East Bay Municipal Utility District Employee's Retirement System

Governmental Accounting Standards Board Statement (GASBS) 74 Actuarial Valuation for the Health Insurance Benefit Plan

As of June 30, 2023

Segal

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January 5, 2024

Ms. Sophia Skoda
Director of Finance
East Bay Municipal Utility District
375 Eleventh Street
Oakland, CA 94607-4240

Dear Sophia:

We are pleased to submit this Governmental Accounting Standards Board Statement (GASBS) 74 Actuarial Valuation as of June 30, 2023 for the health insurance benefit (HIB) plan or Other Post Employment Benefits (OPEB) Plan. It contains various information that will need to be disclosed in order to comply with GASBS 74 for the health plan.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the East Bay Municipal Utility District Employees' Retirement System (EBMUDERS). The census and financial information on which our calculations were based was prepared by EBMUDERS. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, FCA, EA and Mehdi Riazi, FSA, MAAA, FCA, EA. The health care trend and other related medical assumptions have been reviewed by Mary Kirby, FSA, MAAA, FCA. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

Mehdi Riazi, FSA, MAAA, FCA, EA
Vice President and Actuary

Mary Kirby, FSA, MAAA, FCA
Senior Vice President and Actuary

TTT/jl

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Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Statement No. 74 of the Governmental Accounting Standards Board (GASB) as of June 30, 2023. This valuation is based on:

- The benefit provisions of the Health Insurance Benefit (HIB) or Other Postemployment Benefits (OPEB) Plan, as administered by the Board;
- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of June 30, 2023, provided by EBMUDERS;
- The assets of the Plan as of June 30, 2023, provided by EBMUDERS;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other (health and non-health) actuarial assumptions, regarding employee terminations, retirement, death, health care trend and enrollment, etc. that the Board has adopted for the June 30, 2023 valuation.

General observations on GASBS 74 actuarial valuation

1. The GASB rules only define OPEB liability and expense for financial reporting purposes, and do not apply to contribution amounts for OPEB funding purposes. Employers and plans still develop and adopt funding policies under current practices.
2. When measuring the Total OPEB Liability, GASB uses the same actuarial cost method (Entry Age) for benefits that are being funded on an actuarial basis[1] and the same expected return on Plan assets as EBMUDERS uses for funding. This means that the Total OPEB Liability (TOL) measure for financial reporting shown in this report is determined on the same basis as EBMUDERS Actuarial Accrued Liability (AAL) measure for funding with the exception discussed below on the "implicit subsidy". We note that the same is true for the Normal Cost component of the annual plan cost for funding and financial reporting again with the exception discussed below on the "implicit subsidy".
    a. Pursuant to Paragraph 46 of GASB Statement No. 74, projected benefit payments should be based on claims costs or age-adjusted premiums approximating claims costs. In effect, GASB requires employers, such as EBMUD, that pool health insurance premium rates for actives and retirees under age 65 to calculate on an accrual basis the liability associated with

[1] The $450/$550 HIB subsidy has been funded on an actuarial basis.

such pooled premiums for retirees under age 65. That liability, referred to as the implicit subsidy, is included in this valuation in addition to the liability for the $450/$550 subsidy.

b. Pursuant to Paragraph 48 of the GASB Statement No. 74 and based on our understanding of subsequent guidance provided in Implementation Guide No. 2017-2, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans, OPEB plans that are not being fully funded on an actuarial basis (such as the implicit subsidy component of the HIB for EBMUDERS that are being paid on a pay-as-you go basis) are required to go through a cross-over test in determining the discount rate that would be used in the valuation

3. The Net OPEB Liability (NOL) is equal to the difference between the TOL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets. The NOL reflects all investment gains and losses as of the measurement date. This is different from the Unfunded Actuarial Accrued Liability (UAAL) calculated on a valuation value of assets basis in the funding valuation that reflects investment gains and losses over a five-year period.

Highlights of the valuation

1. The NOLs measured as of June 30, 2023 and 2022 have been determined from the actuarial valuations as of June 30, 2023 and June 30, 2022, respectively.
2. Following the method outlined in the Implementation Guide, we have calculated a discount rate of 5.23% instead of 6.75% used in the June 30, 2023 funding valuation.
3. The discount rates used to determine the TOL and NOL as of June 30, 2023 and 2022 were 5.23% and 5.35%, respectively. The detailed calculations in the derivation of the "cross-over date" to determine the discount rate of 5.23% used in the calculation of the TOL and NOL as of June 30, 2023 can be found in Appendix A of Section 3. Various other information that is required to be disclosed can be found throughout Section 2.
4. The discount rate used in the valuation for financial disclosure purposes as of June 30, 2023 is a blend of the assumed investment return on Plan assets (e.g. 6.75% for the June 30, 2023 valuation) and the rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (e.g. 3.65% as of June 30, 2023[1]). Because EBMUDERS is not prefunding the implicit subsidy, Plan assets, when projected in accordance with the method prescribed by GASBS 74, are expected to be sufficient to make benefit payment through June 30, 2048 (the projected beginning balance at July 1, 2048 is less than the projected benefit payments for the 2048/2049 year, before including projected contributions for the year). Projected benefit payments are discounted by the Plan investment return assumption of 6.75% until June 30, 2048. Benefit payments after

[1] The comparable rate was 3.54% in the last valuation as of June 30, 2022.

