Solano County 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.

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Table of Contents

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PART I: EXECUTIVE SUMMARY

A. Introduction

Solano County 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 Solano CCD to manage the costs and liabilities associated with its retiree health benefits.
- To provide information to enable Solano 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, Solano 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 Solano 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 Solano 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, Confidential, Management and Operating Engineers. We estimated the following:

- the total liability created. (The actuarial present value of projected benefits or APVPBP)
- fifteen 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 $1,086,439 (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 $988,664. This service cost would increase each year based on covered payroll. Had Solano 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 $14,629,817. This amount is called the "Total OPEB Liability” (TOL). Solano 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 $3,056,263. This leaves a Net OPEB Liability (NOL) of $11,573,554.

Based on the information we were provided, the OPEB Expense for the fiscal year ending June 30, 2017 is $1,294,725. 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 May, 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. Non-faculty employees who don't qualify for or who exhaust the following benefits are entitled to statutory minimum employer contributions under the "unequal contribution method" as provided under Government Code sections collectively known as PEMHCA.

	Faculty	Classified	Management	Operating Engineers
Benefit types provided	Medical, dental and vision*	Medical, dental and vision*	Medical, dental and vision*	Medical, dental and vision*
Duration of Benefits	10 years**	5, 8 or 10 years**	5, 8 or 10 years**	5, 8 or 10 years**
Required Service	15 years***	10 years	10 years	10 years
Minimum Age	55	50	50	50
Dependent Coverage	Spouse	Spouse	Spouse	Spouse
District Contribution %	100%	100%	100%	100%
District Cap	None	None	None	None

*Some retirees do not receive all three benefit types.
**Retirees electing coverage for less than 10 years receive cash payments depending on the duration elected. Retirees may waive retiree health benefits in exchange for cash payments. Faculty and management may waive dental benefits in exchange for cash payments.
***Faculty hired before July 1, 2004 only need 10 years of service

D. Recommendations

It is outside the scope of this report to make specific recommendations of actions Solano 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 Solano CCD's practices, it is possible that Solano CCD is already complying with some or all of our recommendations.

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

- We recommend that Solano 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. Solano 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, Solano 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.

- Solano 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 Solano 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, Solano 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 Solano 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 <u>would have</u> 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 Solano 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 4.2% 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*	*Confidential*	*Management*	*Operating Engineers*
Active: Pre-65	$6,136,107	$1,950,269	$2,271,538	$189,215	$511,518	$1,213,567
Post-65	$8,338,425	$5,160,370	$1,467,780	$130,370	$689,982	$889,923
Subtotal	$14,474,532	$7,110,639	$3,739,318	$319,585	$1,201,500	$2,103,490
Retiree: Pre-65	$1,750,991	$500,855	$778,686	$0	$206,700	$264,750
Post-65	$4,912,192	$2,832,662	$1,155,551	$0	$647,456	$276,523
Subtotal	$6,663,183	$3,333,517	$1,934,237	$0	$854,156	$541,273
Grand Total	$21,137,715	$10,444,156	$5,673,555	$319,585	$2,055,656	$2,644,763
Subtotal Pre-65	$7,887,098	$2,451,124	$3,050,224	$189,215	$718,218	$1,478,317
Subtotal Post-65	$13,250,617	$7,993,032	$2,623,331	$130,370	$1,337,438	$1,166,446

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 41. To accrue the liability by retirement, the District would accrue the retiree liability over a period of about 20 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*	*Confidential*	*Management*	*Operating Engineers*
# of Employees	331	142	110	9	27	43
Per Capita Service Cost						
Pre-65 Benefit	N/A	$813	$1,693	$1,698	$2,267	$2,158
Post-65 Benefit	N/A	$2,073	$884	$890	$2,179	$1,378
First Year Service Cost						
Pre-65 Benefit	$470,961	$115,446	$186,230	$15,282	$61,209	$92,794
Post-65 Benefit	$517,703	$294,366	$97,240	$8,010	$58,833	$59,254
Total	$988,664	$409,812	$283,470	$23,292	$120,042	$152,048

