

# Montgomery County Public Schools Employees' Retirement and Pension System

GASB Statement Nos. 67 and 68 Accounting and Financial  
Reporting for Pensions

Measured as of June 30, 2022

Applicable to Plan's Fiscal Year End June 30, 2022

Applicable to Employer's Fiscal Year End June 30, 2023





September 16, 2022

The Board of Trustees  
Montgomery County Public Schools Employees' Retirement and Pension System

Dear Board Members:

This report provides accounting and financial reporting information that is intended to comply with Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the Montgomery County Public Schools Employees' Retirement and Pension System ("MCPS ERS"). This report provides reporting information for fiscal year ending June 30, 2022 in accordance with GASB Statement No. 67 and for fiscal year ending June 30, 2023 in accordance with GASB Statement No. 68. These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The calculation of the plan's liability for this report is not applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the MCPS ERS only in its entirety and only with the permission of MCPS ERS.

The total pension liability, net pension liability and certain sensitivity information shown in this report are based upon information furnished to us by MCPS ERS and an actuarial valuation performed as of July 1, 2021. GRS projected the results from the actuarial valuation as of July 1, 2021, to the fiscal year ending June 30, 2022, using information from that report and generally accepted actuarial methods. We are not responsible for the accuracy or completeness of the information provided by MCPS.

This report complements the actuarial valuation report that was provided to MCPS ERS and should be considered in conjunction with that report. Please see the actuarial valuation report as of July 1, 2021 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation, and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled. We are relying on the GRS actuaries and Internal Software, Training and Processes Team who developed and maintain the model.


This report reflects the impact of COVID-19 through June 30, 2022 on assets, and through June 30, 2021 on member demographics. However, this report does not reflect the longer-term and still developing future impact of COVID-19, which is likely to further influence demographic experience and economic expectations. We will continue to monitor these developments and their impact on the Fund and the actuarial assumptions. Actual experience will be reflected in each subsequent annual valuation, as experience emerges.

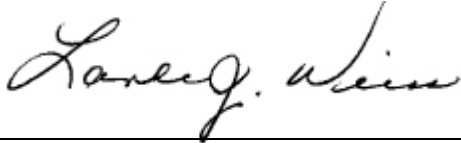
To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Montgomery County Public Schools Employees' Retirement and Pension System in accordance with the requirements of GASB Statement Nos. 67 and 68. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and with our understanding of GASB Statement Nos. 67 and 68.

The signing actuaries are independent of the plan sponsor.

Amy Williams and Lance Weiss are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,  
Gabriel, Roeder, Smith & Company

By   
Amy Williams, ASA, MAAA, FCA  
Senior Consultant

By   
Lance Weiss, EA, MAAA, FCA  
Senior Consultant and Team Leader



Auditor's Note – This information is intended to assist in preparation of the financial statements of the Montgomery County Public Schools Employees' Retirement and Pension System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.



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# SECTION A



## EXECUTIVE SUMMARY

# Executive Summary

## As of June 30, 2022

|   |               |
|---|---------------|
| Actuarial Valuation Date  | July 1, 2021  |
| Measurement Date of the Net Pension Liability                       | June 30, 2022 |
| Pension Plan's Fiscal Year Ending Date (Reporting Date) for GASB 67 | June 30, 2022 |
| Employer's Fiscal Year Ending Date (Reporting Date) for GASB 68     | June 30, 2023 |

### Membership

|                                |                  |
|--------------------------------|------------------|
| Number of                      |                  |
| - Retirees and Beneficiaries   | 14,476           |
| - Inactive, Nonretired Members | 8,114            |
| - Active Members               | 24,223           |
| - Total                        | 46,813           |
| Covered Payroll <sup>1</sup>   | \$ 1,760,070,058 |

### Net Pension Liability

|   |                  |
|---|------------------|
| Total Pension Liability   | \$ 2,539,582,525 |
| Plan Fiduciary Net Position   | 2,037,030,384    |
| Net Pension Liability   | \$ 502,552,141   |
| Plan Fiduciary Net Position as a Percentage<br>of Total Pension Liability | 80.21 %          |
| Net Pension Liability as a Percentage<br>of Covered Payroll               | 28.55 %          |

### Development of the Single Discount Rate

|   |        |
|---|--------|
| Single Discount Rate  | 6.75 % |
| Long-Term Expected Rate of Investment Return  | 6.75 % |
| Long-Term Municipal Bond Rate*  | 3.69 % |
| Last year ending June 30 in the 2022 to 2121 projection period<br>for which projected benefit payments are fully funded | 2121   |

**Total Pension Expense** \$ 71,341,266

### Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses

|   | Deferred Outflows<br>of Resources | Deferred Inflows<br>of Resources |
|---|-----------------------------------|----------------------------------|
| Difference between expected and actual experience                               | \$ 12,657,252                     | \$ 40,981,214                    |
| Changes in assumptions  | 100,082,556                       | 92,887,657                       |
| Difference between projected and actual earnings<br>on pension plan investments | 153,464,635                       | 0                                |
| Employer Contributions Subsequent to June 30, 2022                              | TBD                               |                                  |
| <b>Total</b>  | <b>\$ 266,204,443</b>             | <b>\$ 133,868,871</b>            |

<sup>1</sup> Payroll for active members from census data as of July 1, 2021, rolled forward with one year of payroll growth of 2.75%.

\*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 30, 2022. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.



# Discussion

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## Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain non-actuarial information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

## Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to MCPS ERS subsequent to the measurement date of June 30, 2022.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.





# Discussion

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## Notes to Financial Statements

GASB Statement No. 68 requires disclosure of the total pension expense, the pension plan's liabilities and assets and deferred outflows and inflows of resources related to pensions in the notes of the employer's financial statements.

GASB Statement Nos. 67 and 68 require disclosure of certain additional information in the notes of the financial statements for the employers and pension plans. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position and the net pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than the rate used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional non-actuarial information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

## Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.



# Discussion

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## Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of July 1, 2021, and a measurement date of June 30, 2022, and is applicable for the fiscal year ending June 30, 2022 for GASB Statement No. 67 and for the fiscal year ending June 30, 2023 for GASB Statement No. 68. For GASB Statement No. 68 for fiscal years ending prior to June 30, 2018, the actuarial valuation date and the measurement date were the same and were one year prior to the applicable fiscal year.

## Roll-Forward Methodology

The July 1, 2021 Total Pension Liability was rolled-forward to the June 30, 2022 measurement date by applying one year of service cost (increases TPL), actual benefit payments and refunds during the year (reduces TPL), and an interest rate adjustment assuming the end of year Single Discount Rate of 6.75%. A full year of interest was applied to the beginning of year TPL and one-half year of interest was applied to the service cost and benefit payments.

## Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) a tax-exempt municipal bond rate based on an index of 20-year mixed maturity general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.75%; the municipal bond rate is 3.69% (based on the most recent date available on or before the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 6.75%.

