MacLeod Watts

September 26, 2022

Ishrat Aziz-Khan
Finance Director
City of Colusa
425 Webster Street
Colusa, CA 95932

Re: City of Colusa Other Post-Employment Benefits June 2021 Actuarial Valuation and GASB 75 Report for Fiscal Year Ending June 30, 2022

Dear Ms. Aziz-Khan:

We are pleased to enclose our actuarial report providing financial information about the other post-employment benefit (OPEB) liabilities of the City of Colusa. The primary purposes of this report are to:

1) Remeasure plan liabilities as of June 30, 2021, in accordance with GASB 75's biennial valuation requirement,
2) Develop Actuarially Determined Contributions levels for prefunding plan benefits,
3) Provide information to be submitted to the California Employers' Retiree Benefit Trust (CERBT) to satisfy filing requirements for the trust, and
4) Provide information required by GASB 75 ("Accounting and Financial Reporting for Postemployment Benefits Other Than Pension") to be reported in the City's financial statements for the fiscal year ending June 30, 2022.

The information included in this report reflects our understanding that the City will contribute 100% or more of the Actuarially Determined Contributions each year. We assumed that OPEB trust assets remain in CERBT Asset Allocation Strategy 1. We based the valuation on the employee data, details on plan benefits and retiree benefit payments reported to us by the City. Please review our summary of this information to be comfortable that it matches your records.

We appreciate the opportunity to work on this analysis and acknowledge the efforts of City staff who provided valuable time and information to enable us to prepare this report. Please let us know if we can be of further assistance.

Sincerely,

Catherine L. MacLeod

Catherine L. MacLeod, FSA, FCA, EA, MAAA
Principal & Consulting Actuary

Enclosure

City of Colusa

Actuarial Valuation of Other Post-Employment Benefit Programs As of June 30, 2021

Development of OPEB Prefunding Levels & GASB 75 Report for the FYE June 30, 2022

Submitted September 2022

MacLeod Watts

Table of Contents

A. Executive Summary

This report presents the results of the June 30, 2021, actuarial valuation and accounting information regarding the other post-employment benefit (OPEB) program of the City of Colusa (the City). The purposes of this report are to: 1) summarize the results of the valuation; 2) develop Actuarially Determined Contribution (ADC) levels for prefunding plan benefits; 3) provide information required by the California Employers' Retiree Benefit Trust (CERBT); and 4) provide disclosure information as required by Statement No. 75 of the Governmental Accounting Standards Board (GASB 75) for the fiscal year ending June 30, 2022.

Important background information regarding the valuation process can be found in Addendum 1. We recommend users of the report read this information to familiarize themselves with the process and context of actuarial valuations, including the requirements of GASB 75. The pages following this executive summary present exhibits and other information relevant for disclosures under GASB 75.

Results of the June 30, 2021, valuation will likely be applied to prepare the City's GASB 75 report for the fiscal year ending June 30, 2023. If there are any significant changes in plan members, plan benefits or eligibility and/or OPEB funding policy, an earlier valuation might be required or appropriate.

OPEB Obligations of the City

The City offers continuation of medical, dental, and vision coverage to retiring employees. This benefit creates one or more of the following types of OPEB liabilities:

- **Explicit subsidy liabilities**: An "explicit subsidy" exists when the employer contributes directly toward the cost of retiree healthcare. In this program, the City contributes a portion of medical premiums for qualifying retirees. These benefits are described in Section 2.
- **Implicit subsidy liabilities**: An "implicit subsidy" exists when premiums are developed using blended active and retiree claims experience. In this situation, premiums charged for retirees may not be sufficient to cover expected medical claims[1] and the premiums charged for active employees are said to "implicitly subsidize" retirees. This OPEB program includes implicit subsidy liabilities for retiree medical coverage prior to coverage under Medicare.
- **Other subsidy liabilities**: Pooled plans that do not blend active and retiree premiums likely generate subsidies between employers and retirees within the pool. In the CalPERS medical program, the premium rates for Medicare-covered retirees are based only on retiree claims experience of the pool. A recent actuarial practice note indicated these subsidies should be included in plan liabilities to the extent they are paid by the employer.[2] We generally expect these subsidies to be small and included any such liability with the implicit subsidy liability in this report.

We determine explicit subsidy liabilities using the expected direct payments promised by the plan toward retiree coverage. We determine the implicit and other subsidy liabilities as the projected difference between (a) retiree medical claim costs by age and (b) premiums charged for retiree coverage. For more information on this process Addendum 2: MacLeod Watts Age Rating Methodology.

[1] In rare situations, premiums for retiree coverage may be high enough that they subsidize active employees' claims.

[2] Exceptions exist for: 1) Medicare Advantage Plans: these plans are treated as if their premiums are age-based due to the nature of the Federal subsidies paid to these plans. 2) Plans with low explicit subsidies to Medicare-covered retirees: in these plans no part of any potential pool subsidy is expected to be paid by the employer.

Executive Summary
(Continued)

OPEB Funding Policy

The City's OPEB funding policy affects the calculation of liabilities by impacting the discount rate that is used to develop the plan liability and expense. "Prefunding" is the term used when an agency consistently contributes an amount based on an actuarially determined contribution (ADC) each year. GASB 75 allows prefunded plans to use a discount rate that reflects the expected earnings on trust assets. Pay-as-you-go, or "PAYGO", is the term used when an agency only contributes the required retiree benefits when due. When an agency finances retiree benefits on a pay-as-you-go basis, GASB 75 requires the use of a discount rate equal to a 20-year high grade municipal bond rate.

The City continues to prefund its OPEB liability, consistently contributing 100% or more of the Actuarially Determined Contributions each year. With the City's approval, the discount rate used for accounting purposes and to develop Actuarially Determined Contributions for plan funding is 6.10%. This rate reflects the current expectation of the long-term return on trust assets, based on information provided by CalPERS in March 2022. This rate is lower than the 6.75% return determined from prior CalPERS return projections. For more information, see Expected Return on Trust Assets on page 11.

Actuarial Assumptions

The actuarial "demographic" assumptions (i.e., rates of retirement, death, disability or other termination of employment) used in this report were chosen, for the most part, to be the same as the actuarial demographic assumptions used for the most recent valuation of the retirement plan(s) covering City employees. Other assumptions, such as age-related healthcare claims, healthcare trend, retiree participation rates and spouse coverage, were selected based on demonstrated plan experience and/or our best estimate of expected future experience. All these assumptions, and more, impact expected future benefits. Please note that this valuation has been prepared on a closed group basis. This means that only employees and retirees present as of the valuation date are considered. We do not consider replacement employees for those we project to leave the current population of plan participants until the valuation date following their employment.

We emphasize that this actuarial valuation provides a projection of future results based on many assumptions. Actual results are likely to vary to some extent and we will continue to monitor these assumptions in future valuations. See Section 3 for a description of assumptions used in this valuation.

Important Dates for GASB 75 in this Report

GASB 75 allows reporting liabilities as of any fiscal year end based on: (1) a *valuation date* no more than 30 months plus 1 day prior to the close of the fiscal year end; and (2) a *measurement date* up to one year prior to the close of the fiscal year. The following dates were used for this report:

Fiscal Year End	June 30, 2022
Measurement Date	June 30, 2021
Measurement Period	June 30, 2020, to June 30, 2021
Valuation Date	June 30, 2021

Executive Summary
(Concluded)

Significant Results and Differences from the Prior Valuation

No benefit changes were reported to MacLeod Watts relative to those in place at the time the June 2019 valuation was prepared. We reviewed and updated certain assumptions used to project the OPEB liability. We collected updated census and premium data and recognized "plan experience", the differences between projected and actual results. Investment experience was also recognized, with higher than expected return on trust assets.

Section C. presents the new valuation results and provides additional information on the impact of the new assumptions and plan experience. See *Recognition Period for Deferred Resources* on page 12 for details on how these changes are recognized.

Impact on Statement of Net Position and OPEB Expense for Fiscal Year Ending 2022

The plan's impact to Net Position will be the sum of difference between assets and liabilities as of the measurement date plus the unrecognized net outflows and inflows of resources. Different recognition periods apply to deferred resources depending on their origin. The plan's impact on Net Position on the measurement date can be summarized as follows:

Items	For Reporting At Fiscal Year Ending June 30, 2022
Total OPEB Liability	$ 3,035,513
Fiduciary Net Position	2,451,154
Net OPEB Liability	**584,359**
Deferred Outflows of Resources	428,623
Deferred Inflows of Resources	849,582
Impact on Statement of Net Position *Net OPEB Liability less Outflows plus Inflows*	**$ 1,005,318**
OPEB Expense, FYE 6/30/2022	**$ (44,510)**

Important Notices

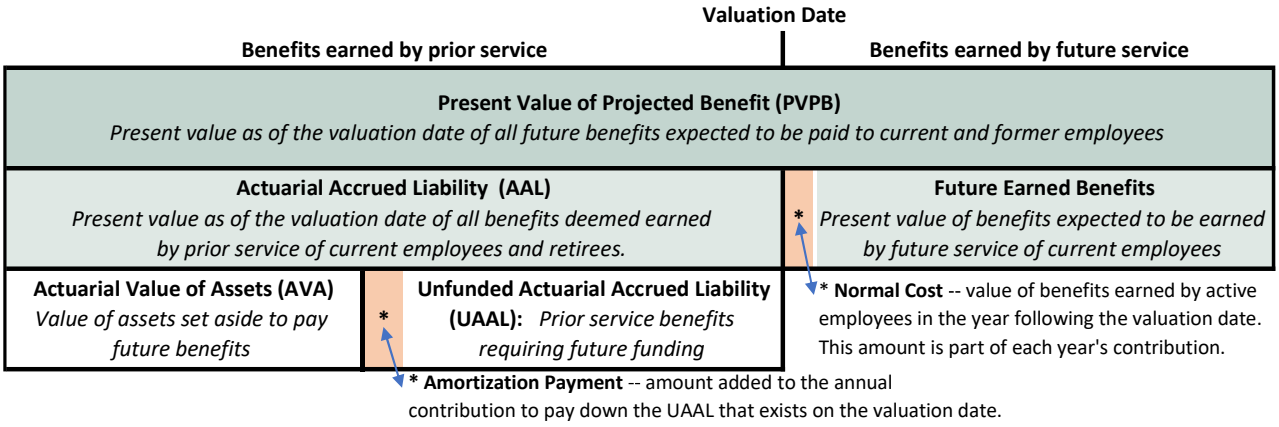
This report is intended to be used only to present the actuarial information relating to other postemployment benefits for the City's financial statements. The results of this report may not be appropriate for other purposes, where other assumptions, methodology and/or actuarial standards of practice may be required or more suitable. We note that various issues in this report may involve legal analysis of applicable law or regulations. The City should consult counsel on these matters; MacLeod Watts does not practice law and does not intend anything in this report to constitute legal advice. In addition, we recommend the City consult with their internal accounting staff or external auditor or accounting firm about the accounting treatment of OPEB liabilities.

B. Valuation Process

This valuation is based on employee census data and benefits initially submitted by the City and clarified in various related communications. A summary of the employee data is provided in Section 1 and a summary of the plan benefits is provided in Section 2. While individual employee records have been reviewed to verify that they are reasonable in various respects, the data has not been audited and we have otherwise relied on the City as to its accuracy. The valuation has been performed in accordance with the process described below using the actuarial methods and assumptions described in Section 3 and is consistent with our understanding of Actuarial Standards of Practice.

In projecting benefit values and liabilities, we first determine an expected premium or benefit stream over each current retiree's or active employee's future retirement. Benefits may include both direct employer payments (explicit subsidies) and any implicit subsidies arising when retiree premiums are expected to be partially subsidized by premiums paid for active employees. The projected benefit streams reflect assumed trends in the cost of those benefits and assumptions as to the expected dates when benefits will end. Assumptions regarding the probability that each employee will remain in service to receive benefits and the likelihood the employee will elect coverage for themselves and their dependents are also applied.

We then calculate a present value of these future benefit streams by discounting the value of each future expected employer payment back to the valuation date using the valuation discount rate. This present value is called the **Present Value of Projected Benefits (PVPB)** and represents the current value of all expected future plan payments to current retirees and current active employees. Note that this long-term projection does not anticipate entry of future employees.



The next step in the valuation process splits the Present Value of Projected Benefits into 1) the value of benefits already earned by prior service of current employees and retirees and 2) the value of benefits expected to be earned by future service of current employees. Actuaries employ an "attribution method" to divide the PVPB into prior service liabilities and future service liabilities. For this valuation we used the **Entry Age Normal** attribution method. This method is the most common used for government funding purposes and the only attribution method allowed for financial reporting under GASB 75.

We call the value of benefits deemed earned by prior service the **Actuarial Accrued Liability (AAL)**. Benefits deemed earned by service of active employees in a single year is called the **Normal Cost** of

Valuation Process
(Concluded)

benefits. The present value of all future normal costs (PVFNC) plus the Actuarial Accrued Liability will equal the Present Value of Projected Benefits (i.e., PVPB = AAL + PVFNC).