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*	*Confidential*	*Management*	*Operating Engineers*
Active: Pre-65	$3,066,088	$1,148,160	$1,033,308	$63,748	$192,413	$628,459
Active: Post-65	$4,900,548	$3,115,139	$821,238	$64,607	$383,264	$516,300
Subtotal	$7,966,636	$4,263,299	$1,854,546	$128,355	$575,677	$1,144,759
Retiree: Pre-65	$1,750,991	$500,855	$778,686	$0	$206,700	$264,750
Retiree: Post-65	$4,912,192	$2,832,662	$1,155,551	$0	$647,456	$276,523
Subtotal	$6,663,183	$3,333,517	$1,934,237	$0	$854,156	$541,273
Subtotal: Pre-65	$4,817,079	$1,649,015	$1,811,994	$63,748	$399,113	$893,209
Subtotal: Post-65	$9,812,740	$5,947,801	$1,976,789	$64,607	$1,030,720	$792,823
Total OPEB Liability (TOL)	$14,629,817	$7,596,816	$3,788,783	$128,355	$1,429,832	$1,686,031
Fiduciary Net Position as of June 30, 2017	$3,056,263					
Net OPEB Liability (NOL)	$11,573,554					

Because Solano 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. Solano 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	$14,121,453	$2,797,971	$11,323,482
Service Cost	$962,203	$0	$962,203
Interest on TOL	$590,814	$0	$590,814
Employer Contributions	$0	$1,044,653	($1,044,653)
Employee Contributions	$0	$0	$0
Actual Investment Income	$0	$263,321	($263,321)
Administrative Expense	$0	($5,029)	$5,029
Benefit Payments	($1,044,653)	($1,044,653)	$0
Other	$0	$0	$0
Net Change during 2016-17	$508,364	$258,292	$250,072
Balance at June 30, 2017 *	$14,629,817	$3,056,263	$11,573,554

***** 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. Solano 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	$962,203
Interest on Total OPEB Liability (TOL)	$590,814
Employee Contributions	$0
Recognized Actuarial Gains/Losses	$0
Recognized Assumption Changes	$0
Actual Investment Income	($263,321)
Recognized Investment Gains/Losses	$0
Contributions After Measurement Date*	$0
Liability Change Due to Benefit Changes	$0
Administrative Expense	$5,029
Preliminary OPEB Expense**	$1,294,725

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

The above OPEB expense does not include an estimated $1,044,653 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 fifteen 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*	*Confidential*	*Management*	*Operating Engineers*
2017	$1,086,439	$531,331	$320,223	$1,992	$157,993	$74,900
2018	$1,004,606	$456,172	$307,127	$3,984	$154,680	$82,643
2019	$1,123,536	$502,253	$353,296	$7,043	$167,208	$93,736
2020	$1,141,512	$483,450	$397,583	$3,917	$145,316	$111,246
2021	$1,099,957	$512,858	$326,011	$4,709	$129,010	$127,369
2022	$1,117,277	$543,277	$315,417	$12,017	$82,749	$163,817
2023	$1,143,324	$548,983	$305,397	$14,606	$91,942	$182,396
2024	$1,177,466	$572,990	$289,296	$17,979	$125,389	$171,812
2025	$1,195,407	$571,307	$282,992	$25,889	$115,160	$200,059
2026	$1,106,673	$462,793	$271,580	$37,405	$129,774	$205,121
2027	$1,148,517	$494,707	$298,556	$26,976	$98,707	$229,571
2028	$1,181,277	$498,514	$315,866	$30,757	$97,539	$238,601
2029	$1,134,362	$521,663	$266,113	$20,455	$89,631	$236,500
2030	$1,139,653	$554,819	$235,848	$21,977	$99,320	$227,689
2031	$1,169,576	$595,491	$245,189	$23,466	$83,794	$221,636

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 Solano 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 Solano CCD to understand that the appropriateness of all selected actuarial assumptions and methods are Solano 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, Solano 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 Solano 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 4.2% per year net of expenses. This is based on assumed long-term return on employer assets and plan assets assuming 30% funding through CCLC. We used the "Building Block Method". (See Appendix E, Paragraph 53 for more information). Our assessment of long-term returns for employer assets is based on long-term historical returns for surplus funds invested pursuant to California Government Code Sections 53601 et seq.

