasmuch as these tables are based on appropriate populations, and that these tables are used for pension purposes, we believe these tables to be the most appropriate for the valuation.

Mortality Table	2009 CalSTRS Mortality
Disclosure	The mortality assumptions are based on the 2009 CalSTRS Mortality table created by CalSTRS. CalSTRS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.

Mortality Table	2014 CalPERS Mortality for Retired safety Employees
Disclosure	The mortality assumptions are based on the 2014 CalPERS Mortality for Retired safety Employees table created by CalPERS. CalPERS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.
Mortality Table	2014 CalPERS Mortality for Active Safety Employees
Disclosure	The mortality assumptions are based on the 2014 CalPERS Mortality for Active Safety Employees table created by CalPERS. CalPERS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.
Mortality Table	2014 CalPERS Retiree Mortality for Miscellaneous Employees
Disclosure	The mortality assumptions are based on the 2014 CalPERS Retiree Mortality for Miscellaneous Employees table created by CalPERS. CalPERS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.
Mortality Table	2014 CalPERS Active Mortality for Miscellaneous Employees
Disclosure	The mortality assumptions are based on the 2014 CalPERS Active Mortality for Miscellaneous Employees table created by CalPERS. CalPERS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.

52.c: Experience Studies Following are the tables the retirement and turnover assumptions are based upon. Inasmuch as these tables are based on appropriate populations, and that these tables are used for pension purposes, we believe these tables to be the most appropriate for the valuation.

Retirement Tables

Retirement Table	2009 CalSTRS Retirement Rates
Disclosure	The retirement assumptions are based on the 2009 CalSTRS Retirement Rates table created by CalSTRS. CalSTRS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

Retirement Table	2009 PERS 3%@55 FIRE RX
Disclosure	The retirement assumptions are based on the 2009 PERS 3%@55 FIRE RX table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

Retirement Table	2009 CalPERS 2%@50 Rates for Sworn Police
Disclosure	The retirement assumptions are based on the 2009 CalPERS 2%@50 Rates for Sworn Police table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

Retirement Table	2009 CalPERS Retirement Rates for School Employees
Disclosure	The retirement assumptions are based on the 2009 CalPERS Retirement Rates for School Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.
Retirement Table	2009 CalPERS 2.0%@60 Rates for Miscellaneous Employees
Disclosure	The retirement assumptions are based on the 2009 CalPERS 2.0%@60 Rates for Miscellaneous Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

Turnover Tables

Turnover Table	2009 CalSTRS Termination Rates
Disclosure	The turnover assumptions are based on the 2009 CalSTRS Termination Rates table created by CalSTRS. CalSTRS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

Turnover Table	2009 CalPERS Turnover for Miscellaneous Employees
Disclosure	The turnover assumptions are based on the 2009 CalPERS Turnover for Miscellaneous Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

Turnover Table	2009 CalPERS Rates for Sworn Police
Disclosure	The turnover assumptions are based on the 2009 CalPERS Rates for Sworn Police table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

For other assumptions, we use actual plan provisions and plan data.

52.d: The alternative measurement method was not used in this valuation.

52.e: NOL Using alternative trend assumptions The following table shows the Net OPEB Liability with a healthcare cost trend rate 1% higher and 1% lower than assumed in the valuation.

	Trend 1% Lower	Valuation Trend	Trend 1% Higher
Net OPEB Liability	$42,842,878	$47,809,628	$53,754,978

Paragraph 53: **Discount Rate**

The following information is intended to assist Yuba CCD to comply with Paragraph 53 requirements.

53.a: A discount rate of 7% was used in the valuation.

53.b: We assumed that contributions would be sufficient to fully fund the obligation over a period not to exceed 30 years.

53.c: We used historic 30 year real rates of return for each asset class along with our assumed long-term inflation assumption to set the discount rate. We offset the expected investment return by investment expenses of 25 basis points.

53.d and 53.e.: Not applicable.

53.f: Following is the assumed asset allocation and assumed rate of return for each.
CERBT - Strategy 1

Asset Class	Percentage of Portfolio	Assumed Gross Return
US Large Cap	43.0000	7.7950
US Small Cap	23.0000	7.7950
Long-Term Corporate Bonds	12.0000	5.2950
Long-Term Government Bonds	6.0000	4.5000
Treasury Inflation Protected Securities (TIPS)	5.0000	7.7950
US Real Estate	8.0000	7.7950
All Commodities	3.0000	7.7950

We looked at rolling periods of time for all asset classes in combination to appropriately reflect correlation between asset classes. That means that the average returns for any asset class don't necessarily reflect the averages over time individually, but reflect the return for the asset class for the portfolio average. We used geometric means.

53.g: The following table shows the Net OPEB liability with a discount rate 1% higher and 1% lower than assumed in the valuation.

	Discount Rate 1% Lower	Valuation Discount Rate	Discount Rate 1% Higher
Net OPEB Liability	$53,663,307	$47,809,628	$42,991,971

Paragraph 55: **Changes in the Net OPEB Liability**

Please see reconciliation on page 9. Please see the notes for Paragraph 244 below for more information.

