

East Bay Municipal Utility District Employees' Retirement System (EBMUDERS)

Governmental Accounting Standards Board Statement (GASBS) 75 Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) for the Health Insurance Benefit Plan

Actuarial Valuation Based on June 30, 2022
Measurement Date for Employer Reporting
As of June 30, 2023

This report has been prepared at the request of the Retirement Board to assist the sponsors of the Fund in preparing their financial report for their liabilities associated with the EBMUDERS Health Insurance Benefit Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Retirement Board and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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June 16, 2023

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) 75 Actuarial Valuation based on a June 30, 2022 measurement date for employer reporting as of June 30, 2023. It contains various information that will need to be disclosed in order for the two systems in EBMUD (i.e., Water and Wastewater) to comply with GASBS 75.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the sponsor for the two systems in preparing their financial report for their liabilities associated with the East Bay Municipal utility District Employees' Retirement System (EBMUDERS) Health Insurance Benefit (HIB) Plan. The census and financial information on which our calculations were based was provided 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, Enrolled Actuary. The health care cost 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 with you and to answering any questions.

Sincerely,

Segal

A handwritten signature in black ink that reads "Andy Yeung".

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

A handwritten signature in black ink that reads "Mary Kirby".

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

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Statement No. 75 of the Governmental Accounting Standards Board (GASB) for employer reporting as of June 30, 2023. The results used in preparing this GASBS 75 report are comparable to those used in preparing the GASBS 74 report for the Plan based on a reporting date and a measurement date as of June 30, 2022. 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, 2022, provided by EBMUDERS;
- The assets of the Plan as of June 30, 2022, provided by EBMUDERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2022 valuation; and
- Other (health and non-health) actuarial assumptions, regarding employee terminations, retirement, death, health care trend and enrollment, etc. adopted by the Board for the June 30, 2022 valuation.

General observations on GASBS 75 actuarial valuation

1. The GASB rules only define OPEB liability and expenses for financial reporting purposes, and do not apply to contribution amounts for OPEB funding purposes. Employers and plan still develop and adopt funding policies under current practices.
2. When measuring OPEB liability, GASB uses the same actuarial cost method (Entry Age) for benefits that are being funded on an actuarial basis¹ and the same expected return on 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 33 of GASB Statement No. 75, 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

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

Section 1: Actuarial Valuation Summary

premium rates for actives and retirees under age 65 to calculate on an accrual basis the liability associated with 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 36 of GASB Statement No. 75 and based on our understanding of subsequent guidance provided in *Implementation Guide No. 2017-3, Accounting and Financial Reporting for Postemployment Benefit Plans Other Than Pensions*, 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 and therefore, the NOL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis with the exception of valuing the implicit subsidy. The NOL reflects all investment gains and losses as of the measurement date. This is different from the UAAL on an actuarial value of assets basis in the funding valuation that reflects investment gains and losses over a five-year period.

Highlights of the Valuation

- 1 For this report, the reporting dates for the employer are June 30, 2023 and 2022. The NOL was measured as of June 30, 2022 and 2021, and determined from the actuarial valuations as of June 30, 2022 and June 30, 2021, respectively. The Plan's Fiduciary Net Position (plan assets) and the TOL were valued as of the measurement dates. Consistent with the provisions of GASBS 75, the assets and liabilities measured as of June 30, 2022 and 2021 are not adjusted or rolled forward to the June 30, 2023 and 2022 reporting dates, respectively.
- 2 Following the method outlined in the above Implementation Guide, we have calculated a discount rate of 5.35% instead of 6.75% used in the June 30, 2022 funding valuation. The discount rate used to determine the TOLs and NOLs as of June 30, 2022 and 2021 were 5.35% and 3.99%, respectively. The detailed calculations used in the derivation of the "cross-over date" to determine the discount rate of 5.35% used in the calculation of the TOL and NOL as of June 30, 2022 can be found in *Section 3, Appendix A*. Various other information that is required to be disclosed can be found throughout *Section 2*.
- 3 The discount rate is a blend of the assumed investment return on Plan assets (e.g. 6.75% for the June 30, 2022 valuation) and the rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (e.g. 3.54% as of June 30, 2022¹). Because EBMUDERS is not prefunding the implicit subsidy, Plan assets, when projected in accordance with the method prescribed by GASBS 75, are expected to be sufficient to make benefit payment through June 30, 2049 (the projected beginning balance at July 1, 2049 is less than the projected benefit payments for the 2049/2050 year, before including projected

¹ The comparable rate was 2.16% in the last valuation as of June 30, 2021.

Section 1: Actuarial Valuation Summary

contributions for the year). Projected benefit payments are discounted by the Plan investment return assumption of 6.75% until June 30, 2049. Benefit payments after June 30, 2049 are then discounted by the 20-year municipal bond rate of 3.54%. The 5.35% 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.

- 4 The NOL decreased from \$143.2 million as of June 30, 2021 to \$127.7 million as of June 30, 2022. The decrease in NOL was primarily a result of the increase in the discount rate from 3.99% to 5.35%, which was mainly due to the increase to the municipal bond yields from 2.16% to 3.54%. Note, the methodology for developing the blended discount rate was slightly updated, which also contributed to the increase in the discount rate. Changes in these values during the last two fiscal years ending June 30, 2021 and June 30, 2022 can be found in Section 2, Schedule of Changes *in Net OPEB Liability* on page 18.
- 5 There was a decrease in the total employer OPEB expense from \$9.7 million calculated last year to \$7.4 million calculated this year. The primary cause of the decrease was the change in the discount rate from 3.99% to 5.35%.
- 6 The projected earnings on the plan investments component of the OPEB expense was based on the long-term expected return assumption as of the beginning of the measurement period (7.00%). In prior year's calculations, the projected earnings were based on the blended discount rate as of the beginning of the measurement period. We believe using the long-term expected rate of return on assets is more consistent with general accounting and actuarial practices.
- 7 Results shown in this report exclude any employer contributions made after the measurement date of June 30, 2022. The employer should consult with their auditor to determine the deferred outflow that should be created for these contributions.
- 8 The NOL as of June 30, 2022 and June 30, 2021 is allocated to the two systems in EBMUD (i.e., Water System and Wastewater System) based on the actual employer contributions. The steps we used are as follows:
 - a. Calculate the ratio of the system's contributions to the total contributions for the two systems in EBMUD.
 - b. This ratio is multiplied by the NOL for the two systems in EBMUD to determine the employer's proportionate share of the NOL for the two systems.

The proportionate share of the total plan NOL is then the ratio of the system's total allocated NOL to the total NOL of both systems. The NOL allocation can be found in Section 2, Determination of proportionate share on pages 22-23.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

Reporting Date for Employer under GASBS 75		June 30, 2023 ¹	June 30, 2022 ²
Measurement Date for Employer under GASBS 75		June 30, 2022	June 30, 2021
Disclosure elements for fiscal year ending June 30:	• Service Cost ³	\$6,725,127	\$5,538,278
	• Total OPEB Liability	181,229,193	201,134,748
	• Plan Fiduciary Net Position	53,571,000	57,959,000
	• Net OPEB Liability	127,658,193	143,175,748
	• OPEB expense	7,414,821	9,658,388
Schedule of contributions for fiscal year ending June 30:	• Actuarially determined contributions	\$10,892,000	\$11,372,000
	• Actual contributions	10,892,000	11,372,000
	• Contribution deficiency / (excess)	0	0
Demographic data for plan year ending June 30:	• Number of retired members and beneficiaries receiving a health subsidy	1,806	1,735
	• Number of vested terminated members	360	327
	• Number of active members	1,895	1,896
Key assumptions as of June 30:	• Discount Rate	5.35%	3.99%
	• Health care premium trend rates		
	– Non-Medicare medical plans	Actual premium increases for 2022-2023, then 7.125% graded down to 4.50% over 11 years.	Actual premium increases for 2021-2022, then 7.375% graded down to 4.50% over 12 years.
	– Medicare medical plans	Actual premium increases for 2022-2023, then 6.125% graded down to 4.50% over 7 years	Actual premium increases for 2021-2022, then 6.375% graded down to 4.50% over 8 years
	• Health Insurance Benefit (HIB) subsidy increase	0.00%	0.00%

¹ The reporting date and measurement date for the plan are June 30, 2022.

