

**Contra Costa Community College District
Actuarial Study of
Unfunded Pension Liabilities Under GASB 73
Valuation Date: June 30, 2019
Measurement Date: June 30, 2019**

*Prepared by:
Total Compensation Systems, Inc.*

Date: September 30, 2019

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**Contra Costa Community College District
Actuarial Study of Unfunded Pension Liabilities**

PART I: EXECUTIVE SUMMARY

A. Introduction

Contra Costa Community College District engaged Total Compensation Systems, Inc. (TCS) to analyze liabilities associated with its current unfunded retiree cash benefit plan as of June 30, 2019 (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, 2019. If the report will first be used for a different fiscal year, the numbers may need to be adjusted accordingly.

This actuarial study is intended to serve the following purposes:

- To provide information to enable Contra Costa CCD to manage the costs and liabilities associated with its retiree cash benefit plan.
- To provide information to enable Contra Costa CCD to communicate the financial implications of retiree cash benefit plan to internal financial staff, the Board, employee groups and other affected parties.
- To provide information needed to comply with Governmental Accounting Standards Board Accounting Standard 73 related to unfunded pension benefits.

Because this report was prepared in compliance with GASB 73, Contra Costa 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 73 compliance.

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

- the total liability created. (The actuarial present value of projected benefit payments (APVPBP))
- ten years of projected benefit payments.
- the "total pension liability (TPL)." (The TPL is the portion of the APVPBP attributable to employees' service prior to the measurement date.)
- the service cost (SC). This is the value of benefits earned for one year of service.
- deferred inflows and outflows of resources attributable to the plan.
- "Pension expense." This is the amount recognized in accrual basis financial statements as the current period expense. The pension expense includes service cost, interest and certain changes in the pension liability, adjusted to reflect deferred inflows and outflows. This amount may need to be adjusted to reflect any contributions received after the Measurement Date.

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- 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 cash benefits in the year beginning July 1, 2019 to be \$689,855 (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, 2019 (the service cost) is \$620,964. This service cost would increase each year based on covered payroll. Had Contra Costa CCD begun accruing retiree cash 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 \$17,224,163. This amount is called the "Total Pension Liability" (TPL).

Based on the information we were provided, the Pension Expense for the fiscal year ending June 30, 2019 is \$820,500. 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 July, 2019. 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:

	<u>Faculty</u>	<u>Classified</u>	<u>Management</u>
Applies to	Hired < 7/1/84	Hired < 7/1/84	Hired < 7/1/84
Benefit types provided	Cash	Cash	Cash
Duration of Benefits	Lifetime	Lifetime	Lifetime
Required Service	10 years	10 years	10 years
Minimum Age	55	50	50/55
College Cap	Kaiser Premium	Kaiser Premium	Kaiser Premium

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D. Recommendations

It is outside the scope of this report to make specific recommendations of actions Contra Costa CCD should take to manage the liability created by the current retiree cash benefit plan. 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 Contra Costa CCD's practices, it is possible that Contra Costa CCD is already complying with some or all of our recommendations.

- We recommend that Contra Costa 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 73.
- Contra Costa CCD should establish a way of designating employees as eligible or ineligible for future retiree cash 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 retiree cash benefits; employees who exceed the termination age for retiree cash benefits, etc.
- Several assumptions were made in estimating costs and liabilities under Contra Costa CCD's retiree cash benefit plan. 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, Contra Costa 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 Contra Costa CCD to maintain employment termination information – namely, the number of pension-eligible employees in each employee class that terminate employment each year for reasons other than death, disability or retirement.

E. Certification

The actuarial information in this report is intended solely to assist Contra Costa CCD in complying with Governmental Accounting Standards Board Accounting Statement 73 and, unless otherwise stated, fully and fairly discloses actuarial information required for compliance. Nothing in this report should be construed as an accounting opinion, accounting advice or legal advice. TCS recommends that third parties retain their own actuary or other qualified professionals when reviewing this report. TCS's work is prepared solely for the use and benefit of Contra Costa CCD. Release of this report may be subject to provisions of the Agreement between Contra Costa CCD and TCS. No third party recipient of this report product should rely on the report for any purpose other than accounting compliance. Any other use of this report is unauthorized without first consulting with TCS.

