

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

## **Governmental Accounting Standards Board Statement (GASBS) 68**

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 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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**Segal**



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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) 68 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 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 black ink that reads "Andy Yeung".

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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, 2023. 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, 2022. This valuation is based on:

- The benefit provisions of the Retirement System, as administered by the Board;
- The characteristics of covered active members, vested terminated members, and retired members and beneficiaries as of June 30, 2022, provided by the Retirement System;
- The assets of the Plan as of June 30, 2022, provided by the Retirement System;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2022 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc., adopted by the Board for the June 30, 2022 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 still 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, 2023 and 2022. The NPL 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 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, 2022 and 2021 are not adjusted or rolled forward to the June 30, 2023 and 2022 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, 2022 Retirement Plan funding valuation report dated March 2, 2023 (*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, 2022 Retirement Plan and HIB Plan valuations, we note that the funded ratio on the PBO (and market value) basis is 70.8% for both plans combined, as shown in the Supplemental Exhibits report dated March 2, 2023.

3. The NPL increased from \$335 million as of June 30, 2021 to \$830 million as of June 30, 2022. This was mainly due to the approximate return on the market value of assets for the Pension Plan of -10.88% during 2021/2022 that was less than the assumption of 7.00% used in the June 30, 2021 valuation (that loss was about \$404 million for the Pension Plan). 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 Pension Liability on page 17.
4. There was an increase in the total employer pension expense from \$38.0 million calculated last year to \$132.0 million calculated this year. The primary cause of the increase was the -10.88% return on the market value of assets for the year ended June 30, 2022 that was less than the assumption of 7.00% used in the June 30, 2021 valuation. (The expensed portion of current-period differences between actual and projected earnings on plan investments resulted in an \$80.8 million increase in this year's pension expense.)
5. The discount rates used to determine the TPLs and NPLs as of June 30, 2022 and 2021 were 6.75% and 7.00%, respectively, following the same assumptions used by the System in the pension funding valuations as of the same dates. The detailed calculations used in the derivation of the discount rate of 6.75% used in the calculation of the TPL and NPL as of June 30, 2022

## Section 1: Actuarial Valuation Summary

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, 2022. 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, 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 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 21-22.

8. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2022. Due to the COVID-19 pandemic, market conditions have changed significantly since the onset of the Public Health Emergency. 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 does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2022. While it is impossible to determine how the pandemic will affect market conditions and other demographic experience of the plan in future valuations, Segal is available to prepare projections of potential outcomes upon request.

## Section 1: Actuarial Valuation Summary

### Summary of key valuation results

| Reporting Date for Employer under GASBS 68                       |  | June 30, 2023 <sup>1</sup>                         | June 30, 2022 <sup>2</sup>                         |
|--|--|--|--|
| Measurement Date for Employer under GASBS 68                     |  | June 30, 2022                                      | June 30, 2021                                      |
| <b>Disclosure elements for fiscal year ending June 30:</b>       | • Service cost <sup>3</sup>                        | \$51,705,682                                       | \$52,212,279                                       |
|  | • Total Pension Liability                          | 2,835,771,092                                      | 2,605,613,762                                      |
|  | • Plan Fiduciary Net Position                      | 2,005,352,000                                      | 2,270,763,000                                      |
|  | • Net Pension Liability                            | 830,419,092  | 334,850,762  |
|  | • Pension expense                                  | 131,977,941  | 37,975,389   |
| <b>Schedule of contributions for fiscal year ending June 30:</b> | • Actuarially determined contributions             | \$91,393,000                                       | \$79,252,000                                       |
|  | • Actual contributions                             | 91,393,000   | 79,252,000   |
|  | • Contribution deficiency/(excess)                 | 0  | 0  |
| <b>Demographic data for plan year ending June 30:</b>            | • Number of retired members and beneficiaries      | 2,048  | 1,977  |
|  | • Number of vested terminated members <sup>4</sup> | 360  | 327  |
|  | • Number of active members                         | 1,895  | 1,896  |
| <b>Key assumptions as of June 30:</b>                            | • Investment rate of return                        | 6.75%  | 7.00%  |
|  | • Inflation rate                                   | 2.50%  | 2.75%  |
|  | • Cost-of-Living Adjustment (COLA)                 | 2.75%  | 2.75%  |
|  | • Projected salary increases <sup>5</sup>          | Ranges from 9.25% to 3.75% based on time from hire | Ranges from 9.50% to 4.00% based on time from hire |

<sup>1</sup> The reporting date and measurement date for the plan are June 30, 2022.

<sup>2</sup> The reporting date and measurement date for the plan are June 30, 2021.

<sup>3</sup> 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 valuations as of June 30, 2021 and June 30, 2020, respectively. Both service costs have been calculated using the assumptions shown in the June 30, 2021 measurement date column, as there had been no changes in the actuarial assumptions between the June 30, 2020 and June 30, 2021 valuations.

<sup>4</sup> Includes inactive members due a refund of contributions.

<sup>5</sup> Includes inflation at 2.50% (2.75% for the June 30, 2021 measurement date) 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

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension 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:

|                              |  |
|------------------------------|--|
| <b>Plan of benefits</b>      | 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.  |
| <b>Participant data</b>      | 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.   |
| <b>Assets</b>                | 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.  |
| <b>Actuarial assumptions</b> | In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable. |
| <b>Models</b>                | 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:

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The actuarial valuation is prepared at the request of the Board to assist the sponsors of the Fund 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.

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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.

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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

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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

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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 benefits<sup>1</sup> 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, 2022, Pension Plan membership consisted of the following:

|  |              |
|--|--------------|
| Retired members and beneficiaries currently receiving benefits                     | 2,048        |
| Vested terminated members entitled to, but not yet receiving benefits <sup>2</sup> | 360          |
| Active members   | <u>1,895</u> |
| <b>Total</b>   | <b>4,303</b> |

<sup>1</sup> 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.

<sup>2</sup> 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%.<sup>1</sup>

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

<sup>1</sup> 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

EBMUDERS' actuary after the completion of the annual actuarial valuation. The average employer contribution rate as of June 30, 2022 for 2021-2022 (based on contribution rates adopted for the June 30, 2020 valuation) was 39.07% 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, 2022 for 2021-2022 (based on the June 30, 2020 valuation) was 8.94% of covered payroll.