² The reporting date and measurement date for the plan are June 30, 2021.

³ The service cost is based on the previous year's valuation, meaning the June 30, 2022 and June 30, 2021 measurement date values are based on the valuation as of June 30, 2021 and June 30, 2020, respectively. The 2022 service cost has been calculated using the assumptions shown in the 2021 column and the 2021 service cost has been calculated using the following key assumptions:

Discount rate	4.40%
Non-Medicare medical plan trend rate	Actual premium increases for 2020-2021, then 6.625% graded down to 4.50% over 9 years
Medicare medical plan trend rate	Actual premium increases for 2020-2021, then 6.125% graded down to 4.50% over 7 years
Health Insurance Benefit (HIB) subsidy increase	0.00%

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of an OPEB plan. It is an estimated forecast – 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.

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 summary 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	This valuation is based on the market value of assets as of the valuation date, as provided by the System. The System uses a “valuation value of assets” that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining contribution requirements.
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. To determine the future costs of benefits, Segal collects premiums and enrollment data in order to establish a baseline cost for the valuation measurement, and then develops short- and long-term health care cost trend rates to project increases in costs in future years. This forecast also requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets or, if there are no assets, a rate of return 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 (or equivalent quality on another rating scale). 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.

Section 1: Actuarial Valuation Summary

Models

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of 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 of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. 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 EBMUDERS, it is not a fiduciary in its capacity as actuaries and consultants with respect to EBMUDERS.

Section 2: GASBS 75 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 benefits¹ 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, 2022, OPEB Plan membership consisted of the following:

Retired members and beneficiaries currently receiving a health subsidy	1,806
Vested terminated members ²	360
Active members	<u>1,895</u>
Total	4,061

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 75 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, 2022 there were 1,806 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 five 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 \$9,341,000 in the year ended June 30, 2022. Effective June 18, 2002, a portion of the post-employment healthcare benefit costs is recovered through employee contributions.

Section 2: GASBS 75 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, 2022 for 2021-2022 (based on the June 30, 2020 valuation) was 4.66% 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, 2022 for 2021-2022 (based on the June 30, 2020 valuation) was 0.09% of pensionable compensation.

Section 2: GASBS 75 Information

Net OPEB Liability

The components of the Net OPEB Liability were as follows:

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
Total OPEB Liability	\$181,229,193	\$201,134,748
Plan Fiduciary Net Position	(53,571,000)	(57,959,000)
Net OPEB Liability	\$127,658,193	\$143,175,748
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	29.56%	28.82%

The Net OPEB Liability (NOL) was measured as of June 30, 2022 and 2021. 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, 2022 and 2021, respectively, with the following exception:

- Discount rate has been calculated as a blend of the investment return on plan assets and municipal bond rate in accordance with GASBS 75 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, Actuarial Assumptions and Methods for Implicit Subsidy Calculation*.

Plan provisions. The plan provisions used in the measurement of the TOL as of June 30, 2022 and 2021 are the same as those used in the EBMUDERS funding valuations as of June 30, 2022 and 2021, respectively.

Section 2: GASBS 75 Information

Actuarial assumptions. 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 75, 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.

The TOL as of June 30, 2021 was determined by an actuarial valuation as of June 30, 2021. The actuarial assumptions used in the June 30, 2021 valuation were based on the July 1, 2016 through June 30, 2020 Actuarial Experience Study report dated November 12, 2020, and the Retiree Health assumptions letter dated January 6, 2022. They are the same as the assumptions used in the June 30, 2021 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 75, 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	2.75%
Salary Increases	Ranges from 9.50% to 4.00% based on time from hire, including inflation and real “across the board” salary increases
Discount Rate	3.99%, net of OPEB Plan investment expense, including inflation
Other assumptions	Same as those used in the June 30, 2021 funding actuarial valuation.

Section 2: GASBS 75 Information

Determination of discount rate and investment rates of return

The 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 long-term expected investment rate of return assumption that was used in the actuarial valuation as of June 30, 2022. 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. 3.54% and 2.16% based on the 20-year municipal bond rate for the Bond Buyer 20-Bond-GO Index as of June 30, 2022 and June 30, 2021, respectively.

Section 2: GASBS 75 Information

Discount rate. The discount rate used to measure the Total OPEB Liability was 5.35% as of June 30, 2022 and 3.99% as of June 30, 2021. 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 basis¹. 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, 2049. 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, 2049, and the 20-year municipal bond rate (3.54%) was applied to periods after June 30, 2049 to determine the Total OPEB Liability.

¹ See Section 3, Appendix A for derivation

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Discount rate and trend sensitivity

Sensitivity of the Net OPEB Liability (NOL) to changes in the discount rate. The following presents the NOL as of June 30, 2022, calculated using the discount rate of 5.35%, as well as what the NOL would be if it were calculated using a discount rate that is 1-percentage-point lower (4.35%) or 1-percentage-point higher (6.35%) than the current rate:

	1% Decrease (4.35%)	Current Discount Rate (5.35%)	1% Increase (6.35%)
Water System	\$125,813,686	\$109,632,275	\$95,843,827
Wastewater System	<u>20,686,492</u>	<u>18,025,918</u>	<u>15,758,799</u>
Total for the City	\$146,500,178	\$127,658,193	\$111,602,626

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 as of June 30, 2022, as well as what the NOL would be if it were calculated using trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current rates:

	1% Decrease ¹	Current Trend Rates ¹	1% Increase ¹
Water System	\$106,993,768	\$109,632,275	\$112,612,916
Wastewater System	<u>17,592,091</u>	<u>18,025,918</u>	<u>18,516,000</u>
Total for the City	\$124,585,859	\$127,658,193	\$131,128,916

¹ Current trend rates: Actual premium increases for fiscal year 2022-2023, then 7.125% in 2023-2024 graded down to 4.50% over 11 years for Non-Medicare medical plan costs and 6.125% in 2023-2024 graded down to 4.50% over 7 years for Medicare medical plan costs.

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

Reporting Date for Employer under GASBS 75 Measurement Date for Employer under GASBS 75	June 30, 2023 June 30, 2022	June 30, 2022 June 30, 2021
Total OPEB Liability		
• Service cost ¹	\$6,725,127	\$5,538,278
• Interest	8,060,939	8,607,804
• Change of benefit terms	0	0
• Differences between expected and actual experience	5,101,873	(4,383,082)
• Changes of assumptions	(28,015,634)	7,162,726
• Benefit payments, including implicit subsidies ²	(11,777,860)	(11,643,872)
• Net change in Total OPEB Liability	(\$19,905,555)	\$5,281,854
• Total OPEB Liability – beginning	201,134,748	195,852,894
• Total OPEB Liability – ending	\$181,229,193	\$201,134,748
Plan Fiduciary Net Position		
• Contributions – employer	\$10,892,000	\$11,372,000
• Contributions – member	212,000	200,000
• Net investment income	(6,105,000)	11,638,000
• Benefit payments, including implicit subsidies ²	(11,777,860)	(11,643,872)
• Administrative expense	(46,000)	(46,000)
• Other ³	2,436,860	2,420,872
• Net change in Plan Fiduciary Net Position	(\$4,388,000)	\$13,941,000
• Plan Fiduciary Net Position – beginning	57,959,000	44,018,000
• Plan Fiduciary Net Position – ending	\$53,571,000	\$57,959,000
• Net OPEB Liability – ending	\$127,658,193	\$143,175,748
• Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	29.56%	28.82%
• Covered payroll⁴	\$233,939,981	\$221,809,447
• Net OPEB Liability as percentage of covered payroll	54.57%	64.55%

¹ The service cost is based on the previous year's valuation, meaning the June 30, 2022 and June 30, 2021 measurement date value are based on the valuations as of June 30, 2021 and June 30, 2020, respectively.