## Effective Date and Transition

GASB Statement Nos. 67 and 68 were effective for fiscal years beginning after June 15, 2013, and June 15, 2014, respectively.

## Changes in Assumptions

The MCPS Board of Education adopted a decrease in the investment return assumption from 7.00% to 6.75% effective with the funding valuation as of July 1, 2021. All other assumptions remain unchanged from the previous actuarial valuation.



## SECTION B

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### **FINANCIAL STATEMENTS**

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Montgomery County Public Schools Employees' Retirement and Pension System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

# Statement of Pension Expense under GASB Statement No. 68

## Fiscal Year Ended June 30, 2022\*

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### A. Expense

|   |           |                   |
|---|-----------|-------------------|
| 1. Service Cost   | \$        | 57,827,229        |
| 2. Interest on the Total Pension Liability                                  |           | 164,309,274       |
| 3. Current-Period Benefit Changes   |           | 0                 |
| 4. Employee Contributions (made negative for addition here)                 |           | (26,478,722)      |
| 5. Projected Earnings on Plan Investments (made negative for addition here) |           | (158,745,880)     |
| 6. Pension Plan Administrative Expense                                      |           | 0                 |
| 7. Other Changes in Plan Fiduciary Net Position                             |           | (2,139,761)       |
| 8. Recognition of Outflow (Inflow) of Resources due to Liabilities          |           | 792,738           |
| 9. Recognition of Outflow (Inflow) of Resources due to Assets               |           | 35,776,388        |
| <b>10. Total Pension Expense</b>  | <b>\$</b> | <b>71,341,266</b> |

### Recognition of Deferred Outflows and Inflows of Resources

Differences between expected and actual experience and changes in assumptions are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees who are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the current measurement period, the average expected remaining service lives of the 24,223 active employees in the plan was approximately 13.3599 years. Additionally, the total plan membership (active employees and inactive employees) was 46,813. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the current measurement period is 6.9130 years.

Additionally, differences between projected and actual earnings on pension plan investments should be recognized in pension expense using a systematic and rational method over a closed five-year period. For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

*\*Based on a measurement date of June 30, 2022. Will be used for fiscal year ending June 30, 2023. Employers' proportionate share of calculations of the net pension liability, pension expense and deferred inflows and outflows, if applicable, are outside the scope of this report.*



# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods

## Fiscal Year Ended June 30, 2022\*

| Increase (Decrease) in Pension Expense Arising from difference between expected and actual experience |   |                            |                               |                                   |                |                |                |                |                |              |
|---|---|----------------------------|-------------------------------|-----------------------------------|----------------|----------------|----------------|----------------|----------------|--------------|
| Year Ending June 30   | Difference between expected and actual experience | Recognition Period (Years) | Total Deferred (2023 & After) | Recognized in Year Ending June 30 |                |                |                |                |                |              |
|   |   |                            |                               | 2020 & Prior                      | 2021           | 2022           | 2023           | 2024           | 2025           | 2026 & After |
| 2014  | \$ (47,593,419)                                   | 12.1500                    | \$ (12,339,033)               | \$ (27,420,078)                   | \$ (3,917,154) | \$ (3,917,154) | \$ (3,917,154) | \$ (3,917,154) | \$ (3,917,154) | \$ (587,571) |
| 2015  | (18,234,988)                                      | 6.6600                     | -                             | (16,427,916)                      | (1,807,072)    | -              | -              | -              | -              | -            |
| 2016  | (22,132,062)                                      | 6.4300                     | -                             | (17,210,000)                      | (3,442,000)    | (1,480,062)    | -              | -              | -              | -            |
| 2017  | -   | 6.7926                     | -                             | -                                 | -              | -              | -              | -              | -              | -            |
| 2018  | 31,406,064  | 6.9793                     | 8,906,629                     | 13,499,661                        | 4,499,887      | 4,499,887      | 4,499,887      | 4,406,742      | -              | -            |
| 2019  | 8,963,079   | 6.8782                     | 3,750,623                     | 2,606,228                         | 1,303,114      | 1,303,114      | 1,303,114      | 1,303,114      | 1,144,395      | -            |
| 2020  | (13,391,489)                                      | 6.9738                     | (7,630,718)                   | (1,920,257)                       | (1,920,257)    | (1,920,257)    | (1,920,257)    | (1,920,257)    | (1,920,257)    | (1,869,947)  |
| 2021  | (13,117,169)                                      | 7.0246                     | (9,382,531)                   | -                                 | (1,867,319)    | (1,867,319)    | (1,867,319)    | (1,867,319)    | (1,867,319)    | (3,780,574)  |
| 2022  | (13,595,604)                                      | 6.9130                     | (11,628,932)                  | -                                 | (1,966,672)    | (1,966,672)    | (1,966,672)    | (1,966,672)    | (1,966,672)    | (5,728,916)  |
| Total   |   |                            | (28,323,962)                  | (46,872,362)                      | (7,150,801)    | (5,348,463)    | (3,868,401)    | (3,961,546)    | (8,527,007)    | (11,967,008) |

| Increase (Decrease) in Pension Expense Arising from changes in assumptions |                        |                            |                               |                                   |              |              |              |              |              |              |
|--|------------------------|----------------------------|-------------------------------|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Year Ending June 30  | Changes in assumptions | Recognition Period (Years) | Total Deferred (2023 & After) | Recognized in Year Ending June 30 |              |              |              |              |              |              |
|  |                        |                            |                               | 2020 & Prior                      | 2021         | 2022         | 2023         | 2024         | 2025         | 2026 & After |
| 2014   | \$ -                   | 12.1500                    | \$ -                          | \$ -                              | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| 2015   | 93,368,251             | 6.6600                     | -                             | 84,115,542                        | 9,252,709    | -            | -            | -            | -            | -            |
| 2016   | -                      | 6.4300                     | -                             | -                                 | -            | -            | -            | -            | -            | -            |
| 2017   | -                      | 6.7926                     | -                             | -                                 | -            | -            | -            | -            | -            | -            |
| 2018   | 132,086,081            | 6.9793                     | 37,459,056                    | 56,776,215                        | 18,925,405   | 18,925,405   | 18,925,405   | 18,533,651   | -            | -            |
| 2019   | -                      | 6.8782                     | -                             | -                                 | -            | -            | -            | -            | -            | -            |
| 2020   | (163,012,720)          | 6.9738                     | (92,887,657)                  | (23,375,021)                      | (23,375,021) | (23,375,021) | (23,375,021) | (23,375,021) | (23,375,021) | (22,762,594) |
| 2021   | -                      | 7.0246                     | -                             | -                                 | -            | -            | -            | -            | -            | -            |
| 2022   | 73,214,317             | 6.9130                     | 62,623,500                    | -                                 | -            | 10,590,817   | 10,590,817   | 10,590,817   | 10,590,817   | 30,851,049   |
| Total  |                        |                            | 7,194,899                     | 117,516,736                       | 4,803,093    | 6,141,201    | 6,141,201    | 5,749,447    | (12,784,204) | 8,088,455    |