The difference between the value of trust assets (i.e., the Market Value of Assets), or a smoothed asset value (i.e., the Actuarial Value of Assets), and the Actuarial Accrued Liability yields the **Unfunded Actuarial Accrued Liability (UAAL)**. The UAAL represents, as of the valuation date, the present value of benefits already earned by past service that remain unfunded. A plan is generally considered "fully funded" when the UAAL is zero. The plan sponsor of a fully funded plan will still need to make future contributions for benefits earned by future service of actives employees. But in a fully funded plan, the plan sponsor has set aside sufficient assets to pay for benefits that have been earned by past service of current retirees and active employees if all valuation assumptions are realized.

Future contributions by the City will fund 1) the remaining part of OPEB benefits earned by past service (the Unfunded Actuarial Accrued Liability) and 2) the value of benefits earned each year by service of active employees. Various strategies might be employed to pay down the UAAL such as longer or shorter amortization payments, and flat or escalating payments depending on the plan sponsors goals and funding philosophy.

Variation in Future Results

Please note that projections of future benefits over such long periods (frequently 70 or more years) which are dependent on numerous assumptions regarding future economic and demographic variables are subject to substantial revision as future events unfold. While we believe that the assumptions and methods used in this valuation are reasonable for the purposes of this report, the costs to the City reflected in this report are subject to future revision, perhaps materially. Demonstrating the range of potential future plan costs was beyond the scope of our assignment except to the limited extent of providing liability information at various discount rates.

Certain actuarial terms and GASB 75 terms may be used interchangeably, as shown below. Specific results from this valuation are provided in the following Section C.

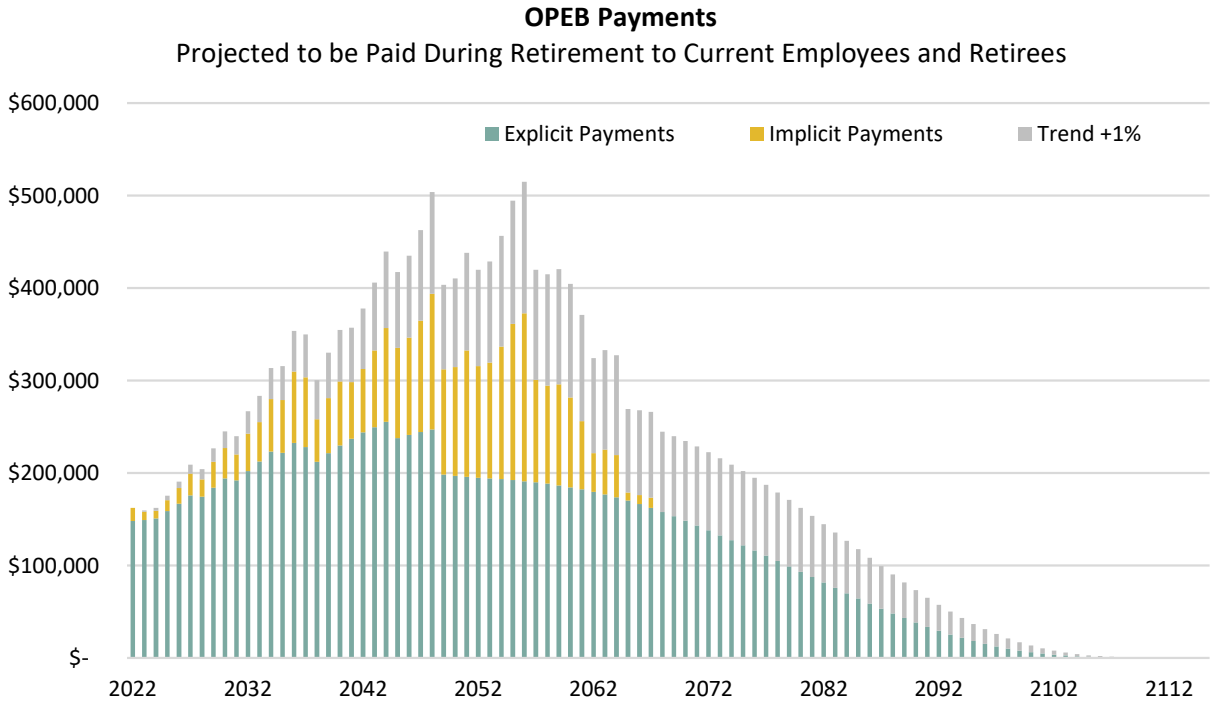
Actuarial Terminology	GASB 75 Terminology
Present Value of Projected Benefits (PVPB)	*No equivalent term*
Actuarial Accrued Liability (AAL)	Total OPEB Liability (TOL)
Market Value of Assets (MVA)	Fiduciary Net Position
Actuarial Value of Assets (AVA)	*No equivalent term*
Unfunded Actuarial Accrued Liability (UAAL)	Net OPEB Liability
Normal Cost	Service Cost

C. Valuation Results as of June 30, 2021

This section presents the basic results of our recalculation of the OPEB liability using the updated employee data, plan provisions and asset information provided to us for the June 2021 valuation. We described the general process for projecting all future benefits to be paid to retirees and current employees in the preceding Section. Expected annual benefits have been projected on the basis of the actuarial assumptions outlined in Supporting Information, Section 3.

Lifetime healthcare benefits are paid for qualifying City retirees. Please see Supporting Information, Section 2 for details.

The following graph illustrates the annual other post-employment benefits projected to be paid on behalf of current retirees and current employees expected to retire from the City.



The amounts shown in green reflect the expected payment by the City toward retiree medical premiums while those in yellow reflect the implicit subsidy benefits (i.e., the excess of retiree medical and prescription drug claims over the premiums expected to be charged during the year for retirees' coverage). The projections in gray reflect increases in benefit levels if healthcare trend were 1% higher.

The first 15 years of benefit payments from the graph above are shown in tabular form on page 19.

Liabilities relating to these projected benefits are shown beginning on the following page.

Valuation Results as of June 30, 2021
(Continued)

This chart compares the results measured as of June 30, 2020, based on the prior valuation, with the results measured as of June 30, 2021, based on the current valuation.

Valuation Date	**6/30/2019**			**6/30/2021**		
Fiscal Year Ending	**6/30/2021**			**6/30/2022**		
Measurement Date	**6/30/2020**			**6/30/2021**		
Discount rate	6.75%			6.10%		
Number of Covered Employees						
Actives	30			32		
Retirees	26			27		
Total Participants	56			59		
OPEB Subsidy Type	Explicit	Implicit	Total	Explicit	Implicit	Total
Actuarial Present Value of Projected Benefits						
Actives	$ 1,321,946	$ 661,889	$ 1,983,836	$ 1,032,052	$ 692,150	$ 1,724,202
Retirees	1,498,412	29,230	1,527,642	2,113,070	103,708	2,216,778
Total APVPB	2,820,358	691,119	3,511,477	3,145,122	795,858	3,940,980
Total OPEB Liability (TOL)						
Actives	920,301	372,073	1,292,374	552,610	266,125	818,735
Retirees	1,498,412	29,230	1,527,642	2,113,070	103,708	2,216,778
TOL	2,418,713	401,303	2,820,016	2,665,680	369,833	3,035,513
Fiduciary Net Position			1,871,292			2,451,154
Net OPEB Liability			948,724			584,359
Service Cost For the period following the measurement date	42,621	29,342	71,963	43,700	37,175	80,875

The ratio of trust assets to the Total OPEB Liability has increased from 66% to 81% and the Net OPEB Liability decreased by $364,365 from that reported one year ago. Some of the change was expected and some was unexpected. Reasons for the change in the NOL are discussed on the following page.

Valuation Results as of June 30, 2021
(Concluded)

Expected NOL changes: The NOL was expected to decrease by $72,675. The expected change reflects additional service and interest costs accruing for the period and decrease by benefits paid to retirees.

Unexpected NOL changes further decreased the NOL by $291,690 and fall into one of these categories:

- *Plan experience* increased the TOL by $19,057 and reflects results that are different than expected based on the prior valuation data and assumptions. The primary reasons are shown below.
- *Assumption changes* collectively increased the TOL by $101,606. These changes are listed below, with additional information provided on the last page in Supporting Information, Section 3.
- *Investment experience:* Trust asset return exceeded the expected earnings by $412,353.

This chart reconciles results measured as of June 30, 2020, to results measured as of June 30, 2021.

Reconciliation of Changes During Measurement Period	Total OPEB Liability (a)	Fiduciary Net Position (b)	Net OPEB Liability (c) = (a) - (b)
Balance at Fiscal Year Ending 6/30/2021 *Measurement Date 6/30/2020*	$ 2,820,016	$ 1,871,292	$ 948,724
Expected Changes During the Period:			
Service Cost	71,963		71,963
Interest Cost	189,582		189,582
Expected Investment Income		127,657	(127,657)
Employer Contributions		207,309	(207,309)
Administrative Expenses		(746)	746
Benefit Payments	(166,711)	(166,711)	-
Total Expected Changes During the Period	94,834	167,509	(72,675)
Expected at Fiscal Year Ending 6/30/2022 *Measurement Date 6/30/2021*	$ 2,914,850	$ 2,038,801	$ 876,049
Unexpected Changes During the Period:			
Change Due to Investment Experience		412,353	(412,353)
Plan Experience:			
Premiums and estimated claims other than expected	(312,241)		
Disability retirement and turnover other than expected	374,081		
Other plan experience	(42,783)		
Change Due to Plan Experience			19,057
Assumption Changes:			
Change in assumed trust return/discount rate	232,341		
Update to healthcare trend	(127,625)		
Decreased spouse coverage assumption	(2,725)		
Updated mortality improvement scale	(385)		
Change Due to Assumption Changes			101,606
Total Unexpected Changes During the Period	120,663	412,353	(291,690)
Balance at Fiscal Year Ending 6/30/2022 *Measurement Date 6/30/2021*	$ 3,035,513	$ 2,451,154	$ 584,359

D. Accounting Information (GASB 75)

The following exhibits are designed to satisfy the reporting and disclosure requirements of GASB 75 for the fiscal year end June 30, 2022.

Components of Net Position and Expense

The exhibit below shows the development of Net Position and Expense as of the Measurement Date.

Plan Summary Information for FYE June 30, 2022 *Measurement Date is June 30, 2021*	**City of Colusa**
Items Impacting Net Position:	
Total OPEB Liability	$ 3,035,513
Fiduciary Net Position	2,451,154
Net OPEB Liability (Asset)	584,359
Deferred Outflows Due to:	
Assumption Changes	170,973
Plan Experience	16,846
Investment Experience	35,757
Deferred Contributions	205,047
Deferred Inflows Due to:	
Assumption Changes	-
Plan Experience	517,272
Investment Experience	332,310
Impact on Statement of Net Position, FYE 6/30/2022 *Net OPEB Liability less Outflows plus Inflows*	**$ 1,005,318**
Items Impacting OPEB Expense:	
Service Cost	$ 71,963
Cost of Plan Changes	-
Interest Cost	189,582
Expected Earnings on Assets	(127,657)
Administrative Expenses	746
Recognition of Deferred Outflows:	
Assumption Changes	32,156
Plan Experience	2,211
Investment Experience	12,937
Recognition of Deferred Inflows:	
Assumption Changes	-
Plan Experience	(132,305)
Investment Experience	(94,143)
OPEB Expense, FYE 6/30/2022	**$ (44,510)**

Accounting Information
(Continued)

Change in Net Position During the Fiscal Year

The exhibit below shows the year-to-year changes in the components of Net Position.

For Reporting at Fiscal Year End *Measurement Date*	6/30/2021 *6/30/2020*	6/30/2022 *6/30/2021*	Change During Period
Total OPEB Liability	$ 2,820,016	$ 3,035,513	$ 215,497
Fiduciary Net Position	1,871,292	2,451,154	579,862
Net OPEB Liability (Asset)	948,724	584,359	(364,365)
Deferred Outflows Due to:			
Assumption Changes	101,523	170,973	69,450
Plan Experience	-	16,846	16,846
Investment Experience	48,694	35,757	(12,937)
Deferred Contributions	207,309	205,047	(2,262)
Deferred Inflows Due to:			
Assumption Changes	-	-	-
Plan Experience	649,577	517,272	(132,305)
Investment Experience	14,100	332,310	318,210
Impact on Statement of Net Position *Net OPEB Liability less Outflows plus Inflows*	$ 1,254,875	$ 1,005,318	$ (249,557)

Change in Net Position During the Fiscal Year

Impact on Statement of Net Position, FYE 6/30/2021	$ 1,254,875
Plus OPEB Expense (Income)	(44,510)
Less Employer Contributions During Fiscal Year	(205,047)
Impact on Statement of Net Position, FYE 6/30/2022	$ 1,005,318

OPEB Expense

Employer Contributions During Fiscal Year	$ 205,047
Deterioration (Improvement) in Net Position	(249,557)
OPEB Expense (Income), FYE 6/30/2022	$ (44,510)

Accounting Information
(Continued)

Change in Fiduciary Net Position During the Measurement Period

	City of Colusa
Fiduciary Net Position at Fiscal Year Ending 6/30/2021 *Measurement Date 6/30/2020*	**$ 1,871,292**
Changes During the Period:	
Investment Income	540,010
Employer Contributions	207,309
Administrative Expenses	(746)
Benefit Payments	(166,711)
Net Changes During the Period	579,862
Fiduciary Net Position at Fiscal Year Ending 6/30/2022 *Measurement Date 6/30/2021*	**$ 2,451,154**

Expected Long-term Return on Trust Assets

In March 2022, CalPERS updated the projected future investment returns for CERBT Strategy 1. CalPERS determined its returns using a building-block method and best-estimate ranges of expected future real rates of return for each major asset class (expected returns, net of OPEB plan investment expense and inflation). The target allocation and best estimates of geometric real rates of return published by CalPERS for each major class are split for years 1-5 and years 6 -20. We assumed that the returns for years 6 through 20 would continue in later years.