² Sum of cash benefit payments (\$9,341,000) and estimated implicit subsidy benefit payments (\$2,436,860) for 2022. Sum of cash benefit payments (\$9,223,000) and estimated implicit subsidy benefit payments (\$2,420,872) for 2021.

³ The total employer contributions for estimated implicit subsidy calculated based on assumptions disclosed in Note 4 of Section 3, Appendix A.

⁴ Pensionable payroll reported by EBMUDERS.

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Schedule of 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
2013	\$7,772,000	\$7,772,000	0	\$153,706,944	5.06%
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%

See accompanying notes to this schedule on the next page.

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

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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:	<p>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 or method changes are amortized over separate decreasing 25-year periods; experience gains/losses and retiree health assumption changes are amortized over separate decreasing 20-year periods.</p> <p>The amortization methodology described above corresponds to that used in the June 30, 2020 valuation, which determined the ADC for fiscal year ending June 30, 2022.</p>
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.

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Actuarial assumptions:		
Valuation Date:	June 30, 2020 (for the year ended June 30, 2022 ADC)	June 30, 2019 (for the year ended June 30, 2021 ADC)
Investment rate of return:	7.00%	7.00%
Inflation rate:	2.75%	2.75%
Real across-the-board salary increase:	0.50%	0.50%
Projected salary increases: ¹	Ranges from 9.50% to 4.00% based on years of service	Ranges from 9.25% to 3.75% 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	Healthy: Headcount-weighted RP-2014 Healthy Mortality Table projected 20 years with scale MP-2015, set forward two years for males and set forward one year for females
Other assumptions:	Same as those used in the June 30, 2020 funding actuarial valuation	Same as those used in the June 30, 2019 funding actuarial valuation

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

Section 2: GASBS 75 Information

Determination of proportionate share

Actual Employer Contributions by System July 1, 2020 to June 30, 2021

System	Contributions	Percentage*
Water System	\$9,757,000	85.798%
Wastewater System	<u>1,615,000</u>	<u>14.202%</u>
Total for both Systems	\$11,372,000	100.000%

*The unrounded percentages are used in the allocation of the NOL amongst systems.

Allocation of June 30, 2021 Net OPEB Liability

System	Total NOL	Percentage
Water System	\$122,842,576	85.798%
Wastewater System	<u>20,333,172</u>	<u>14.202%</u>
Total for both Systems	\$143,175,748	100.000%

Notes:

Based on the July 1, 2020 through June 30, 2021 employer contributions as provided by EBMUDERS.

The Net OPEB Liability (NOL) is the Total OPEB Liability (TOL) minus the Plan's Fiduciary Net Position (plan assets). The NOL, TOL, and Plan's Fiduciary Net Position totals for both systems combined are provided in Segal's June 30, 2021 GASBS 74 valuation report dated January 11, 2022.

A system's share of the total plan NOL is the ratio of the system's contributions to the plan's total employer contributions.

Section 2: GASBS 75 Information

Determination of proportionate share (continued)

Actual Employer Contributions by System July 1, 2021 to June 30, 2022

System	Contributions	Percentage*
Water System	\$9,354,000	85.880%
Wastewater System	1,538,000	14.120%
Total for both Systems	\$10,892,000	100.000%

*The unrounded percentages are used in the allocation of the NOL amongst systems.

Allocation of June 30, 2022 Net OPEB Liability

System	Total NOL	Percentage
Water System	\$109,632,275	85.880%
Wastewater System	18,025,918	14.120%
Total for both Systems	\$127,658,193	100.000%

Notes:

Based on the July 1, 2021 through June 30, 2022 employer contributions as provided by EBMUDERS.

The Net OPEB Liability (NOL) is the Total OPEB Liability (TOL) minus the Plan's Fiduciary Net Position (plan assets). The NOL, TOL, and Plan's Fiduciary Net Position totals for both systems combined are provided in Segal's June 30, 2022 GASBS 74 valuation report dated March 2, 2023.

A system's share of the total plan NOL is the ratio of the system's contributions to the plan's total employer contributions.

Section 2: GASBS 75 Information

OPEB expense

Total for All Systems

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
• Service cost	\$6,725,127	\$5,538,278
• Interest on the Total OPEB Liability	8,060,939	8,607,804
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total OPEB Liability	881,153	(751,815)
• Expensed portion of current-period changes of assumptions or other inputs	(4,838,624)	1,228,598
• Member contributions	(212,000)	(200,000)
• Projected earnings on plan investments	(4,117,225)	(1,987,458)
• Expensed portion of current-period differences between projected and actual earnings on plan investments	2,044,445	(1,930,110)
• Administrative expense	46,000	46,000
• Other ¹	(2,436,860)	(2,420,872)
• Recognition of beginning of year deferred outflows of resources as OPEB expense	6,054,760	4,826,162
• Recognition of beginning of year deferred inflows of resources as OPEB expense	(4,792,894)	(3,298,199)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
OPEB Expense	\$7,414,821	\$9,658,388

¹ Implicit subsidy.

Section 2: GASBS 75 Information

OPEB expense (continued)

Water System

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
• Service cost	\$5,775,508	\$4,751,757
• Interest on the Total OPEB Liability	6,922,698	7,385,363
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	19,022	8,914
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total OPEB Liability	756,730	(645,046)
• Expensed portion of current-period changes of assumptions or other inputs	(4,155,388)	1,054,118
• Member contributions	(182,065)	(171,597)
• Projected earnings on plan investments	(3,535,854)	(1,705,208)
• Expensed portion of current-period differences between projected and actual earnings on plan investments	1,755,760	(1,656,005)
• Administrative expense	39,505	39,467
• Other ¹	(2,092,764)	(2,077,071)
• Recognition of beginning of year deferred outflows of resources as OPEB expense	5,199,800	4,140,772
• Recognition of beginning of year deferred inflows of resources as OPEB expense	(4,116,116)	(2,829,804)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>128,205</u>	<u>139,775</u>
OPEB Expense	\$6,515,041	\$8,435,435

¹ Implicit subsidy.

Section 2: GASBS 75 Information

OPEB expense (continued)

Wastewater System

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
• Service cost	\$949,619	\$786,521
• Interest on the Total OPEB Liability	1,138,241	1,222,441
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(19,022)	(8,914)
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total OPEB Liability	124,423	(106,769)
• Expensed portion of current-period changes of assumptions or other inputs	(683,236)	174,480
• Member contributions	(29,935)	(28,403)
• Projected earnings on plan investments	(581,371)	(282,250)
• Expensed portion of current-period differences between projected and actual earnings on plan investments	288,685	(274,105)
• Administrative expense	6,495	6,533
• Other ¹	(344,096)	(343,801)
• Recognition of beginning of year deferred outflows of resources as OPEB expense	854,960	685,390
• Recognition of beginning of year deferred inflows of resources as OPEB expense	(676,778)	(468,395)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(128,205)</u>	<u>(139,775)</u>
OPEB Expense	\$899,780	\$1,222,953

¹ Implicit subsidy.

Section 2: GASBS 75 Information

Deferred outflows of resources and deferred inflows of resources

Total for All Systems

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$318,944	\$356,033
• Changes of assumptions or other inputs	15,053,597	20,710,548
• Net excess of projected over actual earnings on OPEB plan investments (if any)	2,920,058	0
• Difference between actual and expected experience in the Total OPEB Liability	<u>4,545,481</u>	<u>451,127</u>
• Total Deferred Outflows of Resources	\$22,838,080	\$21,517,708
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$318,944	\$356,033
• Changes of assumptions or other inputs	23,226,621	690,112
• Net excess of actual over projected earnings on OPEB plan investments (if any)	0	7,136,821
• Difference between expected and actual experience in the Total OPEB Liability	<u>3,974,725</u>	<u>5,976,576</u>
• Total Deferred Inflows of Resources	\$27,520,290	\$14,159,542
Deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized as follows:		
Reporting Date for Employer under GASBS 75 Year Ended June 30:		
2023	N/A	\$1,261,866
2024	\$599,750	2,512,776
2025	720,599	2,633,625
2026	(1,358,856)	554,170
2027	(1,517,297)	395,729
2028	(3,126,406)	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 64 and 65 of GAS 75.