This report is for fiscal year July 1, 2018 to June 30, 2019, using a measurement date of June 30, 2019. The calculations in this report have been made based on our understanding of plan provisions and actual practice at the time we were provided the required information. We relied on information provided by Contra Costa CCD. Much or all of this information was unaudited at the time of our evaluation. We reviewed the information provided for reasonableness, but this review should not be viewed as fulfilling any audit requirements. Information we relied on is listed in Appendix A.

All costs, liabilities, and other estimates are based on actuarial assumptions and methods that comply with all applicable Actuarial Standards of Practice (ASOPs). Each assumption is deemed to be reasonable by itself, taking

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into account plan experience and reasonable future expectations.

This report contains estimates of the Plan's financial condition only as of a single date. It cannot predict the Plan's future condition nor guarantee its future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. Determining results using alternative assumptions (except for the alternate discount rate shown in this report) is outside the scope of our engagement.

Future actuarial measurements may differ significantly from those presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the measurement methodology (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. We were not asked to perform analyses to estimate the potential range of such future measurements.

The signing actuary is independent of Contra Costa CCD and any plan sponsor. TCS does not intend to benefit from and assumes no duty or liability to other parties who receive this report. TCS is not aware of any relationship that would impair the objectivity of the opinion.

On the basis of the foregoing, I hereby certify that, to the best of my knowledge and belief, this report is complete and has been prepared in accordance with generally accepted actuarial principles and practices and all applicable Actuarial Standards of Practice. I am a member of the American Academy of Actuaries and meet the Qualification Standards to render this actuarial opinion.

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 Standard 73 for unfunded retiree pension benefits.

B. Actuarial Accrual

To actuarially accrue retiree cash 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 cash benefits 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 73 is the “entry age actuarial cost method”. Under this method, there are two components of actuarial cost – a “service cost” (SC) and the “Total Pension Liability” (TPL). GASB 73 allows certain changes in the TPL 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 cash benefits. This amount is the service cost. Under GASB 73, 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:

- **Mortality rates** varying by age and sex. (Unisex mortality rates are not often used as individual retiree cash 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.

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- The *discount rate* estimates investment earnings for assets earmarked to cover retiree cash benefit liabilities. The discount rate depends on the nature of underlying assets for funded plans. The rate used for an unfunded plan is based on an index of 20 year General Obligation municipal bonds.

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 Pension Liability (TPL).

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

Under GASB 73, a portion of actuarial gains and losses can be deferred as follows:

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

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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 Contra Costa 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.

We multiplied each future 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, 2019 at 3.5% interest.

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). The APVPBP is the estimated present value of all future retiree cash benefits for all **current** employees and retirees. The APVPBP is the amount on June 30, 2019 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, 2019

	<i>Total</i>	<i>Certificated</i>	<i>Classified</i>	<i>Management</i>
Active: Pre-65	\$1,344,081	\$625,735	\$586,828	\$131,518
Post-65	\$12,154,660	\$5,377,411	\$5,395,681	\$1,381,568
Subtotal	\$13,498,741	\$6,003,146	\$5,982,509	\$1,513,086
Retiree: Pre-65	\$93,073	\$0	\$82,802	\$10,271
Post-65	\$8,630,282	\$3,170,611	\$3,979,924	\$1,479,747
Subtotal	\$8,723,355	\$3,170,611	\$4,062,726	\$1,490,018
Grand Total	\$22,222,096	\$9,173,757	\$10,045,235	\$3,003,104
Subtotal Pre-65	\$1,437,154	\$625,735	\$669,630	\$141,789
Subtotal Post-65	\$20,784,942	\$8,548,022	\$9,375,605	\$2,861,315

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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 Pension Liability (TPL) under GASB 73) 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 38. To accrue the liability by retirement, the District would accrue the retiree liability over a period of about 23 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 July 1, 2019

	<i>Total</i>	<i>Certificated</i>	<i>Classified</i>	<i>Management</i>
# of Employees	1126	474	528	124
Per Capita Service Cost				
Pre-65 Benefit	N/A	\$88	\$74	\$70
Post-65 Benefit	N/A	\$492	\$444	\$515
First Year Service Cost				
Pre-65 Benefit	\$89,464	\$41,712	\$39,072	\$8,680
Post-65 Benefit	\$531,500	\$233,208	\$234,432	\$63,860
Total	\$620,964	\$274,920	\$273,504	\$72,540

Accruing retiree cash benefit costs using service costs levels out the cost of retiree cash 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 Pension Liability (TPL)

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 Pension Liability (TPL). We calculated the TPL as the APVPBP minus the present value of future service costs.