CERBT Strategy 1		Years 1-5			Years 6-20		
Major Asset Classification	**Target Allocation**	**General Inflation Rate Assumption**	**1-5 Year Expected Real Rate of Return**	**Compound Return Yrs 1-5**	**General Inflation Rate Assumption**	**6-20 Year Expected Real Rate of Return**	**Compound Return Years 6-20**
Global Equity	49%	2.40%	4.40%	6.80%	2.30%	4.50%	6.80%
Fixed Income	23%	2.40%	-1.50%	0.90%	2.30%	0.40%	2.70%
Global Real Estate(REITs)	20%	2.40%	3.00%	5.40%	2.30%	3.70%	6.00%
Treasury Inflation Protected Securities	5%	2.40%	-1.80%	0.60%	2.30%	0.50%	2.80%
Commodities	3%	2.40%	0.80%	3.20%	2.30%	1.10%	3.40%
Volatility	12.10%		weighted *	5.31%		weighted *	6.31%

* preliminary estimate, pending confirmation by CalPERS.

To derive the expected future trust return specifically for the City, we first adjusted CalPERS' future return expectations to align with the 2.5% general inflation assumption used in this report. Then applying the plan specific benefit payments to CalPERS' bifurcated return expectations, we determined the single equivalent long-term rate of return to be 6.10%.

Accounting Information
(Continued)

Recognition Period for Deferred Resources

Liability changes due to plan experience which differs from what was assumed in the prior measurement period and/or from assumption changes during the period are recognized over the plan's Expected Average Remaining Service Life ("EARSL"). The EARSL of 8.62 years is the period used to recognize such changes in the OPEB Liability arising during the current measurement period.

When applicable, changes in the Fiduciary Net Position due to investment performance different from the assumed earnings rate are always recognized over 5 years.

Liability changes attributable to benefit changes occurring during the period, if any, are recognized immediately.

Deferred Resources as of Fiscal Year End and Expected Future Recognition

The exhibit below shows deferred resources as of the fiscal year end June 30, 2022.

City of Colusa	Deferred Outflows of Resources	Deferred Inflows of Resources
Changes of Assumptions	$ 170,973	$ -
Differences Between Expected and Actual Experience	16,846	517,272
Net Difference Between Projected and Actual Earnings on Investments	-	296,553
Deferred Contributions	205,047	-
Total	$ 392,866	$ 813,825

In addition, future recognition of these deferred resources is shown below.

For the Fiscal Year Ending June 30	Recognized Net Deferred Outflows (Inflows) of Resources
2023	$ (169,900)
2024	(167,474)
2025	(157,164)
2026	(130,927)
2027	(37,216)
Thereafter	36,675

Accounting Information
(Continued)

Sensitivity of Liabilities to Changes in the Discount Rate and Healthcare Cost Trend Rate

The discount rate used for accounting purposes for the fiscal year end 2022 is 6.10%. Healthcare Cost Trend Rate was assumed to start at 5.8% (increase effective January 1, 2023) and grade down to 3.9% for years 2076 and later. The impact of a 1% increase or decrease in these assumptions is shown in the chart below.

Sensitivity to:			
Change in Discount Rate	**Current - 1% 5.10%**	**Current 6.10%**	**Current + 1% 7.10%**
Total OPEB Liability	3,422,619	3,035,513	2,713,678
Increase (Decrease)	387,106		(321,835)
% Increase (Decrease)	12.8%		-10.6%
Net OPEB Liability (Asset)	971,465	584,359	262,524
Increase (Decrease)	387,106		(321,835)
% Increase (Decrease)	66.2%		-55.1%
Change in Healthcare Cost Trend Rate	**Current Trend - 1%**	**Current Trend**	**Current Trend + 1%**
Total OPEB Liability	2,691,412	3,035,513	3,453,887
Increase (Decrease)	(344,101)		418,374
% Increase (Decrease)	-11.3%		13.8%
Net OPEB Liability (Asset)	240,258	584,359	1,002,733
Increase (Decrease)	(344,101)		418,374
% Increase (Decrease)	-58.9%		71.6%

Accounting Information
(Continued)

Schedule of Changes in the City's Net OPEB Liability and Related Ratios

GASB 75 requires presentation of the 10-year history of changes in the Net OPEB Liability. Results for years since GASB 75 was implemented (fiscal years 2018 through 2022) are shown in the table.

Fiscal Year Ending	**2022**	**2021**	**2020**	**2019**	**2018**
Measurement Date	*6/30/2021*	*6/30/2020*	*6/30/2019*	*6/30/2018*	*6/30/2017*
Discount Rate on Measurement Date	*6.10%*	*6.75%*	*6.75%*	*7.28%*	*7.28%*
Total OPEB liability					
Service Cost	$ 71,963	$ 69,867	$ 89,424	$ 86,611	$ 95,414
Interest	189,582	183,599	225,075	217,975	239,103
Changes of benefit terms	-	-	-	-	-
Differences between expected and actual experience	19,057	-	(584,005)	-	(445,430)
Changes of assumptions	101,606	-	95,599	-	62,950
Benefit payments	(166,711)	(167,131)	(189,351)	(230,403)	(236,494)
Net change in total OPEB liability	215,497	86,335	(363,258)	74,183	(284,457)
Total OPEB liability - beginning	2,820,016	2,733,681	3,096,939	3,022,756	3,307,213
Total OPEB liability - ending (a)	$ 3,035,513	$ 2,820,016	$ 2,733,681	$ 3,096,939	$ 3,022,756
Plan fiduciary net position					
Contributions - employer	$ 207,309	$ 249,964	$ 265,353	$ 287,818	$ 277,549
Net investment income	540,010	69,432	99,930	114,256	135,032
Benefit payments	(166,711)	(167,131)	(189,351)	(230,403)	(236,494)
Administrative expenses	(746)	(906)	(359)	(2,596)	(702)
Net change in plan fiduciary net position	579,862	151,359	175,573	169,075	175,385
Plan fiduciary net position - beginning	1,871,292	1,719,933	1,544,360	1,375,284	1,199,899
Plan fiduciary net position - ending (b)	$ 2,451,154	$ 1,871,292	$ 1,719,933	$ 1,544,359	$ 1,375,284
Net OPEB liability - ending (a) - (b)	$ 584,359	$ 948,724	$ 1,013,748	$ 1,552,580	$ 1,647,473
Covered-employee payroll	$ 2,518,237	$ 2,231,354	$ 2,166,363	$ 1,763,442	$ 1,763,442
Net OPEB liability as a % of covered-employee payroll	23.21%	42.52%	46.79%	88.04%	93.42%

Accounting Information
(Continued)

Schedule of Contributions

The chart below shows the Actuarially Determined Contribution (ADC), the City's contribution, and the excess or shortfall.

Fiscal Year Ending	**2022**	**2021**	**2020**	**2019**	**2018**
Measurement Date	*6/30/2021*	*6/30/2020*	*6/30/2019*	*6/30/2018*	*6/30/2017*
Actuarially Determined Contribution	$ 145,476	$ 141,579	$ 212,271	$ 206,622	$ 246,173
Contributions in relation to the actuarially determined contribution	205,047	207,309	249,964	265,353	287,818
Contribution deficiency (excess)	$ (59,571)	$ (65,730)	$ (37,693)	$ (58,731)	$ (41,645)
Covered employee payroll	$ 2,659,380	$ 2,518,237	$ 2,231,354	$ 2,166,363	$ 1,763,442
Contributions as a % of covered employee payroll	7.71%	8.23%	11.20%	12.25%	16.32%
Percent of ADC contributed	140.95%	146.43%	117.76%	128.42%	116.92%

Notes to Schedule - assumptions used to develop Actuarially Determined Contributions.

Valuation Date applied for ADCs	6/30/2019			6/30/2017	7/1/2015
Actuarial cost method	Entry Age Normal Level % of Pay			Entry Age Normal Level % of Pay	Entry Age Normal Level % of Pay
Amortization method	Level % of Pay, Closed 30 yrs			Level % of Pay, Closed 30 yrs	Level % of Pay, Closed 30 yrs
Amortization period	20 yrs remain	21 yrs remain	22 yrs remain	23 yrs remain	24 yrs remain
Asset valuation method	Market Value			Market Value	Market Value
Inflation	2.50%			2.75%	2.75%
Healthcare cost trend rates	5.4% in 2021 fluctuating down to 4% by 2076			8.0% in Jan 2018, step down .5% per year to 5.0% by 2024	7.5% in Jan 2017, step down .5% per year to 4.5% by 2023
Salary increases	3.00%			3.25%	3.25%
Investment rate of return	6.75%			7.28%	7.28%
Retirement age	From 50 to 75			From 50 to 75	From 50 to 75
Mortality	2017 CalPERS Experience Study; Improvement using MacLeod Watts Scale 2018			2014 CalPERS Experience Study; Improvement using MacLeod Watts Scale 2017	2014 CalPERS Experience Study; Improvement using MacLeod Watts Scale 2014

Accounting Information
(Continued)

Detail of Changes to Net Position

The chart below details changes to all components of Net Position.

City of Colusa	Total OPEB Liability (a)	Fiduciary Net Position (b)	Net OPEB Liability (c) = (a) - (b)	(d) Deferred Outflows:				(e) Deferred Inflows:			Impact on Statement of Net Position (f) = (c) - (d) + (e)
				Assumption Changes	Plan Experience	Investment Experience	Deferred Contributions	Assumption Changes	Plan Experience	Investment Experience	
Balance at Fiscal Year Ending 6/30/2021 *Measurement Date 6/30/2020*	$ 2,820,016	$ 1,871,292	$ 948,724	$ 101,523	$ -	$ 48,694	$ 207,309	$ -	$ 649,577	$ 14,100	$ 1,254,875
Changes During the Period:											
Service Cost	71,963		71,963								71,963
Interest Cost	189,582		189,582								189,582
Expected Investment Income		127,657	(127,657)								(127,657)
Employer Contributions		207,309	(207,309)								(207,309)
Changes of Benefit Terms	-		-								-
Administrative Expenses		(746)	746								746
Benefit Payments	(166,711)	(166,711)	-								-
Assumption Changes	101,606		101,606	101,606							-
Plan Experience	19,057		19,057		19,057						-
Investment Experience		412,353	(412,353)							412,353	-
Recognized Deferred Resources				(32,156)	(2,211)	(12,937)	(207,309)	-	(132,305)	(94,143)	28,165
Employer Contributions in Fiscal Year							205,047				(205,047)
Net Changes in Fiscal Year 2021-2022	215,497	579,862	(364,365)	69,450	16,846	(12,937)	(2,262)	-	(132,305)	318,210	(249,557)
Balance at Fiscal Year Ending 6/30/2022 *Measurement Date 6/30/2021*	$ 3,035,513	$ 2,451,154	$ 584,359	$ 170,973	$ 16,846	$ 35,757	$ 205,047	$ -	$ 517,272	$ 332,310	$ 1,005,318

Accounting Information
(Continued)

Schedule of Deferred Outflows and Inflows of Resources

A listing of all deferred resource bases used to develop the Net Position and OPEB Expense is shown below. Deferred Contributions are not shown.