## Section 2: GASBS 68 Information

### Net Pension Liability

The components of the Net Pension Liability were as follows:

| <b>Reporting Date for Employer under GASBS 68</b>                          | <b>June 30, 2023</b> | <b>June 30, 2022</b> |
|--|----------------------|----------------------|
| <b>Measurement Date for Employer under GASBS 68</b>                        | <b>June 30, 2022</b> | <b>June 30, 2021</b> |
| Total Pension Liability  | \$2,835,771,092      | \$2,605,613,762      |
| Plan Fiduciary Net Position  | (2,005,352,000)      | (2,270,763,000)      |
| <b>Net Pension Liability</b>   | <b>\$830,419,092</b> | <b>\$334,850,762</b> |
| Plan Fiduciary Net Position as a percentage of the Total Pension Liability | 70.72%               | 87.15%               |

The Net Pension Liability was measured as of June 30, 2022 and 2021. 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, 2022 and 2021, respectively.

*Plan provisions.* The plan provisions used in the measurement of the NPL 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.

*Actuarial assumptions.* The TPL 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 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, 2022 funding actuarial valuation for EBMUDERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

|                                   |   |
|-----------------------------------|---|
| <b>Investment rate of return:</b> | 6.75%, net of Pension Plan investment expense, including inflation  |
| <b>Inflation:</b>                 | 2.50%   |
| <b>Cost-of-living adjustment:</b> | 2.75%   |
| <b>Salary increases:</b>          | Ranges from 9.25% to 3.75% based on time from hire, including inflation and real across the board salary increase |
| <b>Other assumptions:</b>         | Same as those used in the June 30, 2022 actuarial valuation   |

## Section 2: GASBS 68 Information

The TPL 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. They are the same as the assumptions used in the June 30, 2021 funding actuarial valuation for EBMUDERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

|                                   |   |
|-----------------------------------|---|
| <b>Investment rate of return:</b> | 7.00%, net of Pension Plan investment expense, including inflation  |
| <b>Inflation:</b>                 | 2.75%   |
| <b>Cost-of-living adjustment:</b> | 2.75%   |
| <b>Salary increases:</b>          | Ranges from 9.50% to 4.00% based on time from hire, including inflation and real across the board salary increase |
| <b>Other assumptions:</b>         | Same as those used in the June 30, 2021 actuarial valuation   |

## 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, 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                            | <u>20.00%</u>     | 5.07%   |
| <b>Total</b>                             | <b>100.00%</b>    | <b>4.71%</b>                                      |

*Discount rate.* The discount rate used to measure the Total Pension Liability was 6.75% as of June 30, 2022 and 7.00% 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 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, 2022 and June 30, 2021.

## 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, 2022, 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<br>(5.75%) | Current Discount Rate<br>(6.75%) | 1% Increase<br>(7.75%) |
|------------------------------|------------------------|----------------------------------|------------------------|
| Water System                 | \$1,034,017,654        | \$714,351,412                    | \$450,160,815          |
| Wastewater System            | <u>168,006,989</u>     | <u>116,067,680</u>               | <u>73,142,043</u>      |
| <b>Total for all Systems</b> | <b>\$1,202,024,643</b> | <b>\$830,419,092</b>             | <b>\$523,302,858</b>   |



## Section 2: GASBS 68 Information

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

| Reporting Date for Employer under GASBS 68<br>Measurement Date for Employer under GASBS 68 | June 30, 2023<br>June 30, 2022 | June 30, 2022<br>June 30, 2021 |
|--|--------------------------------|--------------------------------|
| <b>Total Pension Liability</b>   |                                |                                |
| • Service cost <sup>1</sup>  | \$51,705,682                   | \$52,212,279                   |
| • Interest   | 181,464,461                    | 176,877,819                    |
| • Change of benefit terms  | 0                              | 0                              |
| • Differences between expected and actual experience                                       | 54,807,594                     | (37,465,547)                   |
| • Changes of assumptions   | 72,119,593                     | 0                              |
| • Benefit payments, including refunds of member contributions                              | (129,940,000)                  | (121,249,000)                  |
| <b>Net change in Total Pension Liability</b>   | <b>\$230,157,330</b>           | <b>\$70,375,551</b>            |
| <b>Total Pension Liability – beginning</b>   | <b><u>2,605,613,762</u></b>    | <b><u>2,535,238,211</u></b>    |
| <b>Total Pension Liability – ending</b>  | <b><u>\$2,835,771,092</u></b>  | <b><u>\$2,605,613,762</u></b>  |
| <b>Plan Fiduciary Net Position</b>   |                                |                                |
| • Contributions – employer   | \$91,393,000                   | \$79,252,000                   |
| • Contributions – employee   | 20,915,000                     | 19,136,000                     |
| • Net investment income  | (245,904,000)                  | 481,909,000                    |
| • Benefit payments, including refunds of member contributions                              | (129,940,000)                  | (121,249,000)                  |
| • Administrative expense   | (1,875,000)                    | (1,876,000)                    |
| • Other expense  | 0                              | 0                              |
| <b>Net change in Plan Fiduciary Net Position</b>   | <b>\$(265,411,000)</b>         | <b>\$457,172,000</b>           |
| <b>Plan Fiduciary Net Position – beginning</b>   | <b><u>2,270,763,000</u></b>    | <b><u>1,813,591,000</u></b>    |
| <b>Plan Fiduciary Net Position – ending</b>  | <b><u>\$2,005,352,000</u></b>  | <b><u>\$2,270,763,000</u></b>  |
| <b>Net Pension Liability – ending</b>  | <b><u>\$830,419,092</u></b>    | <b><u>\$334,850,762</u></b>    |
| Plan Fiduciary Net Position as a percentage of the Total Pension Liability                 | 70.72%                         | 87.15%                         |
| Covered payroll <sup>2</sup>   | \$233,939,981                  | \$221,809,447                  |
| Net Pension Liability as percentage of covered payroll                                     | 354.97%                        | 150.96%                        |

<sup>1</sup> 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 valuations as of June 30, 2021 and June 30, 2020, respectively. Both service costs have been calculated using the actuarial assumptions shown in the June 30, 2021 measurement date column on page 7, as there had been no changes in actuarial assumptions between the June 30, 2020 and June 30, 2021 valuations.