| Increase (Decrease) in Pension Expense Arising from net difference between projected and actual earnings on pension plan investments |  |                            |                               |                                   |              |              |              |              |              |              |
|--|--|----------------------------|-------------------------------|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Year Ending June 30  | Difference between projected and actual earnings on pension plan investments | Recognition Period (Years) | Total Deferred (2023 & After) | Recognized in Year Ending June 30 |              |              |              |              |              |              |
|  |  |                            |                               | 2020 & Prior                      | 2021         | 2022         | 2023         | 2024         | 2025         | 2026 & After |
| 2014   | \$ (91,741,294)  | 5.0000                     | \$ -                          | \$ (91,741,294)                   | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| 2015   | 76,355,787   | 5.0000                     | -                             | 76,355,787                        | -            | -            | -            | -            | -            | -            |
| 2016   | 109,386,141  | 5.0000                     | -                             | 109,386,141                       | -            | -            | -            | -            | -            | -            |
| 2017   | (66,866,236)   | 5.0000                     | -                             | (53,492,988)                      | (13,373,248) | -            | -            | -            | -            | -            |
| 2018   | (13,546,903)   | 5.0000                     | -                             | (8,128,143)                       | (2,709,381)  | (2,709,379)  | -            | -            | -            | -            |
| 2019   | 41,119,798   | 5.0000                     | 8,223,958                     | 16,447,920                        | 8,223,960    | 8,223,960    | 8,223,958    | -            | -            | -            |
| 2020   | 106,615,483  | 5.0000                     | 42,646,192                    | 21,323,097                        | 21,323,097   | 21,323,097   | 21,323,095   | 21,323,095   | -            | -            |
| 2021   | (334,198,209)  | 5.0000                     | (200,518,925)                 | -                                 | (66,839,642) | (66,839,642) | (66,839,642) | (66,839,641) | (66,839,641) | -            |
| 2022   | 378,891,762  | 5.0000                     | 303,113,410                   | -                                 | -            | 75,778,352   | 75,778,352   | 75,778,352   | 75,778,352   | 75,778,354   |
| Total  |  |                            | 153,464,635                   | 70,150,520                        | (53,375,214) | 35,776,388   | 38,485,765   | 30,261,805   | 8,938,711    | 75,778,354   |

| Increase (Decrease) in Pension Expense Arising from All Sources |                  |                            |                               |                                   |                |                |                |                |                |              |
|---|------------------|----------------------------|-------------------------------|-----------------------------------|----------------|----------------|----------------|----------------|----------------|--------------|
| Year Ending June 30   | Total Difference | Recognition Period (Years) | Total Deferred (2023 & After) | Recognized in Year Ending June 30 |                |                |                |                |                |              |
|   |                  |                            |                               | 2020 & Prior                      | 2021           | 2022           | 2023           | 2024           | 2025           | 2026 & After |
| 2014  | \$ (139,334,713) | Varies by Type             | \$ (12,339,033)               | \$ (119,161,372)                  | \$ (3,917,154) | \$ (3,917,154) | \$ (3,917,154) | \$ (3,917,154) | \$ (3,917,154) | \$ (587,571) |
| 2015  | 151,489,050      | Varies by Type             | -                             | 144,043,413                       | 7,445,637      | -              | -              | -              | -              | -            |
| 2016  | 87,254,079       | Varies by Type             | -                             | 92,176,141                        | (3,442,000)    | (1,480,062)    | -              | -              | -              | -            |
| 2017  | (66,866,236)     | Varies by Type             | -                             | (53,492,988)                      | (13,373,248)   | -              | -              | -              | -              | -            |
| 2018  | 149,945,242      | Varies by Type             | 46,365,685                    | 62,147,733                        | 20,715,911     | 20,715,913     | 23,425,292     | 22,940,393     | -              | -            |
| 2019  | 50,082,877       | Varies by Type             | 11,974,581                    | 19,054,148                        | 9,527,074      | 9,527,074      | 9,527,072      | 1,303,114      | 1,144,395      | -            |
| 2020  | (69,788,726)     | Varies by Type             | (57,872,183)                  | (3,972,181)                       | (3,972,181)    | (3,972,181)    | (3,972,181)    | (3,972,183)    | (25,295,278)   | (24,632,541) |
| 2021  | (347,315,378)    | Varies by Type             | (209,901,456)                 | -                                 | (68,706,961)   | (68,706,961)   | (68,706,961)   | (68,706,961)   | (68,706,960)   | (3,780,574)  |
| 2022  | 438,510,475      | Varies by Type             | 354,107,978                   | -                                 | -              | 84,402,497     | 84,402,497     | 84,402,497     | 84,402,497     | 100,900,487  |
| Total   |                  |                            | 132,335,572                   | 140,794,894                       | (55,722,922)   | 36,569,126     | 40,758,565     | 32,049,706     | (12,372,500)   | 71,899,801   |

\*Based on a measurement date of June 30, 2022. Will be used for fiscal year ending June 30, 2023. Employers' proportionate share of calculations of the net pension liability, pension expense and deferred inflows and outflows, if applicable, are outside the scope of this report. Amounts prior to fiscal year 2017 were calculated by the prior actuary.



# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods

## Fiscal Year Ended June 30, 2022\*

|   | Total              |                    | Outflow of Resources              |                   |                   |                   |                   |                    |  |
|---|--------------------|--------------------|-----------------------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--|
|   | Deferred           |                    | Recognized in Year Ending June 30 |                   |                   |                   |                   |                    |  |
|   | (2023 & After)     | 2020 & Prior       | 2021                              | 2022              | 2023              | 2024              | 2025              | 2026 & After       |  |
| Difference between expected and actual experience               | \$ 12,657,252      | \$ 16,105,889      | \$ 5,803,001                      | \$ 5,803,001      | \$ 5,803,001      | \$ 5,709,856      | \$ 1,144,395      | \$ -               |  |
| Changes in assumptions  | 100,082,556        | 140,891,757        | 28,178,114                        | 29,516,222        | 29,516,222        | 29,124,468        | 10,590,817        | 30,851,049         |  |
| Difference between projected and actual earnings on investments | 153,464,635        | 70,150,520         | (53,375,214)                      | 35,776,388        | 38,485,765        | 30,261,805        | 8,938,711         | 75,778,354         |  |
| <b>Total</b>  | <b>266,204,443</b> | <b>227,148,166</b> | <b>(19,394,099)</b>               | <b>71,095,611</b> | <b>73,804,988</b> | <b>65,096,129</b> | <b>20,673,923</b> | <b>106,629,403</b> |  |