June 30, 2048 are then discounted by the 20-year municipal bond rate of 3.65%. The 5.23% discount rate used in this valuation is the blended discount rate reflecting benefits discounted by the Plan investment return assumption rate and the bond rate.

5. The NOL has increased from $127.7 million as of June 30, 2022 to $132.4 million as of June 30, 2023. The increase in NOL was primarily due to larger than expected premium increases. The premium increases had very little impact on the plan's fixed future explicit subsidies but resulted in a higher liability attributable to future implicit subsidies. The liability loss from the premium experience contributed to the change in the blended discount rate, from 5.35% to 5.23%, which also increased the NOL. The increase in liability from these assumption changes was partially offset by an investment gain, exceeding the expected return, roughly $2.0 million.
6. The following assumptions were changed since the prior valuation:
   - The estimated per capita retiree claims costs and associated trend assumptions were updated to reflect 2024 calendar year premiums and updated trend assumptions for 2025 and after. As part of the update to the retiree claims estimates, the actuarial factors used to estimate individual retiree and spouse costs by age and gender were updated. The new factors are based on a review of historical claims experience by age, gender, and status (active vs. retired) from Segal's claims data warehouse. The updated claims and associated trend assumptions had a combined impact of increasing the TOL.
   - The discount rate decreased from 5.35% to 5.23%. This change increased the TOL.
   - The average HIB for future retirees was updated. This change had a very minor impact.

Summary of key valuation results

Measurement Date		June 30, 2023	June 30, 2022
Disclosure elements for fiscal year ending June 30:	• Service cost[1]	$5,088,059	$6,725,127
	• Total OPEB Liability	193,546,328	181,229,193
	• Plan Fiduciary Net Position	61,165,000	53,571,000
	• Net OPEB Liability	132,381,328	127,658,193
Schedule of contributions for fiscal year ending June 30:	• Actuarially determined contributions	$11,420,000	$10,892,000
	• Actual contributions	11,420,000	10,892,000
	• Contribution deficiency / (excess)	0	0
Demographic data for plan year ending June 30:	• Number of retired members and beneficiaries receiving a health subsidy	1,870	1,806
	• Number of vested terminated members[2]	381	360
	• Number of active members	1,955	1,895
Key assumptions as of June 30:	• Discount Rate	5.23%	5.35%
	• Health care premium trend rates		
	– Non-Medicare medical plans	Actual premium increases for 2023-2024, then 7.375% graded down to 4.50% over 12 years.	Actual premium increases for 2022-2023, then 7.125% graded down to 4.50% over 11 years.
	– Medicare medical plans	Actual premium increases for 2023-2024, then 6.375% graded down to 4.50% over 8 years	Actual premium increases for 2022-2023, then 6.125% graded down to 4.50% over 7 years
	• Health Insurance Benefit (HIB) subsidy increase	0.00%	0.00%

1 The service cost is based on the previous year's valuation, meaning the June 30, 2023 value is based on the valuation results as of June 30, 2022, whereas the June 30, 2022 value is based on the June 30, 2021 valuation results. As a result, this year's decrease in service cost was due to the liability decrease in last year's valuation, which was primarily due to the change in the discount rate from 3.99% as of June 30, 2021 to 5.35% as of June 30, 2022.

2 Includes inactive members due a refund of Pension Plan member contributions.

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to defining future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the System.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to health care trends and member enrollment in retiree health benefits. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

Models	Segal valuation results are based on proprietary actuarial modeling software. The accounting valuation models generate a comprehensive set of liability and cost calculations that are presented to meet accounting standards and client requirements. Our Actuarial Technology and Systems unit, comprising both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary. Our claims costs assumptions are based on proprietary modeling software as well as models that were developed by others. These models generate per capita claims cost calculations that are used in our valuation software. Our Health Technical Services Unit, comprised of actuaries and programmers, is responsible for the initial development and maintenance of our health models. They are also responsible for testing models that we purchase from other vendors for reasonableness. The client team inputs the paid claims, enrollments, plan provisions and assumptions into these models and reviews the results for reasonableness, under the supervision of the responsible actuary.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The valuation is prepared at the request of the Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
An actuarial valuation is a measurement at a specific date – it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
If the Board is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.
Sections of this report include actuarial results that are not rounded, but that does not imply precision.
Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience, health care trend, and investment losses, not just the current valuation results.
While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

As Segal has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

Section 2: GASBS 74 Information

General information about the OPEB plan

Plan Description

Plan administration. The East Bay Municipal Utility District (the District) Employees' Retirement System (EBMUDERS or the System) was established in 1937 to administer a single-employer, contributory, defined benefit OPEB plan (the OPEB Plan). The System provides retirement, disability, survivorship, and post-employment health insurance benefits[1] for eligible directors, officers, and employees of the District. The System is administered by a Retirement Board composed of three members appointed by the board of directors of the District, two members elected by and from the active membership, and one (nonvoting) member elected by and from the retired membership of the System. Retirement Ordinance No. 40 (Ordinance) assigns the authority to establish Plan benefit provisions to the District's board of directors. It should be noted that there are two systems in EBMUDERS (i.e., Water System and Wastewater System).

