

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

Governmental Accounting Standards Board Statement (GASBS) 68 Actuarial Valuation for the Pension Plan

Actuarial Valuation Based on June 30, 2023
Measurement Date for Employer Reporting
as of June 30, 2024



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 pension 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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April 25, 2024

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

Dear Sophia:

We are pleased to submit this Governmental Accounting Standards Board Statement (GASBS) 68 Actuarial Valuation based on a June 30, 2023 measurement date for employer reporting as of June 30, 2024. 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 68.

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 EBMUDERS pension 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. I am a member of the American Academy of Actuaries and I 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 Retirement System.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal

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

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

BTS/jl

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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. 68 of the Governmental Accounting Standards Board (GASB) for employer reporting as of June 30, 2024. The results used in preparing this GASBS 68 report are comparable to those used in preparing the GASBS 67 report for the plan based on a reporting date and a measurement date as of June 30, 2023. This valuation is based on:

- The benefit provisions of the Retirement System, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2023, provided by the Retirement System;
- The assets of the Plan as of June 30, 2023, provided by the Retirement System;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2023 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc., adopted by the Board for the June 30, 2023 valuation.

General observations on GASBS 68 actuarial valuation

1. The GASB rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans should develop and adopt funding policies under current practices.
2. When measuring pension liability, GASB uses the same actuarial cost method (Entry Age) and the same type of discount rate (expected return on assets) as EBMUDERS uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as EBMUDERS' Actuarial Accrued Liability (AAL) measure for funding. We note that the same is true for the Normal Cost component of the annual plan cost for funding and financial reporting.
3. The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is the same as the Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis. The NPL reflects all investment gains and losses as of the measurement date. This is different from the UAAL calculated on an actuarial value of assets basis in the funding valuation that reflects investment gains and losses over a five-year period.

Section 1: Actuarial Valuation Summary

Highlights of the valuation

1. For this report, the reporting dates for the employer are June 30, 2024 and 2023. The NPL was measured as of June 30, 2023 and 2022, and determined from the actuarial valuations as of June 30, 2023 and June 30, 2022, respectively. The Plan Fiduciary Net Position (plan assets) and the TPL were valued as of the measurement dates. Consistent with the provisions of GASBS 68, the assets and liabilities measured as of June 30, 2023 and 2022 are not adjusted or rolled forward to the June 30, 2024 and 2023 reporting dates, respectively.
2. Section 33 of the Employees' Retirement System Ordinance ("Ordinance") references a funded ratio based on the ratio of the market value of assets to the projected benefit obligation (PBO) for purposes of determining post-retirement cost of living adjustments (COLA). As noted in the plan provisions section of the June 30, 2023 Retirement Plan funding valuation report dated January 5, 2024 (*Section 4, Exhibit 2*), the basic minimum COLA benefit is the lesser of 3% and the actual change in the cost of living index. Any excess of the actual change in the cost of living index over 3% is accumulated in individual retiree COLA banks, and withdrawals from the bank are made in years when the index increases less than 3%. However, increases of up to 5% are granted in years when the Retirement Board determines that the System is more than 85% funded on a PBO basis. In those years when the System is more than 85% funded and the cost of living index exceeds 5%, any excess cost of living over 5% is accumulated in the COLA bank. Furthermore, effective October 1, 2000, in those years when the system is more than 85% funded on a PBO basis and the cost of living is less than 4%, withdrawals from the bank are made to allow cost of living increases up to 4%.

For the June 30, 2023 Retirement Plan and HIB Plan valuations, we note that the funded ratio on the PBO (and market value) basis is 73.6% for both plans combined, as shown in the Supplemental Exhibits report dated January 5, 2024.

3. The NPL decreased from \$830 million as of June 30, 2022 to \$800 million as of June 30, 2023. This was mainly due to (a) the approximate return on the market value of assets for the Pension Plan of 10.75% during 2022/2023 that was more than the assumption of 6.75% used in the June 30, 2023 valuation (that gain was about \$80 million for the Pension Plan), offset somewhat by (b) higher than expected salary increases for continuing active members (that loss was about \$21 million) and (c) higher than expected cost of living adjustment increases for payees (that loss was about \$35 million). Changes in these values during the last two fiscal years ending June 30, 2022 and June 30, 2023 can be found in *Section 2, Schedule of Changes in Net Pension Liability* on page 16.
4. There was an increase in the total employer pension expense from \$132.0 million calculated last year to \$162.0 million calculated this year. The primary cause of the increase was a reduction in the projected earnings on plan investments. (There was over a 10% reduction in the beginning of year plan assets which prompted a reduction in the projected earnings. The reduction in the projected earnings resulted in a \$23.8 million increase in this year's pension expense, compared to last year's.)
5. The discount rate used to determine the TPLs and NPLs as of June 30, 2023 and 2022 was 6.75%, following the same assumption used by the System in the pension funding valuations as of the same dates. The detailed calculations used in the

Section 1: Actuarial Valuation Summary

derivation of the discount rate of 6.75% used in the calculation of the TPL and NPL as of June 30, 2023 can be found in *Section 3, Appendix A*. Various other information that is required to be disclosed can be found throughout *Section 2*.

6. Results shown in this report exclude any employer contributions made after the measurement date of June 30, 2023. The employer should consult with their auditor to determine the deferred outflow that should be created for these contributions.
7. The NPL as of June 30, 2023 and June 30, 2022 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 NPL for the two systems in EBMUD to determine the employer's proportionate share of the NPL for the two systems.

The proportionate share of the total plan NPL is then the ratio of the system's total allocated NPL to the total NPL of both systems. The NPL allocation can be found in *Section 2, Determination of proportionate share* on pages 20-21.

8. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2023. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. Moreover, this actuarial valuation is based on Plan data as of June 30, 2023 and it does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2023 due to COVID-19. Segal is available to prepare projections of potential outcomes on market conditions and other demographic experience upon request.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

Reporting Date for Employer under GASBS 68		June 30, 2024 ¹	June 30, 2023 ²
Measurement Date for Employer under GASBS 68		June 30, 2023	June 30, 2022
Disclosure elements for fiscal year ending June 30:	• Service cost ³	\$56,378,319	\$51,705,682
	• Total Pension Liability	2,994,429,150	2,835,771,092
	• Plan Fiduciary Net Position	2,194,142,000	2,005,352,000
	• Net Pension Liability	800,287,150	830,419,092
	• Pension expense	161,956,946	131,977,941
Schedule of contributions for fiscal year ending June 30:	• Actuarially determined contributions	\$95,103,000	\$91,393,000
	• Actual contributions	95,103,000	91,393,000
	• Contribution deficiency/(excess)	0	0
Demographic data for plan year ending June 30:	• Number of retired members and beneficiaries	2,117	2,048
	• Number of inactive vested members ⁴	381	360
	• Number of active members	1,955	1,895
Key assumptions as of June 30:	• Investment rate of return	6.75%	6.75%
	• Inflation rate	2.50%	2.50%
	• Real across-the-board salary increase	0.50%	0.50%
	• Projected salary increases ⁵	Ranges from 9.25% to 3.75% based on time from hire	Ranges from 9.25% to 3.75% based on time from hire
	• Cost of living adjustments	2.75%	2.75%

¹ The reporting date and measurement date for the plan are June 30, 2023.

² The reporting date and measurement date for the plan are June 30, 2022.

³ The service cost is based on the previous year's valuation, meaning the June 30, 2023 and June 30, 2022 measurement date values are based on the valuations as of June 30, 2022 and June 30, 2021, respectively. The June 30, 2023 measurement date service cost has been calculated using the actuarial assumptions shown in the June 30, 2022 measurement date column and the June 30, 2022 measurement date service cost has been calculated using the following assumptions:

Key assumptions as of June 30, 2021:

Investment rate of return	7.00%
Inflation rate	2.75%
Projected salary increases*	Ranges from 9.50% to 4.00%, based on time from hire
Cost of living adjustments	2.75%

* Includes inflation of 2.75% plus real across-the-board salary increases of 0.50% plus merit and promotion increases.

⁴ Includes inactive members due a refund of contributions.

⁵ Includes inflation at 2.50% plus real across the board salary increase of 0.50% plus merit and promotion increases.

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

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.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. 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. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.
Actuarial 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.

Section 1: Actuarial Valuation Summary

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

The actuarial valuation is prepared at the request of the Board to assist the System in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement at a specific date. 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.

Actuarial results in this report are not rounded, but that does not imply precision.

If the System 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.

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.

Segal's report shall be deemed to be final and accepted by the System upon delivery and review. The System should notify Segal immediately of any questions or concerns about the final content.

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 68 Information

General information about the pension 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 pension plan (the Pension 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 its funding. Accordingly, the System's operations have been reported as a Pension and Other Employee Benefit Trust Fund in the District's basic financial statements.

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

Retired members and beneficiaries currently receiving benefits	2,117
Inactive vested members entitled to, but not yet receiving benefits ²	381
Active members	<u>1,955</u>
Total	4,453

¹ The liabilities and expenses associated with providing post-employment health insurance benefits are reportable under GASB Statements 74 and 75. They have not been included in this report.

² Includes inactive members due a refund of contributions.

Section 2: GASBS 68 Information

Benefits provided. EBMUDERS provides service retirement, disability, death and survivor 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 reduced service retirement upon attaining the age of 54 and completing 5 years of continuous full-time employment. Members may elect voluntary unreduced service retirement upon attaining the age of 62 and completing 5 years of continuous full-time employment or age 65 without restriction. Members who continue to work upon attaining the normal retirement age of 65 continue to contribute to the Plan, and at the time they retire, computation of their retirement allowance is based upon their compensation and length of service as of the date of retirement. Service retirement allowances are computed by formulas specified in the Ordinance and are based on date of employment, length of employment, age at date of retirement, and compensation earned during 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 elect voluntary unreduced service retirement upon attaining the age of 67, and completing 5 years of continuous full-time employment. Members who continue to work upon attaining the normal retirement age of 67 continue to contribute to the Plan, and at the time they retire, computation of their allowance is based upon their compensation and length of service as of the date of retirement. Service retirement allowances are computed by formulas specified in the Ordinance and are based on length of service, age at retirement, and compensation earned during 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. The allowance for disability retirement is computed by a formula specified in the Ordinance and is based upon compensation earnable during employment, years of continuous service, and date upon which the retiring individual became a member. There is a guaranteed minimum disability benefit equal to the greater of one-third of terminal compensation (final average salary) or the retirement allowance, based on the disability formula.

Death benefits are payable to the estate or 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.

EBMUDERS provides an annual cost-of-living benefit to all retirees. The cost-of-living adjustment is capped at 3.0% unless the System is more than 85% funded on a Projected Benefit Obligation (PBO) basis, in which case the cost-of-living adjustment is capped at 5.0%.¹

¹ Effective October 1, 2000, when the System is 85% funded on a PBO basis and the cost-of-living is less than 4%, withdrawals from the accumulated COLA bank are made to allow cost-of-living increases up to 4%.

Section 2: GASBS 68 Information

The East Bay Municipal Utility District contributes to the Pension 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 after the completion of the annual actuarial valuation. The average employer contribution rate as of June 30, 2023 for 2022-2023 (based on contribution rates adopted for the June 30, 2021 valuation) was 38.62% of covered payroll.

All members are required to make contributions to EBMUDERS regardless of the Pension Plan or tier in which they are included. The average member contribution rate as of June 30, 2023 for 2022-2023 (based on the June 30, 2021 valuation) was 8.88% of covered payroll.

Section 2: GASBS 68 Information

Net Pension Liability

The components of the Net Pension Liability were as follows:

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
Total Pension Liability	\$2,994,429,150	\$2,835,771,092
Plan Fiduciary Net Position	(2,194,142,000)	(2,005,352,000)
Net Pension Liability	\$800,287,150	\$830,419,092
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	73.27%	70.72%

The Net Pension Liability was measured as of June 30, 2023 and 2022. The Plan Fiduciary Net Position (plan assets) was valued as of the measurement date, while the Total Pension Liability was determined based upon the results of the actuarial valuations as of June 30, 2023 and 2022, respectively.

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

Actuarial assumptions. The TPLs as of June 30, 2023 and June 30, 2022 were determined by actuarial valuations as of June 30, 2023 and June 30, 2022, respectively. The actuarial assumptions used in both the June 30, 2023 and June 30, 2022 valuations were based on the July 1, 2016 through June 30, 2020 Actuarial Experience Study report dated November 12, 2020 and the June 30, 2022 Economic Assumptions Review report dated November 8, 2022. They are the same as the assumptions used in the June 30, 2023 funding actuarial valuation for EBMUDERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Investment rate of return:	6.75%, net of Pension Plan investment expense, including inflation
Inflation rate:	2.50%
Real across-the-board salary increase:	0.50%
Projected salary increases:	Ranges from 9.25% to 3.75% based on time from hire, including inflation and real across the board salary increase
Cost-of-living adjustments:	Retiree COLA increases of 2.75% per year. For members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3.00% per year.
Other assumptions:	See the experience study report for the period July 1, 2016 through June 30, 2020 and the June 30, 2022 economic assumptions review report.