Measurement Date: June 30, 2021

Deferred Resource							Recognition of Deferred Outflow or Deferred (Inflow) in Measurement Period:						
Date Created	Created Due To		Initial Amount	Period (Yrs)	Annual Recognition	Balance as of Jun 30, 2021	2020-21 (FYE 2022)	2021-22 (FYE 2023)	2022-23 (FYE 2024)	2023-24 (FYE 2025)	2024-25 (FYE 2026)	2025-26 (FYE 2027)	Thereafter
6/30/2017	Assumption Changes	Increased Liability	$ 62,950	7.73	$ 8,144	$ 22,230	$ 8,144	$ 8,144	$ 8,144	$ 5,942	$ -	$ -	$ -
6/30/2017	Investment Earnings	Greater than Expected	(46,212)	5.00	(9,242)	-	(9,244)	-	-	-	-	-	-
6/30/2017	Plan Experience	Decreased Liability	(445,430)	7.73	(57,624)	(157,310)	(57,624)	(57,624)	(57,624)	(42,062)	-	-	-
6/30/2018	Investment Earnings	Greater than Expected	(12,140)	5.00	(2,428)	(2,428)	(2,428)	(2,428)	-	-	-	-	-
6/30/2019	Plan Experience	Decreased Liability	(584,005)	7.82	(74,681)	(359,962)	(74,681)	(74,681)	(74,681)	(74,681)	(74,681)	(61,238)	-
6/30/2019	Assumption Changes	Increased Liability	95,599	7.82	12,225	58,924	12,225	12,225	12,225	12,225	12,225	10,024	-
6/30/2019	Investment Earnings	Less than Expected	15,253	5.00	3,051	6,100	3,051	3,051	3,049	-	-	-	-
6/30/2020	Investment Earnings	Less than Expected	49,429	5.00	9,886	29,657	9,886	9,886	9,886	9,885	-	-	-
6/30/2021	Plan Experience	Increased Liability	19,057	8.62	2,211	16,846	2,211	2,211	2,211	2,211	2,211	2,211	5,791
6/30/2021	Assumption Changes	Increased Liability	101,606	8.62	11,787	89,819	11,787	11,787	11,787	11,787	11,787	11,787	30,884
6/30/2021	Investment Earnings	Greater than Expected	(412,353)	5.00	(82,471)	(329,882)	(82,471)	(82,471)	(82,471)	(82,471)	(82,469)	-	-

Accounting Information
(Continued)

Detail of City Contributions to the Plan

City contributions to the Plan occur as benefits are paid to or on behalf of retirees. Benefit payments may occur in the form of direct payments for premiums ("explicit subsidies") and/or indirect payments to retirees in the form of higher premiums for active employees ("implicit subsidies"). Note that the implicit subsidy contribution does not represent cash payments to retirees, but rather the reclassification of a portion of active healthcare expense to be recognized as a retiree healthcare cost. For details, see Addendum 1 – Important Background Information.

Benefits and other contributions paid by the City during the measurement period are shown below.

For the Measurement Period, Jul 1, 2020 thru Jun 30, 2021	**City of Colusa**
Employer	
(a) Contribution To Trust	$ 141,579
(b) Benefits Paid Directly to Retirees	146,201
(c) Implicit Subsidy Payment	20,510
Trust	
(d) Benefits Paid Directly to Retirees	-
(e) Reimbursements to Employer	100,981
Total Benefits Paid During MP, (b)+(c)+(d)	166,711
Employer Contribution During MP, (a)+(b)+(c)-(e)	207,309

Note: in the prior report, the City's OPEB contributions were reported to total $210,166. An adjustment should be made to correct the total to $207,309 shown above.

Contributions made by the City after the measurement date but prior to the current fiscal year end are shown below.

For the Fiscal Year, Jul 1, 2021 thru Jun 30, 2022	**City of Colusa**
Employer	
(f) Contribution To Trust	$ 145,476
(g) Benefits Paid Directy to Retirees	148,155
(h) Implicit Subsidy Payment	13,960
Trust	
(i) Benefits Paid Directly to Retirees	-
(j) Reimbursements to Employer	102,544
Total Benefits Paid During FY, (g)+(h)+(i)	162,115
Employer Contribution During FY, (f)+(g)+(h)-(j)	205,047

Accounting Information
(Continued)

Projected Benefit Payments (15-year projection)

The following is an estimate of other post-employment benefits to be paid on behalf of current retirees and current employees expected to retire from the City. Expected annual benefits have been projected on the basis of the actuarial assumptions outlined in Section 3.

Projected Annual Benefit Payments							
Fiscal Year Ending June 30	Explicit Subsidy			Implicit Subsidy			Total
	Current Retirees	Future Retirees	Total	Current Retirees	Future Retirees	Total	
2022	$ 148,155	$ -	$ 148,155	$ 13,960	$ -	$ 13,960	$ 162,115
2023	146,943	2,169	149,112	8,600	305	8,905	158,017
2024	146,755	4,213	150,968	7,135	954	8,089	159,057
2025	151,610	7,063	158,673	9,402	2,418	11,820	170,493
2026	155,994	10,688	166,682	12,002	4,868	16,870	183,552
2027	159,986	15,708	175,694	14,984	8,750	23,734	199,428
2028	152,079	22,369	174,448	4,288	14,157	18,445	192,893
2029	155,034	29,047	184,081	6,180	21,885	28,065	212,146
2030	157,705	36,278	193,983	8,356	24,726	33,082	227,065
2031	147,531	44,376	191,907	(1,750)	29,958	28,208	220,115
2032	148,991	53,093	202,084	(781)	41,192	40,411	242,495
2033	150,186	62,335	212,521	296	42,327	42,623	255,144
2034	151,143	71,954	223,097	1,490	55,208	56,698	279,795
2035	151,844	69,825	221,669	2,813	54,343	57,156	278,825
2036	152,256	80,351	232,607	4,271	72,693	76,964	309,571

The amounts shown in the Explicit Subsidy section of the table reflect the expected payment by the City toward retiree medical premiums in each of the years shown. The amounts are shown separately, and in total, for those retired on the valuation date ("current retirees") and those expected to retire after the valuation date ("future retirees").

The amounts shown in the Implicit Subsidy table reflect the expected excess of retiree medical and prescription drug claims over the premiums expected to be charged during the year for retirees' coverage. These amounts are also shown separately and in total for those currently retired on the valuation date and for those expected to retire in the future.

These projections do not include any benefits expected to be paid on behalf of current active employees *prior to* retirement, nor do they include any benefits for potential *future employees* (i.e., those who might be hired in future years).

Accounting Information
(Concluded)

Sample Journal Entries

OPEB Accounts at Beginning of Fiscal Year	*By Source* Debit	*By Source* Credit	*Sources Combined* Debit	*Sources Combined* Credit
Net OPEB Liability		948,724		948,724
Deferred Outflow:				
Assumption Changes	101,523			
Plan Experience	-			
Investment Experience	48,694			
Contribution Subsequent to MD	207,309 *			
Deferred Outflows			357,526	
Deferred Inflow:				
Assumption Changes		-		
Plan Experience		649,577		
Investment Experience		14,100		
Deferred Inflows				663,677

** Changed from $210,166 reported at FYE 2021.*

Record Benefits Paid to Retirees	**Debit**	**Credit**
Net OPEB Liability	148,155	
Cash		148,155

Record Contributions to the Trust	**Debit**	**Credit**
Net OPEB Liability	145,476	
Cash		145,476

Record Reimbursements from the Trust	**Debit**	**Credit**
Cash	102,544	
Net OPEB Liability		102,544

Record Implicit Subsidy Payment	**Debit**	**Credit**
Net OPEB Liability	13,960	
Premium Expense		13,960

Record End of Year Updates to OPEB Accounts	*By Source* Debit	*By Source* Credit	*Sources Combined* Debit	*Sources Combined* Credit
Net OPEB Liability	159,318		159,318	
Deferred Outflow:				
Assumption Changes	69,450			
Plan Experience	16,846			
Investment Experience		12,937		
Contribution Subsequent to MD		2,262		
Deferred Outflows			71,097	
Deferred Inflow:				
Assumption Changes	-			
Plan Experience	132,305			
Investment Experience		318,210		
Deferred Inflows				185,905
OPEB Expense		44,510		44,510

E. Funding Information

The employer's OPEB funding policy and level of contributions to an irrevocable OPEB trust directly affects the discount rate which is used to calculate the OPEB liability to be reported in the employer's financial statements. Prefunding (setting aside funds to accumulate in an irrevocable OPEB trust) has certain advantages, one of which is the ability to (potentially) use a higher discount rate in the determination of liabilities for GASB 75 reporting purposes. Prefunding also improves the security of benefits for current and potential future recipients and contributes to intergenerational taxpayer equity by better matching the cost of the benefits to the service years in which they are "earned" and which correspond to years in which taxpayers benefit from those services.

Paying Down the UAAL

Once an employer decides to prefund, a decision must be made about how to pay for benefits related to accumulated prior service that have not yet been funded (the UAAL[3]). This is most often, though not always, handled through structured amortization payments. The period and method chosen for amortizing this unfunded liability can significantly affect the Actuarially Determined Contribution (ADC) or other basis selected for funding the OPEB program.

Much like paying off a mortgage, when the AAL exceeds plan assets, choosing a longer amortization period to pay off the UAAL means smaller payments, but the payments will be required for more years; plan investments will have less time to work toward helping reduce required contribution levels. When the plan is in a surplus position, the reverse is true, and a longer amortization period is usually preferable.

There are several ways the amortization payment can be determined. The most common methods are calculating the amortization payment as a level dollar amount or as a level percentage of payroll. The employer might also choose to apply a shorter period when the UAAL only when it is positive, i.e., when trust assets are lower than the AAL, but opt for a longer period or to exclude amortization of a negative UAAL, when assets exceed the AAL. The entire UAAL may be amortized as one single component or may be broken into multiple components reflecting the timing and source of each change, such as those arising from assumption changes, benefit changes and/or liability or investment experience.

The amortization period(s) should not exceed the number of years which would allow current trust assets plus future contributions and earnings to be sufficient to pay all future benefits and trust expenses each year. Prefunding of OPEB is optional and contributions at any level are permitted. However, if trust sufficiency is not expected, a discount rate other than the assumed trust return will likely be required for accounting purposes.

Funding and Prefunding of the Implicit Subsidy

An implicit subsidy liability is created when retiree medical claims are expected to exceed the premiums charged for retiree coverage. Recognition of the estimated implicit subsidy each year is handled by an accounting entry, reducing the amount paid for active employees and shifting that amount to be treated as a retiree healthcare expense/contribution (see Sample Journal Entries). The implicit subsidy is a true benefit to the retiree but can be difficult to see when medical premiums are set as a flat rate for both actives and pre-Medicare retirees.

[3] We use actuarial, rather than accounting, terminology to describe the components used to develop the ADCs.

Funding Information
(Continued)

This might lead some employers to believe the benefit is not real or is merely an accounting construct, and thus to forgo prefunding of retiree implicit benefits.

Consider what would happen if the retiree premiums were based only on expected retiree claims experience. Almost certainly, retiree premiums would increase while premiums for active employees would go down if the active premiums no longer had to help support the higher retiree claims. *Who would pay the increases in retiree premiums*? Current plan documents and bargaining agreements would have to be consulted. Depending on circumstances, the increase in retiree premiums might remain the responsibility of the employer, pass entirely to the retirees, or some blending of the two. The answer would determine whether separate retiree-only premium rates would result in a higher or lower employer OPEB liability. In the current premium structure, with blended active and pre-Medicare retiree premiums, the employer is clearly, though indirectly, paying the implicit retiree cost.

The prefunding decision is complex. OPEB materiality, budgetary concerns, desire to use the full trust rate in developing the liability for GASB 75, and other factors must be weighed by each employer. Since prefunding OPEB benefits is not required, each employer's OPEB prefunding strategy will depend on how they balance these competing perspectives.

Development of the Actuarially Determined Contributions

The City has approved development of ADCs based on the following two components, which are then adjusted with interest to each fiscal year end:

- The amounts attributed to service performed in the current fiscal year (the normal cost) and
- Amortization of the unfunded actuarial accrued liability (UAAL) over a closed 30-year period. Amortization payments are determined on a level % of pay basis; 20 years remain for FYE 2022.

Actuarially Determined Contributions, developed as described above for the City's fiscal years ending June 30, 2023, and June 30, 2024, are shown the exhibit on the next page. These ADCs incorporate both explicit (cash benefit) and implicit subsidy benefit liabilities. Contributions credited toward meeting the ADC will be comprised of:

1) direct payments to insurers toward retiree premiums, to the extent not reimbursed to the City by the trust; plus
2) each year's implicit subsidy payment; and
3) contributions to the OPEB trust.

ADCs determined on this basis should provide for trust sufficiency, based on the current plan provisions and census data, provided all assumptions are exactly realized and if the City contributes 100% or more of the ADC each year. When an agency commits to funding the trust at or above the ADC, the expected long-term trust return may be used as the discount rate in determining the plan liability for accounting purposes. Trust sufficiency cannot be guaranteed to a certainty, however, because of the non-trivial risk that the assumptions used to project future benefit liabilities may not be realized.

Funding Information
(Continued)

We develop the Actuarially Determined Contributions (ADCs) for fiscal years June 30, 2023, and June 30, 2024, from the results of this valuation.[4] The ADC for fiscal year end June 30, 2022, was developed from the prior (2019) valuation and we have included this for reference.