The System is exempt from the regulations of the Employee Retirement Income Security Act of 1974. The System is also exempt from federal income taxes and California franchise taxes.

The System is an integral part of the District and the District appoints the majority of the Retirement Board of the System and provides for most of its funding. Accordingly, the System's operations have been reported as a Pension and Other Employee Benefit Trust Fund in the District's basic financial statements.

Plan membership. All regular full-time employees of the District are members of the Plan, in addition to certain job share and intermittent employees. Eligible employees become members on the first day they are physically on the job. At June 30, 2023, OPEB Plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	1,870
Vested terminated members entitled to but not yet receiving benefits[2]	381
Active members	1,955
Total	4,206

[1] The liabilities and expenses associated with providing retirement, disability and survivorship benefits are reportable under GASB Statements 67 and 68. They have not been included in this report.
[2] Includes inactive members due a refund of Pension Plan member contributions.

Section 2: GASBS 74 Information

Benefits provided. EBMUDERS provides post-employment health insurance benefits to eligible employees.

There are two tiers in effect currently, the 1955/1980 Plan and the 2013 Tier. Employees who became members of the retirement system prior to January 1, 2013, or who have reciprocal membership are in the 1955/1980 Plan. Employees who became members on or after January 1, 2013 are in the 2013 Tier.

1955/1980 Plan members may elect voluntary service retirement upon attaining the age of 54 and completing 5 years of continuous full-time employment.

2013 Tier members may elect voluntary reduced service retirement upon attaining the age of 52 and completing 5 years of continuous full-time employment.

Members may receive disability retirement benefits prior to age 65 if the member is determined to be physically or mentally incapacitated, provided the member has 8 or more years of continuous full-time employment.

Death benefits are payable to the eligible beneficiary of a member who dies before retirement. Survivorship benefits are payable to the spouse/domestic partner of a member who dies after retirement, or who was eligible but had not retired from service, provided the spouse/domestic partner was married to/established domestic partnership with the member at the date of retirement and for at least one year prior to the member's death.

The District provides post-employment health benefits assistance (administered by the Employees' Retirement System) for employees who retire from the District or their surviving spouses. As of June 30, 2023 there were 1,870 participants receiving these health care benefits.

Effective July 1, 1996, a 20-year vesting schedule for full benefits was implemented for all new participants with a lesser benefit paid for less than 20 years of service. Effective January 1, 1999, retired members who had separated from the District prior to their retirement and who had at least 5 years of service also became eligible for the post-employment health benefits based on the same sliding scale. The scale provides for 25% of healthcare benefits for service from 5 through 10 years, 50% of healthcare benefits for service from 10 to 15 years, 75% of healthcare benefits for service from 15 through 20 years, and 100% of healthcare benefits for service of 20 years or more. Effective July 1, 2003, the District reimburses up to $450 per month ($550 per month effective July 1, 2004, for members with a spouse or registered domestic partner) for any health, dental, or long-term care insurance premiums paid by the retiree for themselves, current spouse, or domestic partner, or any health, dental, or long-term care insurance premiums paid by the eligible surviving spouse of a retiree. These benefits are paid from a separate post-employment healthcare benefits fund which up until June 17, 2002, was advance funded entirely by the District on an actuarially determined basis without considering the implicit subsidy. Cash reimbursement of these benefits totaled $9,705,000 in the year ended June 30, 2023. Effective June 18, 2002, a portion of the post-employment healthcare benefit costs is recovered through employee contributions.

Section 2: GASBS 74 Information

The District contributes to the Plan based upon actuarially determined contribution rates adopted by the Retirement Board. Employer contribution rates are adopted annually based upon recommendations received from EBMUDERS' actuary (Segal) after the completion of the annual actuarial valuation. The average employer contribution rate (not reflecting any estimated implicit subsidies) as of June 30, 2023 for 2022-2023 (based on contribution rates adopted for the June 30, 2021 valuation) was 4.64% of pensionable compensation.

All members are required to make contributions to EBMUDERS regardless of the OPEB Plan or tier in which they are included. The average member contribution rate as of June 30, 2023 for 2022-2023 (based on the June 30, 2021 valuation) was 0.09% of pensionable compensation.

Net OPEB liability

Measurement Date	June 30, 2023	June 30, 2022
Components of the Net OPEB Liability		
Total OPEB Liability	$193,546,328	$181,229,193
Plan Fiduciary Net Position	(61,165,000)	(53,571,000)
Net OPEB Liability	$132,381,328	$127,658,193
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	31.60%	29.56%

The Net OPEB Liability (NOL) was measured as of June 30, 2023 and 2022. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement date, while the Total OPEB Liability (TOL) was determined based upon the results of the funding actuarial valuations as of June 30, 2023 and 2022, respectively, with the following exceptions:

- Discount rate has been calculated as a blend of the investment return on plan assets and municipal bond rate in accordance with GASBS 74 and Illustration 2 of Implementation Guide No. 2017-2, Financial Reporting Postemployment Benefit Plans Other Than Pension Plans.
- The implicit subsidy benefit payments are valued based on the age-based costs, which are provided for sample ages in Section 3, Appendix B.