Paragraph 56: **Additional Net OPEB Liability Information**

The following information is intended to assist Yuba CCD to comply with Paragraph 56 requirements.

56.a: The valuation date is June 30, 2017.
The measurement date is June 30, 2017.
56 b; 56 c; 56.d; 56.e; 56.f: Not applicable
56.g: To be determined by the employer
56.h.(1) through (4): Not applicable
56.h.(5): To be determined by the employer
56.i: Not applicable

Paragraph 57: **Required Supplementary Information**

57.a: Please see reconciliation on page 9. Please see the notes for Paragraph 244 below for more information.
57.b: These items are provided on page 9 for the current valuation, except for covered payroll, which should be determined based on appropriate methods.
57.c: We have not been asked to calculate an actuarially determined contribution amount. We assume the District contributes on an ad hoc basis, but in an amount sufficient to fully fund the obligation over a period not to exceed 30 years.
57.d: We are not aware that there are any statutorily or contractually established contribution requirements.

Paragraph 58: **Actuarially Determined Contributions**

We have not been asked to calculate an actuarially determined contribution amount. We assume the District contributes on an ad hoc basis, but in an amount sufficient to fully fund the obligation over a period not to exceed 30 years.

Paragraph 244: **Transition Option**

Prior periods were not restated due to the fact that prior valuations were not rerun in accordance with GASB 75. It was determined that the time and expense necessary to rerun prior valuations and to restate prior financial statements was not justified.

APPENDIX F: GLOSSARY OF RETIREE HEALTH VALUATION TERMS

Note: The following definitions are intended to help a *non*-actuary understand concepts related to retiree health valuations. Therefore, the definitions may not be actuarially accurate.

Actuarial Cost Method:	A mathematical model for allocating OPEB costs by year of service. The only actuarial cost method allowed under GASB 74/75 is the entry age actuarial cost method.
Actuarial Present Value of Projected Benefit Payments:	The projected amount of all OPEB benefits to be paid to current and future retirees discounted back to the valuation or measurement date.
Deferred Inflows/Outflows of Resources:	A portion of certain items that can be deferred to future periods or that weren't reflected in the valuation. The former includes investment gains/losses, actuarial gains/losses, and gains/losses due to changes in actuarial assumptions or methods. The latter includes contributions made to a trust subsequent to the measurement date but before the statement date.
Discount Rate:	Assumed investment return net of all investment expenses. Generally, a higher assumed interest rate leads to lower service costs and total OPEB liability.
Fiduciary Net Position:	Net assets (liability) of a qualifying OPEB "plan" (i.e. qualifying irrevocable trust or equivalent arrangement).
Implicit Rate Subsidy:	The estimated amount by which retiree rates are understated in situations where, for rating purposes, retirees are combined with active employees and the employer is expected, in the long run, to pay the underlying cost of retiree benefits.
Measurement Date:	The date at which assets and liabilities are determined in order to estimate TOL and NOL.
Mortality Rate:	Assumed proportion of people who die each year. Mortality rates always vary by age and often by sex. A mortality table should always be selected that is based on a similar "population" to the one being studied.
Net OPEB Liability (NOL):	The Total OPEB Liability minus the Fiduciary Net Position.
OPEB Benefits:	Other Post Employment Benefits. Generally medical, dental, prescription drug, life, long-term care or other postemployment benefits that are not pension benefits.
OPEB Expense:	This is the amount employers must recognize as an expense each year. The annual OPEB expense is equal to the Service Cost plus interest on the Total OPEB Liability TOL) plus change in TOL due to plan changes minus projected investment income; all adjusted to reflect deferred inflows and outflows of resources.

Participation Rate:	The proportion of retirees who elect to receive retiree benefits. A lower participation rate results in lower service cost and a TOL. The participation rate often is related to retiree contributions.
Retirement Rate:	The proportion of active employees who retire each year. Retirement rates are usually based on age and/or length of service. (Retirement rates can be used in conjunction with the service requirement to reflect both age and length of service). The more likely employees are to retire early, the higher service costs and actuarial accrued liability will be.
Service Cost:	The annual dollar value of the "earned" portion of retiree health benefits if retiree health benefits are to be fully accrued at retirement.
Service Requirement:	The proportion of retiree benefits payable under the OPEB plan, based on length of service and, sometimes, age. A shorter service requirement increases service costs and TOL.
Total OPEB Liability (TOL):	The amount of the actuarial present value of projected benefit payments attributable to employees' past service based on the actuarial cost method used.
Trend Rate:	The rate at which the employer's share of the cost of retiree benefits is expected to increase over time. The trend rate usually varies by type of benefit (e.g. medical, dental, vision, etc.) and may vary over time. A higher trend rate results in higher service costs and TOL.
Turnover Rate:	The rate at which employees cease employment due to reasons other than death, disability or retirement. Turnover rates usually vary based on length of service and may vary by other factors. Higher turnover rates reduce service costs and TOL.
Valuation Date:	The date as of which the OPEB obligation is determined by means of an actuarial valuation. Under GASB 74 and 75, the valuation date does not have to coincide with the statement date, but can't be more than 30 months prior.