<sup>2</sup> 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 <sup>1</sup> | Contributions as a Percentage of Covered Payroll |
|--------------------|--------------------------------------|---|------------------------------------|------------------------------|--|
| 2013               | \$53,795,000                         | \$53,795,000  | \$0                                | \$153,706,944                | 35.00%   |
| 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%   |

<sup>1</sup> 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:

|                                |   |
|--------------------------------|---|
| <b>Valuation date:</b>         | 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   |
| <b>Actuarial cost method:</b>  | Entry Age Cost Method   |
| <b>Amortization method:</b>    | Level percent of payroll  |
| <b>Amortization period:</b>    | 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 (prior to July 1, 2021); and experience gains/losses are amortized over separate decreasing 20-year periods. On or after July 1, 2021, assumption or method changes are amortized over separate decreasing 20-year periods. |
| <b>Asset valuation method:</b> | 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

| <b>Actuarial assumptions:</b>                  |   |  |
|--|---|--|
| <b>Valuation Date:</b>                         | <b>June 30, 2020</b><br><b>(for the year ended June 30, 2022 ADC)</b>   | <b>June 30, 2019</b><br><b>(for the year ended June 30, 2021 ADC)</b>  |
| <b>Investment rate of return:</b>              | 7.00%   | 7.00%  |
| <b>Inflation rate:</b>                         | 2.75%   | 2.75%  |
| <b>Real across-the-board salary increase:</b>  | 0.50%   | 0.50%  |
| <b>Projected salary increases:<sup>1</sup></b> | Ranges from 9.50% to 4.00% based on time from hire  | Ranges from 9.25% to 3.75% based on years of service   |
| <b>Cost of living adjustments:</b>             | 2.75% per annum   | 2.75% per annum  |
| <b>Mortality:</b>                              | 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 improvement scale MP-2020 | Healthy: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Tables projected 20 years with the two-dimensional improvement Scale MP-2015, set forward two years for males and set forward one year for females |
| <b>Other assumptions:</b>                      | Same as those used in the June 30, 2020 funding actuarial valuation   | Same as those used in the June 30, 2019 funding actuarial valuation  |

<sup>1</sup> 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, 2020 to June 30, 2021

| System                        | Contributions       | Percentage*     |
|-------------------------------|---------------------|-----------------|
| Water System                  | \$68,048,000        | 85.863%         |
| Wastewater System             | 11,204,000          | 14.137%         |
| <b>Total for both Systems</b> | <b>\$79,252,000</b> | <b>100.000%</b> |

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

#### Allocation of June 30, 2021 Net Pension Liability

| System                        | Total NPL            | Percentage      |
|-------------------------------|----------------------|-----------------|
| Water System                  | \$287,512,298        | 85.863%         |
| Wastewater System             | 47,338,464           | 14.137%         |
| <b>Total for both Systems</b> | <b>\$334,850,762</b> | <b>100.000%</b> |

#### Notes:

Based on the July 1, 2020 through June 30, 2021 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, 2021 GASBS 67 valuation report dated January 11, 2022.

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, 2021 to June 30, 2022

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

\* 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%         |
| <b>Total for both Systems</b> | <b>\$830,419,092</b> | <b>100.000%</b> |

#### 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

### Pension expense

#### Total for All Systems

| Reporting Date for Employer under GASBS 68  | June 30, 2023        | June 30, 2022       |
|---|----------------------|---------------------|
| Measurement Date for Employer under GASBS 68  | June 30, 2022        | June 30, 2021       |
| • Service cost  | \$51,705,682         | \$52,212,279        |
| • Interest on the Total Pension Liability   | 181,464,461          | 176,877,819         |
| • 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                                       | 10,038,021           | (6,750,549)         |
| • Expensed portion of current-period changes of assumptions or other inputs   | 13,208,717           | 0                   |
| • Actual Member contributions   | (20,915,000)         | (19,136,000)        |
| • Projected earnings on plan investments  | (158,270,665)        | (126,085,575)       |
| • Expensed portion of current-period differences between actual and projected earnings on plan investments  | 80,834,933           | (71,164,685)        |
| • Administrative expense  | 1,875,000            | 1,876,000           |
| • Other expense   | 0                    | 0                   |
| • Recognition of beginning of year deferred outflows of resources as pension expense  | 58,890,963           | 61,751,645          |
| • Recognition of beginning of year deferred inflows of resources as pension expense   | (86,854,171)         | (31,605,545)        |
| • Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | 0                    | 0                   |
| <b>Pension Expense</b>  | <b>\$131,977,941</b> | <b>\$37,975,389</b> |

## Section 2: GASBS 68 Information

### Pension expense (continued)

#### Water System

| Reporting Date for Employer under GASBS 68  | June 30, 2023        | June 30, 2022       |
|---|----------------------|---------------------|
| Measurement Date for Employer under GASBS 68  | June 30, 2022        | June 30, 2021       |
| • Service cost  | \$44,478,776         | \$44,830,933        |
| • Interest on the Total Pension Liability   | 156,101,173          | 151,872,279         |
| • Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions        | 149,109              | 60,171              |
| • Current-period benefit changes  | 0                    | 0                   |
| • Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability                                       | 8,635,007            | (5,796,212)         |
| • Expensed portion of current-period changes of assumptions or other inputs   | 11,362,535           | 0                   |
| • Actual Member contributions   | (17,991,710)         | (16,430,709)        |
| • Projected earnings on plan investments  | (136,149,173)        | (108,260,627)       |
| • Expensed portion of current-period differences between actual and projected earnings on plan investments  | 69,536,634           | (61,104,003)        |
| • Administrative expense  | 1,612,931            | 1,610,786           |
| • Other expense   | 0                    | 0                   |
| • Recognition of beginning of year deferred outflows of resources as pension expense  | 50,659,773           | 53,021,702          |
| • Recognition of beginning of year deferred inflows of resources as pension expense   | (74,714,563)         | (27,137,411)        |
| • Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | <u>496,322</u>       | <u>608,407</u>      |
| <b>Pension Expense</b>  | <b>\$114,176,814</b> | <b>\$33,275,316</b> |