Plan provisions. The plan provisions used in the measurement of the TOL as of June 30, 2023 and 2022 are the same as those used in the EBMUDERS funding valuations as of June 30, 2023 and 2022, respectively.

Actuarial assumptions. The TOL as of June 30, 2023 was determined by an actuarial valuation as of June 30, 2023. The actuarial assumptions used in the June 30, 2023 valuation were based on the results of an experience study (dated November 12, 2020) for the period from July 1, 2016 through June 30, 2020, the June 30, 2022 Economic Assumptions Review report (dated November 8, 2022), and the Retiree Health assumptions letter (dated November 10, 2023). They are the same as the assumptions used in the June 30, 2023 funding actuarial valuation for EBMUDERS except the discount rate is calculated as a blend of the investment return on plan assets and municipal bond rate in accordance with GASBS 74, and implicit subsidy benefit payments are valued based on the age-based costs. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	Ranges from 9.25% to 3.75% based on time from hire, including inflation and real “across the board” salary increases
Discount rate	5.23%, net of OPEB Plan investment expense, including inflation
Other assumptions	Same as those used in the June 30, 2023 funding actuarial valuation
Medical cost trend rates:	
Non-Medicare medical plans	Actual premium increases for 2023-2024, then 7.375% graded down to 4.50% over 12 years.
Medicare medical plans	Actual premium increases for 2023-2024, then 6.375% graded down to 4.50% over 8 years

The TOL as of June 30, 2022 was determined by an actuarial valuation as of June 30, 2022. The actuarial assumptions used in the June 30, 2022 valuation were based on the results of an experience study for the period from July 1, 2016 through June 30, 2020 dated November 12, 2020, the June 30, 2022 Economic Assumptions Review report dated November 8, 2022, and the Retiree Health assumptions letter dated January 12, 2023. They are the same as the assumptions used in the June 30, 2022 funding actuarial valuation for EBMUDERS except the discount rate is calculated as a blend of the investment return on plan assets and municipal bond rate in accordance with GASBS 74, and implicit subsidy benefit payments are valued based on the age-based costs. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	Ranges from 9.25% to 3.75% based on time from hire, including inflation and real “across the board” salary increases
Discount rate	5.35%, net of OPEB Plan investment expense, including inflation
Other assumptions	Same as those used in the June 30, 2022 funding actuarial valuation
Medical cost trend rates:	
Non-Medicare medical plans	Actual premium increases for 2022-2023, then 7.125% graded down to 4.50% over 11 years.
Medicare medical plans	Actual premium increases for 2022-2023, then 6.125% graded down to 4.50% over 7 years

Determination of discount rate and investment rates of return

The 6.75% long-term expected rate of return on OPEB Plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, and by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, are summarized in the following table. These values were used in the derivation of the 6.75% long-term expected investment rate of return assumption for the actuarial valuation as of June 30, 2023. This information is subject to change every four years based on the actuarial experience study, or every two years based on the interim economic actuarial assumptions study.

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
Domestic Large Cap Equity	21.75%	5.60%
Domestic Small Cap Equity	3.25%	6.63%
Developed International Large Cap Equity	17.50%	6.39%
Emerging Market Equity	7.50%	8.34%
Core Bonds	20.00%	0.59%
High Yield Bonds	2.50%	3.22%
Bank Loans	2.50%	2.76%
Real Estate	5.00%	5.00%
Covered Calls	20.00%	5.07%
Total	**100.00%**	**4.71%**

Municipal Bond Rate. 3.65% and 3.54% based on the 20-year municipal bond rate for the Bond Buyer 20-Bond GO Index as of June 30, 2023 and June 30, 2022, respectively.

Discount rate. The discount rates used to measure the Total OPEB Liability were 5.23% as of June 30, 2023 and 5.35% as of June 30, 2022. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates for the $450/$550 HIB Subsidy excluding the implicit subsidy that will continue to be paid on a pay-as-you go basis. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Only the implicit subsidies for current members were included as employer contributions since the employer is funding the implicit subsidy on a pay-as-you go basis[1]. Based on those assumptions, the OPEB Plan's assets were projected to be sufficient to make projected future benefit payments for current plan members through June 30, 2048. Payments after that date would be funded by employer assets. Therefore, the long-term expected rate of return on OPEB Plan investments (6.75%) was applied to periods of projected benefit payments through June 30, 2048, and the 20-year municipal bond rate (3.65%) was applied to periods after June 30, 2048 to determine the Total OPEB Liability.