|   | Total                |                     | (Inflows) of Resources            |                     |                     |                     |                     |                     |  |
|---|----------------------|---------------------|-----------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--|
|   | Deferred             |                     | Recognized in Year Ending June 30 |                     |                     |                     |                     |                     |  |
|   | (2023 & After)       | 2020 & Prior        | 2021                              | 2022                | 2023                | 2024                | 2025                | 2026 & After        |  |
| Difference between expected and actual experience               | \$ (40,981,214)      | \$ (62,978,251)     | \$ (12,953,802)                   | \$ (11,151,464)     | \$ (9,671,402)      | \$ (9,671,402)      | \$ (9,671,402)      | \$ (11,967,008)     |  |
| Changes in assumptions  | (92,887,657)         | (23,375,021)        | (23,375,021)                      | (23,375,021)        | (23,375,021)        | (23,375,021)        | (23,375,021)        | (22,762,594)        |  |
| Difference between projected and actual earnings on investments | -                    | -                   | -                                 | -                   | -                   | -                   | -                   | -                   |  |
| <b>Total</b>  | <b>(133,868,871)</b> | <b>(86,353,272)</b> | <b>(36,328,823)</b>               | <b>(34,526,485)</b> | <b>(33,046,423)</b> | <b>(33,046,423)</b> | <b>(33,046,423)</b> | <b>(34,729,602)</b> |  |

|                   | Total              |                    | Increase (Decrease) in Pension Expense Arising from Assets and Liabilities |                   |                   |                   |                     |                   |  |
|-------------------|--------------------|--------------------|--|-------------------|-------------------|-------------------|---------------------|-------------------|--|
|                   | Deferred           |                    | Recognized in Year Ending June 30  |                   |                   |                   |                     |                   |  |
|                   | (2023 & After)     | 2020 & Prior       | 2021   | 2022              | 2023              | 2024              | 2025                | 2026 & After      |  |
| Total Liabilities | \$ (21,129,063)    | \$ 70,644,374      | \$ (2,347,708)   | \$ 792,738        | \$ 2,272,800      | \$ 1,787,901      | \$ (21,311,211)     | \$ (3,878,553)    |  |
| Total Assets      | 153,464,635        | 70,150,520         | (53,375,214)   | 35,776,388        | 38,485,765        | 30,261,805        | 8,938,711           | 75,778,354        |  |
| <b>Total</b>      | <b>132,335,572</b> | <b>140,794,894</b> | <b>(55,722,922)</b>  | <b>36,569,126</b> | <b>40,758,565</b> | <b>32,049,706</b> | <b>(12,372,500)</b> | <b>71,899,801</b> |  |

\*Based on a measurement date of June 30, 2022. Will be used for fiscal year ending June 30, 2023. Employers' proportionate share of calculations of the net pension liability, pension expense and deferred inflows and outflows, if applicable, are outside the scope of this report. Amounts prior to fiscal year 2017 were calculated by the prior actuary.



# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2022\*

## A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

|                       | Outflows<br>of Resources | Inflows<br>of Resources | Net Outflows<br>(Inflows) of Resources |
|-----------------------|--------------------------|-------------------------|--|
| 1. Due to Liabilities | \$ 35,319,223            | \$ 34,526,485           | \$ 792,738                             |
| 2. Due to Assets      | 35,776,388               | 0                       | 35,776,388                             |
| <b>3. Total</b>       | <b>\$ 71,095,611</b>     | <b>\$ 34,526,485</b>    | <b>\$ 36,569,126</b>                   |

## B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

|   | Outflows<br>of Resources | Inflows<br>of Resources | Net Outflows<br>(Inflows) of Resources |
|---|--------------------------|-------------------------|--|
| 1. Differences between expected and actual experience                           | \$ 5,803,001             | \$ 11,151,464           | \$ (5,348,463)                         |
| 2. Assumption Changes   | 29,516,222               | 23,375,021              | 6,141,201                              |
| 3. Difference between projected and actual earnings on pension plan investments | 35,776,388               | 0                       | 35,776,388                             |
| <b>4. Total</b>   | <b>\$ 71,095,611</b>     | <b>\$ 34,526,485</b>    | <b>\$ 36,569,126</b>                   |

## C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

|   | Deferred Outflows<br>of Resources | Deferred Inflows<br>of Resources | Net Deferred Outflows<br>(Inflows) of Resources |
|---|-----------------------------------|----------------------------------|---|
| 1. Differences between expected and actual experience                           | \$ 12,657,252                     | \$ 40,981,214                    | \$ (28,323,962)                                 |
| 2. Assumption Changes   | 100,082,556                       | 92,887,657                       | 7,194,899                                       |
| 3. Difference between projected and actual earnings on pension plan investments | 153,464,635                       | 0                                | 153,464,635                                     |
| <b>4. Total</b>   | <b>\$ 266,204,443</b>             | <b>\$ 133,868,871</b>            | <b>\$ 132,335,572</b>                           |

## D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

| Year Ending<br>June 30 | Net Deferred Outflows<br>(Inflows) of Resources |
|------------------------|---|
| 2023                   | \$ 40,758,565                                   |
| 2024                   | 32,049,706                                      |
| 2025                   | (12,372,500)                                    |
| 2026                   | 57,315,068                                      |
| 2027                   | 6,756,826                                       |
| Thereafter             | 7,827,907                                       |
| <b>Total</b>           | <b>\$ 132,335,572</b>                           |

## E. Deferred Outflow of Resources Due to Employer Contributions Subsequent to June 30, 2022 but before June 30, 2023

TBD

Employer contributions that were made subsequent to the measurement date of the net pension liability of June 30, 2022, and prior to the end of the employer's reporting period of June 30, 2023, should be reported by the employer as a deferred outflow of resources related to pensions. The information contained in this report does not incorporate any contributions made subsequent to the measurement date of June 30, 2022.

*\*Based on a measurement date of June 30, 2022. Will be used for fiscal year ending June 30, 2023. Employers' proportionate share of calculations of the net pension liability, pension expense and deferred inflows and outflows, if applicable, are outside the scope of this report. Amounts prior to fiscal year 2017 were calculated by the prior actuary.*



# Statement of Fiduciary Net Position

## As of June 30, 2022

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|   | <b>2022</b>             |
|---|-------------------------|
| <b>Assets</b>                               |                         |
| Investments, at fair value                  |                         |
| Global equities                             | \$ 1,069,808,657        |
| Fixed income securities                     | 516,408,879             |
| Real estate                                 | 109,522,646             |
| Alternative investments                     | 299,169,170             |
| Short-term investments                      | 41,370,347              |
| <b>Total Investments</b>                    | <b>\$ 2,036,279,699</b> |
| Receivables                                 |                         |
| Accounts receivable                         | \$ 0                    |
| Due from general fund                       | 750,685                 |
| <b>Total Assets</b>                         | <b>\$ 2,037,030,384</b> |
| <b>Liabilities</b>                          |                         |
| Payables                                    |                         |
| Accounts payable                            | \$ 0                    |
| Claims payable                              | 0                       |
| Due to general fund                         | 0                       |
| <b>Total Liabilities</b>                    | <b>\$ 0</b>             |
| <b>Net Position Restricted for Pensions</b> | <b>\$ 2,037,030,384</b> |