Section 2: GASBS 68 Information

Determination of discount rate and investment rates of return

The long-term expected rate of return on Pension 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, 2023. This information is subject to change every four years based on the actuarial experience study, or every two years based on the interim economic actuarial assumptions study.

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

Discount rate. The discount rate used to measure the Total Pension Liability was 6.75% as of June 30, 2023 and June 30, 2022. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For 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. Based on those assumptions, the Pension Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on Pension Plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both June 30, 2023 and June 30, 2022.

Section 2: GASBS 68 Information

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the NPL as of June 30, 2023, calculated using the discount rate of 6.75%, as well as what the NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (5.75%) or 1-percentage-point higher (7.75%) than the current rate:

	1% Decrease (5.75%)	Current Discount Rate (6.75%)	1% Increase (7.75%)
Water System	\$1,023,267,747	\$687,594,117	\$410,031,020
Wastewater System	<u>167,708,163</u>	<u>112,693,033</u>	<u>67,201,912</u>
Total for all Systems	\$1,190,975,910	\$800,287,150	\$477,232,932

Section 2: GASBS 68 Information

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

Reporting Date for Employer under GASBS 68 Measurement Date for Employer under GASBS 68	June 30, 2024 June 30, 2023	June 30, 2023 June 30, 2022
Total Pension Liability		
• Service cost ¹	\$56,378,319	\$51,705,682
• Interest	190,492,351	181,464,461
• Change of benefit terms	0	0
• Differences between expected and actual experience	51,868,388	54,807,594
• Changes of assumptions	0	72,119,593
• Benefit payments, including refunds of member contributions	(140,081,000)	(129,940,000)
Net change in Total Pension Liability	\$158,658,058	\$230,157,330
Total Pension Liability – beginning	<u>2,835,771,092</u>	<u>2,605,613,762</u>
Total Pension Liability – ending	<u>\$2,994,429,150</u>	<u>\$2,835,771,092</u>
Plan Fiduciary Net Position		
• Contributions – employer	\$95,103,000	\$91,393,000
• Contributions – employee	21,865,000	20,915,000
• Net investment income	214,117,000	(245,904,000)
• Benefit payments, including refunds of member contributions	(140,081,000)	(129,940,000)
• Administrative expense	(2,214,000)	(1,875,000)
• Other expense	0	0
Net change in Plan Fiduciary Net Position	\$188,790,000	\$(265,411,000)
Plan Fiduciary Net Position – beginning	<u>2,005,352,000</u>	<u>2,270,763,000</u>
Plan Fiduciary Net Position – ending	<u>\$2,194,142,000</u>	<u>\$2,005,352,000</u>
Net Pension Liability – ending	<u>\$800,287,150</u>	<u>\$830,419,092</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	73.27%	70.72%
Covered payroll ²	\$246,230,567	\$233,939,981
Net Pension Liability as percentage of covered payroll	325.02%	354.97%

¹ The service cost is based on the previous year's valuation, meaning the June 30, 2023 and June 30, 2022 measurement date values are based on the valuations as of June 30, 2022 and June 30, 2021, respectively. The June 30, 2023 measurement date service cost has been calculated using the actuarial assumptions shown in the June 30, 2022 column on page 7 and the June 30, 2022 measurement date service cost has been calculated using the actuarial assumptions shown in footnote 3 on page 7.

² Pensionable payroll reported by EBMUDERS.

Section 2: GASBS 68 Information

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
2014	\$61,660,000	\$61,660,000	\$0	\$159,513,251	38.66%
2015	64,177,000	64,177,000	0	166,886,146	38.46%
2016	65,218,000	65,218,000	0	174,586,444	37.36%
2017	67,096,000	67,096,000	0	182,031,838	36.86%
2018	71,221,000	71,221,000	0	193,717,364	36.77%
2019	74,033,000	74,033,000	0	203,541,207	36.37%
2020	77,645,000	77,645,000	0	215,109,948	36.10%
2021	79,252,000	79,252,000	0	221,809,447	35.73%
2022	91,393,000	91,393,000	0	233,939,981	39.07%
2023	95,103,000	95,103,000	0	246,230,567	38.62%

¹ These are the pensionable payroll amounts reported by EBMUDERS.

See accompanying notes to this schedule on the next page.

Section 2: GASBS 68 Information

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:	Prior to July 1, 2011, the UAAL from plan changes, assumption changes, and experience gains/losses were amortized over separate decreasing 30-year amortization periods. On or after July 1, 2011, any new UAAL resulting from plan changes are amortized over separate decreasing 15-year periods; assumption and method changes are amortized over separate decreasing 25-year periods (prior to July 1, 2021); and experience gains/losses are amortized over separate decreasing 20-year periods. On or after July 1, 2021, assumption and method changes are amortized over separate decreasing 20-year periods.
Asset valuation method:	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five year period, further adjusted, if necessary, to be within 30% of the market value.

Section 2: GASBS 68 Information

Actuarial assumptions:

Valuation Date:	June 30, 2021 (for the year ended June 30, 2023 ADC)	June 30, 2020 (for the year ended June 30, 2022 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 time from hire	Ranges from 9.50% to 4.00% based on time from hire
Cost of living adjustments:	Retiree COLA increases of 2.75% per year. For members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3.00% per year.	Retiree COLA increases of 2.75% per year. For members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3.00% per year.
Mortality:	Healthy: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020	Healthy: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020
Other assumptions:	Same as those used in the June 30, 2021 funding actuarial valuation	Same as those used in the June 30, 2020 funding actuarial valuation

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

Section 2: GASBS 68 Information

Determination of proportionate share

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

System	Contributions	Percentage*
Water System	\$78,619,000	86.023%
Wastewater System	12,774,000	13.977%
Total for both Systems	\$91,393,000	100.000%

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

Allocation of June 30, 2022 Net Pension Liability

System	Total NPL	Percentage
Water System	\$714,351,412	86.023%
Wastewater System	116,067,680	13.977%
Total for both Systems	\$830,419,092	100.000%

Notes:

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

The Net Pension Liability (NPL) is the Total Pension Liability (TPL) minus the Plan Fiduciary Net Position (plan assets). The NPL, TPL, and Plan Fiduciary Net Position totals for both systems combined are provided in Segal's June 30, 2022 GASBS 67 valuation report dated March 2, 2023.

