

**Contra Costa Community College District**  
**Actuarial Study of**  
**Unfunded Pension Liabilities Under GASB 73**  
**Roll-forward Valuation**  
**Valuation Date: June 30, 2017**  
**Measurement Date: June 30, 2018**

*Prepared by:*  
*Total Compensation Systems, Inc.*

*Date: October 15, 2018*

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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, 2018 (the measurement date). This valuation report is based on an earlier GASB 73 valuation as of June 30, 2017. We used standard actuarial “roll-forward” methodology to estimate the Total Pension Liability (TPL) as of the measurement date. The Fiduciary Net Position (FNP) is based on the actual FNP at June 30, 2018. 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: Faculty, 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

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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 cash benefits in the year beginning July 1, 2018 to be \$765,324 (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 \$370,425. 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 at June 30, 2018 to be \$18,799,864. This amount is called the "Total Pension Liability" (TPL). Contra Costa 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, 2018 was \$0. This leaves a Net OPEB Liability (NOL) of \$18,799,864.

Based on the information we were provided, the Pension Expense for the fiscal year ending June 30, 2019 is \$1,011,021. 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 February, 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:

	<b><u>Faculty</u></b>	<b><u>Classified</u></b>	<b><u>Management</u></b>
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

### **D. Recommendations**

It is outside the scope of this report to make specific recommendations of actions Contra Costa CCD should

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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.

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.
- 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

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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 average working lifetime
- 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.

The liability for pension benefits was calculated in the valuation as of June 30, 2017 and the methodology used was described in our GASB 73 valuation report dated November 29, 2017. In Part III, we show the tables included in our November 29, 2017 valuation report and provide details of our roll-forward valuation.

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

### B. Liability for Retiree Benefits.

Below is the actuarial present value of projected benefit payments (APVPBP) table presented in our November 29, 2017 valuation report.

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

	<i>Total</i>	<i>Faculty</i>	<i>Classified</i>	<i>Management</i>
Active: Pre-65	\$1,807,972	\$837,477	\$798,380	\$172,115
Post-65	\$11,234,329	\$4,982,958	\$5,048,957	\$1,202,414
Subtotal	\$13,042,301	\$5,820,435	\$5,847,337	\$1,374,529
Retiree: Pre-65	\$120,866	\$9,871	\$110,995	\$0
Post-65	\$9,022,514	\$3,781,627	\$3,610,635	\$1,630,252
Subtotal	\$9,143,380	\$3,791,498	\$3,721,630	\$1,630,252
Grand Total	\$22,185,681	\$9,611,933	\$9,568,967	\$3,004,781
Subtotal Pre-65	\$1,928,838	\$847,348	\$909,375	\$172,115
Subtotal Post-65	\$20,256,843	\$8,764,585	\$8,659,592	\$2,832,666

### C. Cost to Prefund Retiree Benefits

#### 1. Service Cost

Below is the service cost table included in our November 29, 2017 valuation report. This service cost is used in calculating the pension expense.

#### **Service Cost Year Beginning July 1, 2017**

	<i>Total</i>	<i>Faculty</i>	<i>Classified</i>	<i>Management</i>
# of Employees	1087	479	491	117
<b>Per Capita Service Cost</b>				
Pre-65 Benefit	N/A	\$122	\$101	\$101
Post-65 Benefit	N/A	\$247	\$211	\$245
<b>First Year Service Cost</b>				
Pre-65 Benefit	\$119,846	\$58,438	\$49,591	\$11,817
Post-65 Benefit	\$250,579	\$118,313	\$103,601	\$28,665
Total	\$370,425	\$176,751	\$153,192	\$40,482



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### 2. Total Pension Liability (TPL)

The table below shows the TPL included in the November 29, 2017 valuation report. This TPL is used as the beginning of year TPL to roll forward the TPL to June 30, 2018.

#### Total Pension Liability (TPL) as of June 30, 2018

	<i>Total</i>	<i>Faculty</i>	<i>Classified</i>	<i>Management</i>
Active: Pre-65	\$877,029	\$387,171	\$403,652	\$86,206
Post-65	\$9,289,621	\$4,071,274	\$4,224,327	\$994,020
Subtotal	\$10,166,650	\$4,458,445	\$4,627,979	\$1,080,226
Retiree: Pre-65	\$120,866	\$9,871	\$110,995	\$0
Post-65	\$9,022,514	\$3,781,627	\$3,610,635	\$1,630,252
Subtotal	\$9,143,380	\$3,791,498	\$3,721,630	\$1,630,252
Subtotal Pre-65	\$997,895	\$397,042	\$514,647	\$86,206
Subtotal Post-65	\$18,312,135	\$7,852,901	\$7,834,962	\$2,624,272
Grand Total	\$19,310,029	\$8,249,943	\$8,349,608	\$2,710,478

In order to determine the June 30, 2018 NPL, we used a “roll-forward” technique for the TPL. The FNP is based on the actual June 30, 2018 FNP. The following table shows the results of the roll-forward.

#### Changes in Net Pension Liability as of June 30, 2018

	<i>TPL</i>	<i>FNP</i>	<i>NOL</i>
Balance at June 30, 2017	\$19,310,029	\$0	\$19,310,029
Service Cost	\$370,425	\$0	\$370,425
Interest on TPL	\$727,024	\$0	\$727,024
Employer Contributions	\$0	\$726,052	(\$726,052)
Employee Contributions	\$0	\$0	\$0
Assumption Changes	(\$881,562)	\$0	(\$881,562)
Expected Investment Income	\$0	\$0	\$0
Investment Gains/Losses	\$0	\$0	\$0
Administrative Expense	\$0	\$0	\$0
Expected Benefit Payments	(\$726,052)	(\$726,052)	\$0
Actual minus Expected Benefit Payments	\$0	\$0	\$0
Other	\$0	\$0	\$0
Net Change during 2017-18	(\$510,165)	\$0	(\$510,165)
<u>Balance at June 30, 2018 *</u>	<u>\$18,799,864</u>	<u>\$0</u>	<u>\$18,799,864</u>

\* May include a slight rounding error.