Valuation date	6/30/2019	6/30/2021	
Discount rate	6.75%	6.10%	
Number of Covered Employees			
Actives	30	32	
Retirees	26	27	
Total Participants	56	59	
For fiscal year ending	6/30/2022	6/30/2023	6/30/2024
Actuarial Present Value of Projected Benefits	$ 3,589,449	$ 4,007,189	$ 4,088,791
Actuarial Accrued Liability (AAL)			
Actives	1,442,946	953,950	1,097,973
Retirees	1,484,144	2,178,345	2,150,937
Total AAL	2,927,090	3,132,295	3,248,910
Actuarial Value of Assets	2,023,105	2,155,929	2,283,325
Unfunded AAL (UAAL)	903,985	976,366	965,585
UAAL Amortization method	Level % of Pay	Level % of Pay	Level % of Pay
Remaining amortization period (years)	20	19	18
Amortization Factor	14.5440	14.7422	14.1558
Actuarially Determined Contribution (ADC)			
Normal Cost	74,122	$ 83,300	$ 85,799
Amortization of UAAL	62,155	66,229	68,211
Interest to fiscal year end	9,199	4,493	4,628
Total ADC	**145,476**	**154,022**	**158,638**

As described on the prior page, OPEB funding consists of 3 different sources. The chart below estimates how these 3 contribution sources would apply toward satisfying the ADC for each of these years.

1 Implicit subsidy contribution	13,960	$ 8,905	$ 8,089
Additional payments needed to meet ADC	131,516	110,951	115,359
2 *Estimated agency paid premiums for retirees*	148,155	*149,112*	*150,968*
3 *Estimated net* City contribution to OPEB trust*	42,932	-	-
Total Expected Employer Contributions (1+2+3)	**205,047**	**$ 158,017**	**$ 159,057**

** Net of contributions in less reimbursements back to the City for a portion of retiree benefits paid.*

Actual contributions as reported to us are shown for FYE 2022. We have estimated the retiree benefit payments for FYE 2023 and FYE 2024 and assumed the City would likely need to make no new contributions to the trust for these years. A small reimbursement is possible but should be determined at year end.

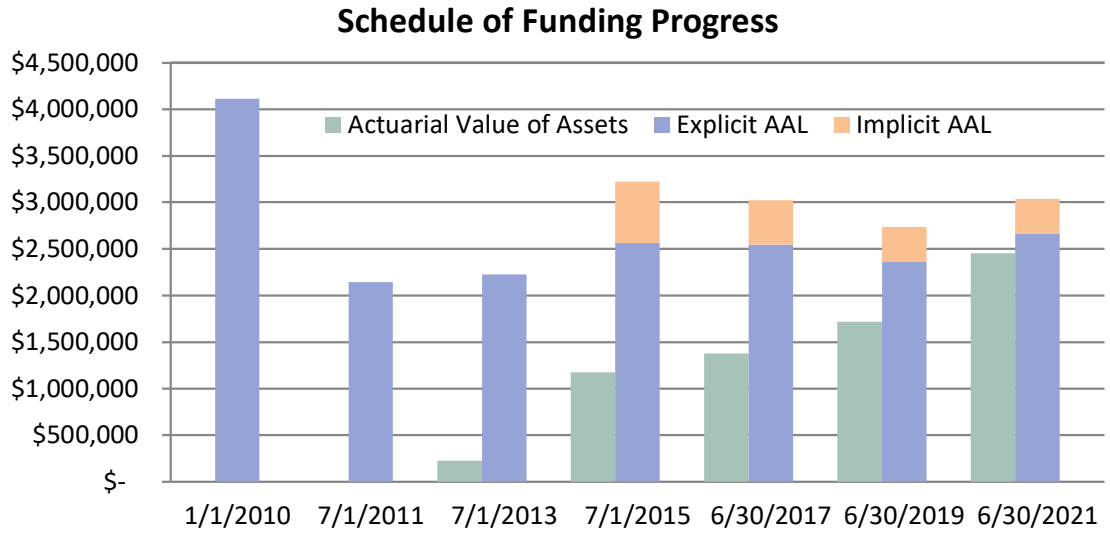
[4] The asset value used to develop the ADC for fiscal year 22/23 is the actual market value of trust assets on 7/1/2022.

Funding Information
(Concluded)

In this section, we provide a review of key components of valuation results from 2010 through 2021.

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)	Discount Rate
1/1/2010	$ -	$ 4,110,906	$ 4,110,906	0.0%	$ 1,740,910	236.1%	4.50%
7/1/2011	$ -	$ 2,141,623	$ 2,141,623	0.0%	$ 1,698,063	126.1%	7.61%
7/1/2013	$ 227,591	$ 2,224,560	$ 1,996,969	10.2%	$ 1,447,177	138.0%	7.61%
7/1/2015	$ 1,175,145	$ 3,222,725	$ 2,047,580	36.5%	$ 1,744,816	117.4%	7.28%
6/30/2017	$ 1,375,284	$ 3,022,757	$ 1,647,473	45.5%	$ 1,763,442	93.4%	7.28%
6/30/2019	$ 1,719,933	$ 2,733,681	$ 1,013,748	62.9%	$ 2,166,363	46.8%	6.75%
6/30/2021	$ 2,451,154	$ 3,035,513	$ 584,359	80.7%	$ 2,518,237	23.2%	6.10%



Some changes impacting valuation results during these years include:

- *July 2011*: Benefits changed; OPEB trust established; discount rate increased to trust rate
- *July 2015*: 1st time recognition of implicit subsidy liability; discount rate decreased slightly; updated assumptions for disability and mortality and future retiree participation.
- *July 2017*: Increase in assumed healthcare trend; assumption changes and favorable plan experience reduced plan liabilities
- *June 2019*: Increased liability from decrease in discount rate from 7.28% to 6.75%; offset by very favorable plan experience and from updated assumptions for medical trend, spouse coverage, and demographic assumptions; repealed excise tax liability for high-cost coverage.
- *June 2021*: Liability increased from decrease in discount rate; return on trust assets exceeded expectations since the prior valuation.

F. Certification

The primary purposes of this report are: (1) to provide actuarial information of the other postemployment benefits (OPEB) provided by the City of Colusa (the City) in compliance with Statement 75 of the Governmental Accounting Standards Board (GASB 75); and (2) to provide Actuarially Determined Contributions for prefunding of this program in conformity with the District's OPEB funding policy. The City is not required to contribute the ADC shown in this report and we make no representation that it will, in fact, fund the OPEB trust at any particular level).

In preparing this report we relied without audit on information provided by the City. This information includes, but is not limited to, plan provisions, census data, and financial information. We performed a limited review of this data and found the information to be reasonably consistent. The accuracy of this report is dependent on this information and if any of the information we relied on is incomplete or inaccurate, then the results reported herein will be different from any report relying on more accurate information.

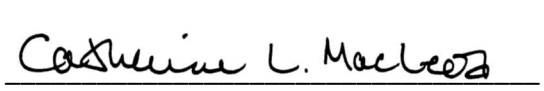
We consider the actuarial assumptions and methods used in this report to be individually reasonable under the requirements imposed by GASB 75 and taking into consideration reasonable expectations of plan experience. The results provide an estimate of the plan's financial condition at one point in time. Future actuarial results may be significantly different due to a variety of reasons including, but not limited to, demographic and economic assumptions differing from future plan experience, changes in plan provisions, changes in applicable law, or changes in the value of plan benefits relative to other alternatives available to plan members.

Alternative assumptions may also be reasonable; however, demonstrating the range of potential plan results based on alternative assumptions was beyond the scope of our assignment except to the limited extent required by GASB 75 and in accordance with the City's stated OPEB funding policy. Results for accounting purposes may be materially different than results obtained for other purposes such as plan termination, liability settlement, or underlying economic value of the promises made by the plan.

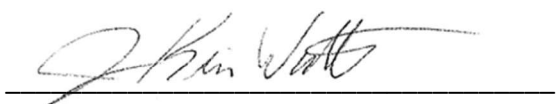
This report is prepared solely for the use and benefit of the City and may not be provided to third parties without prior written consent of MacLeod Watts. Exceptions: The City may provide copies of this report to their professional accounting and legal advisors who are subject to a duty of confidentiality, and the City may provide this work to any party if required by law or court order. No part of this report should be used as the basis for any representations or warranties in any contract or agreement without the written consent of MacLeod Watts.

The undersigned are unaware of any relationship that might impair the objectivity of this work. Nothing within this report is intended to be a substitute for qualified legal or accounting counsel. The signing actuary is a member of the American Academy of Actuaries and meets the qualification standards for rendering this opinion.

Signed: September 26, 2022



Catherine L. MacLeod, FSA, FCA, EA, MAAA



J. Kevin Watts, FSA. FCA, MAAA

G. Supporting Information

Section 1 - Summary of Employee Data

Active members: The City reported 32 active employees in the data provided to us for the June 2021 valuation. Of these, 31 were reported as currently enrolled in the medical program and 1 employee was reported as waiving coverage.

Distribution of Benefits-Eligible Active Employees								
	Years of Service							
Current Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 & Up	Total	Percent
Under 25		3					3	9%
25 to 29	2	3	1				6	19%
30 to 34	1	4	1				6	19%
35 to 39	2	1	2		1		6	19%
40 to 44	1		1				2	6%
45 to 49		1	1		2	1	5	16%
50 to 54	1			1			2	6%
55 to 59			2				2	6%
60 to 64							0	0%
65 to 69							0	0%
70 & Up							0	0%
Total	7	12	8	1	3	1	**32**	**100%**
Percent	22%	38%	25%	3%	9%	3%	**100%**	

Valuation	June 2019	June 2021
Average Attained Age for Actives	38.6	37.5
Average Years of Service	7.8	5.3

Retired members: There were also 25 retirees and 2 survivors receiving benefits on the valuation date. Their ages are summarized in this chart:

Retirees by Age					
Current Age	Misc	Police	Fire	Total	Percent
Below 50	0	1	0	1	4%
50 to 54	0	0	0	0	0%
55 to 59	2	0	0	2	7%
60 to 64	1	1	1	3	11%
65 to 69	7	1	1	9	33%
70 to 74	4	0	0	4	15%
75 to 79	4	0	0	4	15%
80 & up	1	1	2	4	15%
Total	**19**	**4**	**4**	**27**	**100%**
Average Age:					
On 6/30/2021	70.3	65.3	77.0	70.6	
At retirement	59.3	53.7	59.7	58.6	

Supporting Information
(Continued)

Section 1 - Summary of Employee Data
(continued)

The chart below reconciles the number of actives and retirees included in the June 30, 2019 valuation with those included in the June 30, 2021 valuation:

Reconciliation of City Plan Members Between Valuation Dates					
Status	Covered Actives	Waiving Actives	Covered Retirees	Covered Surviving Spouses	Total
Number reported as of June 30, 2019	27	3	23	3	56
New employees	7	1			8
Separated employees	(2)				(2)
New retiree, elected coverage	(4)		4		0
New retiree, waiving coverage					0
Previously waiving, now covered	3	(3)			0
Deceased			(2)	(1)	(3)
Number reported as of June 30, 2021	**31**	**1**	**25**	**2**	**59**

Overall, the number of active plan members increased by 2, from 30 to 32, representing a 7% increase in active employees included in the valuation. The number of covered retirees increased by 1, from 26 to 27. There were 4 new retirements reported between June 30, 2019, and June 30, 2021; all 4 retirees elected City coverage in retirement.

The chart below shows level of coverage in the medical program on the valuation date. These elections have minimal impact on the OPEB liability, generally affecting only survivor benefits and/or estimated implicit subsidy liabilities.

Counts by Coverage Level			
Coverage Level	**Active**	**Retired**	**Total**
Employee Only	23	-	23
Employee & Spouse	2	21	23
Employee & Child(ren)	2	6	8
Employee & Family	4	-	4
Waived	1	-	1
Total	**32**	**27**	**59**

Summary of Plan Member Counts: The numbers of those members currently or potentially eligible to receive benefits under the OPEB plan are required to be reported in the notes to the financial statements.

Summary of Plan Member Counts	
Number of active plan members	32
Number of inactive plan members currently receiving benefits	27
Number of inactive plan members entitled to but not receiving benefits	12*

** Retirees eligible to return to the City for PEMHCA coverage*

Supporting Information
(Continued)

Section 2 - Summary of Retiree Benefit Provisions

OPEB provided: The City reported that medical, dental and vision coverage is available for retirees.

Benefits excluded from this valuation: If dental and/or vision coverage is selected, the retiree must pay 100% of the premiums. Since no OPEB liability is expected with respect to dental or vision coverage for retirees, neither is considered in this valuation.

Access to medical coverage: Medical coverage is currently provided through CalPERS as permitted under the Public Employees' Medical and Hospital Care Act (PEMHCA). Access to this coverage requires the employee to satisfy the requirements for retirement under CalPERS, i.e., (a) attainment of age 50 (age 52 for miscellaneous PEPRA employees) with 5 years of State or public agency service or (b) an approved disability retirement.

The employee must begin his or her retirement (pension) benefit within 120 days of terminating employment with the City to be eligible to continue medical coverage through the City and be entitled to the benefits described below. It is the timing of initiating retirement benefits and not timing of enrollment in the medical program which determines whether or not the retiree qualifies for lifetime medical coverage and any benefits defined in the PEMHCA resolution. Once eligible, coverage may be continued at the retiree's option for his or her lifetime. A surviving spouse and other eligible dependents may also continue coverage. If an eligible employee is not already enrolled in the medical plan, he or she may enroll within 60 days of retirement, during any future open enrollment period or with a qualifying life event.