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 Solano 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	$2,797,971	$3,056,263
Capital Assets	$0	$0
Total Assets	$2,797,971	$3,056,263
Benefits Payable	$0	$0
Fiduciary Net Position	$2,797,971	$3,056,263

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

RETIREMENT RATES

Employee Type	***Retirement Rate Tables***
Certificated	2009 CalSTRS Retirement Rates
Classified	Hired before 2013: 2009 CalPERS Retirement Rates for School Employees Hired after 2012: 2009 CalPERS 2%@60 Retirement Rates for Miscellaneous Employees adjusted to reflect minimum retirement age of 52

SERVICE REQUIREMENT

Employee Type	***Vesting Rate Tables***
Certificated	100% at 10 Years of Service
Classified	100% at 10 Years of Service

COSTS FOR RETIREE COVERAGE

Actuarial Standard of Practice 6 (ASOP 6) provides that, as a general rule, retiree costs should be based on actual claim costs or age-adjusted premiums. This is true even for many medical plans that are commonly considered to be "community-rated." However, ASOP 6 contains a provision – specifically section 3.7.7(c) – that allows use of unadjusted premiums in certain circumstances.

Because the section 3.7.7(c) exception is new, there is not a consensus among practicing actuaries regarding the specific circumstances under which a section 3.7.7(c) exception may be invoked. It is my opinion that the section 3.7.7(c)(4) exception allows use of unadjusted premium for PEMHCA agencies if certain conditions are met. Other actuaries have taken the position that ASOP 6 does not explicitly allow use of unadjusted premium for any agencies participating in the CalPERS medical plan.

Prior to the most recent ASOP 6 revision, there was general agreement that ASOP 6 allowed use of unadjusted premium as a retiree cost basis for PEMHCA agencies (under section 3.4.5 of the prior version of ASOP 6). Since there have been no changes to the CalPERS medical plan, use of unadjusted premium must still be viewed as appropriate actuarial practice to the extent that it was under the prior version of ASOP 6. That means that if the current ASOP 6 section 3.7.7(c)(4) exception is not deemed to ***explicitly*** allow use of unadjusted premium as a retiree cost basis for Solano CCD , then it would be allowable as a "deviation."

While I am confident that ASOP 6 section 3.7.7(c)(4) will ultimately be found to explicitly allow use of unadjusted premium as a retiree cost basis for most PEMHCA agencies, I cannot be certain that this will be the case if and when this issue is fully reviewed. Therefore, I am including disclosure information required for a "deviation" so that the valuation will not need to be revised in the event section 3.7.7(c)(4) should be found not to explicitly allow use of unadjusted premium. Following is the disclosure information that is required should a deviation be necessary.

Use of ***age-adjusted*** premium for the CalPERS medical plan results in an overstatement of Solano CCD's OPEB Expense and Total OPEB Liability (TOL) to the extent that Solano CCD continues to participate in the CalPERS medical plan AND that the rate structure of the CalPERS medical plan continues in its current form (i.e. with no rate distinction between active employees and retirees). In addition to the overstatement of OPEB costs and liabilities, Solano CCD's policy of funding OPEB obligations could lead to an inability of Solano CCD to recover overfunded assets. It is important to note that, should Solano CCD leave the CalPERS medical plan, the subsequent plan may not qualify to use unadjusted premium rates. In this event, leaving the CalPERS medical plan would be comparable to a significant change in plan terms and would likely require a new valuation.

Following are the criteria we applied to Solano CCD to determine that it is reasonable to assume that Solano CCD's future participation in PEMHCA is likely and that the CalPERS medical program as well as its premium structure are sustainable. (We also have an extensive white paper on this subject that provides a basis for our rationale entirely within the context of ASOP 6. We will make this white paper available upon request.)

The District participates in the CalPERS medical program. We have performed the required evaluation of the CalPERS medical program and we have determined that there is sufficient evidence to apply the 3.7.7(c)(4) exception. Following are details regarding the evaluation based on the criteria we have set:

- **Plan qualifies as a "pooled health plan."** ASOP 6 defines a "pooled health plan" as one in which premiums are based at least in part on the claims experience of groups other than the one being valued." Since CalPERS rates are the same for all employers in each region, rates are clearly based on the experience of many groups.

- **Rates not based to any extent on the agency's claim experience.** As mentioned above, rates are the same for all participating employers regardless of claim experience or size.