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

Section 2: GASBS 68 Information

Determination of proportionate share (continued)

Actual Employer Contributions by System
July 1, 2022 to June 30, 2023

System	Contributions	Percentage*
Water System	\$81,711,000	85.918%
Wastewater System	13,392,000	14.082%
Total for both Systems	\$95,103,000	100.000%

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

Allocation of June 30, 2023 Net Pension Liability

System	Total NPL	Percentage
Water System	\$687,594,117	85.918%
Wastewater System	112,693,033	14.082%
Total for both Systems	\$800,287,150	100.000%

Notes:

Based on the July 1, 2022 through June 30, 2023 employer contributions as provided by EBMUDERS.

The Net Pension Liability (NPL) is the Total Pension Liability (TPL) minus the Plan Fiduciary Net Position (plan assets). The NPL, TPL, and Plan Fiduciary Net Position totals for both systems combined are provided in Segal's June 30, 2023 GASBS 67 valuation report dated January 5, 2024.

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

Section 2: GASBS 68 Information

Pension expense

Total for All Systems

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
• Service cost	\$56,378,319	\$51,705,682
• Interest on the Total Pension Liability	190,492,351	181,464,461
• 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 Pension Liability	9,605,257	10,038,021
• Expensed portion of current-period changes of assumptions or other inputs	0	13,208,717
• Actual Member contributions	(21,865,000)	(20,915,000)
• Projected earnings on plan investments	(134,506,474)	(158,270,665)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(15,922,105)	80,834,933
• Administrative expense	2,214,000	1,875,000
• Other expense	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	154,645,500	58,890,963
• Recognition of beginning of year deferred inflows of resources as pension expense	(79,084,902)	(86,854,171)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	\$161,956,946	\$131,977,941

Section 2: GASBS 68 Information

Pension expense (continued)

Water System

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
• Service cost	\$48,439,364	\$44,478,776
• Interest on the Total Pension Liability	163,668,028	156,101,173
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(106,286)	149,109
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	8,252,686	8,635,007
• Expensed portion of current-period changes of assumptions or other inputs	0	11,362,535
• Actual Member contributions	(18,786,064)	(17,991,710)
• Projected earnings on plan investments	(115,565,844)	(136,149,173)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(13,680,022)	69,536,634
• Administrative expense	1,902,234	1,612,931
• Other expense	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	132,868,978	50,659,773
• Recognition of beginning of year deferred inflows of resources as pension expense	(67,948,502)	(74,714,563)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>609,022</u>	<u>496,322</u>
Pension Expense	\$139,653,594	\$114,176,814

Section 2: GASBS 68 Information

Pension expense (continued)

Wastewater System

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
• Service cost	\$7,938,955	\$7,226,906
• Interest on the Total Pension Liability	26,824,323	25,363,288
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	106,286	(149,109)
• Current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	1,352,571	1,403,014
• Expensed portion of current-period changes of assumptions or other inputs	0	1,846,182
• Actual Member contributions	(3,078,936)	(2,923,290)
• Projected earnings on plan investments	(18,940,630)	(22,121,492)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(2,242,083)	11,298,299
• Administrative expense	311,766	262,069
• Other expense	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	21,776,522	8,231,190
• Recognition of beginning of year deferred inflows of resources as pension expense	(11,136,400)	(12,139,608)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	(609,022)	(496,322)
Pension Expense	\$22,303,352	\$17,801,127

Section 2: GASBS 68 Information

Deferred outflows of resources and deferred inflows of resources

Total for All Systems

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$1,450,902	\$1,594,327
• Changes of assumptions or other inputs	71,411,167	105,058,093
• Net excess of projected over actual earnings on Pension Plan investments (if any)	53,452,602	149,459,921
• Difference between actual and expected experience in the Total Pension Liability	<u>78,464,890</u>	<u>53,716,750</u>
• Total Deferred Outflows of Resources	\$204,779,561	\$309,829,091
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$1,450,902	\$1,594,327
• Changes of assumptions or other inputs	0	0
• Net excess of actual over projected earnings on Pension Plan investments (if any)	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>18,734,468</u>	<u>26,654,685</u>
• Total Deferred Inflows of Resources	\$20,185,370	\$28,249,012
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASBS 68 Year Ended June 30:		
2024	N/A	\$75,560,598
2025	\$56,891,880	63,208,728
2026	25,431,539	31,748,387
2027	94,052,021	100,368,869
2028	4,376,648	10,693,497
2029	3,842,103	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GASBS 68.

Section 2: GASBS 68 Information

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

Water System

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$983,243	\$1,593,296
• Changes of assumptions or other inputs	61,355,350	90,374,123
• Net excess of projected over actual earnings on Pension Plan investments (if any)	45,925,634	128,569,907
• Difference between actual and expected experience in the Total Pension Liability	<u>67,415,798</u>	<u>46,208,760</u>
• Total Deferred Outflows of Resources	\$175,680,025	\$266,746,086
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$467,659	\$1,031
• Changes of assumptions or other inputs	0	0
• Net excess of actual over projected earnings on Pension Plan investments (if any)	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>16,096,360</u>	<u>22,929,160</u>
• Total Deferred Inflows of Resources	\$16,564,019	\$22,930,191
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASBS 68 Year Ended June 30:		
2024	N/A	\$65,608,515
2025	\$49,239,395	54,839,118
2026	22,011,470	27,578,293
2027	80,883,931	86,522,514
2028	3,722,650	9,267,455
2029	3,258,560	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GAS 68.

Section 2: GASBS 68 Information

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

Wastewater System

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$467,659	\$1,031
• Changes of assumptions or other inputs	10,055,817	14,683,970
• Net excess of projected over actual earnings on Pension Plan investments (if any)	7,526,968	20,890,014
• Difference between actual and expected experience in the Total Pension Liability	<u>11,049,092</u>	<u>7,507,990</u>
• Total Deferred Outflows of Resources	\$29,099,536	\$43,083,005
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$983,243	\$1,593,296
• Changes of assumptions or other inputs	0	0
• Net excess of actual over projected earnings on Pension Plan investments (if any)	0	0
• Difference between expected and actual experience in the Total Pension Liability	<u>2,638,108</u>	<u>3,725,525</u>
• Total Deferred Inflows of Resources	\$3,621,351	\$5,318,821
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASBS 68 Year Ended June 30:		
2024	N/A	\$9,952,083
2025	\$7,652,485	8,369,610
2026	3,420,069	4,170,094
2027	13,168,090	13,846,355
2028	653,998	1,426,042
2029	583,543	0
Thereafter	0	0

¹ Calculated in accordance with Paragraphs 54 and 55 of GAS 68.