*Values may not add up due to rounding.*





## Statement of Changes in Fiduciary Net Position For Year Ended June 30, 2022

|   | <b>2022</b>             |
|---|-------------------------|
| <b>Additions</b>                            |                         |
| Contributions                               |                         |
| Employer                                    | \$ 70,507,843           |
| Member                                      | 26,478,722              |
| Total Contributions                         | \$ 96,986,565           |
| Other Income                                | \$ 2,139,761            |
| Investment Income                           |                         |
| Net increase in fair value of investments   | \$ (226,642,352)        |
| Interest and dividends                      | 19,460,121              |
| Gross Investment Income                     | \$ (207,182,231)        |
| Less investment expense                     |                         |
| Investment fees and other                   | 12,963,651              |
| Net investment income                       | \$ (220,145,882)        |
| <b>Total Additions</b>                      | <b>\$ (121,019,556)</b> |
| <b>Deductions</b>                           |                         |
| Benefits paid to plan members               | \$ 120,017,030          |
| Administrative expense                      | 0                       |
| <b>Total Deductions</b>                     | <b>\$ 120,017,030</b>   |
| <b>Net Increase in Net Position</b>         | <b>\$ (241,036,586)</b> |
| <b>Net Position Restricted for Pensions</b> |                         |
| Beginning of Year                           | \$ 2,278,066,970        |
| End of Year                                 | \$ 2,037,030,384        |

*Values may not add up due to rounding.*



## SECTION C

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### **REQUIRED SUPPLEMENTARY INFORMATION**

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Montgomery County Public Schools Employees' Retirement and Pension System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

# Schedule of Changes in Net Pension Liability and Related Ratios

## Current Reporting Period

### Fiscal Year Ended June 30, 2022\*

|  |                         |
|--|-------------------------|
| <b>A. Total pension liability</b>  |                         |
| 1. Service cost  | \$ 57,827,229           |
| 2. Interest on the total pension liability   | 164,309,274             |
| 3. Changes of benefit terms  | 0                       |
| 4. Difference between expected and actual experience of the total pension liability  | (13,595,604)            |
| 5. Changes of assumptions  | 73,214,317              |
| 6. Benefit payments, including refunds of employee contributions                     | (120,017,030)           |
| <b>7. Net change in total pension liability</b>                                      | <b>161,738,186</b>      |
| <b>8. Total pension liability – beginning</b>  | <b>2,377,844,339</b>    |
| <b>9. Total pension liability – ending</b>   | <b>\$ 2,539,582,525</b> |
| <b>B. Plan fiduciary net position</b>  |                         |
| 1. Contributions – employer  | \$ 70,507,843           |
| 2. Contributions – employee  | 26,478,722              |
| 3. Net investment income   | (220,145,882)           |
| 4. Benefit payments, including refunds of employee contributions                     | (120,017,030)           |
| 5. Pension plan administrative expense   | 0                       |
| 6. Other   | 2,139,761               |
| <b>7. Net change in plan fiduciary net position</b>                                  | <b>(241,036,586)</b>    |
| <b>8. Plan fiduciary net position – beginning</b>                                    | <b>2,278,066,970</b>    |
| <b>9. Plan fiduciary net position – ending</b>                                       | <b>\$ 2,037,030,384</b> |
| <b>C. Net pension liability</b>  | <b>\$ 502,552,141</b>   |
| <b>D. Plan fiduciary net position as a percentage of the total pension liability</b> | <b>80.21 %</b>          |
| <b>E. Covered-employee payroll</b>   | <b>\$ 1,760,070,058</b> |
| <b>F. Net pension liability as a percentage of covered-employee payroll</b>          | <b>28.55 %</b>          |

*Covered employee payroll is equal to the valuation payroll from the actuarial valuation as of July 1, 2021, rolled forward with one year of payroll growth at 2.75%.*

*Beginning of year total pension liability based on an actuarial valuation date of July 1, 2020, with the results rolled forward to a measurement date of June 30, 2021.*

*End of year total pension liability based on an actuarial valuation date of July 1, 2021, with the results rolled forward to a measurement date of June 30, 2022.*

*\*Applicable for fiscal year ending June 30, 2022, for GASB Statement No. 67 and June 30, 2023, for GASB Statement No. 68.*