[1] See Section 3, Appendix A for derivation

Discount rate and trend sensitivity

Sensitivity of the Net OPEB Liability (NOL) to changes in the discount rate. The following presents the NOL of EBMUDERS as of June 30, 2023, calculated using the discount rate of 5.23%, as well as what EBMUDERS NOL would be if it were calculated using a discount rate that is 1-percentage-point lower (4.23%) or 1-percentage-point higher (6.23%) than the current rate:

	1% Decrease (4.23%)	Current Discount Rate (5.23%)	1% Increase (6.23%)
Net OPEB Liability (Asset)	$152,404,690	$132,381,328	$115,293,853

Sensitivity of the NOL to changes in the trend rate (only applied to implicit subsidy and not the $450/$550 cash subsidy). The following presents the NOL of EBMUDERS as of June 30, 2023, calculated using the current trend rates as well as what EBMUDERS NOL would be if it were calculated using a trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

	1% Decrease[1]	Current Trend Rate[1]	1% Increase[1]
Net OPEB Liability (Asset)	$128,362,248	$132,381,328	$137,019,557

[1] Current trend rates: Actual premium increases for fiscal year 2023-2024, then 7.375% in 2024-2025 graded down to 4.50% over 12 years for Non-Medicare medical plan costs and 6.375% in 2024-2025 graded down to 4.50% over 8 years for Medicare medical plan costs.

Schedule of changes in EBMUDERS OPEB Liability – Last two fiscal years

Measurement Date	June 30, 2023	June 30, 2022
Total OPEB Liability		
Service cost[1]	$5,088,059	$6,725,127
Interest	9,646,268	8,060,939
Change of benefit terms	- -	- -
Differences between expected and actual experience	(438,245)	5,101,873
Changes of assumptions	10,206,178	(28,015,634)
Benefit payments, including implicit subsidies[2]	(12,185,125)	(11,777,860)
Net change in Total OPEB Liability	**$12,317,135**	**($19,905,555)**
Total OPEB Liability – beginning	**181,229,193**	**201,134,748**
Total OPEB Liability – ending	**$193,546,328**	**$181,229,193**
Plan Fiduciary Net Position		
Contributions – employer	$11,420,000	$10,892,000
Contributions – member	223,000	212,000
Net investment income	5,715,000	(6,105,000)
Benefit payments, including implicit subsidies[2]	(12,185,125)	(11,777,860)
Administrative expense	(59,000)	(46,000)
Other[3]	2,480,125	2,436,860
Net change in Plan Fiduciary Net Position	**$7,594,000**	**($4,388,000)**
Plan Fiduciary Net Position – beginning	**53,571,000**	**57,959,000**
Plan Fiduciary Net Position – ending	**$61,165,000**	**$53,571,000**
Net OPEB Liability – ending	**$132,381,328**	**$127,658,193**
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	**31.60%**	**29.56%**
Covered payroll[4]	**$246,230,567**	**$233,939,981**
Plan Net OPEB Liability as percentage of covered payroll	**53.76%**	**54.57%**

1 The service cost is based on the previous year's valuation, meaning the June 30, 2023 and June 30, 2022 value is based on valuation results as of June 30, 2022 and June 30, 2021, respectively.
2 Sum of cash benefit payments ($9,705,000) and estimated implicit subsidy benefit payments ($2,480,125) for 2023. Sum of cash benefit payments ($9,341,000) and estimated implicit subsidy benefit payments ($2,436,860) for 2022.
3 The total employer contributions for estimated implicit subsidy calculated based on assumptions disclosed in Note 4 of Appendix A.
4 Pensionable payroll reported by EBMUDERS.

Schedule of EBMUDERS contributions – Last ten fiscal years

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll[1]	Contributions as a Percentage of Covered Payroll
2014	$8,457,000	$8,457,000	0	$159,513,251	5.30%
2015	8,964,000	8,964,000	0	166,886,146	5.37%
2016	9,454,000	9,454,000	0	174,586,444	5.42%
2017	9,764,000	9,764,000	0	182,031,838	5.36%
2018	9,875,000	9,875,000	0	193,717,364	5.10%
2019	10,518,000	10,518,000	0	203,541,207	5.17%
2020	11,089,000	11,089,000	0	215,109,948	5.16%
2021	11,372,000	11,372,000	0	221,809,447	5.13%
2022	10,892,000	10,892,000	0	233,939,981	4.66%
2023	11,420,000	11,420,000	0	246,230,567	4.64%

See accompanying notes to this schedule on next page.

[1] These amounts are the pensionable payroll amounts reported by EBMUDERS.

Notes to Schedule:

Methods and assumptions used to establish "actuarially determined contribution" (ADC) rates:

Valuation date	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported
Actuarial cost method	Entry Age Cost Method
Amortization method	Level percent of payroll
Remaining amortization period	Plan changes, assumption changes, and experience gains/losses prior to July 1, 2011 are amortized over separate decreasing 30-year amortization periods. On or after July 1, 2011, plan changes are amortized over separate decreasing 15-year periods; assumption changes are amortized over separate decreasing 25-year periods; and experience gains/losses and retiree health assumption changes are amortized over separate decreasing 20-year periods. The amortization methodology described above was first applied beginning with the June 30, 2021 valuation, which determined the ADC for fiscal year ending June 30, 2022.
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five year period, further adjusted, if necessary, to be within 30% of the market value.