## Section 2: GASBS 68 Information

### Pension expense (continued)

#### Wastewater System

| Reporting Date for Employer under GASBS 68  | June 30, 2023       | June 30, 2022      |
|---|---------------------|--------------------|
| Measurement Date for Employer under GASBS 68  | June 30, 2022       | June 30, 2021      |
| • Service cost  | \$7,226,906         | \$7,381,346        |
| • Interest on the Total Pension Liability   | 25,363,288          | 25,005,540         |
| • Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions        | (149,109)           | (60,171)           |
| • Current-period benefit changes  | 0                   | 0                  |
| • Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability                                       | 1,403,014           | (954,337)          |
| • Expensed portion of current-period changes of assumptions or other inputs   | 1,846,182           | 0                  |
| • Actual Member contributions   | (2,923,290)         | (2,705,291)        |
| • Projected earnings on plan investments  | (22,121,492)        | (17,824,948)       |
| • Expensed portion of current-period differences between actual and projected earnings on plan investments  | 11,298,299          | (10,060,682)       |
| • Administrative expense  | 262,069             | 265,214            |
| • Other expense   | 0                   | 0                  |
| • Recognition of beginning of year deferred outflows of resources as pension expense  | 8,231,190           | 8,729,943          |
| • Recognition of beginning of year deferred inflows of resources as pension expense   | (12,139,608)        | (4,468,134)        |
| • Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | <u>(496,322)</u>    | <u>(608,407)</u>   |
| <b>Pension Expense</b>  | <b>\$17,801,127</b> | <b>\$4,700,073</b> |

## 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, 2023        | June 30, 2022        |
|--|----------------------|----------------------|
| Measurement Date for Employer under GASBS 68   | June 30, 2022        | June 30, 2021        |
| <b>Deferred Outflows of Resources</b>  |                      |                      |
| • Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>1</sup> | \$1,594,327          | \$1,433,000          |
| • Changes of assumptions or other inputs   | 105,058,093          | 68,287,843           |
| • Net excess of projected over actual earnings on Pension Plan investments (if any)  | 149,459,921          | 0                    |
| • Difference between actual and expected experience in the Total Pension Liability   | <u>53,716,750</u>    | <u>23,048,864</u>    |
| <b>• Total Deferred Outflows of Resources</b>  | <b>\$309,829,091</b> | <b>\$92,769,707</b>  |
| <b>Deferred Inflows of Resources</b>   |                      |                      |
| • Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>1</sup> | \$1,594,327          | \$1,433,000          |
| • Changes of assumptions or other inputs   | 0                    | 0                    |
| • Net excess of actual over projected earnings on Pension Plan investments (if any)  | 0                    | 229,045,975          |
| • Difference between expected and actual experience in the Total Pension Liability   | <u>26,654,685</u>    | <u>35,694,042</u>    |
| <b>• Total Deferred Inflows of Resources</b>   | <b>\$28,249,012</b>  | <b>\$266,173,017</b> |
| <b>Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:</b>      |                      |                      |
| <b>Reporting Date for Employer under GASBS 68 Year Ended June 30:</b>  |                      |                      |
| 2023   | N/A                  | \$(27,963,208)       |
| 2024   | \$75,560,598         | (28,521,073)         |
| 2025   | 63,208,728           | (40,872,943)         |
| 2026   | 31,748,387           | (72,333,284)         |
| 2027   | 100,368,869          | (3,712,802)          |
| 2028   | 10,693,497           | 0                    |
| Thereafter   | 0                    | 0                    |

<sup>1</sup> 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, 2023        | June 30, 2022        |
|--|----------------------|----------------------|
| Measurement Date for Employer under GASBS 68   | June 30, 2022        | June 30, 2021        |
| <b>Deferred Outflows of Resources</b>  |                      |                      |
| • Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>1</sup> | \$1,593,296          | \$1,428,281          |
| • Changes of assumptions or other inputs   | 90,374,123           | 58,633,866           |
| • Net excess of projected over actual earnings on Pension Plan investments (if any)  | 128,569,907          | 0                    |
| • Difference between actual and expected experience in the Total Pension Liability   | <u>46,208,760</u>    | <u>19,790,404</u>    |
| <b>• Total Deferred Outflows of Resources</b>  | <b>\$266,746,086</b> | <b>\$79,852,551</b>  |
| <b>Deferred Inflows of Resources</b>   |                      |                      |
| • Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>1</sup> | \$1,031              | \$4,719              |
| • Changes of assumptions or other inputs   | 0                    | 0                    |
| • Net excess of actual over projected earnings on Pension Plan investments (if any)  | 0                    | 196,665,327          |
| • Difference between expected and actual experience in the Total Pension Liability   | <u>22,929,160</u>    | <u>30,647,910</u>    |
| <b>• Total Deferred Inflows of Resources</b>   | <b>\$22,930,191</b>  | <b>\$227,317,956</b> |
| <b>Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:</b>      |                      |                      |
| <b>Reporting Date for Employer under GASBS 68 Year Ended June 30:</b>  |                      |                      |
| 2023   | N/A                  | \$(23,513,676)       |
| 2024   | \$65,608,515         | (24,029,084)         |
| 2025   | 54,839,118           | (34,778,695)         |
| 2026   | 27,578,293           | (61,989,127)         |
| 2027   | 86,522,514           | (3,154,823)          |
| 2028   | 9,267,455            | 0                    |
| Thereafter   | 0                    | 0                    |