*Values may not add up due to rounding.*



# Schedules of Required Supplementary Information

## GASB 68 – Schedule of Changes in Net Pension Liability and Related Ratios Multiyear

| Employer Fiscal year ending June 30,  | 2023                    | 2022                    | 2021                    | 2020                    | 2019                    | 2018                    | 2017                    | 2016                    | 2015                    | 2014 |
|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------|
| <b>Total pension liability</b>  |                         |                         |                         |                         |                         |                         |                         |                         |                         |      |
| Service cost  | \$ 57,827,229           | \$ 57,102,963           | \$ 54,379,440           | \$ 51,411,385           | \$ 50,395,825           | \$ 44,436,725           | \$ 43,500,877           | \$ 53,269,208           | \$ 53,238,295           |      |
| Interest on the total pension liability                                       | 164,309,274             | 158,332,579             | 163,070,418             | 155,248,918             | 146,658,956             | 141,159,580             | 135,814,794             | 123,895,167             | 120,371,102             |      |
| Changes of benefit terms  | -                       | (1,537,714)             | -                       | -                       | -                       | -                       | -                       | -                       | -                       |      |
| Difference between expected and actual experience                             | (13,595,604)            | (13,117,169)            | (13,391,489)            | 8,963,079               | 31,406,064              | -                       | (22,132,062)            | (18,234,988)            | (47,593,419)            |      |
| Changes of assumptions  | 73,214,317              | -                       | (163,012,720)           | -                       | 132,086,081             | -                       | -                       | 93,368,251              | -                       |      |
| Benefit payments, including refunds of employee contributions                 | (120,017,030)           | (111,635,349)           | (108,552,381)           | (102,247,449)           | (95,135,058)            | (90,109,676)            | (85,230,639)            | (81,971,251)            | (76,147,472)            |      |
| <b>Net change in total pension liability</b>                                  | <b>161,738,186</b>      | <b>89,145,310</b>       | <b>(67,506,732)</b>     | <b>113,375,933</b>      | <b>265,411,868</b>      | <b>95,486,629</b>       | <b>71,952,970</b>       | <b>170,326,387</b>      | <b>49,868,506</b>       |      |
| <b>Total pension liability - beginning</b>                                    | <b>2,377,844,339</b>    | <b>2,288,699,029</b>    | <b>2,356,205,761</b>    | <b>2,242,829,828</b>    | <b>1,977,417,960</b>    | <b>1,881,931,331</b>    | <b>1,809,978,361</b>    | <b>1,639,651,974</b>    | <b>1,589,783,468</b>    |      |
| <b>Total pension liability - ending (a)</b>                                   | <b>\$ 2,539,582,525</b> | <b>\$ 2,377,844,339</b> | <b>\$ 2,288,699,029</b> | <b>\$ 2,356,205,761</b> | <b>\$ 2,242,829,828</b> | <b>\$ 1,977,417,960</b> | <b>\$ 1,881,931,331</b> | <b>\$ 1,809,978,361</b> | <b>\$ 1,639,651,974</b> |      |
| <b>Plan fiduciary net position</b>  |                         |                         |                         |                         |                         |                         |                         |                         |                         |      |
| Employer contributions  | \$ 70,507,843           | \$ 70,919,230           | \$ 86,941,255           | \$ 88,769,344           | \$ 79,863,596           | \$ 65,877,870           | \$ 74,861,086           | \$ 83,498,517           | \$ 80,544,815           |      |
| Employee contributions  | 26,478,722              | 25,715,329              | 25,526,536              | 24,951,070              | 24,323,349              | 23,749,197              | 22,949,001              | 22,486,721              | 21,578,300              |      |
| Pension plan net investment income  | (220,145,882)           | 461,878,831             | 20,090,221              | 79,565,869              | 124,868,624             | 172,942,114             | (3,391,963)             | 26,441,619              | 179,375,231             |      |
| Benefit payments, including refunds of employee contributions                 | (120,017,030)           | (111,635,349)           | (108,552,381)           | (102,247,449)           | (95,135,058)            | (90,109,676)            | (85,230,639)            | (81,971,251)            | (76,147,472)            |      |
| Pension plan administrative expense   | 0                       | (380,559)               | (1,166,352)             | (1,475,279)             | (1,209,068)             | (1,151,736)             | (2,012,071)             | (2,217,291)             | (2,163,665)             |      |
| Other   | 2,139,761               | -                       | -                       | -                       | -                       | -                       | -                       | -                       | -                       |      |
| <b>Net change in plan fiduciary net position</b>                              | <b>(241,036,586)</b>    | <b>446,497,482</b>      | <b>22,839,279</b>       | <b>89,563,555</b>       | <b>132,711,443</b>      | <b>171,307,769</b>      | <b>7,175,414</b>        | <b>48,238,315</b>       | <b>203,187,209</b>      |      |
| <b>Plan fiduciary net position - beginning</b>                                | <b>2,278,066,970</b>    | <b>1,831,569,488</b>    | <b>1,808,730,209</b>    | <b>1,719,166,654</b>    | <b>1,586,455,212</b>    | <b>1,415,147,443</b>    | <b>1,407,972,029</b>    | <b>1,359,733,714</b>    | <b>1,156,546,505</b>    |      |
| <b>Plan fiduciary net position - ending (b)</b>                               | <b>\$ 2,037,030,384</b> | <b>\$ 2,278,066,970</b> | <b>\$ 1,831,569,488</b> | <b>\$ 1,808,730,209</b> | <b>\$ 1,719,166,655</b> | <b>\$ 1,586,455,212</b> | <b>\$ 1,415,147,443</b> | <b>\$ 1,407,972,029</b> | <b>\$ 1,359,733,714</b> |      |
| <b>Net pension liability - ending (a) - (b)</b>                               | <b>\$ 502,552,141</b>   | <b>\$ 99,777,369</b>    | <b>\$ 457,129,541</b>   | <b>\$ 547,475,552</b>   | <b>\$ 523,663,173</b>   | <b>\$ 390,962,748</b>   | <b>\$ 466,783,888</b>   | <b>\$ 402,006,332</b>   | <b>\$ 279,918,260</b>   |      |
| <b>Plan fiduciary net position as a percentage of total pension liability</b> | <b>80.21 %</b>          | <b>95.80 %</b>          | <b>80.03 %</b>          | <b>76.76 %</b>          | <b>76.65 %</b>          | <b>80.23 %</b>          | <b>75.20 %</b>          | <b>77.79 %</b>          | <b>82.93 %</b>          |      |
| <b>Covered-employee payroll</b>   | <b>\$ 1,760,070,058</b> | <b>\$ 1,706,582,045</b> | <b>\$ 1,630,158,866</b> | <b>\$ 1,600,129,357</b> | <b>\$ 1,563,346,475</b> | <b>\$ 1,468,494,379</b> | <b>\$ 1,425,722,698</b> | <b>\$ 1,429,764,138</b> | <b>\$ 1,390,868,330</b> |      |
| <b>Net pension liability as a percentage of covered-employee payroll</b>      | <b>28.55 %</b>          | <b>5.85 %</b>           | <b>28.04 %</b>          | <b>34.21 %</b>          | <b>33.50 %</b>          | <b>26.62 %</b>          | <b>32.74 %</b>          | <b>28.12 %</b>          | <b>20.13 %</b>          |      |

Amounts prior to fiscal year 2018 were calculated by the prior actuary.

Ten fiscal years will be built prospectively.

Covered employee payroll for employer fiscal years ending June 30, 2019 and June 30, 2020, is based on payroll data provided as of the actuarial valuation date increased with one year of payroll growth at 3.00%.

Covered employee payroll for employer fiscal year ending June 30, 2021, June 30, 2022, and June 30, 2023 is based on payroll data provided as of the actuarial valuation date increased with one year of payroll growth at 2.75%.

The measurement date of the net pension liability is one year prior to the employer's applicable fiscal year.

The actuarial valuation date is one year prior to the measurement date for GASB 68 beginning with the measurement date of June 30, 2017. Prior to the measurement date of June 30, 2017, the actuarial valuation date was the same as the measurement date for GASB 68.



## Schedules of Required Supplementary Information

### GASB 68 – Schedule of the Net Pension Liability Multiyear

| FY Ending<br>June 30, | Total<br>Pension<br>Liability | Plan Net<br>Position | Net Pension<br>Liability | Plan Net Position<br>as a % of Total<br>Pension Liability | Covered<br>Payroll | Net Pension Liability<br>as a % of<br>Covered Payroll |
|-----------------------|-------------------------------|----------------------|--------------------------|---|--------------------|---|
| 2015                  | \$ 1,639,651,974              | \$ 1,359,733,714     | \$ 279,918,260           | 82.93 %   | \$ 1,390,868,330   | 20.13 %   |
| 2016                  | 1,809,978,361                 | 1,407,972,029        | 402,006,332              | 77.79 %   | 1,429,764,138      | 28.12 %   |
| 2017                  | 1,881,931,331                 | 1,415,147,443        | 466,783,888              | 75.20 %   | 1,425,722,698      | 32.74 %   |
| 2018                  | 1,977,417,960                 | 1,586,455,212        | 390,962,748              | 80.23 %   | 1,468,494,379      | 26.62 %   |
| 2019                  | 2,242,829,828                 | 1,719,166,655        | 523,663,173              | 76.65 %   | 1,563,346,475      | 33.50 %   |
| 2020                  | 2,356,205,761                 | 1,808,730,209        | 547,475,552              | 76.76 %   | 1,600,129,357      | 34.21 %   |
| 2021                  | 2,288,699,029                 | 1,831,569,488        | 457,129,541              | 80.03 %   | 1,630,158,866      | 28.04 %   |
| 2022                  | 2,377,844,339                 | 2,278,066,970        | 99,777,369               | 95.80 %   | 1,706,582,045      | 5.85 %  |
| 2023                  | 2,539,582,525                 | 2,037,030,384        | 502,552,141              | 80.21 %   | 1,760,070,058      | 28.55 %   |

Amounts prior to fiscal year 2018 were calculated by the prior actuary.