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Total Pension Liability (TPL) as of June 30, 2019

	<i>Total</i>	<i>Certificated</i>	<i>Classified</i>	<i>Management</i>
Active: Pre-65	\$622,096	\$284,670	\$267,486	\$69,940
Post-65	\$7,878,712	\$3,470,550	\$3,479,629	\$928,533
Subtotal	\$8,500,808	\$3,755,220	\$3,747,115	\$998,473
Retiree: Pre-65	\$93,073	\$0	\$82,802	\$10,271
Post-65	\$8,630,282	\$3,170,611	\$3,979,924	\$1,479,747
Subtotal	\$8,723,355	\$3,170,611	\$4,062,726	\$1,490,018
Subtotal Pre-65	\$715,169	\$284,670	\$350,288	\$80,211
Subtotal Post-65	\$16,508,994	\$6,641,161	\$7,459,553	\$2,408,280
Grand Total	\$17,224,163	\$6,925,831	\$7,809,841	\$2,488,491

The following table shows the reconciliation of the June 30, 2018 Net Pension Liability (NPL) in the prior valuation to the June 30, 2019 NPL.

	<i>TOL</i>	<i>FNP</i>	<i>NOL</i>
Balance at June 30, 2018	\$18,799,864	\$0	\$18,799,864
Service Cost	\$380,612	\$0	\$380,612
Interest on Total OPEB Liability	\$707,085	\$0	\$707,085
Expected Investment Income	\$0	\$0	\$0
Administrative Expenses	\$0	\$0	\$0
Employee Contributions	\$0	\$0	\$0
Employer Contributions to Trust	\$0	\$0	\$0
Employer Contributions as Benefit Payments	\$0	\$765,324	(\$765,324)
Actual Benefit Payments from Trust	\$0	\$0	\$0
Actual Benefit Payments from Employer	(\$765,324)	(\$765,324)	\$0
Expected Minus Actual Benefit Payments*	\$0	\$0	\$0
Expected Balance at June 30, 2019	\$19,122,237	\$0	\$19,122,237
Experience Gains/Losses	(\$2,593,954)	\$0	(\$2,593,954)
Changes in Assumptions	\$695,880	\$0	\$695,880
Changes in Benefit Terms	\$0	\$0	\$0
Investment Gains/Losses	\$0	\$0	\$0
Other	\$0	\$0	\$0
Net Change during 2018-19	(\$1,575,701)	\$0	(\$1,575,701)
Actual Balance at June 30, 2019**	\$17,224,163	\$0	\$17,224,163

* Deferrable as an Experience Gain or Loss.

** May include a slight rounding error.

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3. Pension Expense

Changes in the NPL arising from certain sources are recognized on a deferred basis. The deferral history for Contra Costa CCD is shown in Appendix F. The following table summarizes the beginning and ending balances for each deferral item.

Deferred Inflow/Outflow Balances Fiscal Year Ending June 30, 2019

	<i>Beginning Balance</i>	<i>Newly Created</i>	<i>Recognition</i>	<i>Ending Balance</i>
Experience Gains/Losses	\$0	(\$2,593,954)	\$247,044	(\$2,346,910)
Assumption Changes	(\$795,134)	\$695,880	\$20,153	(\$79,101)
Investment Gains/Losses	\$0	\$0	\$0	\$0
Deferred Balances	(\$795,134)	(\$1,898,074)	\$267,197	(\$2,426,011)

The following table shows the reconciliation between the change in the NPL and the OPEB expense.

Pension Expense Fiscal Year Ending June 30, 2019

	<i>Beginning Balance</i>	<i>Ending Balance</i>	<i>Change</i>
Net OPEB Liability (NPL)	\$18,799,864	\$17,224,163	(\$1,575,701)
Deferred Balances	(\$795,134)	(\$2,426,011)	(\$1,630,877)
Change in Net Position	\$19,594,998	\$19,650,174	\$55,176
Employer Contributions			\$765,324
Other			\$0
Pension Expense			\$820,500

Under GASB 73, OPEB expense includes service cost, interest cost, change in TOL due to plan changes; all adjusted for deferred inflows and outflows.

Pension Expense Fiscal Year Ending June 30, 2019

	<i>Total</i>
Service Cost	\$380,612
Interest on Total Pension Liability (TPL)	\$707,085
Employee Contributions	\$0
Recognized Actuarial Gains/Losses	(\$247,044)
Recognized Assumption Changes	(\$20,153)
Actual Investment Income	\$0
Recognized Investment Gains/Losses	\$0
Contributions After Measurement Date*	\$0
Liability Change Due to Benefit Changes	\$0
Administrative Expense	\$0
Pension Expense**	\$820,500

* Should be added by Contra Costa CCD if reporting date is after the measurement date.