<sup>1</sup> 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, 2023       | June 30, 2022       |
|--|---------------------|---------------------|
| Measurement Date for Employer under GASBS 68   | June 30, 2022       | June 30, 2021       |
| <b>Deferred Outflows of Resources</b>  |                     |                     |
| • Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>1</sup> | \$1,031             | \$4,719             |
| • Changes of assumptions or other inputs   | 14,683,970          | 9,653,977           |
| • Net excess of projected over actual earnings on Pension Plan investments (if any)  | 20,890,014          | 0                   |
| • Difference between actual and expected experience in the Total Pension Liability   | <u>7,507,990</u>    | <u>3,258,460</u>    |
| <b>• Total Deferred Outflows of Resources</b>  | <b>\$43,083,005</b> | <b>\$12,917,156</b> |
| <b>Deferred Inflows of Resources</b>   |                     |                     |
| • Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>1</sup> | \$1,593,296         | \$1,428,281         |
| • Changes of assumptions or other inputs   | 0                   | 0                   |
| • Net excess of actual over projected earnings on Pension Plan investments (if any)  | 0                   | 32,380,648          |
| • Difference between expected and actual experience in the Total Pension Liability   | <u>3,725,525</u>    | <u>5,046,132</u>    |
| <b>• Total Deferred Inflows of Resources</b>   | <b>\$5,318,821</b>  | <b>\$38,855,061</b> |
| <b>Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:</b>      |                     |                     |
| <b>Reporting Date for Employer under GASBS 68 Year Ended June 30:</b>  |                     |                     |
| 2023   | N/A                 | \$(4,449,532)       |
| 2024   | \$9,952,083         | (4,491,989)         |
| 2025   | 8,369,610           | (6,094,248)         |
| 2026   | 4,170,094           | (10,344,157)        |
| 2027   | 13,846,355          | (557,979)           |
| 2028   | 1,426,042           | 0                   |
| Thereafter   | 0                   | 0                   |

<sup>1</sup> 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, 2022. 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 5.46 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 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 <sup>1</sup> | 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 |
|--|---|--|------------------------------|---|--|
| 2014   | 100.0%                                  | \$538,906,127                                | \$153,706,944                | 350.61%   | 67.27%   |
| 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%   |

<sup>1</sup> 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 <sup>1</sup> | 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 |
|--|---|--|------------------------------|---|--|
| 2014   | 84.203%                                 | \$453,775,088                                | \$129,328,971                | 350.87%   | 67.27%   |
| 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%   |

<sup>1</sup> 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 <sup>1</sup> | 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 |
|--|---|--|------------------------------|---|--|
| 2014   | 15.797%                                 | \$85,131,039                                 | \$24,377,973                 | 349.21%   | 67.27%   |
| 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%   |

<sup>1</sup> 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, 2023        | June 30, 2022        |
|---|----------------------|----------------------|
| Measurement Date for Employer under GASBS 68                      | June 30, 2022        | June 30, 2021        |
| <b>Beginning Net Pension Liability</b>                            | <b>\$334,850,762</b> | <b>\$721,647,211</b> |
| • Pension Expense   | 131,977,941          | 37,975,389           |
| • Employer Contributions  | (91,393,000)         | (79,252,000)         |
| • New Net Deferred Inflows/Outflows                               | 427,020,181          | (315,373,738)        |
| • 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                  | 27,963,208           | (30,146,100)         |
| • Recognition of Prior Deferred Flows Due to Change in Proportion | <u>0</u>             | <u>0</u>             |
| <b>Ending Net Pension Liability</b>                               | <b>\$830,419,092</b> | <b>\$334,850,762</b> |

## Section 2: GASBS 68 Information

### Schedule of reconciliation of Net Pension Liability (continued)

#### Water System

| Reporting Date for Employer under GASBS 68                        | June 30, 2023        | June 30, 2022        |
|---|----------------------|----------------------|
| Measurement Date for Employer under GASBS 68                      | June 30, 2022        | June 30, 2021        |
| <b>Beginning Net Pension Liability</b>                            | <b>\$287,512,298</b> | <b>\$619,188,085</b> |
| • Pension Expense   | 114,176,814          | 33,275,316           |
| • Employer Contributions  | (78,619,000)         | (68,048,000)         |
| • New Net Deferred Inflows/Outflows                               | 367,335,569          | (270,788,776)        |
| • Change in Allocation of Prior Deferred Inflows/Outflows         | (277,762)            | 104,594              |
| • New Net Deferred Flows Due to Change in Proportion              | 665,025              | 273,777              |
| • Recognition of Prior Deferred Inflows/Outflows                  | 24,054,790           | (25,884,291)         |
| • Recognition of Prior Deferred Flows Due to Change in Proportion | <u>(496,322)</u>     | <u>(608,407)</u>     |
| <b>Ending Net Pension Liability</b>                               | <b>\$714,351,412</b> | <b>\$287,512,298</b> |

## Section 2: GASBS 68 Information

### Schedule of reconciliation of Net Pension Liability (continued)

#### Wastewater System

| Reporting Date for Employer under GASBS 68                        | June 30, 2023        | June 30, 2022        |
|---|----------------------|----------------------|
| Measurement Date for Employer under GASBS 68                      | June 30, 2022        | June 30, 2021        |
| <b>Beginning Net Pension Liability</b>                            | <b>\$47,338,464</b>  | <b>\$102,459,126</b> |
| • Pension Expense   | 17,801,127           | 4,700,073            |
| • Employer Contributions  | (12,774,000)         | (11,204,000)         |
| • New Net Deferred Inflows/Outflows                               | 59,684,612           | (44,584,962)         |
| • Change in Allocation of Prior Deferred Inflows/Outflows         | 277,762              | (104,594)            |
| • New Net Deferred Flows Due to Change in Proportion              | (665,025)            | (273,777)            |
| • Recognition of Prior Deferred Inflows/Outflows                  | 3,908,418            | (4,261,809)          |
| • Recognition of Prior Deferred Flows Due to Change in Proportion | <u>496,322</u>       | <u>608,407</u>       |
| <b>Ending Net Pension Liability</b>                               | <b>\$116,067,680</b> | <b>\$47,338,464</b>  |