### 3. Pension Expense

Under GASB 73, pension expense includes service cost, interest cost, change in TPL due to plan changes; all adjusted for deferred inflows and outflows. Following is the pension expense for the fiscal year ending June 30, 2019. The pension 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 pension plan).

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### **Pension Expense Fiscal Year Ending June 30, 2019**

	<i>Total</i>
Service Cost	\$370,425
Interest on Total Pension Liability (TPL)	\$727,024
Employee Contributions	\$0
Recognized Actuarial Gains/Losses	\$0
Recognized Assumption Changes	(\$86,428)
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**	\$1,011,021

\* 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 \$726,052 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 details of any deferred inflows and/or outflows included in the pension expense.

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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 that was included in the November 29, 2017 valuation report.

<i>Year Beginning</i>				
<i>July 1</i>	<i>Total</i>	<i>Faculty</i>	<i>Classified</i>	<i>Management</i>
2017	\$755,094	\$405,151	\$240,078	\$109,865
2018	\$765,324	\$407,708	\$242,992	\$114,624
2019	\$780,051	\$410,936	\$250,750	\$118,365
2020	\$794,962	\$411,168	\$262,194	\$121,600
2021	\$814,616	\$410,357	\$278,932	\$125,327
2022	\$833,826	\$407,691	\$297,804	\$128,331
2023	\$852,915	\$403,958	\$315,971	\$132,986
2024	\$869,504	\$400,691	\$333,529	\$135,284
2025	\$884,523	\$397,560	\$348,908	\$138,055
2026	\$905,227	\$397,130	\$367,986	\$140,111

### 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 3.8% 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	
Management	

**SERVICE REQUIREMENT:** See tables on pages 4 and 5

### **PARTICIPATION RATES**

<i>Employee Type</i>	<i>&lt;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>Faculty</i>	<i>Classified</i>	<i>Management</i>
Under 25	6	0	6	0
25-29	35	5	30	0
30-34	88	40	43	5
35-39	121	55	54	12
40-44	120	49	54	17
45-49	150	67	65	18
50-54	158	64	78	16
55-59	162	66	70	26
60-64	154	73	66	15
65 and older	93	60	25	8
Total	1087	479	491	117

#### **ELIGIBLE RETIREES**

<i>Age</i>	<i>Total</i>	<i>Faculty</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	2	1	1	0
65-69	7	0	5	2
70-74	9	5	2	2
75-79	10	4	4	2
80-84	6	3	2	1
85-89	7	7	0	0
90 and older	4	2	2	0
Total	46	22	17	7

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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	46
Inactive Employees Entitled to But Not Receiving Benefits*	0
Participating Active Employees	1087
Total Number of participants	1133

\*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	\$21,887,323	\$18,799,864	\$16,322,356

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

Please see reconciliation on page 9. 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, 2017.  
The measurement date is June 30, 2018.
- 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 9. Please see the notes for Paragraph 124 below for more information.
- 45.b: These items are provided on page 9 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: DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES

### EXPERIENCE GAINS AND LOSSES

**Increase (Decrease) in Pension Expense Arising from the Recognition of Effects of  
Experience Gains and Losses  
(Measurement Periods)**

Measurement Period	Experience Gain/Loss	Original Recognition Period (Years)	Amounts Recognized in OPEB Expense through 2017	2018	Amounts to be Recognized in OPEB Expense after 2018	2019	2020	2021	2022	2023	Thereafter
2017-18	\$0	0	\$0	\$0	\$0						
<b>Net Increase (Decrease) in Pension Expense</b>			<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

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### CHANGES OF ASSUMPTIONS

#### Increase (Decrease) in Pension Expense Arising from the Recognition of Effects of Changes of Assumptions (Measurement Periods)

Measurement Period	Changes of Assumptions	Original Recognition Period (Years)	Amounts Recognized in OPEB Expense through 2017	2018	Amounts to be Recognized in OPEB Expense after 2018	2019	2020	2021	2022	2023	Thereafter
2017-18	(\$881,562)	10.2	\$0	(\$86,428)	(\$795,134)	(\$86,428)	(\$86,428)	(\$86,428)	(\$86,428)	(\$86,428)	(\$362,994)
Net Increase (Decrease) in Pension Expense			<b>\$0</b>	<b>(\$86,428)</b>	<b>(\$795,134)</b>	<b>(\$86,428)</b>	<b>(\$86,428)</b>	<b>(\$86,428)</b>	<b>(\$86,428)</b>	<b>(\$86,428)</b>	<b>(\$362,994)</b>

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## INVESTMENT GAINS AND LOSSES

### Increase (Decrease) in Pension Expense Arising from the Recognition of Effects of Investment Gains and Losses (Measurement Periods)

Measurement Period	Investment Gain/Loss	Original Recognition Period (Years)	Amounts Recognized in OPEB Expense through 2017	2018	Amounts to be Recognized in OPEB Expense after 2018	2019	2020	2021	2022	2023	Thereafter
2017-18	\$0	0	\$0	\$0	\$0						
Net Increase (Decrease) in Pension Expense			<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>



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## APPENDIX G: 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.