Ten fiscal years will be built prospectively.

Covered employee payroll for employer fiscal years ending June 30, 2019 and June 30, 2020, is based on payroll data provided as of the actuarial valuation date increased with one year of payroll growth at 3.00%.

Covered employee payroll for employer fiscal year ending June 30, 2021, June 30, 2022, and June 30, 2023 is based on payroll data provided as of the actuarial valuation date increased with one year of payroll growth at 2.75%.

The measurement date of the net pension liability is one year prior to the employer's applicable fiscal year.

The actuarial valuation date is one year prior to the measurement date for GASB 68 beginning with the measurement date of June 30, 2017. Prior to the measurement date of June 30, 2017, the actuarial valuation date was the same as the measurement date for GASB 68.



## Schedule of Contributions Multiyear

| FY Ending<br>June 30, | Actuarially<br>Determined<br>Contribution | Actual<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Covered<br>Payroll | Actual Contribution<br>as a % of<br>Covered Payroll |
|-----------------------|---|------------------------|--|--------------------|---|
| 2014                  | \$ 79,016,414                             | \$ 80,544,815          | \$ (1,528,401)                         | \$ 1,390,868,330   | 5.79 %  |
| 2015                  | 44,295,412                                | 83,498,517             | (39,203,105)                           | 1,429,764,138      | 5.84 %  |
| 2016                  | 58,384,555                                | 74,861,086             | (16,476,531)                           | 1,425,722,698      | 5.25 %  |
| 2017                  | 59,762,674                                | 65,877,870             | (6,115,196)                            | 1,468,494,379      | 4.49 %  |
| 2018                  | 58,627,379                                | 79,863,596             | (21,236,217)                           | 1,563,346,475      | 5.11 %  |
| 2019                  | 73,119,150                                | 88,769,344             | (15,650,194)                           | 1,600,129,357      | 5.55 %  |
| 2020                  | 73,016,807                                | 86,941,255             | (13,924,448)                           | 1,630,158,866      | 5.33 %  |
| 2021                  | 61,688,473                                | 70,919,230             | (9,230,757)                            | 1,706,582,045      | 4.16 %  |
| 2022                  | 62,184,996                                | 70,507,843             | (8,322,847)                            | 1,760,070,058      | 4.01 %  |

*Amounts prior to fiscal year 2017 were calculated by the prior actuary.*

*Ten fiscal years will be built prospectively.*

*Covered employee payroll for plan fiscal years ending June 30, 2018 and June 30, 2019 is equal to the valuation payroll from the actuarial valuation at the beginning of the fiscal year, rolled forward with one year of payroll growth at 3.00% to the measurement date equal to the end of the fiscal year.*

*Covered employee payroll for plan fiscal years ending June 30, 2020, June 30, 2021, and June 30, 2022 is equal to the valuation payroll from the actuarial valuation at the beginning of the fiscal year, rolled forward with one year of payroll growth at 2.75% to the measurement date equal to the end of the fiscal year.*

*The actuarially determined contribution for fiscal year 2018 is based on a contribution rate of 4.11% and an investment return assumption of 7.50% used in the actuarial valuation as of July 1, 2016.*

*The Board contribution for fiscal year 2018 was based on updated results from the actuarial valuation as of July 1, 2016, and a contribution rate of 4.68% based on an investment return assumption of 7.25% (compared to a rate of 4.11% based on an investment return assumption of 7.50%).*



# Notes to Schedule of Contributions

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## Methods and Assumptions Used to Determine Actuarially Determined Contribution:

|                               |   |
|-------------------------------|---|
| Valuation Date                | July 1, 2020  |
| Notes                         | Actuarially determined contribution rates are calculated as of June 30, which is 12 months prior to the beginning of the fiscal year in which contributions are reported.   |
| Actuarial Cost Method         | Entry Age Normal  |
| Amortization Method           | Level Percentage of Payroll, Open (Closed Period for Plan Changes)  |
| Remaining Amortization Period | 15 years for non-plan changes, initial period of 30 years for the 2006 and 2010 plan changes (16 years remaining for the 2006 plan change and 20 years for the 2010 plan change), initial period of 15 years for the 2020 plan change (15 years remaining)  |
| Asset Valuation Method        | 5-Year smoothed market.   |
| Inflation                     | 2.50%   |
| Salary Increases              | 2.50% to 13.50%, including inflation  |
| Investment Rate of Return     | 7.00%, net of investment expense, including inflation   |
| Retirement Age                | Experience-based table of rates.  |
| Mortality                     | Pre-retirement: Pub-2010 Employee mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP-2018.<br>Post-retirement healthy lives: Pub-2010 Healthy Retiree mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP-2018.<br>Disabled Lives: Pub-2010 Disabled Retiree mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP- |
| Cost-of-Living Adjustment     | 2.50% compound for ERS retirees and 2.50% simple for original pension plan retirees. 2.35% compound for service before July 1, 2011 and 1.85% compound for service after July 1, 2011 for enhanced pension plan retirees.   |

## Methods and Assumptions Used to Determine GASB 67 and 68 Net Pension Liability:

|                           |   |
|---------------------------|---|
| Valuation Date            | July 1, 2021  |
| Actuarial Cost Method     | Entry Age Normal  |
| Asset Valuation Method    | Fair Market Value   |
| Inflation                 | 2.50%   |
| Salary Increases          | 2.50% to 13.50%, including inflation  |
| Investment Rate of Return | 6.75%, net of investment expense, including inflation   |
| Retirement Age            | Experience-based table of rates.  |
| Mortality                 | Pre-retirement: Pub-2010 Employee mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP-2018.<br>Post-retirement healthy lives: Pub-2010 Healthy Retiree mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP-2018.<br>Disabled Lives: Pub-2010 Disabled Retiree mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP- |
| Cost-of-Living Adjustment | 2.50% compound for ERS retirees and 2.50% simple for original pension plan retirees. 2.35% compound for service before July 1, 2011 and 1.85% compound for service after July 1, 2011 for enhanced pension plan retirees.   |



## SECTION D

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### **NOTES TO FINANCIAL STATEMENTS**

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Montgomery County Public Schools Employees' Retirement and Pension System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.