## 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: |                     |                    |                    |                    |                    |                    |            |
|--|--|----------------------------|--|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|------------|
|  |  |                            | 2022   | 2023                | 2024               | 2025               | 2026               | 2027               | 2028               | Thereafter |
| 2017   | \$5,278,052  | 5.26                       | \$260,892  | \$0                 | \$0                | \$0                | \$0                | \$0                | \$0                | \$0        |
| 2018   | (22,641,070)                                       | 5.26                       | (4,304,386)  | (1,119,140)         | 0                  | 0                  | 0                  | 0                  | 0                  | 0          |
| 2019   | 48,581,253   | 5.28                       | 9,200,995  | 9,200,995           | 2,576,278          | 0                  | 0                  | 0                  | 0                  | 0          |
| 2020   | 25,973,667   | 5.30                       | 4,900,692  | 4,900,692           | 4,900,692          | 1,470,207          | 0                  | 0                  | 0                  | 0          |
| 2021   | (6,199,240)  | 5.30                       | (1,169,668)  | (1,169,668)         | (1,169,668)        | (1,169,668)        | (350,900)          | 0                  | 0                  | 0          |
| 2022   | (37,465,547)                                       | 5.55                       | (6,750,549)  | (6,750,549)         | (6,750,549)        | (6,750,549)        | (6,750,549)        | (3,712,802)        | 0                  | 0          |
| 2023   | 54,807,594   | 5.46                       | <u>N/A</u>   | <u>10,038,021</u>   | <u>10,038,021</u>  | <u>10,038,021</u>  | <u>10,038,021</u>  | <u>10,038,021</u>  | <u>4,617,489</u>   | <u>0</u>   |
| <b>Net increase (decrease) in pension expense</b>              |  |                            | <b>\$2,137,976</b>   | <b>\$15,100,351</b> | <b>\$9,594,774</b> | <b>\$3,588,011</b> | <b>\$2,936,572</b> | <b>\$6,325,219</b> | <b>\$4,617,489</b> | <b>\$0</b> |

As described on page 29, 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, 2021 (the beginning of the measurement period ending June 30, 2022) is 5.46 years.

Amortization amounts prior to June 30, 2022 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: |                     |                     |                     |                     |                     |                    |            |
|--|-------------------------------|----------------------------|--|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|------------|
|  |                               |                            | 2022   | 2023                | 2024                | 2025                | 2026                | 2027                | 2028               | Thereafter |
| 2017   | \$52,595,760                  | 5.26                       | \$2,599,790  | \$0                 | \$0                 | \$0                 | \$0                 | \$0                 | \$0                | \$0        |
| 2018   | 0                             | 5.26                       | 0  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                  | 0          |
| 2019   | 12,484,391                    | 5.28                       | 2,364,468  | 2,364,468           | 662,051             | 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          | 19,776,158          | 5,932,850           | 0                   | 0                  | 0          |
| 2022   | 0                             | 5.55                       | 0  | 0                   | 0                   | 0                   | 0                   | 0                   | 0                  | 0          |
| 2023   | 72,119,593                    | 5.46                       | N/A  | 13,208,717          | 13,208,717          | 13,208,717          | 13,208,717          | 13,208,717          | 6,076,008          | 0          |
| <b>Net increase (decrease) in pension expense</b>              |                               |                            | <b>\$24,740,416</b>  | <b>\$35,349,343</b> | <b>\$33,646,926</b> | <b>\$32,984,875</b> | <b>\$19,141,567</b> | <b>\$13,208,717</b> | <b>\$6,076,008</b> | <b>\$0</b> |

As described on page 29, 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, 2021 (the beginning of the measurement period ending June 30, 2022) is 5.46 years.

Amortization amounts prior to June 30, 2022 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 | Differences Between Projected and Actual Earnings | Recognition Period (Years) | Reporting Date for Employer under GASBS 68 Year Ended June 30: |                     |                     |                     |                    |                     |            |            |
|--|---|----------------------------|--|---------------------|---------------------|---------------------|--------------------|---------------------|------------|------------|
|  |   |                            | 2022   | 2023                | 2024                | 2025                | 2026               | 2027                | 2028       | Thereafter |
| 2017   | \$89,599,375                                      | 5.00                       | \$0  | \$0                 | \$0                 | \$0                 | \$0                | \$0                 | \$0        | \$0        |
| 2018   | (97,406,812)                                      | 5.00                       | (19,481,364)   | 0                   | 0                   | 0                   | 0                  | 0                   | 0          | 0          |
| 2019   | (33,250,637)                                      | 5.00                       | (6,650,127)  | (6,650,129)         | 0                   | 0                   | 0                  | 0                   | 0          | 0          |
| 2020   | 28,415,280  | 5.00                       | 5,683,056  | 5,683,056           | 5,683,056           | 0                   | 0                  | 0                   | 0          | 0          |
| 2021   | 84,827,970  | 5.00                       | 16,965,594   | 16,965,594          | 16,965,594          | 16,965,594          | 0                  | 0                   | 0          | 0          |
| 2022   | (355,823,425)                                     | 5.00                       | (71,164,685)   | (71,164,685)        | (71,164,685)        | (71,164,685)        | (71,164,685)       | 0                   | 0          | 0          |
| 2023   | 404,174,665                                       | 5.00                       | N/A  | 80,834,933          | 80,834,933          | 80,834,933          | 80,834,933         | 80,834,933          | 0          | 0          |
| <b>Net increase (decrease) in pension expense</b>              |   |                            | <b>\$(74,647,526)</b>  | <b>\$25,668,769</b> | <b>\$32,318,898</b> | <b>\$26,635,842</b> | <b>\$9,670,248</b> | <b>\$80,834,933</b> | <b>\$0</b> | <b>\$0</b> |

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, 2022 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: |                     |                     |                     |                     |                      |                     |            |
|--|-------------------|--|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|------------|
|  |                   | 2022   | 2023                | 2024                | 2025                | 2026                | 2027                 | 2028                | Thereafter |
| 2017   | \$147,473,187     | \$2,860,682  | \$0                 | \$0                 | \$0                 | \$0                 | \$0                  | \$0                 | \$0        |
| 2018   | (120,047,882)     | (23,785,750)   | (1,119,140)         | 0                   | 0                   | 0                   | 0                    | 0                   | 0          |
| 2019   | 27,815,007        | 4,915,336  | 4,915,334           | 3,238,329           | 0                   | 0                   | 0                    | 0                   | 0          |
| 2020   | 54,388,947        | 10,583,748   | 10,583,748          | 10,583,748          | 1,470,207           | 0                   | 0                    | 0                   | 0          |
| 2021   | 183,442,370       | 35,572,084   | 35,572,084          | 35,572,084          | 35,572,084          | 5,581,950           | 0                    | 0                   | 0          |
| 2022   | (393,288,972)     | (77,915,234)   | (77,915,234)        | (77,915,234)        | (77,915,234)        | (77,915,234)        | (3,712,802)          | 0                   | 0          |
| 2023   | 531,101,852       | N/A  | <u>104,081,671</u>  | <u>104,081,671</u>  | <u>104,081,671</u>  | <u>104,081,671</u>  | <u>104,081,671</u>   | <u>10,693,497</u>   | 0          |
| <b>Net increase (decrease) in pension expense</b>              |                   | <b>\$(47,769,134)</b>  | <b>\$76,118,463</b> | <b>\$75,560,598</b> | <b>\$63,208,728</b> | <b>\$31,748,387</b> | <b>\$100,368,869</b> | <b>\$10,693,497</b> | <b>\$0</b> |