Section 2: GASBS 75 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Water System

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$318,944	\$356,033
• Changes of assumptions or other inputs	12,927,961	17,769,330
• Net excess of projected over actual earnings on OPEB plan investments (if any)	2,507,733	0
• Difference between actual and expected experience in the Total OPEB Liability	<u>3,903,638</u>	<u>387,060</u>
• Total Deferred Outflows of Resources	\$19,658,276	\$18,512,423
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$0	\$0
• Changes of assumptions or other inputs	19,946,916	592,105
• Net excess of actual over projected earnings on OPEB plan investments (if any)	0	6,123,282
• Difference between expected and actual experience in the Total OPEB Liability	<u>3,413,476</u>	<u>5,127,810</u>
• Total Deferred Inflows of Resources	\$23,360,392	\$11,843,197
Deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized as follows:		
Reporting Date for Employer under GASBS 75 Year Ended June 30:		
2023	N/A	\$1,210,866
2024	\$641,025	2,262,863
2025	719,210	2,340,950
2026	(1,115,811)	507,615
2027	(1,276,625)	346,932
2028	(2,669,915)	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 64 and 65 of GAS 75.

Section 2: GASBS 75 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Wastewater System

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$0	\$0
• Changes of assumptions or other inputs	2,125,636	2,941,218
• Net excess of projected over actual earnings on OPEB plan investments (if any)	412,325	0
• Difference between actual and expected experience in the Total OPEB Liability	<u>641,843</u>	<u>64,067</u>
• Total Deferred Outflows of Resources	\$3,179,804	\$3,005,285
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$318,944	\$356,033
• Changes of assumptions or other inputs	3,279,705	98,007
• Net excess of actual over projected earnings on OPEB plan investments (if any)	0	1,013,539
• Difference between expected and actual experience in the Total OPEB Liability	<u>561,249</u>	<u>848,766</u>
• Total Deferred Inflows of Resources	\$4,159,898	\$2,316,345
Deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized as follows:		
Reporting Date for Employer under GASBS 75 Year Ended June 30:		
2023	N/A	\$51,000
2024	\$(41,275)	249,913
2025	1,389	292,675
2026	(243,045)	46,555
2027	(240,672)	48,797
2028	(456,491)	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 64 and 65 of GAS 75.

Section 2: GASBS 75 Information

Deferred outflows of resources and deferred inflows of resources (continued)

There are changes in both systems' proportionate share of the total Net OPEB Liability during the measurement period ended June 30, 2022. The net effect of the change on the system's proportionate share of the collective Net OPEB Liability and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all employees that are provided with OPEB through EBMUDERS which is 5.79¹ years determined as of June 30, 2021 (the beginning of the measurement period ending June 30, 2022).

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2022 is recognized over the same period.

The average of the expected remaining service lives of all employees was determined by:

- Calculating each active employee's expected remaining service life as the present value of \$1 per year of future service at zero percent interest.
- Setting the remaining service life to zero for each non-active or retired member.
- Dividing the sum of the above amounts by the total number of active, non-active and retired members.

¹ The remaining service lives of all employees of 5.79 years used here for GASBS 75 is different from the 5.46 years used for GASBS 68 because the number of payees (with 0 years of expected remaining service lives) receiving health benefits under the Plan is less than the number of payees receiving pension benefits.

Section 2: GASBS 75 Information

Schedule of proportionate share of the Net OPEB Liability

Total for All Systems

Reporting Date for Employer Under GASBS 75 as of June 30	Proportion of the Net OPEB Liability	Proportionate Share of Net OPEB Liability	Covered Payroll ¹	Proportionate Share of the Net OPEB Liability as a Percentage of Covered Payroll	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability
2017	100.000%	\$145,085,453	\$174,586,444	83.10%	15.37%
2018	100.000%	135,805,924	182,031,838	74.61%	19.11%
2019	100.000%	131,007,522	193,717,364	67.63%	21.91%
2020	100.000%	132,871,132	203,541,207	65.28%	23.51%
2021	100.000%	151,834,894	215,109,948	70.58%	22.48%
2022	100.000%	143,175,748	221,809,447	64.55%	28.82%
2023	100.000%	127,658,193	233,939,981	54.57%	29.56%

¹ Pensionable payroll report by EBMUDERS.

Section 2: GASBS 75 Information

Schedule of proportionate share of the Net OPEB Liability (continued)

Water System

Reporting Date for Employer Under GASBS 75 as of June 30	Proportion of the Net OPEB Liability	Proportionate Share of Net OPEB Liability	Covered Payroll ¹	Proportionate Share of the Net OPEB Liability as a Percentage of Covered Payroll	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability
2017	85.213%	\$123,631,099	\$148,621,780	83.19%	15.37%
2018	85.365%	115,930,190	155,221,134	74.69%	19.11%
2019	85.377%	111,850,574	165,235,805	67.69%	21.91%
2020	85.596%	113,732,535	174,040,983	65.35%	23.51%
2021	85.761%	130,214,613	184,365,098	70.63%	22.48%
2022	85.798%	122,842,576	190,047,243	64.64%	28.82%
2023	85.880%	109,632,275	200,833,534	54.59%	29.56%

¹ Pensionable payroll report by EBMUDERS.

Section 2: GASBS 75 Information

Schedule of proportionate share of the Net OPEB Liability (continued)

Wastewater System

Reporting Date for Employer Under GASBS 75 as of June 30	Proportion of the Net OPEB Liability	Proportionate Share of Net OPEB Liability	Covered Payroll ¹	Proportionate Share of the Net OPEB Liability as a Percentage of Covered Payroll	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability
2017	14.787%	\$21,454,354	\$25,964,664	82.63%	15.37%
2018	14.635%	19,875,734	26,810,704	74.13%	19.11%
2019	14.623%	19,156,948	28,481,559	67.26%	21.91%
2020	14.404%	19,138,597	29,500,224	64.88%	23.51%
2021	14.239%	21,620,281	30,744,850	70.32%	22.48%
2022	14.202%	20,333,172	31,762,204	64.02%	28.82%
2023	14.120%	18,025,918	33,106,447	54.45%	29.56%

¹ Pensionable payroll report by EBMUDERS.

Section 2: GASBS 75 Information

Schedule of reconciliation of Net OPEB Liability

Total for All Systems

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
Beginning Net OPEB Liability	\$143,175,748	\$151,834,894
• OPEB Expense	7,414,821	9,658,388
• Employer Contributions	(10,892,000)	(11,372,000)
• New Net Deferred Inflows/Outflows	(10,778,510)	(5,417,571)
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion	0	0
• Recognition of Prior Deferred Inflows/Outflows	(1,261,866)	(1,527,963)
• Recognition of Prior Deferred Flows Due to Change in Proportion	<u>0</u>	<u>0</u>
Ending Net OPEB Liability	\$127,658,193	\$143,175,748

Section 2: GASBS 75 Information

Schedule of reconciliation of Net OPEB Liability (continued)

Water System

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
Beginning Net OPEB Liability	\$122,842,576	\$130,214,613
• OPEB Expense	6,515,041	8,435,435
• Employer Contributions	(9,354,000)	(9,757,000)
• New Net Deferred Inflows/Outflows	(9,256,535)	(4,648,191)
• Change in Allocation of Prior Deferred Inflows/Outflows	5,966	5,405
• New Net Deferred Flows Due to Change in Proportion	91,116	43,057
• Recognition of Prior Deferred Inflows/Outflows	(1,083,684)	(1,310,968)
• Recognition of Prior Deferred Flows Due to Change in Proportion	<u>(128,205)</u>	<u>(139,775)</u>
Ending Net OPEB Liability	\$109,632,275	\$122,842,576