Section 2: GASBS 68 Information

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

There are changes in both systems' proportionate share of the total Net Pension Liability during the measurement period ended June 30, 2023. The net effect of the change on the system's proportionate share of the collective Net Pension 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 pensions through EBMUDERS which is 5.40 years determined as of June 30, 2022 (the beginning of the measurement period ending June 30, 2023).

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2023 is recognized over the same period.

The average of the expected service lives of all employees is 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 nonactive or retired member.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

Section 2: GASBS 68 Information

Schedule of proportionate share of the Net Pension Liability

Total for All Systems

Reporting Date for Employer under GASBS 68 as of June 30	Proportion of the Net Pension Liability	Proportionate Share of Net Pension Liability	Covered Payroll ¹	Proportionate Share of the Net Pension Liability as a Percentage of its Covered Payroll	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability
2015	100.0%	\$431,319,400	\$159,513,251	270.40%	75.45%
2016	100.0%	462,859,285	166,886,146	277.35%	74.93%
2017	100.0%	604,092,155	174,586,444	346.01%	69.73%
2018	100.0%	487,458,945	182,031,838	267.79%	76.43%
2019	100.0%	504,499,433	193,717,364	260.43%	77.28%
2020	100.0%	548,649,072	203,541,207	269.55%	76.56%
2021	100.0%	721,647,211	215,109,948	335.48%	71.54%
2022	100.0%	334,850,762	221,809,447	150.96%	87.15%
2023	100.0%	830,419,092	233,939,981	354.97%	70.72%
2024	100.0%	800,287,150	246,230,567	325.02%	73.27%

¹ Pensionable payroll reported by EBMUDERS.

Section 2: GASBS 68 Information

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

Water System

Reporting Date for Employer under GASBS 68 as of June 30	Proportion of the Net Pension Liability	Proportionate Share of Net Pension Liability	Covered Payroll ¹	Proportionate Share of the Net Pension Liability as a Percentage of its Covered Payroll	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability
2015	84.614%	\$364,956,650	\$134,916,222	270.51%	75.45%
2016	84.973%	393,304,539	141,811,327	277.34%	74.93%
2017	85.220%	514,809,376	148,621,780	346.39%	69.73%
2018	85.376%	416,173,814	155,221,134	268.12%	76.43%
2019	85.372%	430,702,728	165,235,805	260.66%	77.28%
2020	85.598%	469,634,357	174,040,983	269.84%	76.56%
2021	85.802%	619,188,085	184,365,098	335.85%	71.54%
2022	85.863%	287,512,298	190,047,243	151.29%	87.15%
2023	86.023%	714,351,412	200,833,534	355.69%	70.72%
2024	85.918%	687,594,117	210,765,227	326.24%	73.27%

¹ Pensionable payroll reported by EBMUDERS.

Section 2: GASBS 68 Information

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

Wastewater System

Reporting Date for Employer under GASBS 68 as of June 30	Proportion of the Net Pension Liability	Proportionate Share of Net Pension Liability	Covered Payroll ¹	Proportionate Share of the Net Pension Liability as a Percentage of its Covered Payroll	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability
2015	15.386%	\$66,362,750	\$24,597,029	269.80%	75.45%
2016	15.027%	69,554,746	25,074,819	277.39%	74.93%
2017	14.780%	89,282,779	25,964,664	343.86%	69.73%
2018	14.624%	71,285,131	26,810,704	265.88%	76.43%
2019	14.628%	73,796,705	28,481,559	259.10%	77.28%
2020	14.402%	79,014,715	29,500,224	267.84%	76.56%
2021	14.198%	102,459,126	30,744,850	333.26%	71.54%
2022	14.137%	47,338,464	31,762,204	149.04%	87.15%
2023	13.977%	116,067,680	33,106,447	350.59%	70.72%
2024	14.082%	112,693,033	35,465,340	317.76%	73.27%

¹ Pensionable payroll reported by EBMUDERS.

Section 2: GASBS 68 Information

Schedule of reconciliation of Net Pension Liability

Total for All Systems

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
Beginning Net Pension Liability	\$830,419,092	\$334,850,762
• Pension Expense	161,956,946	131,977,941
• Employer Contributions	(95,103,000)	(91,393,000)
• New Net Deferred Inflows/Outflows	(21,425,290)	427,020,181
• 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	(75,560,598)	27,963,208
• Recognition of Prior Deferred Flows Due to Change in Proportion	<u>0</u>	<u>0</u>
Ending Net Pension Liability	\$800,287,150	\$830,419,092

Section 2: GASBS 68 Information

Schedule of reconciliation of Net Pension Liability (continued)

Water System

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
Beginning Net Pension Liability	\$714,351,412	\$287,512,298
• Pension Expense	139,653,594	114,176,814
• Employer Contributions	(81,711,000)	(78,619,000)
• New Net Deferred Inflows/Outflows	(18,408,272)	367,335,569
• Change in Allocation of Prior Deferred Inflows/Outflows	(294,460)	(277,762)
• New Net Deferred Flows Due to Change in Proportion	(467,659)	665,025
• Recognition of Prior Deferred Inflows/Outflows	(64,920,476)	24,054,790
• Recognition of Prior Deferred Flows Due to Change in Proportion	<u>(609,022)</u>	<u>(496,322)</u>
Ending Net Pension Liability	\$687,594,117	\$714,351,412

Section 2: GASBS 68 Information

Schedule of reconciliation of Net Pension Liability (continued)

Wastewater System

Reporting Date for Employer under GASBS 68	June 30, 2024	June 30, 2023
Measurement Date for Employer under GASBS 68	June 30, 2023	June 30, 2022
Beginning Net Pension Liability	\$116,067,680	\$47,338,464
• Pension Expense	22,303,352	17,801,127
• Employer Contributions	(13,392,000)	(12,774,000)
• New Net Deferred Inflows/Outflows	(3,017,018)	59,684,612
• Change in Allocation of Prior Deferred Inflows/Outflows	294,460	277,762
• New Net Deferred Flows Due to Change in Proportion	467,659	(665,025)
• Recognition of Prior Deferred Inflows/Outflows	(10,640,122)	3,908,418
• Recognition of Prior Deferred Flows Due to Change in Proportion	<u>609,022</u>	<u>496,322</u>
Ending Net Pension Liability	\$112,693,033	\$116,067,680