** May include a slight rounding error.

The above Pension expense does not include an estimated \$765,324 in employer contributions.

4. Deferred Inflows and Outflows

Certain types of TPL changes are subject to deferral, as are investment gains/losses. Appendix F provides information about deferred inflows and outflows.

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

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

The following table shows a projection of annual amounts needed to pay retiree cash benefits.

<i>Year Beginning</i>				
<i>July 1</i>	<i>Total</i>	<i>Certificated</i>	<i>Classified</i>	<i>Management</i>
2019	\$689,855	\$333,405	\$254,197	\$102,253
2020	\$700,615	\$334,008	\$262,365	\$104,242
2021	\$730,042	\$342,161	\$278,096	\$109,785
2022	\$753,605	\$346,887	\$293,890	\$112,828
2023	\$775,413	\$348,409	\$310,532	\$116,472
2024	\$793,665	\$348,031	\$326,763	\$118,871
2025	\$806,435	\$347,295	\$337,601	\$121,539
2026	\$825,039	\$347,694	\$353,779	\$123,566
2027	\$841,688	\$346,778	\$368,764	\$126,146
2028	\$856,282	\$345,536	\$383,128	\$127,618

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 73 requires 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 a cash early retirement incentive program.
- An employer should perform a valuation whenever the employer adopts a retiree cash 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 adds or terminates a group of participants that constitutes a significant part of the covered group.

We recommend Contra Costa 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 cash benefit 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 Contra Costa CCD to understand that the appropriateness of all selected actuarial assumptions and methods are Contra Costa 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 73, applicable actuarial standards of practice, Contra Costa CCD's actual historical experience, and TCS's judgment based on experience and training.

ACTUARIAL METHODS AND ASSUMPTIONS:

ACTUARIAL COST METHOD: GASB 73 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 73, 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 Contra Costa CCD.

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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.

INVESTMENT RETURN / DISCOUNT RATE: We assumed 3.5% per year. This is based on assumed long-term return on employer assets. We used the “Building Block Method”. (See Appendix E, Paragraph 42 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.

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.

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NON-ECONOMIC ASSUMPTIONS:

Economic assumptions are set under the guidance of Actuarial Standard of Practice 35 (ASOP 35). See Appendix E, Paragraph 42 for more information.

MORTALITY

<i>Participant Type</i>	<i>Mortality Tables</i>
Certificated	2009 CalSTRS Mortality
Classified	2014 CalPERS Active Mortality for Miscellaneous Employees

RETIREMENT RATES

<i>Employee Type</i>	<i>Retirement Rate Tables</i>
Certificated	2009 CalSTRS Retirement Rates
Classified Hired before 1/1/13	2009 CalPERS Retirement Rates for School Employees
Classified Hired after 12/31/2012	2009 CalPERS Retirement Rates for Miscellaneous Employees 2% @60 adjusted to minimum retirement age of 52

SERVICE REQUIREMENT: See tables on page 2

PARTICIPATION RATES

<i>Employee Type</i>	<i><65 Non-Medicare Participation %</i>	<i>65+ Medicare Participation %</i>
Certificated	6%	6%
Classified	6%	6%

TURNOVER

<i>Employee Type</i>	<i>Turnover Rate Tables</i>
Certificated	2009 CalSTRS Termination Rates
Classified	2009 CalPERS Termination Rates for School Employees

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APPENDIX D: DISTRIBUTION OF ELIGIBLE PARTICIPANTS BY AGE

ELIGIBLE ACTIVE EMPLOYEES

<i>Age</i>	<i>Total</i>	<i>Certificated</i>	<i>Classified</i>	<i>Management</i>
Under 25	5	0	5	0
25-29	41	4	37	0
30-34	86	32	51	3
35-39	134	72	52	10
40-44	139	50	73	16
45-49	149	65	61	23
50-54	166	69	75	22
55-59	167	68	80	19
60-64	143	63	60	20
65 and older	96	51	34	11
Total	1126	474	528	124

ELIGIBLE RETIREES

<i>Age</i>	<i>Total</i>	<i>Certificated</i>	<i>Classified</i>	<i>Management</i>
Under 50	0	0	0	0
50-54	0	0	0	0
55-59	1	0	1	0
60-64	1	0	0	1
65-69	6	1	4	1
70-74	9	3	4	2
75-79	9	4	3	2
80-84	8	4	3	1
85-89	5	3	1	1
90 and older	2	2	0	0
Total	41	17	16	8

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APPENDIX E: GASB 73 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 73 includes 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 73 disclosure requirements:

Paragraph 41: Information about the Pension Plan

Most of the information about the pension plan should be supplied by Contra Costa CCD. Following is information to help fulfill Paragraph 41 reporting requirements.