Benefits provided: Under PEMHCA, the City is required to contribute toward retiree premiums for the retiree's lifetime or until coverage is discontinued. In accordance with a resolution executed in 2010, the City contributes the PEMHCA minimum employer contribution (MEC)[5] for any City retiree who satisfies the requirements for "Access to Coverage" above. For certain retirees, the City provides a medical premium stipend, which in combination with the PEMHCA minimum (MEC), provides an additional subsidy toward retiree (single coverage) medical premiums.

Current premium rates: The 2022 CalPERS monthly medical plan rates in the Region 1 rate group are shown in the table below. If different rates apply where the member resides outside of this area, those rates are reflected in the valuation, but not listed here. The CalPERS administration fee is assumed to be expensed each year and has not been projected as an OPEB liability in this valuation.

Region 1 2022 Health Plan Rates						
	Actives and Pre-Med Retirees			Medicare Eligible Retirees		
Plan	Ee Only	Ee & 1	Ee & 2+	Ee Only	Ee & 1	Ee & 2+
Blue Shield Access+ HMO & EPO	$ 1,116.01	$ 2,232.02	$ 2,901.63	$ 353.11	$ 706.22	$ 1,375.83
PERS Platinum PPO	1,057.01	2,114.02	2,748.23	381.94	763.88	1,398.09
PERS Gold PPO	701.23	1,402.46	1,823.20	377.41	754.82	1,175.56
PORAC Region 1	799.00	1,725.00	2,219.00	461.00	919.00	1,413.00
UHC Alliance HMO*	1,020.28	2,040.56	2,652.73	347.21	694.42	1,306.59

[5] It is our understanding that there is a pre-tax flexible benefit plan for active employees to provide premiums in excess of the MEC and these payments are not required to be provided to retired employees to meet PEMHCA requirements.

Supporting Information
(Continued)

Section 2 - Summary of Retiree Benefit Provisions

The chart below summarizes the details of plan eligibility for and the amount of these benefits.

Date Hired	Date of Retirement	Group	Eligibility Requirements	Pre-Medicare Retiree Benefit	Medicare Retiree Benefit	Maximum Monthly Benefit for 2022
Any	Any	All Groups	At least age 50 with 5 years of **PERS** service	Required PEMHCA Minimum Employer Contribution (MEC)		$149
Before 7/1/2010	Before 1/1/2011	All Groups	At least age 50 with 5 years of **City** service	100% Employee (Retiree) Only premium		Not Applicable
Before 7/1/2010	On or After 1/1/2011	All except Police	At least age 50 with 5 years of **City** service	100% Employee Only premium up to Blue Shield EPO Basic premium	100% Employee Only premium up to United HealthCare Supplemental Medicare premium	Pre-Medicare: $1,116.01 Post-Medicare: $353.01
		Police		100% Employee Only premium up to PORAC Basic premium		Pre-Medicare: $799.00 Post-Medicare: $353.01
On or After 7/1/2010	Any	All Groups	*No additional benefits payable; PEMHCA MEC Only; see above.*			

Surviving Spouses: The MEC continues to the surviving spous of a deceased retiree. In addition, the benefits described abovefor retirees who retired prior to January 1, 2011 continue to the surviving spouse of a deceased retiree.

City Council members are eligible to continue coverage in retirement, but, if they opt to do so, must pay 100% of the monthly premiums. The City does not contribute toward the monthly premiums for retired Council members.

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

The ultimate real cost of an employee benefit plan is the value of all benefits and other expenses of the plan over its lifetime. These payments depend only on the terms of the plan and the administrative arrangements adopted. Actuarial assumptions are used to estimate the cost of these benefits; the funding method spreads the expected costs on a level basis over the life of the plan.

Important Dates

Valuation Date	June 30, 2021
Fiscal Year End	June 30, 2022
GASB 75 Measurement Date	June 30, 2021 (last day of the prior fiscal year)

Valuation Methods

Funding Method	Entry Age Normal Cost, level percent of pay
Asset Valuation Method	Market value of assets
Participants Valued	Only current active employees and retired participants and covered dependents are valued. No future entrants are considered in this valuation.
Development of Age-related Medical Premiums	Actual premium rates for retirees and their spouses were adjusted to an age-related basis by applying medical claim cost factors developed from the data presented in the report, "Health Care Costs – From Birth to Death", sponsored by the Society of Actuaries. A description of the use of claims cost curves can be found in MacLeod Watts's Age Rating Methodology (Addendum 2 to this report). Pre-Medicare retiree premiums are blended with premiums for active members. Medicare-eligible retirees are covered by plans which are rated solely on the experience of Medicare retirees with no subsidy by active employee premiums. Monthly baseline premium costs were set equal to the active single premiums shown in the chart in Section 2. Representative claims costs derived from the dataset provided by CalPERS are shown in the chart on the following page. Age-based claims were applied (a) for all retirees not yet eligible for Medicare and (b) for Medicare retirees receiving benefits in excess of the PEMHCA minimum *and* covered by Medicare Supplement plans.

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Development of Age-related
Medical Premiums (continued)

Expected Monthly Claims by Medical Plan for Selected Ages														
		Non-Medicare Male Retirees					Medicare Male Retirees							
Region	**Medical Plan**	50	53	56	59	62	65	70	75	80	85	90	95	
Region 1	Blue Shield Access	$1,007	$1,187	$1,379	$1,581	$1,797	*Claims not developed for Medicare Advantage plans*							
	PERS Gold PPO	720	849	986	1,130	1,285	$ 315	$ 352	$ 383	$ 401	$ 396	$ 378	$ 375	
	PERS Platinum PPO	909	1,072	1,245	1,427	1,622	319	357	388	406	401	383	380	
	PORAC	757	893	1,037	1,189	1,351	392	440	478	500	494	472	468	
	UHC Alliance HMO	1,016	1,198	1,392	1,595	1,814	*Claims not developed for Medicare Advantage plans*							
Region 3	UHC Alliance HMO	775	914	1,061	1,217	1,383	276	310	336	352	348	332	329	
Out of State	PORAC	629	742	862	988	1,123	392	440	478	500	494	472	468	
		Non-Medicare Female Retirees					Medicare Female Retirees							
Region	**Medical Plan**	50	53	56	59	62	65	70	75	80	85	90	95	
Region 1	Blue Shield Access	$1,248	$1,370	$1,475	$1,594	$1,757	*Claims not developed for Medicare Advantage plans*							
	PERS Gold PPO	892	980	1,054	1,139	1,256	$ 301	$ 341	$ 369	$ 385	$ 389	$ 381	$ 375	
	PERS Platinum PPO	1,127	1,237	1,331	1,439	1,586	305	345	374	390	394	386	379	
	PORAC	938	1,030	1,109	1,198	1,321	376	425	460	481	485	475	467	
	UHC Alliance HMO	1,259	1,383	1,488	1,608	1,773	*Claims not developed for Medicare Advantage plans*							
Region 3	UHC Alliance HMO	960	1,055	1,135	1,227	1,352	265	299	324	338	341	334	329	
Out of State	PORAC	780	856	922	996	1,098	376	425	460	481	485	475	467	

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Economic Assumptions

Long Term Return on Assets/ Discount Rate

As of June 30, 2021: 6.10%, net of plan investment expenses
As of June 30, 2020: 6.75%, net of plan investment expenses

General Inflation Rate

2.5% per year

Salary Increase

3.0% per year; since benefits do not depend on salary, this is used to allocate the cost of benefits between service years.

Healthcare Trend

Medical plan premiums and claims costs by age are assumed to increase once each year. Increases over the prior year's levels were derived using the Getzen model and are assumed to be effective on the dates shown in the chart below.

Effective January 1	Premium Increase	Effective January 1	Premium Increase
2022	Actual	2044-2049	4.7%
2023	5.8%	2050-2059	4.6%
2024	5.6%	2060-2066	4.5%
2025	5.4%	2067-2068	4.4%
2026-2027	5.2%	2069-2070	4.3%
2028-2029	5.1%	2071	4.2%
2030-2038	5.0%	2072-2073	4.1%
2039	4.9%	2074-2075	4.0%
2040-2043	4.8%	2076 & later	3.9%

The healthcare trend shown above was developed using the Getzen Model 2022_b published by the Society of Actuaries using the following settings: CPI 2.5%; Real GDP Growth 1.4%; Excess Medical Growth 1.0%; Expected Health Share of GDP in 2028 20.3%; Resistance Point 20%; Year after which medical growth is limited to growth in GDP 2075.

The PEMHCA minimum employer contribution is assumed to increase by 4.0% per year.

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Participant Election Assumptions

Participation Rate	*Active employees hired prior to July 1, 2010*: 100% are assumed to continue their current plan election in retirement. *Active employees hired on or after July 1, 2010*: 70% of currently enrolled employees and 50% of non-participating employees are assumed to continue medical coverage through the City in retirement. *Active Council members currently waiving City medical coverage* are assumed to waive the coverage in retirement. *Active police, fire and miscellaneous employees currently waiving medical coverage* are assumed to elect coverage in the PERS Platinum plan in retirement. *Retired participants*: Existing medical plan elections are assumed to be continued until the retiree's death.
Spouse Coverage	*Active employees:* 30% of employees are assumed to be married and to elect spousal coverage at the time of retirement. Surviving spouses are assumed to retain coverage until their death. Husbands are assumed to be 3 years older than their wives. *Retired participants*: Existing elections for spouse coverage are assumed to be continued until the spouse's death. Actual spouse ages are used, where known; if not, husbands are assumed to be 3 years older than their wives. Spouse gender is assumed to be the opposite of the employee.
Medicare Eligibility	Absent contrary data, all individuals are assumed to be eligible for Medicare Parts A and B at age 65.

Demographic Assumptions

Demographic actuarial assumptions used in this valuation are based on the 2017 experience study of the California Public Employees Retirement System using data from 1997 to 2015, except for a different basis used to project future mortality improvements. Rates for selected age and service are shown below and on the following pages. The representative mortality rates were those published by CalPERS adjusted to back out 15 years of Scale MP 2016 to central year 2015.

Mortality Improvement	MacLeod Watts Scale 2022 applied generationally from 2015 (see Addendum 3)

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Mortality Before Retirement
(before improvement applied)

CalPERS Public Agency Miscellaneous Non-Industrial Deaths

Age	Male	Female
15	0.00019	0.00004
20	0.00027	0.00008
30	0.00044	0.00018
40	0.00070	0.00040
50	0.00135	0.00090
60	0.00288	0.00182
70	0.00693	0.00438
80	0.01909	0.01080

CalPERS Public Agency Police & Fire Combined Industrial & Non-Industrial

Age	Male	Female
15	0.00023	0.00008
20	0.00032	0.00013
30	0.00053	0.00025
40	0.00081	0.00050
50	0.00150	0.00104
60	0.00306	0.00200
70	0.00714	0.00459
80	0.01934	0.01105

Mortality After Retirement
(before improvement applied)

Healthy Lives

CalPERS Public Agency Miscellaneous, Police & Fire Post Retirement Mortality

Age	Male	Female
40	0.00070	0.00040
50	0.00431	0.00390
60	0.00758	0.00524
70	0.01490	0.01044
80	0.04577	0.03459
90	0.14801	0.11315
100	0.35053	0.30412
110	1.00000	1.00000

Disabled Miscellaneous

CalPERS Public Agency Disabled Miscellaneous Post-Retirement Mortality

Age	Male	Female
20	0.00027	0.00008
30	0.00044	0.00018
40	0.00070	0.00040
50	0.01371	0.01221
60	0.02447	0.01545
70	0.03737	0.02462
80	0.07218	0.05338
90	0.16585	0.14826

Disabled Fire Safety

CalPERS Public Agency Disabled Fire Post-Retirement Mortality

Age	Male	Female
20	0.00027	0.00009
30	0.00031	0.00014
40	0.00034	0.00022
50	0.00780	0.00681
60	0.01250	0.00809
70	0.02361	0.01647
80	0.06612	0.04975
90	0.18524	0.14349

Disabled Police Safety

CalPERS Public Agency Disabled Police Post-Retirement Mortality

Age	Male	Female
20	0.00034	0.00010
30	0.00023	0.00012
40	0.00023	0.00017
50	0.00642	0.00563
60	0.01059	0.00696
70	0.02185	0.01537
80	0.06477	0.04883
90	0.18501	0.14169

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Termination Rates

These rates reflect the assumed probability that an employee will leave the City in the next 12 months for reasons other than a service or disability retirement or death.