Section 2: GASBS 68 Information

Schedule of recognition of changes in total Net Pension Liability

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

Reporting Date for Employer under GASBS 68, Year Ended June 30	Differences Between Actual and Expected Experience	Recognition Period (Years)	Reporting Date for Employer under GASBS 68 Year Ended June 30:							
			2023	2024	2025	2026	2027	2028	2029	Thereafter
2018	\$(22,641,070)	5.26	\$(1,119,140)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	48,581,253	5.28	9,200,995	2,576,278	0	0	0	0	0	0
2020	25,973,667	5.30	4,900,692	4,900,692	1,470,207	0	0	0	0	0
2021	(6,199,240)	5.30	(1,169,668)	(1,169,668)	(1,169,668)	(350,900)	0	0	0	0
2022	(37,465,547)	5.55	(6,750,549)	(6,750,549)	(6,750,549)	(6,750,549)	(3,712,802)	0	0	0
2023	54,807,594	5.46	10,038,021	10,038,021	10,038,021	10,038,021	10,038,021	4,617,489	0	0
2024	51,868,388	5.40	N/A	<u>9,605,257</u>	<u>9,605,257</u>	<u>9,605,257</u>	<u>9,605,257</u>	<u>9,605,257</u>	<u>3,842,103</u>	<u>0</u>
Net increase (decrease) in pension expense			\$15,100,351	\$19,200,031	\$13,193,268	\$12,541,829	\$15,930,476	\$14,222,746	\$3,842,103	\$0

As described on page 28, the average of the expected remaining service lives of all employees that are provided with pensions through EBMUDERS (active and inactive employees) determined as of June 30, 2022 (the beginning of the measurement period ending June 30, 2023) is 5.40 years.

Amortization amounts prior to June 30, 2023 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 68 reports.

Section 2: GASBS 68 Information

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

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

Reporting Date for Employer under GASBS 68, Year Ended June 30	Effects of Assumption Changes	Recognition Period (Years)	Reporting Date for Employer under GASBS 68 Year Ended June 30:							
			2023	2024	2025	2026	2027	2028	2029	Thereafter
2018	\$0	5.26	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	12,484,391	5.28	2,364,468	662,051	0	0	0	0	0	0
2020	0	5.30	0	0	0	0	0	0	0	0
2021	104,813,640	5.30	19,776,158	19,776,158	19,776,158	5,932,850	0	0	0	0
2022	0	5.55	0	0	0	0	0	0	0	0
2023	72,119,593	5.46	13,208,717	13,208,717	13,208,717	13,208,717	13,208,717	6,076,008	0	0
2024	0	5.40	N/A	0	0	0	0	0	0	0
Net increase (decrease) in pension expense			\$35,349,343	\$33,646,926	\$32,984,875	\$19,141,567	\$13,208,717	\$6,076,008	\$0	\$0

As described on page 28, the average of the expected remaining service lives of all employees that are provided with pensions through EBMUDERS (active and inactive employees) determined as of June 30, 2022 (the beginning of the measurement period ending June 30, 2023) is 5.40 years.

Amortization amounts prior to June 30, 2023 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 68 reports.

Section 2: GASBS 68 Information

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

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

Reporting Date for Employer under GASBS 68, Year Ended June 30	Effects of Assumption Changes	Recognition Period (Years)	Reporting Date for Employer under GASBS 68 Year Ended June 30:							
			2023	2024	2025	2026	2027	2028	2029	Thereafter
2018	\$(97,406,812)	5.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	(33,250,637)	5.00	(6,650,129)	0	0	0	0	0	0	0
2020	28,415,280	5.00	5,683,056	5,683,056	0	0	0	0	0	0
2021	84,827,970	5.00	16,965,594	16,965,594	16,965,594	0	0	0	0	0
2022	(355,823,425)	5.00	(71,164,685)	(71,164,685)	(71,164,685)	(71,164,685)	0	0	0	0
2023	404,174,665	5.00	80,834,933	80,834,933	80,834,933	80,834,933	80,834,933	0	0	0
2024	(79,610,526)	5.00	N/A	(15,922,105)	(15,922,105)	(15,922,105)	(15,922,105)	(15,922,106)	0	0
Net increase (decrease) in pension expense			\$25,668,769	\$16,396,793	\$10,713,737	\$(6,251,857)	\$64,912,828	\$(15,922,106)	\$0	\$0

The differences between projected and actual earnings on pension plan investments are recognized over a five-year period per Paragraph 33b. of GASBS 68.

Amortization amounts prior to June 30, 2023 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 68 reports.

Section 2: GASBS 68 Information

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

Total Increase (Decrease) in Pension Expense

Reporting Date for Employer under GASBS 68, Year Ended June 30	Total Differences	Reporting Date for Employer under GASBS 68 Year Ended June 30:							
		2023	2024	2025	2026	2027	2028	2029	Thereafter
2018	\$(120,047,882)	\$(1,119,140)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	27,815,007	4,915,334	3,238,329	0	0	0	0	0	0
2020	54,388,947	10,583,748	10,583,748	1,470,207	0	0	0	0	0
2021	183,442,370	35,572,084	35,572,084	35,572,084	5,581,950	0	0	0	0
2022	(393,288,972)	(77,915,234)	(77,915,234)	(77,915,234)	(77,915,234)	(3,712,802)	0	0	0
2023	531,101,852	104,081,671	104,081,671	104,081,671	104,081,671	104,081,671	10,693,497	0	0
2024	(27,742,138)	N/A	(6,316,848)	(6,316,848)	(6,316,848)	(6,316,848)	(6,316,849)	3,842,103	0
Net increase (decrease) in pension expense		\$76,118,463	\$69,243,750	\$56,891,880	\$25,431,539	\$94,052,021	\$4,376,648	\$3,842,103	\$0

Amortization amounts prior to June 30, 2023 have been omitted from this exhibit. These amounts can be found in prior years' GASBS 68 reports.

Section 2: GASBS 68 Information

Allocation of changes in total Net Pension Liability

In addition to the amounts shown in the *Schedule of Recognition of Changes in Total Net Pension Liability*, there are changes in each system's proportionate share of the total Net Pension Liability during the measurement period ending on June 30, 2023. The net effect of the change on the system's proportionate share of the collective Net Pension 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, 2023 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 Retirement System.