Section 2: GASBS 75 Information

Schedule of reconciliation of Net OPEB Liability (continued)

Wastewater System

Reporting Date for Employer under GASBS 75	June 30, 2023	June 30, 2022
Measurement Date for Employer under GASBS 75	June 30, 2022	June 30, 2021
Beginning Net OPEB Liability	\$20,333,172	\$21,620,281
• OPEB Expense	899,780	1,222,953
• Employer Contributions	(1,538,000)	(1,615,000)
• New Net Deferred Inflows/Outflows	(1,521,975)	(769,380)
• Change in Allocation of Prior Deferred Inflows/Outflows	(5,966)	(5,405)
• New Net Deferred Flows Due to Change in Proportion	(91,116)	(43,057)
• Recognition of Prior Deferred Inflows/Outflows	(178,182)	(216,995)
• Recognition of Prior Deferred Flows Due to Change in Proportion	<u>128,205</u>	<u>139,775</u>
Ending Net OPEB Liability	\$18,025,918	\$20,333,172

Section 2: GASBS 75 Information

Schedule of recognition of changes in total Net OPEB Liability

Increase / (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Differences Between Actual and Expected Experience on Total OPEB Liability

Reporting Date for Employer Under GASBS 75, Year Ended June 30	Differences between Actual and Expected Experience	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:						
			2022	2023	2024	2025	2026	2027	2028
2018	(\$1,711,130)	5.49	(\$311,681)	(\$152,725)	\$0	\$0	\$0	\$0	\$0
2019	(3,298,879)	5.52	(597,623)	(597,623)	(310,764)	0	0	0	0
2020	(2,783,261)	5.57	(499,688)	(499,688)	(499,688)	(284,821)	0	0	0
2021	703,859	5.57	126,366	126,366	126,366	126,366	72,029	0	0
2022	(4,383,082)	5.83	(751,815)	(751,815)	(751,815)	(751,815)	(751,815)	(624,007)	0
2023	5,101,873	5.79	N/A	881,153	881,153	881,153	881,153	881,153	696,108
Net increase (decrease) in OPEB expense			(\$2,034,441)	(\$994,332)	(\$554,748)	(\$29,117)	\$201,367	\$257,146	\$696,108

As described on page 30, the average of the expected remaining service lives of all employees that are provided with OPEB benefits through EBMUDERS (active and inactive employees) determined as of June 30, 2021 (the beginning of the measurement period ending June 30, 2022) is 5.79 years.

Amortization amounts prior to June 30, 2022 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 75 reports.

Section 2: GASBS 75 Information

Schedule of recognition of changes in total Net OPEB Liability (continued)

Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Assumption Changes

Reporting Date for Employer Under GASBS 75, Year Ended June 30	Effects of Assumption Changes	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:						
			2022	2023	2024	2025	2026	2027	2028
2018	(\$6,107,235)	5.49	(\$1,112,429)	(\$545,090)	\$0	\$0	\$0	\$0	\$0
2019	(526,666)	5.52	(95,411)	(95,411)	(49,611)	0	0	0	0
2020	5,752,677	5.57	1,032,797	1,032,797	1,032,797	588,692	0	0	0
2021	18,913,246	5.57	3,395,556	3,395,556	3,395,556	3,395,556	1,935,466	0	0
2022	7,162,726	5.83	1,228,598	1,228,598	1,228,598	1,228,598	1,228,598	1,019,736	0
2023	(28,015,634)	5.79	N/A	(4,838,624)	(4,838,624)	(4,838,624)	(4,838,624)	(4,838,624)	(3,822,514)
Net increase (decrease) in OPEB expense			\$4,449,111	\$177,826	\$768,716	\$374,222	(\$1,674,560)	(\$3,818,888)	(\$3,822,514)

As described on page 30, the average of the expected remaining service lives of all employees that are provided with OPEB benefits through EBMUDERS (active and inactive employees) determined as of June 30, 2021 (the beginning of the measurement period ending June 30, 2022) is 5.79 years.

Amortization amounts prior to June 30, 2022 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 75 reports.

Section 2: GASBS 75 Information

Schedule of recognition of changes in total Net OPEB Liability (continued)

Increase (Decrease) in OPEB Expense Arising from the Recognition of Differences between Projected and Actual Earnings on OPEB Plan Investments

Reporting Date for Employer Under GASBS 75, Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:						
			2022	2023	2024	2025	2026	2027	2028
2018	(\$2,304,656)	5.00	(\$460,932)	\$0	\$0	\$0	\$0	\$0	\$0
2019	(1,102,174)	5.00	(220,435)	(220,434)	0	0	0	0	0
2020	51,427	5.00	10,285	10,285	10,287	0	0	0	0
2021	1,305,789	5.00	261,158	261,158	261,158	261,157	0	0	0
2022	(9,650,542)	5.00	(1,930,110)	(1,930,108)	(1,930,108)	(1,930,108)	(1,930,108)	0	0
2023	10,222,225	5.00	N/A	<u>2,044,445</u>	<u>2,044,445</u>	<u>2,044,445</u>	<u>2,044,445</u>	<u>2,044,445</u>	<u>0</u>
Net increase (decrease) in OPEB expense			(\$2,340,034)	\$165,346	\$385,782	\$375,494	\$114,337	\$2,044,445	\$0

The differences between projected and actual earnings on OPEB plan investments are recognized over a five-year period per Paragraph 43b. of GASBS 75.

Amortization amounts prior to June 30, 2022 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 75 reports.

Section 2: GASBS 75 Information

Schedule of recognition of changes in total Net OPEB Liability (continued)

Total Increase (Decrease) in OPEB Expense

Reporting Date for Employer Under GASBS 75, Year Ended June 30	Total Differences	Reporting Date for Employer under GASBS 75 Year Ended June 30:						
		2022	2023	2024	2025	2026	2027	2028
2018	(\$10,123,021)	(\$1,885,042)	(\$697,815)	\$0	\$0	\$0	\$0	\$0
2019	(4,927,719)	(913,469)	(913,468)	(360,375)	0	0	0	0
2020	3,020,843	543,394	543,394	543,396	303,871	0	0	0
2021	20,922,894	3,783,080	3,783,080	3,783,080	3,783,079	2,007,495	0	0
2022	(6,870,898)	(1,453,327)	(1,453,325)	(1,453,325)	(1,453,325)	(1,453,325)	395,729	0
2023	(12,691,536)	N/A	(1,913,026)	(1,913,026)	(1,913,026)	(1,913,026)	(1,913,026)	(3,126,406)
Net increase (decrease) in OPEB expense		\$74,636	(\$651,160)	\$599,750	\$720,599	(\$1,358,856)	(\$1,517,297)	(\$3,126,406)

Amortization amounts prior to June 30, 2022 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 75 reports.

Section 2: GASBS 75 Information

Allocation of changes in total Net OPEB Liability

In addition to the amounts shown in the *Schedule of Recognition of Changes in total Net OPEB Liability*, there are changes in each system's proportionate share of the total Net OPEB Liability during the measurement period ending on June 30, 2022. The net effect of the change on the system's proportionate share of the collective Net OPEB Liability and collective deferred outflows of resources and deferred inflows of resources is also recognized over the average of the expected remaining service lives of all employees shown above. The difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ending on June 30, 2022 is recognized over the same periods. These amounts are shown below. While these amounts are different for both systems, they sum to zero over the entire System.

Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended June 30, 2022

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:					
			2023	2024	2025	2026	2027	2028
Water System	\$110,138	5.79	\$19,022	\$19,022	\$19,022	\$19,022	\$19,022	\$15,028
Wastewater System	<u>(110,138)</u>	5.79	<u>(19,022)</u>	<u>(19,022)</u>	<u>(19,022)</u>	<u>(19,022)</u>	<u>(19,022)</u>	<u>(15,028)</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended June 30, 2021

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:					
			2022	2023	2024	2025	2026	2027
Water System	\$51,971	5.83	\$8,914	\$8,914	\$8,914	\$8,914	\$8,914	\$7,401
Wastewater System	<u>(51,971)</u>	5.83	<u>(8,914)</u>	<u>(8,914)</u>	<u>(8,914)</u>	<u>(8,914)</u>	<u>(8,914)</u>	<u>(7,401)</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASBS 75 Information

Allocation of changes in total Net OPEB Liability (continued)

Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended June 30, 2020

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:					
			2021	2022	2023	2024	2025	2026
Water System	\$227,007	5.57	\$40,755	\$40,755	\$40,755	\$40,755	\$40,755	\$23,232
Wastewater System	<u>(227,007)</u>	5.57	<u>(40,755)</u>	<u>(40,755)</u>	<u>(40,755)</u>	<u>(40,755)</u>	<u>(40,755)</u>	<u>(23,232)</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended June 30, 2019

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:					
			2020	2021	2022	2023	2024	2025
Water System	\$309,477	5.57	\$55,561	\$55,561	\$55,561	\$55,561	\$55,561	\$31,672
Wastewater System	<u>(309,477)</u>	5.57	<u>(55,561)</u>	<u>(55,561)</u>	<u>(55,561)</u>	<u>(55,561)</u>	<u>(55,561)</u>	<u>(31,672)</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended June 30, 2018

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:					
			2019	2020	2021	2022	2023	2024
Water System	\$18,165	5.52	\$3,291	\$3,291	\$3,291	\$3,291	\$3,291	\$1,710
Wastewater System	<u>(18,165)</u>	5.52	<u>(3,291)</u>	<u>(3,291)</u>	<u>(3,291)</u>	<u>(3,291)</u>	<u>(3,291)</u>	<u>(1,710)</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASBS 75 Information

Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended June 30, 2017

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASBS 75 Year Ended June 30:					
			2018	2019	2020	2021	2022	2023
Water System	\$220,524	5.49	\$40,168	\$40,168	\$40,168	\$40,168	\$40,168	\$19,684
Wastewater System	<u>(220,524)</u>	5.49	<u>(40,168)</u>	<u>(40,168)</u>	<u>(40,168)</u>	<u>(40,168)</u>	<u>(40,168)</u>	<u>(19,684)</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Section 3: Actuarial Assumptions and Methods and Appendices

Actuarial assumptions and methods

For June 30, 2022 Measurement Date and Employer Reporting as of June 30, 2023:

Rationale for Assumptions:	The information and analysis used in selecting each assumption and method that has a significant effect on this actuarial valuation is shown in the July 1, 2016 through June 30, 2020 Actuarial Experience Study report dated November 12, 2020, the Actuarial Funding Policy review letter dated September 14, 2022, the June 30, 2022 Economic Assumptions Review report dated November 8, 2022, and the Retiree Health assumptions letter dated January 12, 2023. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both tiers.
<u>Economic Assumptions</u>	
Net Investment Return:	6.75%; net of investment expenses
Discount Rate:	5.35%
Inflation:	2.50%
Across the Board Salary Increases:	0.50%
Payroll Growth:	Inflation of 2.50% per year plus real “across the board” salary increases of 0.50% per year, used to amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll.

Section 3: Actuarial Assumptions and Methods and Appendices

Salary Increases:

The annual rate of compensation Increase includes inflation at 2.50%, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotional increases:

Years of Service	Rate (%)
Less than 1	6.25
1 – 2	6.00
2 – 3	5.00
3 – 4	3.75
4 – 5	2.50
5 – 6	1.50
6 – 7	1.25
7 – 8	1.25
8 – 9	1.00
9 – 10	1.00
10 & Over	0.75

Section 3: Actuarial Assumptions and Methods and Appendices

Demographic Assumptions

Mortality:

Post-Retirement Healthy Members:

- 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.

Post-Retirement Disabled Members:

- Pub-2010 Non-Safety Disabled Retiree Headcount-Weighted Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020.

Pre-Retirement:

- Pub-2010 General Employee Headcount-Weighted Above-Median Mortality Tables, projected generationally with the two-dimensional mortality improvement scale MP-2020.

Beneficiaries:

- Pub-2010 Contingent Survivor Headcount-Weighted Above-Median Mortality Tables with rates increased by 5% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2020.

The Pub-2010 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Disability Incidence:

Age	Rate (%)
25	0.000
30	0.006
35	0.022
40	0.084
45	0.150
50	0.170
55	0.182
60	0.220
65	0.288

Note: Disability rates are applicable after eight years of service.

Section 3: Actuarial Assumptions and Methods and Appendices

Termination:

Less Than Five Years of Service

Years of Service	Rate (%)
Less than 1	6.75
1 – 2	4.25
2 – 3	4.00
3 – 4	3.50
4 – 5	2.50

Five or More Years of Service

Years of Service	Rate (%)
25	2.34
30	2.24
35	2.14
40	2.04
45	1.85
50	1.60
55	1.35
60	1.10

No termination is assumed after a member is eligible for retirement (as long as a retirement rate is present).

Section 3: Actuarial Assumptions and Methods and Appendices

Retirement:

Age	Rate (%)		
	1955/1980 Plan		
	Unreduced Pension ¹	Reduced Pension	2013 Tier
52	0.00	0.00	1.75
53	0.00	0.00	1.75
54	55.00	7.00	2.75
55	16.00	7.00	4.75
56	16.00	7.00	5.75
57	16.00	7.00	5.75
58	16.00	7.00	5.75
59	16.00	7.00	7.75
60	16.00	7.00	7.75
61	16.00	12.00	10.25
62	16.00	N/A ²	18.00
63	16.00	N/A	15.00
64	16.00	N/A	9.00
65	16.00	N/A	23.75
66	27.00	N/A	23.75
67	27.00	N/A	32.50
68	27.00	N/A	35.00
69	27.00	N/A	38.75
70 & Over	100.00	N/A	100.00

¹ For example, a 1955/1980 Plan member age 54 with 30 or more years of service would be eligible for an unreduced pension benefit.

² For ages 62 and over, all 1955/1980 Plan members who are eligible for retirement are eligible for an unreduced pension benefit.

Unknown Data for Participants:

Same as those exhibited by members are similar known characteristics. If not specified, members are assumed to be male.

Retirement Age for Inactive Vested Participants:

59

Section 3: Actuarial Assumptions and Methods and Appendices

Percent Married/Domestic Partnership:	<p>For all active and inactive vested participants: 70% of male members and 35% of female members are assumed to elect spouse/domestic partner HIB coverage at retirement.</p> <p>For retired participants: Actual data included in census.</p> <p>Based on past practice this is not necessarily the same as the percent married/domestic partnership assumption used in the pension valuation. Some of those members may not elect HIB spouse/domestic partner coverage upon retirement due to the additional cost to the member.</p>
Age of Spouse/Domestic Partner:	<p>For all active and inactive vested participants, male participants are assumed to have a female spouse who is 3 years younger than the participant and female participants are assumed to have a male spouse who is 2 years older than the participant.</p>
Future Benefit Accruals:	<p>1.0 year of service per year.</p> <p>We have not applied the 0.038 years of additional service for each year of employment, applied in the pension valuation to anticipate conversion of unused sick leave, based on our understanding of the HIB plan provisions.</p>
<u>Actuarial Funding Policy</u>	
Actuarial Cost Method:	<p>Entry Age Cost Method. Entry Age is the age at the member's hire date. Actuarial Accrued Liability is calculated on an individual basis and is based on costs allocated as a level percentage of compensation. The Normal Cost is calculated on an individual basis where the Entry Age Normal Cost is calculated as the sum of the individual Normal Costs.</p>
Actuarial Value of Assets:	<p>Market value of assets (MVA) less unrecognized returns in each of the last five years. Unrecognized returns are equal to the difference between the actual market returns and the expected returns on the market value, and are recognized over a five-year period. The actuarial value of assets (AVA) is limited by a 30% corridor; the AVA cannot be less than 70% of MVA, nor greater than 130% of MVA.</p>
Expected Remaining Service Lives	<p>The average of the expected service lives of all employees is determined by:</p> <ul style="list-style-type: none"> • Calculating each active employee's expected remaining service life as the present value of \$1 per year of future service at zero percent interest. • Setting the remaining service life to zero for each nonactive or retired member. • Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.
<u>Retiree Health Assumptions</u>	
Participation:	<p>95% of future eligible retirees are assumed to enroll in the HIB plan.</p> <p>All current pensioners and beneficiaries with a retiree health insurance cash subsidy were valued.</p> <p>For deferred vested members, we assume an election equal to 50% of the future retiree election percent.</p>