Section 2: GASBS 74 Information

Actuarial assumptions:

June 30, 2021 (for the year ended June 30, 2023 ADC)	
Investment rate of return	7.00%
Inflation rate	2.75%
Real across-the-board salary increase	0.50%
Projected salary increases[1]	Ranges from 9.50% to 4.00% based on years of service
Mortality	Healthy: Pub-2010 General Healthy Retiree Headcount-Weighted Above-Median Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020
Other assumptions	Same as those used in the June 30, 2021 funding actuarial valuation
Medical cost trend rates:	
Non-Medicare medical plans	Actual premium increases for 2021-2022, then 7.375% graded down to 4.50% over 12 years.
Medicare medical plans	Actual premium increases for 2021-2022, then 6.375% graded down to 4.50% over 8 years
June 30, 2020 (for the year ended June 30, 2022 ADC)	
Investment rate of return	7.00%
Inflation rate	2.75%
Real across-the-board salary increase	0.50%
Projected salary increases[1]	Ranges from 9.50% to 4.00% based on years of service
Mortality	Healthy: Pub-2010 General Healthy Retiree Headcount-Weighted Above-Median Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020
Other assumptions	Same as those used in the June 30, 2020 funding actuarial valuation
Medical cost trend rates:	
Non-Medicare medical plans	Actual premium increases for 2020-2021, then 6.625% graded down to 4.50% over 9 years.
Medicare medical plans	Actual premium increases for 2020-2021, then 6.125% graded down to 4.50% over 7 years

[1] Includes inflation at 2.75 plus across the board salary increases of 0.50% plus merit and promotional increases.

Section 3: Appendices

Appendix A: Table 1 – Projection of plan fiduciary net position for use in the calculation of discount rate as of June 30, 2023

Year Beginning July 1,	Projected Beginning Plan Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan Fiduciary Net Position (e) = (a) + (b) – (c) – (d) + (e)
2023	$61,165	$14,351	$12,932	$67	$4,174	$66,691
2024	66,691	14,815	13,543	73	4,542	72,432
2025	72,432	14,924	13,763	80	4,926	78,439
2026	78,439	15,269	13,995	86	5,335	84,961
2027	84,961	12,900	14,332	93	5,683	89,119
2028	89,119	13,069	14,545	98	5,962	93,507
2029	93,507	11,951	14,532	103	6,221	97,045
2030	97,045	11,187	14,708	107	6,428	99,845
2031	99,845	11,053	14,775	110	6,610	102,624
2032	102,624	8,364	14,827	113	6,705	102,753
2043	59,354	3,654	16,056	65	3,586	50,472
2044	50,472	3,569	16,138	56	2,981	40,829
2045	40,829	3,139	16,053	45	2,319	30,188
2046	30,188	2,952	16,144	33	1,591	18,554
2047	18,554	2,788	16,029	20	805	6,097
2048	6,097	2,650	15,980	7	0	0
2049	0	2,243	15,660	0	0	0
2050	0	1,871	15,347	0	0	0
2051	0	1,491	15,016	0	0	0
2102	0	0	11	0	0	0
2103	0	0	7	0	0	0
2104	0	0	5	0	0	0
2105	0	0	3	0	0	0
2106	0	0	2	0	0	0

Note that in preparing the projections in the table above, we have not taken into consideration the one-year delay between the date of the contribution rate calculation and the implementation.

Notes

1. Amounts are in $000’s and may not total exactly due to rounding.
2. Years 2033-2042 and 2052-2101, have been omitted from this table.
3. Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of June 30, 2023); plus employer contributions to the unfunded actuarial accrued liability; plus contributions to fund each year's annual administrative expenses reflecting a 20-year amortization schedule; plus implicit subsidy payments for current plan members as shown on the next page, based on Illustration 2 of Implementation Guide No. 2017-2, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans. Contributions are assumed to occur halfway through the year, on average.
4. Column (c): Projected benefit payments have been determined in accordance with paragraphs 43-47 of GASB Statement No. 74, and are based on the closed group of active, inactive vested, retired participants, and beneficiaries as of June 30, 2023. The projected benefit payments reflect the health care trend assumptions used in the June 30, 2023 funding valuation report. Benefit payments are assumed to occur halfway through the year, on average. In accordance with paragraph 48 of GASB Statement No. 74, the long-term expected rate of return on Plan investments of 6.75% was applied to periods of projected benefit payments through June 30, 2048, and the index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (3.65%) was applied to periods after June 30, 2048, to determine the discount rate of 5.23%. See the following pages for details.
5. Column (d): Projected administrative expenses are calculated as approximately 0.11% of the projected beginning Plan Fiduciary Net Position amount. The 0.11% portion was based on the actual fiscal year 2022/2023 administrative expenses as a percentage of the beginning Plan Fiduciary Net Position amount as of July 1, 2022. Administrative expenses are assumed to occur halfway through the year, on average.
6. Column (e): Projected investment earnings are based on the assumed investment rate of return on Plan investments of 6.75% per annum.
7. As illustrated in this Appendix, the Plan's Fiduciary Net Position was projected to be available to make projected future benefit payments for current Plan members through June 30, 2048. In other words, the projected 'cross-over date' when projected benefits are not covered by projected assets (before reflecting contributions and investment earnings) occurs between June 30, 2048 and June 30, 2049. Therefore, the long-term expected rate of return on Plan investments of 6.75% per annum was applied to periods of projected benefit payments through June 30, 2048. Benefit payments after June 30, 2048 were discounted at 3.65%, the index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