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended June 30, 2023

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASBS 68 Year Ended June 30:					
			2024	2025	2026	2027	2028	2029
Water System	\$(573,945)	5.40	\$(106,286)	\$(106,286)	\$(106,286)	\$(106,286)	\$(106,286)	\$(42,515)
Wastewater System	573,945	5.40	106,286	106,286	106,286	106,286	106,286	42,515
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Increase (Decrease) in Pension 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 68 Year Ended June 30:					
			2023	2024	2025	2026	2027	2028
Water System	\$814,134	5.46	\$149,109	\$149,109	\$149,109	\$149,109	\$149,109	\$68,589
Wastewater System	(814,134)	5.46	(149,109)	(149,109)	(149,109)	(149,109)	(149,109)	(68,589)
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASBS 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension 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 68 Year Ended June 30:					
			2022	2023	2024	2025	2026	2027
Water System	\$333,948	5.55	\$60,171	\$60,171	\$60,171	\$60,171	\$60,171	\$33,093
Wastewater System	(333,948)	5.55	(60,171)	(60,171)	(60,171)	(60,171)	(60,171)	(33,093)
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Increase (Decrease) in Pension 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 68 Year Ended June 30:					
			2021	2022	2023	2024	2025	2026
Water System	\$1,026,398	5.30	\$193,660	\$193,660	\$193,660	\$193,660	\$193,660	\$58,098
Wastewater System	(1,026,398)	5.30	(193,660)	(193,660)	(193,660)	(193,660)	(193,660)	(58,098)
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASBS 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension 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 68 Year Ended June 30:					
			2020	2021	2022	2023	2024	2025
Water System	\$1,097,699	5.30	\$207,113	\$207,113	\$207,113	\$207,113	\$207,113	\$62,134
Wastewater System	<u>(1,097,699)</u>	5.30	<u>(207,113)</u>	<u>(207,113)</u>	<u>(207,113)</u>	<u>(207,113)</u>	<u>(207,113)</u>	<u>(62,134)</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Increase (Decrease) in Pension 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 68 Year Ended June 30:					
			2019	2020	2021	2022	2023	2024
Water System	\$(19,471)	5.28	\$(3,688)	\$(3,688)	\$(3,688)	\$(3,688)	\$(3,688)	\$(1,031)
Wastewater System	<u>19,471</u>	5.28	<u>3,688</u>	<u>3,688</u>	<u>3,688</u>	<u>3,688</u>	<u>3,688</u>	<u>1,031</u>
Total for all Systems	\$0		\$0	\$0	\$0	\$0	\$0	\$0

Section 2: GASBS 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension 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 68 Year Ended June 30:					
			2018	2019	2020	2021	2022	2023
Water System	\$790,361	5.26	\$150,259	\$150,259	\$150,259	\$150,259	\$150,259	\$39,066
Wastewater System	(790,361)	5.26	(150,259)	(150,259)	(150,259)	(150,259)	(150,259)	(39,066)
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, 2023 Measurement Date and Employer Reporting as of June 30, 2024:

Rationale for Assumptions:	The information and analysis used in selecting each assumption 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 and the June 30, 2022 Economic Assumptions Review report dated November 8, 2022. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both tiers. These assumptions were adopted by the Board.
Economic Assumptions:	
Net Investment Return:	6.75%; net of investment expenses.
Employee Contribution Crediting Rate:	6.75%, compounded semi-annually.
Cost of Living Adjustment (COLA):	Retiree COLA increases of 2.75% per year. For members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3.00% per year.
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.
Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 2.50% per year from the valuation date.
Increase in California Government Code Section 7522.10 Compensation Limit:	Increase of 2.50% per year from the valuation date.

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 promotion increases:

Merit and Promotion Increases	
Time from Hire (Years)	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

Demographic Assumptions:

Post-Retirement Mortality Rates:

Healthy Members:

- Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020.

Disabled Members:

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

Beneficiaries:

- Pub-2010 Contingent Survivor Amount-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.

Section 3: Actuarial Assumptions and Methods and Appendices

Pre-Retirement Mortality Rates:

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

Age	Rate (%)	
	Male	Female
20	0.04	0.01
25	0.02	0.01
30	0.03	0.01
35	0.04	0.02
40	0.06	0.03
45	0.09	0.05
50	0.13	0.08
55	0.19	0.11
60	0.28	0.17
65	0.41	0.27

Generational projections beyond the base year (2010) are not reflected in the above mortality rates.

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

Disabilities 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

Age	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 Rates:

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 receive the full 2.60% per year of service accrual.

² For ages 62 and over, all 1955/1980 Plan members who are eligible for retirement receive the full 2.60% per year of service accrual.

Section 3: Actuarial Assumptions and Methods and Appendices

Retirement Age for Inactive Vested Members:	59 1955/1980 Plan non-reciprocal members who are currently terminated with less than five years of service and are not vested are assumed to retire at age 65 if they decide to leave their contributions on deposit.										
Reciprocity:	15% of members who terminate with a vested benefit are assumed to enter a reciprocal system. For reciprocals, 3.75% compensation increases are assumed per annum.										
Future Benefit Accruals:	1.0 year of service per year of employment, plus 0.038 years of additional service to anticipate conversion of unused sick leave for each year of employment. As directed by EBMUDERS, this assumption has been applied to active members in the 1955/1980 Plan and the 2013 Tier.										
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.										
Percent Married/Domestic Partnership:	For all active and inactive members, 85% of male members and 60% of female members are assumed to be married or with domestic partner at pre-retirement death or retirement.										
Age and Gender of Spouse/Domestic Partner:	For all active and inactive members, male members are assumed to have a female spouse who is 2 years younger than the member and female members are assumed to have a male spouse who is 3 years older than the member. Since birth dates for non-spouse/non-domestic partner contingent beneficiaries are not provided by EBMUDERS, the age differences noted above also apply to assumed contingent beneficiaries of retired members who chose an optional form of payment at retirement.										
Form of Payment:	At retirement, members with spouses or domestic partners are assumed to elect the following form of payment (single members are assumed to elect the Unmodified option): <table border="1"> <thead> <tr> <th>Form of Payment</th> <th>Election Percentage</th> </tr> </thead> <tbody> <tr> <td>Unmodified or Option 1</td> <td>50%</td> </tr> <tr> <td>Option 2 (100% Continuance)</td> <td>10%</td> </tr> <tr> <td>Option 3 (50% Continuance)</td> <td>20%</td> </tr> <tr> <td>Option 4 (25% Continuance)</td> <td>20%</td> </tr> </tbody> </table>	Form of Payment	Election Percentage	Unmodified or Option 1	50%	Option 2 (100% Continuance)	10%	Option 3 (50% Continuance)	20%	Option 4 (25% Continuance)	20%
Form of Payment	Election Percentage										
Unmodified or Option 1	50%										
Option 2 (100% Continuance)	10%										
Option 3 (50% Continuance)	20%										
Option 4 (25% Continuance)	20%										
Actuarial Funding Policy:											
Actuarial Cost Method:	Entry Age Cost Method. Entry Age is the age at the member's hire date. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formula for each individual had always been in effect (i.e., "replacement life within a tier.").										