Section 3: Actuarial Assumptions and Methods and Appendices

Average HIB Subsidy:

The enrollment percent of 70% is used to estimate the proportion of future retirees expected to participate in the EBMUD medical insurance plans (Kaiser, Blue Cross, Sutter Health Plus<65, and UHC Medicare Advantage PPO 65+). The difference between the 95% of all future retirees expected to be provided with an HIB subsidy and 70% (i.e. 25%) is what we used to anticipate future retirees who receive reimbursement for medical expenses through the HIB plan without being enrolled in an EBMUD medical insurance plan. The HIB subsidy may be used to defray any other allowed health benefits (e.g., Medicare Part B premiums, dental costs) in addition to medical premiums. For current retirees, we have used the HIB on record. For the expected 95% future retirees who received an HIB, we have assumed, based on the average HIB on record for current retirees at 100% vesting level, that:

- Retirees at 100% vesting level under age 65 with single HIB coverage will receive an average \$447 monthly benefit as of July 1, 2022,
- Retirees at 100% vesting level under age 65 with spouse HIB coverage will receive an average \$522 monthly benefit as of July 1, 2022,
- Retirees at 100% vesting level age 65 and over with single HIB coverage will receive an average \$439 monthly benefit as of July 1, 2022, and
- Retirees at 100% vesting level age 65 and over with spouse HIB coverage will receive an average \$541 monthly benefit as of July 1, 2022.

The maximum (100% vesting level) monthly HIB subsidy is \$450 for a retiree with single coverage and \$550 for a retiree with spouse/domestic partner coverage.

Projected HIB Subsidy Increase:

We have projected the HIB medical benefit to increase with medical trend until it reaches the limits described in the Summary of Plan Provisions. The benefit limits are projected to remain unchanged at the current levels of \$450/\$550.

Section 3: Actuarial Assumptions and Methods and Appendices

Health Care Cost Trend Rates:

Trend is to be applied to premium for shown fiscal year to calculate next fiscal year's projected premium.
First Fiscal Year (July 1, 2022 through June 30, 2023)

Plan	Rate (%)				
	Anthem Blue Cross PPO, Under Age 65	Sutter Health Plus HMO, Under Age 65	Kaiser HMO, Under Age 65	Kaiser Senior Advantage	UHC Medicare Advantage PPO
Trend to be applied to 202-202 Fiscal Year premium	(1.83)%	6.89%	3.69%	(2.39)%	4.70%

The fiscal year trend rates are based on the following calendar year trend rates:

Fiscal Year	Approximate Trend Rate (%)		Calendar Year	Trend Rate Applied to Calculate Following Year Premium (%)	
	Non-Medicare	Medicare		Non-Medicare	Medicare
2023-2024	7.125	6.125	2023	7.25	6.25
2024-2025	6.875	5.875	2024	7.00	6.00
2025-2026	6.625	5.625	2025	6.75	5.75
2026-2027	6.375	5.375	2026	6.50	5.50
2027-2028	6.125	5.125	2027	6.25	5.25
2028-2029	5.875	4.875	2028	6.00	5.00
2029-2030	5.625	4.625	2029	5.75	4.75
2030-2031	5.375	4.500	2030	5.50	4.50
2031-2032	5.125	4.500	2031	5.25	4.50
2032-2033	4.875	4.500	2032	5.00	4.50
2033-2034	4.625	4.500	2033	4.75	4.50
2034 and later	4.500	4.500	2034	4.50	4.50

Section 3: Actuarial Assumptions and Methods and Appendices

Medical Carrier Election:	Non-Medicare Medical Carrier	Election (%)
	Kaiser HMO	70
Anthem Blue Cross PPO	25	
Sutter Health Plus HMO	5	
	Medicare Medical Carrier	Election (%)
	Kaiser Senior Advantage HMO (High Option)	67
	UHC Medicare Advantage PPO	33

Section 3: Actuarial Assumptions and Methods and Appendices

Actuarial Assumptions and Methods for Implicit Subsidy Calculation

Carrier Election and Monthly Premiums – Participants Under Age 65:¹

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

2022 Calendar Year

Carrier	Monthly Premium		
	Single Party	Married/With Domestic Partner	Eligible Survivor
Kaiser HMO	\$760.59	\$1,521.18	\$760.59
Anthem Blue Cross PPO	974.03	1,948.05	974.03
Sutter Health Plus HMO	876.70	1,753.40	876.70

2023 Calendar Year

Carrier	Monthly Premium		
	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

2022-2023 Fiscal Year

Carrier ²	Election Percent	Monthly Premium		
		Single Party	Married/With Domestic Partner	Eligible Survivor
Kaiser HMO	70	\$761.09	\$1,522.18	\$761.09
Anthem Blue Cross PPO	25	925.33	1,850.65	925.33
Sutter Health Plus HMO	5	905.20	1,810.40	905.20

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.

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Implicit Subsidy:

Retiree under age 65 and active health insurance premiums have been underwritten together. Under GASBS 75, 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, gender and spouse/domestic partner status, are in accordance with Actuarial Standard of Practice (ASOP) No. 6.

Kaiser HMO

Annual Blended Active/Retiree Premium **\$9,133**

Annual Per Capita Costs

Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	\$10,610	\$12,085	\$7,411	\$9,704
55	12,600	13,009	9,917	11,232
60	14,964	14,022	13,276	13,027
64	17,168	14,875	16,759	14,662

Annual Implicit Subsidy Rates

Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	\$1,477	\$2,952	(\$1,722)	\$571
55	3,467	3,876	784	2,099
60	5,831	4,889	4,143	3,894
64	8,035	5,742	7,626	5,529

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Sutter Health Plus HMO

Annual Blended Active/Retiree Premium **\$10,862**

Annual Per Capita Costs				
Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	\$10,827	\$12,332	\$7,563	\$9,902
55	12,858	13,276	10,120	11,462
60	15,271	14,309	13,548	13,294
64	17,519	15,180	17,102	14,962

Annual Implicit Subsidy Rates				
Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	(\$35)	\$1,470	(\$3,299)	(\$960)
55	1,996	2,414	(742)	600
60	4,409	3,447	2,686	2,432
64	6,657	4,318	6,240	4,100

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Anthem Blue Cross PPO

Annual Blended Active/Retiree Premium **\$11,104**

Annual Per Capita Costs				
Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	\$11,116	\$12,662	\$7,765	\$10,167
55	13,202	13,630	10,390	11,768
60	15,678	14,691	13,909	13,648
64	17,987	15,585	17,559	15,362

Annual Implicit Subsidy Rates				
Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	\$12	\$1,558	(\$3,339)	(\$937)
55	2,098	2,526	(714)	664
60	4,574	3,587	2,805	2,544
64	6,883	4,481	6,455	4,258

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WEIGHTED AVERAGE Use for future retirees

Annual Blended Active/Retiree Premium **\$9,712**

Annual Per Capita Costs				
Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	\$10,747	\$12,241	\$7,507	\$9,829
55	12,763	13,177	10,045	11,377
60	15,158	14,204	13,447	13,195
64	17,390	15,068	16,976	14,852

Annual Implicit Subsidy Rates				
Age	Retiree		Spouse/Domestic Partner	
	Male	Female	Male	Female
50	\$1,035	\$2,529	(\$2,205)	\$117
55	3,051	3,465	333	1,665
60	5,446	4,492	3,735	3,483
64	7,678	5,356	7,264	5,140

Assumption Changes Since Prior Valuation:

The following assumptions were changed since the prior valuation:

- The average HIB subsidy for future retirees was updated.
- The future trend for projecting medical costs below the subsidy limit were updated.
- The long-term expected investment return assumption was decreased from 7.00% to 6.75%.
- The discount rate changed from 3.99% to 5.35%.
- The inflation assumption was decreased from 2.75% to 2.50%.
- The inflation component of the salary increase assumption was decreased from 2.75% to 2.50%.
- The payroll growth assumption was decreased from 3.25% to 3.00%.
- The per capita health costs, used to calculate the implicit subsidy, were updated based on more recent data.