Amortization amounts prior to June 30, 2022 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, 2022. 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, 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 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, 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)   |
| <b>Total for all Systems</b> | <b>\$0</b>                    |                            | <b>\$0</b>   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> |

#### 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)   |
| <b>Total for all Systems</b> | <b>\$0</b>                    |                            | <b>\$0</b>   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> |



## 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, 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            | <u>(1,026,398)</u>            | 5.30                       | <u>(193,660)</u>   | <u>(193,660)</u> | <u>(193,660)</u> | <u>(193,660)</u> | <u>(193,660)</u> | <u>(58,098)</u> |
| <b>Total for all Systems</b> | <b>\$0</b>                    |                            | <b>\$0</b>   | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>      |

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> |
| <b>Total for all Systems</b> | <b>\$0</b>                    |                            | <b>\$0</b>   | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>      |

## 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, 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> |
| <b>Total for all Systems</b> | <b>\$0</b>                    |                            | <b>\$0</b>   | <b>\$0</b>   | <b>\$0</b>   | <b>\$0</b>   | <b>\$0</b>   | <b>\$0</b>   |

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            | <u>(790,361)</u>              | 5.26                       | <u>(150,259)</u>   | <u>(150,259)</u> | <u>(150,259)</u> | <u>(150,259)</u> | <u>(150,259)</u> | <u>(39,066)</u> |
| <b>Total for all Systems</b> | <b>\$0</b>                    |                            | <b>\$0</b>   | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>      |

## 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, 2016

|                              | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GASBS 68 Year Ended June 30: |                  |                  |                  |                  |                 |
|------------------------------|-------------------------------|----------------------------|--|------------------|------------------|------------------|------------------|-----------------|
|                              |                               |                            | 2017   | 2018             | 2019             | 2020             | 2021             | 2022            |
| Water System                 | \$1,235,393                   | 5.26                       | \$234,866  | \$234,866        | \$234,866        | \$234,866        | \$234,866        | \$61,063        |
| Wastewater System            | <u>(1,235,393)</u>            | 5.26                       | <u>(234,866)</u>   | <u>(234,866)</u> | <u>(234,866)</u> | <u>(234,866)</u> | <u>(234,866)</u> | <u>(61,063)</u> |
| <b>Total for all Systems</b> | <b>\$0</b>                    |                            | <b>\$0</b>   | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>      |

# 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:

|   |  |
|---|--|
| <b>Rationale for Assumptions:</b>   | 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. |
| <b><u>Economic Assumptions:</u></b>   |  |
| <b>Net Investment Return:</b>   | 6.75%; net of investment expenses.   |
| <b>Employee Contribution Crediting Rate:</b>                                      | 6.75%, compounded semi-annually.   |
| <b>Cost of Living Adjustment (COLA):</b>  | 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.  |
| <b>Payroll Growth:</b>  | 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.   |
| <b>Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:</b>   | Increase of 2.50% per year from the valuation date.  |
| <b>Increase in California Government Code Section 7522.10 Compensation Limit:</b> | 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 <sup>1</sup> | 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 <sup>2</sup> | 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    |

<sup>1</sup> 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.

<sup>2</sup> 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

| <b>Retirement Age for Inactive Vested Members:</b> | 59<br>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.   |                 |                     |                        |     |                             |     |                            |     |                            |     |
|--|--|-----------------|---------------------|------------------------|-----|-----------------------------|-----|----------------------------|-----|----------------------------|-----|
| <b>Reciprocity:</b>                                | 15% of members who terminate with a vested benefit are assumed to enter a reciprocal system. For reciprocals, 4.00% compensation increases are assumed per annum.  |                 |                     |                        |     |                             |     |                            |     |                            |     |
| <b>Future Benefit Accruals:</b>                    | 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.   |                 |                     |                        |     |                             |     |                            |     |                            |     |
| <b>Unknown Data for Members:</b>                   | Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.   |                 |                     |                        |     |                             |     |                            |     |                            |     |
| <b>Percent Married/Domestic Partnership:</b>       | 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.   |                 |                     |                        |     |                             |     |                            |     |                            |     |
| <b>Age and Gender of Spouse/Domestic Partner:</b>  | 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.  |                 |                     |                        |     |                             |     |                            |     |                            |     |
| <b>Form of Payment:</b>                            | 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%  |                 |                     |                        |     |                             |     |                            |     |                            |     |
| <b>Actuarial Funding Policy:</b>                   |  |                 |                     |                        |     |                             |     |                            |     |                            |     |
| <b>Actuarial Cost Method:</b>                      | 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

|   |  |
|---|--|
| <b>Actuarial Value of Assets:</b>   | 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.  |
| <b>Expected Remaining Service Lives:</b>  | The average of the expected service lives of all employees is determined by: <ul style="list-style-type: none"> <li>• Calculating each active employee’s expected remaining service life as the present value of \$1 per year of future service at zero percent interest.</li> <li>• Setting the remaining service life to zero for each nonactive or retired member.</li> <li>• Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.</li> </ul> |
| <b>Justification for Change in Actuarial Assumptions:</b>                         | Based on the June 30, 2022 Economic Assumptions Review report dated November 8, 2022, the following actuarial assumptions were changed. Previously, these assumptions were:  |
| <b><u>Economic Assumptions:</u></b>   |  |
| <b>Net Investment Return:</b>   | 7.00%; net of investment expenses.   |
| <b>Employee Contribution Crediting Rate:</b>                                      | 7.00%, compounded semi-annually.   |
| <b>Payroll Growth:</b>  | Inflation of 2.75% 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.   |
| <b>Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:</b>   | Increase of 2.75% per year from the valuation date.  |
| <b>Increase in California Government Code Section 7522.10 Compensation Limit:</b> | Increase of 2.75% 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 2.75%, 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     |