Miscellaneous Employees: Sum of Vested Terminated & Refund Rates From CalPERS Experience Study Report Issued December 2017

Attained Age	Years of Service					
	0	3	5	10	15	20
15	0.1812	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.1742	0.1193	0.0654	0.0000	0.0000	0.0000
25	0.1674	0.1125	0.0634	0.0433	0.0000	0.0000
30	0.1606	0.1055	0.0615	0.0416	0.0262	0.0000
35	0.1537	0.0987	0.0567	0.0399	0.0252	0.0184
40	0.1468	0.0919	0.0519	0.0375	0.0243	0.0176
45	0.1400	0.0849	0.0480	0.0351	0.0216	0.0168

Police Safety Employees: Sum of Vested Terminated & Refund Rates From CalPERS Experience Study Report Issued December 2017

Attained Age	Years of Service					
	0	3	5	10	15	20
15	0.1013	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.1013	0.0258	0.0249	0.0000	0.0000	0.0000
25	0.1013	0.0258	0.0249	0.0179	0.0000	0.0000
30	0.1013	0.0258	0.0249	0.0179	0.0109	0.0000
35	0.1013	0.0258	0.0249	0.0179	0.0109	0.0082
40	0.1013	0.0258	0.0249	0.0179	0.0109	0.0082
45	0.1013	0.0258	0.0249	0.0179	0.0109	0.0082

Fire Safety Employees: Sum of Vested Terminated & Refund Rates From CalPERS Experience Study Report Issued December 2017

Attained Age	Years of Service					
	0	3	5	10	15	20
15	0.1298	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.1298	0.0237	0.0146	0.0000	0.0000	0.0000
25	0.1298	0.0237	0.0146	0.0069	0.0000	0.0000
30	0.1298	0.0237	0.0146	0.0069	0.0052	0.0000
35	0.1298	0.0237	0.0146	0.0069	0.0052	0.0041
40	0.1298	0.0237	0.0146	0.0069	0.0052	0.0041
45	0.1298	0.0237	0.0146	0.0069	0.0052	0.0041

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Service Retirement Rates

Each rate in these tables reflects the assumed probability that an employee with that age and service will take a service retirement from the City in the next 12 months.

The following miscellaneous retirement formulas apply:

Classic, hired before 7/1/2010: 2.0% @ 55

Miscellaneous Employees: 2% at 55 formula From CalPERS Experience Study Report Issued December 2017						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0080	0.0130	0.0180	0.0210	0.0220	0.0330
55	0.0400	0.0400	0.0560	0.0930	0.1090	0.1540
60	0.0580	0.0750	0.0930	0.1260	0.1430	0.1690
65	0.1450	0.1730	0.2010	0.2330	0.2660	0.2890
70	0.1500	0.1710	0.1920	0.2390	0.3040	0.3300
75 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Classic, hired after 7/1/2010: 2.0% @ 60

Miscellaneous Employees: 2% at 60 formula From CalPERS Experience Study Report Issued December 2017						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0200	0.0200	0.0200	0.0200	0.0200	0.1500
55	0.0190	0.0260	0.0330	0.0920	0.1360	0.1460
60	0.0700	0.0740	0.0890	0.1130	0.1370	0.1610
65	0.1400	0.1780	0.2150	0.2640	0.3210	0.3770
70	0.1400	0.1780	0.2150	0.2640	0.3210	0.3770
75 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

PEPRA: 2.0% @ 62

Miscellaneous "PEPRA" Employees: 2% at 62 formula From CalPERS Experience Study Report Issued December 2017						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.0100	0.0190	0.0280	0.0360	0.0610	0.0960
60	0.0310	0.0510	0.0710	0.0910	0.1110	0.1380
65	0.1080	0.1410	0.1730	0.2060	0.2390	0.3000
70	0.1200	0.1560	0.1930	0.2290	0.2650	0.3330
75 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Service Retirement Rates
(continued)

The following fire safety retirement formulas apply:

Classic: 2.0% @ 50

Fire Safety Employees: 2% at 50 formula From CalPERS Experience Study Report Issued December 2017						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0090	0.0090	0.0090	0.0090	0.0130	0.0200
53	0.0520	0.0520	0.0520	0.0520	0.0790	0.1190
56	0.0830	0.0830	0.0830	0.0830	0.1270	0.1900
59	0.0740	0.0740	0.0740	0.0740	0.1130	0.1700
62	0.0990	0.0990	0.0990	0.0990	0.1520	0.2280
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

PEPRA: 2.7% @ 57

Fire Safety Employees: 2.7% at 57 formula From CalPERS Experience Study Report Issued December 2017						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0065	0.0065	0.0065	0.0065	0.0101	0.0151
53	0.0442	0.0442	0.0442	0.0442	0.0680	0.1018
56	0.0740	0.0740	0.0740	0.0740	0.1140	0.1706
59	0.0729	0.0729	0.0729	0.0729	0.1123	0.1681
62	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

The following police safety retirement formulas apply:

Classic: 2.0% @ 50

Police Safety Employees: 2% at 50 formula From CalPERS Experience Study Report Issued December 2017						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0500	0.0500	0.0500	0.0500	0.0500	0.1000
53	0.0400	0.0400	0.0400	0.0400	0.0820	0.1230
56	0.0660	0.0660	0.0660	0.0880	0.1290	0.2280
59	0.0800	0.0800	0.0800	0.0920	0.1400	0.2280
62	0.1500	0.1500	0.1500	0.1500	0.1500	0.2130
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Supporting Information
(Continued)

Section 3 - Actuarial Methods and Assumptions

Service Retirement Rates

PEPRA: 2.7% @ 57

Police Safety Employees: 2.7% at 57 formula From CalPERS Experience Study Report Issued December 2017						
Current Age	Years of Service					
	5	10	15	20	25	30
50	0.0500	0.0500	0.0500	0.0500	0.0500	0.1000
53	0.0380	0.0380	0.0380	0.0380	0.0774	0.1169
56	0.0627	0.0627	0.0627	0.0836	0.1228	0.2168
59	0.0800	0.0800	0.0800	0.0920	0.1400	0.2275
62	0.1500	0.1500	0.1500	0.1500	0.1500	0.2125
65 & over	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Disability Retirement Rates

CalPERS Public Agency Miscellaneous Disability From Dec 2017 Experience Study Report		
Age	Male	Female
20	0.00017	0.00010
25	0.00017	0.00010
30	0.00019	0.00024
35	0.00039	0.00071
40	0.00102	0.00135
45	0.00151	0.00188
50	0.00158	0.00199
55	0.00158	0.00149
60	0.00153	0.00105

CalPERS Public Agency Police Combined Disability From Dec 2017 Experience Study Report	
Age	Unisex
20	0.00010
25	0.00175
30	0.00496
35	0.00818
40	0.01140
45	0.01461
50	0.01925
55	0.04909
60	0.06212

CalPERS Public Agency Fire Combined Disability From Dec 2017 Experience Study Report	
Age	Unisex
20	0.00015
25	0.00029
30	0.00066
35	0.00129
40	0.00235
45	0.00418
50	0.02128
55	0.03134
60	0.04442

Software and Models Used in the Valuation

ProVal - MacLeod Watts utilizes ProVal, a licensed actuarial valuation software product from Winklevoss Technologies (WinTech) to project future retiree benefit payments and develop the OPEB liabilities presented in this report. ProVal is widely used by the actuarial community. We review results at the plan level and for individual sample lives and find them to be reasonable and consistent with the results we expect. We are not aware of any material inconsistencies or limitations in the software that would affect this actuarial valuation.

Age-based premiums model – developed internally and reviewed by an external consultant at the time it was developed. See discussion on Development of Age-Related Medical Premiums and Addendum 3.

Getzen model – published by the Society of Actuaries; used to derive medical trend assumptions described earlier in this section.

Supporting Information
(Concluded)

Section 3 - Actuarial Methods and Assumptions

Changes in assumptions or methods since the prior Measurement Date

Trust rate of return/discount rate	Decreased from 6.75% to 6.10%, reflecting updated long-term rates of return provided by CalPERS in March 2022
Mortality Improvement	The mortality improvement scale was updated from MacLeod Watts Scale 2018 to MacLeod Watts Scale 2022, reflecting continued updates in available information (see Addendum 3).
Healthcare Trend	Updated the base healthcare trend scale to Getzen Model 2021_b, as published by the Society of Actuaries
Spouse Coverage	Decreased percentage of future retirees assumed to cover a spouse from 40% to 30%, based on observed experience
Pool Subsidy for Medicare retirees	We applied age-based premiums and developed a liability for the projected pool subsidy for retirees enrolled in Medicare plans, under guidance provided by a new actuarial practice note

Addendum 1: Important Background Information

General Types of Other Post-Employment Benefits (OPEB)

Post-employment benefits other than pensions (OPEB) comprise a part of compensation that employers offer for services received. The most common OPEB are medical, prescription drug, dental, vision, and/or life insurance coverage. Other OPEB may include outside group legal, long-term care, or disability benefits outside of a pension plan. OPEB does not generally include COBRA, vacation, sick leave (unless converted to defined benefit OPEB), or other direct retiree payments.

A direct employer payment toward the cost of OPEB benefits is referred to as an "explicit subsidy". In addition, if claims experience of employees and retirees are pooled when determining premiums, retiree premiums are based on a pool of members which, on average, are younger and healthier. For certain types of coverage such as medical insurance, this results in an "implicit subsidy" of retiree premiums by active employee premiums since the retiree premiums are lower than they would have been if retirees were insured separately. GASB 75 and Actuarial Standards of Practice generally require that an implicit subsidy of retiree premium rates be valued as an OPEB liability.

<table>
<tr><td colspan="3">Expected retiree claims</td></tr>
<tr><td colspan="2">Premium charged for retiree coverage</td><td>Covered by higher active premiums</td></tr>
<tr><td>Retiree portion of premium</td><td>Agency portion of premium
Explicit subsidy</td><td>Implicit subsidy</td></tr>
</table>

This chart shows the sources of funds needed to cover expected medical claims for pre-Medicare retirees. The portion of the premium paid by the Agency does not impact the amount of the implicit subsidy.

Valuation Process

The valuation was based on employee census data and benefits provided by the City. A summary of the employee data is provided in Section 1 and a summary of the benefits provided under the Plan is provided in Section 2. While individual employee records have been reviewed to verify that they are reasonable in various respects, the data has not been audited and we have otherwise relied on the City as to its accuracy. The valuation was also based on the actuarial methods and assumptions described in Section 3.

In developing the projected benefit values and liabilities, we first determine an expected premium or benefit stream over the employee's future retirement. Benefits may include both direct employer payments (explicit subsidies) and/or an implicit subsidy, arising when retiree premiums are expected to be subsidized by active employee premiums. The projected benefit streams reflect assumed trends in the cost of those benefits and assumptions as to the expected date(s) when benefits will end. We then apply assumptions regarding:

- The probability that each individual employee will or will not continue in service to receive benefits.
- The probability of when such retirement will occur for each retiree, based on current age, service and employee type; and

Important Background Information
(Continued)

- The likelihood that future retirees will or will not elect retiree coverage (and benefits) for themselves and/or their dependents.

We then calculate a present value of these benefits by discounting the value of each future expected benefit payment, multiplied by the assumed expectation that it will be paid, back to the valuation date using the discount rate. These benefit projections and liabilities have a very long time horizon. The final payments for currently active employees may not be made for many decades.

The resulting present value for each employee is allocated as a level percent of payroll each year over the employee's career using the entry age normal cost method and the amounts for each individual are then summed to get the results for the entire plan. This creates a cost expected to increase each year as payroll increases. Amounts attributed to prior fiscal years form the "Total OPEB Liability". The OPEB cost allocated for active employees in the current year is referred to as "Service Cost".

Where contributions have been made to an irrevocable OPEB trust, the accumulated value of trust assets ("Fiduciary Net Position") is applied to offset the "Total OPEB Liability", resulting in the "Net OPEB Liability". If a plan is not being funded, then the Net OPEB Liability is equal to the Total OPEB Liability.

It is important to remember that an actuarial valuation is, by its nature, a projection of one possible future outcome based on many assumptions. To the extent that actual experience is not what we assumed, future results will differ. Some possible sources of future differences may include:

- A significant change in the number of covered or eligible plan members
- A significant increase or decrease in the future premium rates
- A change in the subsidy provided by the Agency toward retiree premiums
- Longer life expectancies of retirees
- Significant changes in expected retiree healthcare claims by age, relative to healthcare claims for active employees and their dependents
- Higher or lower returns on plan assets or contribution levels other than were assumed, and/or
- Changes in the discount rate used to value the OPEB liability

Important Background Information
(Continued)

Requirements of GASB 75

The Governmental Accounting Standards Board (GASB) issued GASB Statement No. 75, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*. This Statement establishes standards for the measurement, recognition, and disclosure of OPEB expense and related liabilities (assets), note disclosures, and, required supplementary information (RSI) in the financial reports of state and local governmental employers.

Important Dates

GASB 75 requires that the information used for financial reporting falls within prescribed timeframes. Actuarial valuations of the total OPEB liability are generally required at least every two years. If a valuation is not performed as of the Measurement Date, then liabilities are required to be based on roll forward procedures from a prior valuation performed no more than 30 months and 1 day prior to the most recent year-end. In addition, the net OPEB liability is required to be measured as of a date no earlier than the end of the prior fiscal year (the "Measurement Date").

Recognition of Plan Changes and Gains and Losses

Under GASB 75, gains and losses related to changes in Total OPEB Liability and Fiduciary Net Position are recognized in OPEB expense systematically over time.