Section 3: Actuarial Assumptions and Methods and Appendices

Actuarial Value of Assets:	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.
Expected Remaining Service Lives:	The average of the expected service lives of all employees is determined by: <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.
Changes in Actuarial Assumptions:	There have been no changes in actuarial assumptions since the last valuation.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix A: Projection of Plan Fiduciary Net Position for use in the Calculation of Discount Rate as of June 30, 2023 (\$ in millions)

Year Beginning July 1,	Projected Beginning Plan's Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan's Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2022	\$2,005	\$117	\$140	\$2	\$214	\$2,194
2023	2,194	124	158	2	146	2,305
2024	2,305	126	162	3	154	2,420
2025	2,420	127	171	3	161	2,534
2026	2,534	132	179	3	169	2,653
2027	2,653	132	187	3	176	2,771
2028	2,771	133	196	3	184	2,889
2029	2,889	134	204	3	192	3,007
2030	3,007	128	212	3	199	3,119
2031	3,119	129	221	3	207	3,230
2057	3,168	11 *	310	3	203	3,068
2058	3,068	10 *	307	3	196	2,964
2059	2,964	10 *	302	3	189	2,857
2060	2,857	9 *	298	3	182	2,748
2061	2,748	9 *	292	3	175	2,636
2087	220	3 *	55	0 **	13	180
2088	180	2 *	47	0 **	10	145
2089	145	2 *	40	0 **	8	116
2090	116	2 *	33	0 **	7	91
2091	91	2 *	27	0 **	5	70
2120	0 **	0 **, **	0 **	0 **	0 **	0 **
2121	0 **	0 **, **	0 **	0 **	0 **	0 **
2122	0 **	0 **, **	0 **	0 **	0 **	0 **
2123	0 **	0 **, **	0 **	0 **	0 **	0 **
2124	0 **	0 **, **	0 **	0 **	0 **	0 **

* Mainly attributable to employer contributions to fund each year's annual administrative expenses.

** Less than \$1 million, when rounded.

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.

Section 3: Actuarial Assumptions and Methods and Appendices

Notes:

- (1) Amounts may not total exactly due to rounding.
- (2) Amounts shown for the year beginning July 1, 2022 row are actual amounts, based on the financial statements provided by EBMUDERS.
- (3) Years 2032-2056, 2062-2086, and 2092-2119 have been omitted from this table.
- (4) Column (a): None of the projected beginning Plan Fiduciary Net Position amounts shown have been adjusted for the time value of money.
- (5) Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of June 30, 2023); plus employer contributions to the unfunded actuarial accrued liability; plus contributions to fund each year's annual administrative expenses reflecting a 20-year amortization schedule. Contributions are assumed to occur halfway through the year, on average.
- (6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2023. The projected benefit payments reflect the cost of living increase assumptions used in the June 30, 2023 funding valuation report. Benefit payments are assumed to occur halfway through the year, on average. In accordance with paragraph 31.b.(1)(e) of GASB Statement No. 67, the long-term expected rate of return on Plan investments of 6.75% was applied to all periods of projected benefit payments to determine the discount rate.
- (7) Column (d): Projected administrative expenses are calculated as approximately 0.11% of the projected beginning Plan Fiduciary Net Position amount. The 0.11% portion was based on the actual fiscal year 2022 - 2023 administrative expenses as a percentage of the beginning Plan Fiduciary Net Position amount as of July 1, 2022. Administrative expenses are assumed to occur halfway through the year, on average.
- (8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 6.75% per annum.
- (9) As illustrated in this Exhibit, the Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected 'cross-over date' when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 6.75% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2023 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.
- (10) This projection is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. 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.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix B: Definition of Terms

Definitions of certain terms as they are used in Statement 68. The terms may have different meanings in other contexts.

Actuarial Present Value of Projected Benefit Payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation:	The determination, as of a point in time (the actuarial valuation date), of the service cost, Total Pension Liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date:	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution:	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad Hoc Cost-of-Living Adjustments (Ad Hoc COLAs):	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad Hoc Postemployment Benefit Changes:	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Automatic Cost-of-Living Adjustments (Automatic COLAs):	Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Automatic Postemployment Benefit Changes:	Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Cost-of-Living Adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (Cost-Sharing Pension Plan):	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered Payroll:	Payroll on which contributions to the pension plan are based.
Defined Benefit Pension Plans:	Pension plans that are used to provide defined benefit pensions.

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Defined Benefit Pensions:	Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)
Defined Contribution Pension Plans:	Pension plans that are used to provide defined contribution pensions.
Defined Contribution Pensions:	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
Discount Rate:	<p>The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:</p> <ol style="list-style-type: none">1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension Plan Fiduciary Net Position is projected (under the requirements of Statement 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments.2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.
Entry Age Actuarial Cost Method:	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the actuarial accrued liability.
Inactive Employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Multiple-Employer Defined Benefit Pension Plan:	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Net Pension Liability (NPL):	The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit pension plan.

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Other Postemployment Benefits:	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Pension Plans:	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed and benefits are paid as they come due.
Pensions:	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
Plan Members:	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment:	The period after employment.
Postemployment Benefit Changes:	Adjustments to the pension of an inactive employee.
Postemployment Healthcare Benefits:	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
Projected Benefit Payments:	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public Employee Retirement System:	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real Rate of Return:	The rate of return on an investment after adjustment to eliminate inflation.
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single-Employer Defined Benefit Pension Plan (Single-Employer Pension Plan):	A defined benefit pension plan that is used to provide pensions to employees of only one employer.
Termination Benefits:	Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.
Total Pension Liability (TPL):	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement 68.