## 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, 2022 (\$ in millions)

| 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) |
|------------------------|---|-----------------------------------|--------------------------------|---------------------------------------|-----------------------------------|--|
| 2021                   | \$2,271   | \$112                             | \$130                          | \$2                                   | -\$246                            | \$2,005  |
| 2022                   | 2,005   | 113                               | 148                            | 2                                     | 134                               | 2,102  |
| 2023                   | 2,102   | 116                               | 153                            | 2                                     | 140                               | 2,204  |
| 2024                   | 2,204   | 119                               | 161                            | 2                                     | 147                               | 2,308  |
| 2025                   | 2,308   | 121                               | 169                            | 2                                     | 154                               | 2,412  |
| 2026                   | 2,412   | 128                               | 177                            | 2                                     | 160                               | 2,521  |
| 2027                   | 2,521   | 128                               | 185                            | 2                                     | 168                               | 2,631  |
| 2028                   | 2,631   | 129                               | 193                            | 2                                     | 175                               | 2,740  |
| 2029                   | 2,740   | 130                               | 201                            | 2                                     | 182                               | 2,849  |
| 2030                   | 2,849   | 125                               | 208                            | 2                                     | 189                               | 2,952  |
| 2056                   | 2,933   | 8 *                               | 289                            | 2                                     | 187                               | 2,837  |
| 2057                   | 2,837   | 8 *                               | 285                            | 2                                     | 181                               | 2,738  |
| 2058                   | 2,738   | 7 *                               | 281                            | 2                                     | 175                               | 2,637  |
| 2059                   | 2,637   | 7 *                               | 276                            | 2                                     | 168                               | 2,534  |
| 2060                   | 2,534   | 6 *                               | 270                            | 2                                     | 161                               | 2,429  |
| 2086                   | 215   | 2 *                               | 52                             | 0 **                                  | 13                                | 177  |
| 2087                   | 177   | 2 *                               | 45                             | 0 **                                  | 10                                | 144  |
| 2088                   | 144   | 1 *                               | 38                             | 0 **                                  | 8                                 | 116  |
| 2089                   | 116   | 1 *                               | 32                             | 0 **                                  | 7                                 | 92   |
| 2090                   | 92  | 1 *                               | 26                             | 0 **                                  | 5                                 | 72   |
| 2119                   | 0 **  | 0 *, **                           | 0 **                           | 0 **                                  | 0 **                              | 0 **   |
| 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 **   |

\* 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, 2021 row are actual amounts, based on the financial statements provided by EBMUDERS.
- (3) Years 2031-2055, 2061-2085, and 2091-2118 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, 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. 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, 2022. The projected benefit payments reflect the cost of living increase 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 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 0.08% 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.
- (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, 2022 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.

|   |  |
|---|--|
| <b>Actuarial Present Value of Projected Benefit Payments:</b>                                   | Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.   |
| <b>Actuarial Valuation:</b>   | 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.   |
| <b>Actuarial Valuation Date:</b>  | The date as of which an actuarial valuation is performed.  |
| <b>Actuarially Determined Contribution:</b>   | 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.  |
| <b>Ad Hoc Cost-of-Living Adjustments (Ad Hoc COLAs):</b>  | Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.  |
| <b>Ad Hoc Postemployment Benefit Changes:</b>   | Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.  |
| <b>Automatic Cost-of-Living Adjustments (Automatic COLAs):</b>                                  | 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).     |
| <b>Automatic Postemployment Benefit Changes:</b>  | 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). |
| <b>Cost-of-Living Adjustments:</b>  | Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.   |
| <b>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (Cost-Sharing Pension Plan):</b> | 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.  |
| <b>Covered Payroll:</b>   | Payroll on which contributions to the pension plan are based.  |
| <b>Defined Benefit Pension Plans:</b>   | Pension plans that are used to provide defined benefit pensions.   |

## Section 3: Actuarial Assumptions and Methods and Appendices

|  |   |
|--|---|
| <b>Defined Benefit Pensions:</b>                       | 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.)   |
| <b>Defined Contribution Pension Plans:</b>             | Pension plans that are used to provide defined contribution pensions.   |
| <b>Defined Contribution Pensions:</b>                  | 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.   |
| <b>Discount Rate:</b>                                  | <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"><li>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.</li><li>2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.</li></ol> |
| <b>Entry Age Actuarial Cost Method:</b>                | 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.   |
| <b>Inactive Employees:</b>                             | Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.   |
| <b>Multiple-Employer Defined Benefit Pension Plan:</b> | A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.   |
| <b>Net Pension Liability (NPL):</b>                    | The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit pension plan.  |

## Section 3: Actuarial Assumptions and Methods and Appendices

|   |  |
|---|--|
| <b>Other Postemployment Benefits:</b>   | 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. |
| <b>Pension Plans:</b>   | Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed and benefits are paid as they come due.  |
| <b>Pensions:</b>  | 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.  |
| <b>Plan Members:</b>  | 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).                   |
| <b>Postemployment:</b>  | The period after employment.   |
| <b>Postemployment Benefit Changes:</b>  | Adjustments to the pension of an inactive employee.  |
| <b>Postemployment Healthcare Benefits:</b>  | Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.   |
| <b>Projected Benefit Payments:</b>  | 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.  |
| <b>Public Employee Retirement System:</b>   | 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.   |
| <b>Real Rate of Return:</b>   | The rate of return on an investment after adjustment to eliminate inflation.   |
| <b>Service Costs:</b>   | The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.  |
| <b>Single-Employer Defined Benefit Pension Plan (Single-Employer Pension Plan):</b> | A defined benefit pension plan that is used to provide pensions to employees of only one employer.   |
| <b>Termination Benefits:</b>  | 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.  |
| <b>Total Pension Liability (TPL):</b>   | 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.   |