41.c: Following is a table of plan participants

	Number of Participants
Inactive Employees Receiving Benefits	41
Inactive Employees Entitled to But Not Receiving Benefits*	0
Participating Active Employees	1126
Total Number of participants	1167

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

Paragraph 42: Information Related to Assumptions and Other Inputs

The following information is intended to assist Contra Costa CCD in complying with the requirements of Paragraph 42.

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 CalSTRS 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.

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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.

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.

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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.

The following table shows the Total Pension 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
Total Pension Liability	\$19,908,886	\$17,224,163	\$15,072,026

Paragraph 43: **Changes in the Total Pension Liability**

Please see reconciliation on page **Error! Bookmark not defined.** Please see the notes for Paragraph 124 below for more information.

Paragraph 44: **Additional Total Pension Liability Information**

The following information is intended to assist Contra Costa CCD to comply with Paragraph 44 requirements.

- 44.a: The valuation date is June 30, 2019.
The measurement date is June 30, 2019.
- 44.b; 44.c; 44.d; 44.e; 44.f: Not applicable
- 44.g: To be determined by the employer
- 44.h.(1) through (3): Not applicable
- 44.h.(4): To be determined by the employer
- 44.i and 44.j: Not applicable

Paragraph 45: **Required Supplementary Information**

- 45.a: Please see reconciliation on page **Error! Bookmark not defined.** Please see the notes for Paragraph 124 below for more information.
- 45.b: These items are provided on page **Error! Bookmark not defined.** for the current valuation, except for covered payroll, which should be determined based on appropriate methods.

Paragraph 124: **Transition Option**

Prior periods were not restated due to the fact that prior valuations were not rerun in accordance with GASB 73. It was determined that the time and expense necessary to rerun prior valuations and to restate prior financial statements was not justified.

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APPENDIX F: GLOSSARY OF PENSION VALUATION TERMS

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

<u>Actuarial Cost Method:</u>	A mathematical model for allocating pension costs by year of service. The only actuarial cost method allowed under GASB 73 is the entry age actuarial cost method.
<u>Actuarial Present Value of Projected Benefit Payments:</u>	The projected amount of all retiree cash benefits to be paid to current and future retirees discounted back to the valuation or measurement date.
<u>Deferred Inflows/Outflows of Resources:</u>	A portion of certain items that can be deferred to future periods or that weren't reflected in the valuation. The former includes actuarial gains/losses and gains/losses due to changes in actuarial assumptions or methods. The latter includes benefit payments made subsequent to the measurement date but before the statement date.
<u>Discount Rate:</u>	Assumed investment return net of all investment expenses. Generally, a higher assumed interest rate leads to lower service costs and total pension liability.
<u>Measurement Date:</u>	The date at which assets and liabilities are determined in order to estimate TPL.
<u>Mortality Rate:</u>	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.
<u>Pension Expense:</u>	This is the amount employers must recognize as an expense each year. The annual pension expense is equal to the Service Cost plus interest on the Total Pension Liability (TPL) plus change in TPL due to plan changes; all adjusted to reflect deferred inflows and outflows of resources.
<u>Retirement Rate:</u>	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.
<u>Service Cost:</u>	The annual dollar value of the "earned" portion of retiree pension benefits if retiree pension benefits are to be fully accrued at retirement.
<u>Service Requirement:</u>	The proportion of retiree benefits payable under the retiree cash benefit plan, based on length of service and, sometimes, age. A shorter service requirement increases service costs and TPL.
<u>Total Pension Liability (TPL):</u>	The amount of the actuarial present value of projected benefit payments

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attributable to employees' past service based on the actuarial cost method used.

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 TPL.

Valuation Date:

The date as of which the pension obligation is determined by means of an actuarial valuation. Under GASB 73, the valuation date does not have to coincide with the statement date, but can't be more than 30 months prior.