- *Timing of recognition*: Changes in the Total OPEB Liability relating to changes in plan benefits are recognized immediately (fully expensed) in the year in which the change occurs. Gains and Losses are amortized, with the applicable period based on the type of gain or loss. The first amortized amounts are recognized in OPEB expense for the year the gain or loss occurs. The remaining amounts are categorized as deferred outflows and deferred inflows of resources related to OPEB and are to be recognized in future OPEB expense.

- *Deferred recognition periods:* These periods differ depending on the source of the gain or loss.

Difference between projected and actual trust earnings:	5 year straight-line recognition
All other amounts:	Straight-line recognition over the expected average remaining service lifetime (EARSL) of all members that are provided with benefits, determined as of the beginning of the Measurement Period. In determining the EARSL, all active, retired and inactive (vested) members are counted, with the latter two groups having 0 remaining service years.

Important Background Information
(Continued)

Implicit Subsidy Plan Contributions

An implicit subsidy occurs when expected retiree claims exceed the premiums charged for retiree coverage. When this occurs, we expect part of the premiums paid for active employees to cover a portion of retiree claims. This transfer represents the current year's "implicit subsidy". Because GASB 75 treats payments to an irrevocable trust *or directly to the insurer* as employer contributions, each year's implicit subsidy is treated as a contribution toward the payment of retiree benefits.

The following hypothetical example illustrates this treatment:

Hypothetical Illustration of Implicit Subsidy Recognition	For Active Employees	For Retired Employees
Prior to Implicit Subsidy Adjustment		
Premiums Paid by Agency During Fiscal Year	$ 411,000	$ 48,000
Accounting Treatment	Compensation Cost for Active Employees	Contribution to Plan & Benefits Paid from Plan
After Implicit Subsidy Adjustment		
Premiums Paid by Agency During Fiscal Year	$ 411,000	$ 48,000
Implicit Subsidy Adjustment	(23,000)	23,000
Accounting Cost of Premiums Paid	$ 388,000	$ 71,000
Accounting Treatment Impact	Reduces Compensation Cost for Active Employees	Increases Contributions to Plan & Benefits Paid from Plan

The example above shows that total payments toward active and retired employee healthcare premiums is the same, but for accounting purposes part of the total is shifted from actives to retirees. This shifted amount is recognized as an OPEB contribution and reduces the current year's premium expense for active employees.

Important Background Information
(Continued)

Discount Rate

When the financing of OPEB liabilities is on a pay-as-you-go basis, GASB 75 requires that the discount rate used for valuing liabilities be based on the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). When a plan sponsor makes regular, sufficient contributions to a trust in order to prefund the OPEB liabilities, GASB 75 allows use of a rate up to the expected rate of return of the trust. Therefore, prefunding has an advantage of potentially being able to report overall lower liabilities due to future expected benefits being discounted at a higher rate.

Actuarial Funding Method and Assumptions

The "ultimate real cost" of an employee benefit plan is the value of all benefits and other expenses of the plan over its lifetime. These expenditures are dependent only on the terms of the plan and the administrative arrangements adopted, and as such are not affected by the actuarial funding method.

The actuarial funding method attempts to spread recognition of these expected costs on a level basis over the life of the plan, and as such sets the "incidence of cost". GASB 75 specifically requires that the actuarial present value of projected benefit payments be attributed to periods of employee service using the Entry Age Actuarial Cost Method, with each period's service cost determined as a level percentage of pay.

The results of this report may not be appropriate for other purposes, where other assumptions, methodology and/or actuarial standards of practice may be required or more suitable.

Addendum 2: MacLeod Watts Age Rating Methodology

Both accounting standards (e.g. GASB 75) and actuarial standards (e.g. ASOP 6) require that expected retiree claims, not just premiums paid, be reflected in most situations where an actuary is calculating retiree healthcare liabilities. Unfortunately, the actuary is often required to perform these calculations without any underlying claims information. In most situations, the information is not available, but even when available, the information may not be credible due to the size of the group being considered.

Actuaries have developed methodologies to approximate healthcare claims from the premiums being paid by the plan sponsor. Any methodology requires adopting certain assumptions and using general studies of healthcare costs as substitutes when there is a lack of credible claims information for the specific plan being reviewed.

Premiums paid by sponsors are often uniform for all employee and retiree ages and genders, with a drop in premiums for those participants who are Medicare-eligible. While the total premiums are expected to pay for the total claims for the insured group, on average, the premiums charged would not be sufficient to pay for the claims of older insureds and would be expected to exceed the expected claims of younger insureds. An age-rating methodology takes the typically uniform premiums paid by plan sponsors and spreads the total premium dollars to each age and gender intended to better approximate what the insurer might be expecting in actual claims costs at each age and gender.

The process of translating premiums into expected claims by age and gender generally follows the steps below.

1. *Obtain or Develop Relative Medical Claims Costs by Age, Gender, or other categories that are deemed significant*. For example, a claims cost curve might show that, if a 50 year old male has $1 in claims, then on average a 50 year old female has claims of $1.25, a 30 year male has claims of $0.40, and an 8 year old female has claims of $0.20. The claims cost curve provides such relative costs for each age, gender, or any other significant factor the curve might have been developed to reflect. Section 3 provides the source of information used to develop such a curve and shows sample relative claims costs developed for the plan under consideration.
2. *Obtain a census of participants, their chosen medical coverage, and the premium charged for their coverage.* An attempt is made to find the group of participants that the insurer considered in setting the premiums they charge for coverage. That group includes the participant and any covered spouses and children. When information about dependents is unavailable, assumptions must be made about spouse age and the number and age of children represented in the population. These assumptions are provided in Section 3.
3. *Spread the total premium paid by the group to each covered participant or dependent based on expected claims.* The medical claims cost curve is used to spread the total premium dollars paid by the group to each participant reflecting their age, gender, or other relevant category. After this step, the actuary has a schedule of expected claims costs for each age and gender for the current premium year. It is these claims costs that are projected into the future by medical cost inflation assumptions when valuing expected future retiree claims.

The methodology described above is dependent on the data and methodologies used in whatever study might be used to develop claims cost curves for any given plan sponsor. These methodologies and assumptions can be found in the referenced paper cited as a source in the valuation report.

Addendum 3: MacLeod Watts Mortality Projection Methodology

Actuarial standards of practice (e.g., ASOP 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations, and ASOP 6, Measuring Retiree Group Benefits Obligations) indicate that the actuary should reflect the effect of mortality improvement (i.e., longer life expectancies in the future), both before and after the measurement date. The development of credible mortality improvement rates requires the analysis of large quantities of data over long periods of time. Because it would be extremely difficult for an individual actuary or firm to acquire and process such extensive amounts of data, actuaries typically rely on large studies published periodically by organizations such as the Society of Actuaries or Social Security Administration.

As noted in a recent actuarial study on mortality improvement, key principles in developing a credible mortality improvement model would include the following:

(1) Short-term mortality improvement rates should be based on recent experience.
(2) Long-term mortality improvement rates should be based on expert opinion.
(3) Short-term mortality improvement rates should blend smoothly into the assumed long-term rates over an appropriate transition period.

The **MacLeod Watts Scale 2022** was developed from a blending of data and methodologies found in two published sources: (1) the Society of Actuaries Mortality Improvement Scale MP-2021 Report, published in October 2021 and (2) the demographic assumptions used in the 2021 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, published August 2021.

MacLeod Watts Scale 2022 is a two-dimensional mortality improvement scale reflecting both age and year of mortality improvement. The underlying base scale is Scale MP-2021 which has two segments – (1) historical improvement rates for the period 1951-2017 and (2) an estimate of future mortality improvement for years 2018-2020 using the Scale MP-2021 methodology but utilizing the assumptions used in generating Scale MP-2015. The MacLeod Watts scale then transitions from the 2020 improvement rate to the Social Security Administration (SSA) Intermediate Scale linearly over the 10-year period 2021-2030. After this transition period, the MacLeod Watts Scale uses the constant mortality improvement rate from the SSA Intermediate Scale from 2030-2044. The SSA's Intermediate Scale has a final step in 2045 which is reflected in the MacLeod Watts scale for years 2045 and thereafter. Over the ages 95 to 117, the age 95 improvement rate is graded to zero.

Scale MP-2021 can be found at the SOA website and the projection scales used in the 2021 Social Security Administrations Trustees Report at the Social Security Administration website.

Glossary

Actuarial Funding Method – A procedure which calculates the actuarial present value of plan benefits and expenses, and allocates these expenses to time periods, typically as a normal cost and an actuarial accrued liability

Actuarial Present Value of Projected Benefits (APVPB) – The amount presently required to fund all projected plan benefits in the future. This value is determined by discounting the future payments by an appropriate interest rate and the probability of nonpayment.

CalPERS – Many state governments maintain a public employee retirement system; CalPERS is the California program, covering all eligible state government employees as well as other employees of other governments within California who have elected to join the system

Defined Benefit (DB) – A pension or OPEB plan which defines the monthly income or other benefit which the plan member receives at or after separation from employment

Deferred Contributions – When an employer makes contributions after the measurement date and prior to the fiscal year end, recognition of these contributions is deferred to a subsequent accounting period by creating a deferred resource. We refer to these contributions as Deferred Contributions.

Defined Contribution (DC) – A pension or OPEB plan which establishes an individual account for each member and specifies how contributions to each active member's account are determined and the terms of distribution of the account after separation from employment

Discount Rate - Interest rate used to discount future potential benefit payments to the valuation date. Under GASB 75, if a plan is prefunded, then the discount rate is equal to the expected trust return. If a plan is not prefunded (pay-as-you-go), then the rate of return is based on a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

Expected Average Remaining Service Lifetime (EARSL) – Average of the expected remaining service lives of all employees that are provided with benefits through the OPEB plan (active employees and inactive employees), beginning in the current period

Entry Age Actuarial Cost Method – An actuarial funding method where, for each individual, the actuarial present value of benefits is levelly spread over the individual's projected earnings or service from entry age to the last age at which benefits can be paid

Explicit Subsidy – The projected dollar value of future retiree healthcare costs expected to be paid directly by the Employer, e.g., the Employer's payment of all or a portion of the monthly retiree premium billed by the insurer for the retiree's coverage

Fiduciary Net Position –The value of trust assets used to offset the Total OPEB Liability to determine the Net OPEB Liability.

Government Accounting Standards Board (GASB) – A private, not-for-profit organization which develops generally accepted accounting principles (GAAP) for U.S. state and local governments; like FASB, it is part of the Financial Accounting Foundation (FAF), which funds each organization and selects the members of each board

Health Care Trend – The assumed rate(s) of increase in future dollar values of premiums or healthcare claims, attributable to increases in the cost of healthcare; contributing factors include medical inflation, frequency or extent of utilization of services and technological developments.

Glossary
(Continued)

Implicit Subsidy – The projected difference between future retiree claims and the premiums to be charged for retiree coverage; this difference results when the claims experience of active and retired employees are pooled together and a 'blended' group premium rate is charged for both actives and retirees; a portion of the active employee premiums subsidizes the retiree premiums.

Net OPEB Liability (NOL) – The liability to employees for benefits provided through a defined benefit OPEB. Only assets administered through a trust that meet certain criteria may be used to reduce the Total OPEB Liability.

Net Position – The Impact on Statement of Net Position is the Net OPEB Liability adjusted for deferred resource items

OPEB Expense – The OPEB expense reported in the Agency's financial statement. OPEB expense is the annual cost of the plan recognized in the financial statements.

Other Post-Employment Benefits (OPEB) – Post-employment benefits other than pension benefits, most commonly healthcare benefits but also including life insurance if provided separately from a pension plan

Pay-As-You-Go (PAYGO) – Contributions to the plan are made at about the same time and in about the same amount as benefit payments and expenses coming due

PEMHCA – The Public Employees' Medical and Hospital Care Act, established by the California legislature in 1961, provides community-rated medical benefits to participating public employers. Among its extensive regulations are the requirements that a contracting Agency contribute toward medical insurance premiums for retired annuitants and that a contracting Agency file a resolution, adopted by its governing body, with the CalPERS Board establishing any new contribution.

Plan Assets – The value of cash and investments considered as 'belonging' to the plan and permitted to be used to offset the AAL for valuation purposes. To be considered a plan asset, GASB 75 requires (a) contributions to the OPEB plan be irrevocable, (b) OPEB assets to dedicated to providing OPEB benefit to plan members in accordance with the benefit terms of the plan, and (c) plan assets be legally protected from creditors, the OPEB plan administrator and the plan members.

Public Agency Miscellaneous (PAM) – Non-safety public employees.

Select and Ultimate – Actuarial assumptions which contemplate rates which differ by year initially (the select period) and then stabilize at a constant long-term rate (the ultimate rate)

Service Cost – Total dollar value of benefits expected to be earned by plan members in the current year, as assigned by the actuarial funding method; also called normal cost

Total OPEB Liability (TOL) – Total dollars required to fund all plan benefits attributable to service rendered as of the valuation date for current plan members and vested prior plan members; a subset of "Actuarial Present Value"

Vesting – As defined by the plan, requirements which when met make a plan benefit nonforfeitable on separation of service before retirement eligibility