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Appendix A: Table 1 – Projection of Plan Fiduciary Net Position for use in the Calculation of Discount Rate as of June 30, 2022 (\$ in thousands)

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 (f) = (a) + (b) – (c) – (d) + (e)
2022	\$53,571	\$13,646	\$12,396	\$43	\$3,657	\$58,436
2023	58,436	13,817	12,552	47	3,986	63,639
2024	63,639	14,209	12,979	51	4,335	69,154
2025	69,154	14,400	13,206	55	4,706	75,000
2026	75,000	14,769	13,421	60	5,106	81,393
2027	81,393	12,398	13,694	65	5,448	85,480
2028	85,480	12,512	13,825	68	5,723	89,822
2029	89,822	11,452	13,836	72	5,980	93,346
2030	93,346	10,635	13,930	75	6,187	96,164
2031	96,164	10,527	13,983	77	6,372	99,004
2042	68,081	3,289	14,284	54	4,222	61,253
2043	61,253	2,788	14,303	49	3,744	53,434
2044	53,434	2,657	14,293	43	3,213	44,967
2045	44,967	2,187	14,122	36	2,631	35,627
2046	35,627	1,966	14,122	29	1,994	25,436
2047	25,436	1,781	13,930	20	1,306	14,573
2048	14,573	1,601	13,741	12	574	2,995
2049	2,995	1,338	13,466	2	0	0
2050	0	977	13,077	0	0	0
2101	0	0	13	0	0	0
2102	0	0	9	0	0	0
2103	0	0	6	0	0	0
2104	0	0	4	0	0	0
2105	0	0	2	0	0	0

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

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Notes

1. Amounts may not total exactly due to rounding.
2. Years 2032-2041 and 2051-2100, 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, 2022); 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, 2022. The projected benefit payments reflect the health care trend assumptions used in the June 30, 2022 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, 2045, and the index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (3.54%) was applied to periods after June 30, 2049, to determine the discount rate of 5.35%. See the next page for details.
5. Column (d): Projected administrative expenses are calculated as approximately 0.08% of the projected beginning Plan Fiduciary Net Position amount. The 0.08% portion was based on the actual fiscal year 2021/2022 administrative expenses as a percentage of the beginning Plan Fiduciary Net Position amount as of July 1, 2021. 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, 2049. 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, 2049 and June 30, 2050. 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, 2049. Benefit payments after June 30, 2049 were discounted at 3.54%, 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.

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Appendix A: Table 2 Projection of Contributions – Implicit Subsidy Only (\$ in thousands)

Year Beginning July 1,	Projected Payroll			Projected Contributions		
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members ¹ (b) = (c) – (a)	Total Payroll ² (c)	Total Implicit Subsidy Contributions = Implicit Subsidy Benefit Payments (d)	Implicit Subsidy Contributions Related to Payroll of Future Plan Members ³ (e) = (b) x 1.07%	Implicit Subsidy Contributions for Current Plan Members ⁴ (f) = (d) - (e)
2022	\$241,538	\$0	\$241,538	\$2,480	\$0	\$2,480
2023	233,770	15,014	248,784	2,466	111	2,355
2024	228,412	27,835	256,247	2,676	206	2,470
2025	222,465	41,469	263,935	2,726	307	2,419
2026	216,129	55,724	271,853	2,788	412	2,375
2027	209,506	70,503	280,008	2,932	522	2,410
2028	202,527	85,881	288,409	2,973	636	2,337
2029	195,994	101,067	297,061	2,909	748	2,161
2030	189,036	116,937	305,973	2,957	865	2,092
2031	182,140	133,011	315,152	2,970	984	1,985
2042	104,239	332,005	436,244	4,007	2,457	1,551
2043	96,982	352,349	449,331	4,176	2,607	1,569
2044	89,665	373,146	462,811	4,328	2,761	1,567
2045	82,226	394,469	476,696	4,342	2,919	1,422
2046	75,294	415,703	490,996	4,532	3,076	1,456
2047	68,470	437,256	505,726	4,550	3,236	1,314
2048	61,869	459,029	520,898	4,576	3,397	1,179
2049	55,342	481,183	536,525	4,521	3,561	960
2050	48,905	503,716	552,621	4,369	3,727	641
2051	42,751	526,449	569,199	4,237	3,896	341

¹ Future plan members assumed to enter plan at the end of the year.

² Initial payroll based on June 30, 2022 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.

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Appendix A: Table 3 Projection of Contributions and Benefit Payments – Total (\$ in thousands)

Year Beginning July 1,	Contributions for Current Plan Members			Benefit Payments		
	Prefunding (a)	Implicit Subsidy (b)	Total Contributions (c) = (a) + (b)	Cash Subsidy (HIB Subsidy) (d)	Implicit Subsidy (e) = column (d) from Table 2	Total Benefit Payments (f) = (d) + (e)
2022	\$11,166	\$2,480	\$13,646	\$9,916	\$2,480	\$12,396
2023	11,462	2,355	13,817	10,086	2,466	12,552
2024	11,739	2,470	14,209	10,303	2,676	12,979
2025	11,981	2,419	14,400	10,480	2,726	13,206
2026	12,394	2,375	14,769	10,633	2,788	13,421
2027	9,988	2,410	12,398	10,762	2,932	13,694
2028	10,175	2,337	12,512	10,852	2,973	13,825
2029	9,291	2,161	11,452	10,927	2,909	13,836
2030	8,543	2,092	10,635	10,973	2,957	13,930
2031	8,542	1,985	10,527	11,013	2,970	13,983
2042	1,738	1,551	3,289	10,277	4,007	14,284
2043	1,219	1,569	2,788	10,127	4,176	14,303
2044	1,090	1,567	2,657	9,965	4,328	14,293
2045	765	1,422	2,187	9,780	4,342	14,122
2046	510	1,456	1,966	9,590	4,532	14,122
2047	467	1,314	1,781	9,380	4,550	13,930
2048	422	1,179	1,601	9,165	4,576	13,741
2049	378	960	1,338	8,945	4,521	13,466
2050	336	641	977	8,708	4,369	13,077
2051	304	341	645	8,462	4,237	12,699

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Appendix B: Definition of Terms

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

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: <ol style="list-style-type: none"> Investment return — the rate of investment yield that the Plan will earn over the long-term future; Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates; Retirement rates — the rate or probability of retirement at a given age; 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 that is the sum of the following: <ol style="list-style-type: none"> the actuarial present value of projected benefit payments projected to be funded by plan assets using a long term rate of return, and the actuarial present value of projected benefit payments that are not included in (1) using a yield or index rate for 20 year tax exempt general obligation municipal bonds with an average rating of AA/Aa or higher
Entry Age Actuarial Cost Method:	An actuarial cost method where the present value of the projected benefits for an individual is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age
Healthcare Cost Trend Rates:	The rate of change in per capita health costs over time
Net OPEB Liability:	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 Cost:	The amount of contributions required to fund the benefit allocated to the current year of service.
Total OPEB Liability:	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.
Valuation Date:	The date at which the actuarial valuation is performed