- **Rates not based to any extent on the agency's demographics.** As mentioned above, rates are the same for all participating employers regardless of demographics.

- **No refunds or charges based on the agency's claim experience or demographics.** The terms of operation of the CalPERS program are set by statute and there is no provision for any refunds and charges that vary from employer to employer for any reason. The only charges are uniform administrative charges.

- **Plan in existence 20 or more years.** Enabling legislation to allow "contracting agencies" to participate in the CalPERS program was passed in 1967. The CalPERS medical plan has been successfully operating for almost 50 years. As far back as we can obtain records, the rating structure has been consistent, with the only difference having been a move to regional rating which is unrelated to age-adjusted rating.

- **No recent large increases or decreases in the number of participating plans or enrollment.** The CalPERS medical plan has shown remarkably stable enrollment. In the past 10 years, there has been small growth in the number of employers in most years – with the maximum being a little over 2% and a very small decrease in one year. Average year over year growth in the number of employers over the last 10 years has been about 0.75% per year. Groups have been consistently leaving the CalPERS medical plan while other groups have been joining with no disruption to its stability.

- **Agency is not expecting to leave plan in foreseeable future.** The District does not plan to leave CalPERS at present.

- **<u>No indication the plan will be discontinued.</u>** We are unaware of anything that would cause the CalPERS medical plan to cease or to significantly change its operation in a way that would affect this determination.

- **<u>The agency does not represent a large part of the pool.</u>** The District is in the CalPERS Bay Area region. Based on the information we have, the District constitutes no more than 0.5% of the Bay Area pool. In our opinion, this is not enough for the District to have a measurable effect on the rates or viability of the Bay Area pool.

Retiree liabilities are based on actual retiree costs. 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	$14,056	$7,328
Classified	$15,099	$5,708
Confidential	$15,099	$5,708
Management	$18,597	$9,073
Operating Engineers	$17,905	$8,295

PARTICIPATION RATES

Employee Type	***<65 Non-Medicare Participation %***	***65+ Medicare Participation %***
Certificated	100%	100%
Classified	100%	100%

TURNOVER

Employee Type	***Turnover Rate Tables***
Certificated	2009 CalSTRS Termination Rates
Classified	2009 CalPERS Termination Rates for School Employees

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*	*Confidential*	*Management*	*Operating Engineers*
Under 25	0	0	0	0	0	0
25-29	10	0	8	1	0	1
30-34	14	3	9	0	0	2
35-39	33	14	11	2	2	4
40-44	35	15	13	1	4	2
45-49	40	24	9	0	3	4
50-54	54	25	13	3	3	10
55-59	63	26	19	1	5	12
60-64	56	25	18	1	10	2
65 and older	26	10	10	0	0	6
Total	331	142	110	9	27	43

ELIGIBLE RETIREES

Age	*Total*	*Certificated*	*Classified*	*Confidential*	*Management*	*Operating Engineers*
Under 50	0	0	0	0	0	0
50-54	5	1	3	0	0	1
55-59	10	2	5	0	2	1
60-64	24	10	11	0	2	1
65-69	41	20	10	0	8	3
70-74	36	24	7	0	4	1
75-79	11	9	1	0	1	0
80-84	0	0	0	0	0	0
85-89	0	0	0	0	0	0
90 and older	0	0	0	0	0	0
Total	127	66	37	0	17	7

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 Solano 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	127
Inactive Employees Entitled to But Not Receiving Benefits*	0
Participating Active Employees	331
Total Number of participants	458

*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 Solano 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 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 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.

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.

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 Termination Rates for School Employees
Disclosure	The turnover assumptions are based on the 2009 CalPERS Termination 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.

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: <u>NOL Using alternative trend assumptions</u> 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	$10,571,692	$11,573,554	$12,680,108

<u>Paragraph 53:</u> **<u>Discount Rate</u>**

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

53.a: A discount rate of 4.2% 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 27 basis points.

53.d and 53.e.: TBD

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

CCLC - CCLC

Asset Class	Percentage of Portfolio	Assumed Gross Return
US Large Cap	60.0000	7.7950
US Small Cap	15.0000	7.7950
Long-Term Corporate Bonds	20.0000	5.2950
Short-Term Gov't Fixed	5.0000	3.2500

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	$12,809,345	$11,573,554	$10,505,801

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 Solano 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.