8. The blended discount rate used for calculating total OPEB liability is based on a model developed by our Actuarial Technology and Systems unit. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

Appendix A: Table 2
Projection of contributions – Implicit subsidy only

Year Beginning July 1,	Projected Payroll: Payroll for Current Plan Members (a)	Payroll for Future Plan Members[1] (b) = (c) – (a)	Total Payroll[2] (c)	Projected Contributions: Total Implicit Subsidy Contributions = Implicit Subsidy Benefit Payments (d)	Implicit Subsidy Contributions Related to Payroll of Future Plan Members[3] (e) = (b) x 0.93%	Implicit Subsidy Contributions for Current Plan Members[4] (f) = (d) - (e)
2023	$262,273	$0	$262,273	$2,875	$0	$2,875
2024	254,629	15,512	270,141	3,244	144	3,100
2025	248,909	29,336	278,245	3,280	273	3,007
2026	242,636	43,956	286,592	3,372	409	2,963
2027	236,468	58,722	295,190	3,583	546	3,037
2028	229,480	74,566	304,046	3,707	693	3,013
2029	223,032	90,135	313,167	3,615	838	2,777
2030	215,973	106,589	322,562	3,747	991	2,756
2031	209,160	123,079	332,239	3,767	1,145	2,622
2032	201,796	140,410	342,206	3,814	1,306	2,508
2043	118,035	355,659	473,693	5,754	3,308	2,446
2044	109,744	378,160	487,904	5,968	3,517	2,452
2045	101,208	401,333	502,541	6,041	3,732	2,309
2046	93,268	424,349	517,618	6,295	3,946	2,348
2047	85,292	447,855	533,146	6,361	4,165	2,196
2048	77,466	471,674	549,141	6,498	4,387	2,111
2049	69,737	495,878	565,615	6,370	4,612	1,758
2050	62,027	520,557	582,583	6,269	4,841	1,427
2051	54,617	545,444	600,061	6,157	5,073	1,084
2052	47,502	570,560	618,063	5,516	5,306	210

[1] Future plan members assumed to enter plan at the end of the year.
[2] Initial payroll based on June 30, 2023 funding valuation. Future payrolls are projected with assumed annual 3.00% increase.
[3] Normal cost rate adjusted for timing of implicit subsidy benefit of 2013 Tier members.
[4] Numbers may not add up due to rounding.

Appendix A: Table 3
Projection of contributions and benefit payments – Total

Year Beginning July 1,	Contributions for Current Plan Members: Prefunding (a)	Implicit Subsidy (b)	Total Contributions (c) = (a) + (b)	Benefit Payments: Cash Subsidy (HIB Subsidy) (d)	Implicit Subsidy (e) = column (d) from Table 2	Total Benefit Payments (f) = (d) + (e)
2023	$11,476	$2,875	$14,351	$10,057	$2,875	$12,932
2024	11,715	3,100	14,815	10,299	3,244	13,543
2025	11,917	3,007	14,924	10,483	3,280	13,763
2026	12,306	2,963	15,269	10,623	3,372	13,995
2027	9,863	3,037	12,900	10,749	3,583	14,332
2028	10,056	3,013	13,069	10,838	3,707	14,545
2029	9,174	2,777	11,951	10,917	3,615	14,532
2030	8,431	2,756	11,187	10,961	3,747	14,708
2031	8,431	2,622	11,053	11,008	3,767	14,775
2032	5,856	2,508	8,364	11,013	3,814	14,827
2043	1,208	2,446	3,654	10,302	5,754	16,056
2044	1,117	2,452	3,569	10,170	5,968	16,138
2045	830	2,309	3,139	10,012	6,041	16,053
2046	604	2,348	2,952	9,849	6,295	16,144
2047	592	2,196	2,788	9,668	6,361	16,029
2048	539	2,111	2,650	9,482	6,498	15,980
2049	485	1,758	2,243	9,290	6,370	15,660
2050	444	1,427	1,871	9,078	6,269	15,347
2051	407	1,084	1,491	8,859	6,157	15,016
2052	370	210	580	8,631	5,516	14,147

Appendix B: Actuarial assumptions and methods for implicit subsidy calculation

Carrier Election and Monthly Premiums — Participants Under Age 65:[1]

These monthly premiums apply to the 70% of future retirees assumed to enroll in an EBMUDERS medical insurance plan.

2023 Calendar Year

Carrier	Single Party	Married/With Domestic Partner	Eligible Survivor
Kaiser HMO	$761.58	$1,523.17	$761.58
Anthem Blue Cross PPO	876.62	1,753.24	876.62
Sutter Health Plus HMO	933.70	1,867.40	933.70

2024 Calendar Year

Carrier	Single Party	Married/With Domestic Partner	Eligible Survivor
Kaiser HMO	$931.22	$1,862.44	$931.22
Anthem Blue Cross PPO	981.81	1,963.62	981.81
Sutter Health Plus HMO	977.00	1,954.00	977.00

2023-2024 Fiscal Year

Carrier[2]	Election Percent	Single Party	Married/With Domestic Partner	Eligible Survivor
Kaiser HMO	70	$846.40	$1,692.81	$846.40
Anthem Blue Cross PPO	25	929.22	1,858.43	929.22
Sutter Health Plus HMO	5	955.35	1,910.70	955.35

[1] We only use monthly premiums for participants under age 65 to determine the implicit subsidy.
[2] We assume 0% of future retirees will enroll in the Kaiser CDHP, Sutter CDHP, and Blue Cross CDHP plans.

Implicit Subsidy:

Retiree under age 65 and active health insurance premiums have been underwritten together. Under GASBS 74, the health care costs must be valued as if the under age 65 retirees had been underwritten separately from the actives. Any excess of the retiree only per capita costs over the blended active/retiree premiums is the implicit subsidy. The tables below show the annual implicit subsidies for sample ages under different carriers. No implicit subsidy exists for retirees over age 65.

The adjustment of per capita premium medical costs for age and gender and spouse/domestic partner status, are in accordance with Actuarial Standard of Practice (ASOP) No. 6. The actuarial factors used to estimate individual retiree and spouse costs by age and by gender were updated. The new factors are based on a review of historical claims experience by age, gender, and status (active vs retired) from Segal's claims data warehouse.

Amounts shown in the tables below are for both retirees and spouses, at selected ages:

Kaiser HMO

Annual Blended Active/Retiree Premium: $10,157

	Annual Per Capita Costs		Annual Implicit Subsidy Rates	
Age	Male	Female	Male	Female
50	$12,316	$13,005	$2,159	$2,848
55	13,898	14,117	3,741	3,960
60	16,001	15,304	5,844	5,147
64	19,447	16,614	9,290	6,457

Sutter Health Plus HMO

Annual Blended Active/Retiree Premium $11,464

	Annual Per Capita Costs		Annual Implicit Subsidy Rates	
Age	Male	Female	Male	Female
50	$12,059	$12,733	$595	$1,269
55	13,608	13,823	2,144	2,359
60	15,667	14,984	4,203	3,520
64	19,041	16,267	7,577	4,803

Implicit Subsidy: *(continued)*

Amounts shown in the tables below are for both retirees and spouses, at selected ages:

Anthem Blue Cross PPO

Annual Blended Active/Retiree Premium $11,151

	Annual Per Capita Costs		Annual Implicit Subsidy Rates	
Age	**Male**	**Female**	**Male**	**Female**
50	$11,969	$12,638	$818	$1,487
55	13,506	13,720	2,355	2,569
60	15,551	14,873	4,400	3,722
64	18,899	16,146	7,748	4,995

WEIGHTED AVERAGE - Use for future retirees

Annual Blended Active/Retiree Premium $10,471

	Annual Per Capita Costs		Annual Implicit Subsidy Rates	
Age	**Male**	**Female**	**Male**	**Female**
50	$12,217	$12,900	$1,746	$2,429
55	13,785	14,003	3,314	3,532
60	15,872	15,180	5,401	4,709
64	19,289	16,480	8,818	6,009

Appendix C: Definition of terms

Definitions of certain terms as they are used in Statement 75. The terms may have different meanings in other contexts.

Actuarial Present Value of Projected Benefit Payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation:	The determination, as of a point in time (the actuarial valuation date), of the service cost, Total OPEB Liability, and related actuarial present value of projected benefit payments for OPEB performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date:	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution:	A target or recommended contribution to an OPEB plan for the reporting period based on the most recent measurement available.
Assumptions or Actuarial Assumptions:	The estimates on which the cost of the Plan is calculated including: a) Investment return — the rate of investment yield that the Plan will earn over the long-term future; b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates; c) Retirement rates — the rate or probability of retirement at a given age; d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Covered Payroll:	The payroll of the employees that are provided OPEB benefits
Discount Rate:	The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following: 1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the OPEB Plan Fiduciary Net Position is projected (under the requirements of Statement 74) to be greater than the benefit payments that are projected to be made in that period and (b) OPEB plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on OPEB plan investments. 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

Entry Age Actuarial Cost Method:	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the actuarial accrued liability.
Healthcare Cost Trend Rates:	The rate of change in per capita health costs over time
Net OPEB Liability (NOL):	The Total OPEB Liability less the Plan Fiduciary Net Position
Plan Fiduciary Net Position:	Market Value of Assets
Real Rate of Return:	The rate of return on an investment after removing inflation
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Total OPEB Liability (TOL):	Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.

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