## Sensitivity of Net Pension Liability To the Single Discount Rate Assumption

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### Single Discount Rate

A Single Discount Rate of 6.75% was used to measure the total pension liability. This Single Discount Rate was based on an expected rate of return on pension plan investments of 6.75% and a municipal bond rate of 3.69%. The projection of cash flows used to determine this Single Discount Rate was the amounts of contributions attributable to current plan members, and assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the statutory contribution rates under the System’s funding policy. Based on these assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of 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.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan’s net pension liability, calculated using a Single Discount Rate of 6.75%, as well as what the plan’s net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

### Sensitivity of Net Pension Liability To the Single Discount Rate Assumption

| 1% Decrease    | Current Single Discount<br>Rate Assumption | 1% Increase    |
|----------------|--|----------------|
| 5.75%          | 6.75%                                      | 7.75%          |
| \$ 831,635,341 | \$ 502,552,141                             | \$ 228,429,401 |

## Summary of Population Statistics Based on Actuarial Valuation as of July 1, 2021

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|   |               |
|---|---------------|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits | 14,476        |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits    | 8,114         |
| Active Plan Members   | <u>24,223</u> |
| Total Plan Members  | 46,813        |

**SECTION E**

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**SUMMARY OF BENEFITS**

**It should be noted that the purpose of this appendix is to describe the benefit structures of MCPS for which actuarial values have been generated. Some portions are described in a manner which is not intended to be legally complete or precise.**

**It is not our intent to provide an exhaustive description of all benefits provided under MCPS or the policies and procedures utilized by MCPS staff.**

# Summary of Benefits

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## EMPLOYEES' PENSION SYSTEM/EMPLOYEES' RETIREMENT SYSTEM

### 1. Membership

All permanent MCPS employees (non-teachers) hired on or after January 1, 1980, who are budgeted to work more than 500 hours in their first fiscal year are enrolled in both the Montgomery County Public Schools Core Plan and Supplemental Plan. Teachers hired on or after January 1, 1980, who are automatically enrolled in the Maryland State Teachers' Pension System are enrolled in the Montgomery County Public Schools Supplemental Plan. Members hired before January 1, 1980, participate in the Retirement System.

### 2. Member Contributions

- Teachers
  - 0.1% of compensation earned from July 1, 1998 through July 1, 2006
  - 0.3% of compensation earned from July 1, 2006 through June 30, 2007
  - 0.4% of compensation earned from July 1, 2007 through June 30, 2008
  - 0.5% of compensation earned on or after July 1 2008
- Non-Teachers
  - 2.1% of compensation earned from July 1, 1998 through July 1, 2006
  - 3.3% of compensation earned from July 1, 2006 through June 30, 2007
  - 4.4% of compensation earned from July 1, 2007 through June 30, 2008
  - 5.5% of compensation earned from July 1, 2008 through June 30, 2010
  - 7.5% of compensation earned on or after July 1, 2010

The contribution rate for the Supplemental Plan is 0.5% of compensation. The contribution rate to the Core Plan is the total member contribution rate less the Supplemental Plan contribution rate.

Interest earned on all employee contributions is 5% per year.

Effective July 1, 2020, non-vested employees who terminate their employment after June 30, 2020, or non-vested employees who have already terminated their employment will not accrue interest on their accumulated contribution and interest.

### 3. Service Retirement Allowance

Eligibility:

#### Pension System

Hired before July 1, 2011: 30 years of eligibility service or attainment of one of the following:

- Age 62 with 5 years of eligibility service.
- Age 63 with 4 years of eligibility service.
- Age 64 with 3 years of eligibility service.
- Age 65 and older with 2 years of eligibility service.

Hired on or after July 1, 2011: Combined age and eligibility service of at least 90 years or age 65 after 10 years of eligibility service.



## Summary of Benefits

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### Retirement System

30 years of credited service or attainment of age 60 with at least 5 years of credited service.

Allowance:

### Pension System

#### Hired before July 1, 2011

Supplemental Benefit (Applicable to Teachers and Non-Teachers)

The sum 1) and 2):

- 1) For each year of creditable service on or before June 30, 1998
  - a. 0.08% of average final compensation for the three highest consecutive years as an employee up to the Social Security integration level plus 0.15% of average final compensation over the integration level;
- 2) For each year of creditable service after June 30, 1998
  - b. 0.2% of average final compensation for the three highest consecutive years as an employee.

Core Benefit (Applicable to Non-Teachers only)

The sum 1) and 2):

- 1) For each year of creditable service on or before June 30, 1998, the greater of a) and b)
  - a) 0.8% of average final compensation for the three highest consecutive years as an employee up to the Social Security integration level plus 0.15% of average final compensation over the integration level;
  - b) 1.2% of average final compensation for the three highest consecutive years as an employee;
- 2) For each year of creditable service after June 30, 1998
  - c) 1.8% of average final compensation for the three highest consecutive years as an employee.

Hired on or after July 1, 2011

Supplemental Benefit (Applicable to Teachers and Non-Teachers)

- 1) For each year of creditable service after June 30, 1998, 0.2% of average final compensation for the five highest consecutive years as an employee.

Core Benefit (Applicable to Non-Teachers only)

- 2) For each year of creditable service after June 30, 1998, 1.5% of average final compensation for the five highest consecutive years as an employee.

### Retirement System

Supplemental Benefit (Applicable to Teachers and Non-Teachers)

- 1) For each year of creditable service, 0.18181% of average final compensation for the three highest years as an employee.

Core Benefit (Applicable to Non-Teachers only)

- 2) For each year of creditable service, 1.8181% of average final compensation for the three highest years as an employee.



## Summary of Benefits

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### 4. Early Retirement Allowance

Eligibility:

Pension System

Hired before July 1, 2011: Attainment of age 55 with at least 15 years of eligibility service.

Hired on or after July 1, 2011: Attainment of age 60 with at least 15 years of eligibility service.

Retirement System

25 years of credited service.

Allowance:

Service Retirement allowance reduced by .005 for each month that date of retirement precedes normal retirement age (Pension System: age 62 if hired before July 1, 2011, age 65 if hired on or after July 1, 2011, Retirement System: the earlier of age 60 or the date the member would have completed 30 years of credited service). Maximum reduction of 42% if hired before July 1, 2011, and 30% if hired on or after July 1, 2011.

### 5. Disability Retirement Allowance

**Ordinary**

Eligibility: Five years of eligibility service (10 years of eligibility service if hired on or after July 1, 2011) and certification of the medical board designated by the Board of Trustees that member is mentally or physically incapacitated from the performance of the normal duties of the member's position, that incapacity is permanent and there is no other available assignment for which the member is qualified or capable of performing.

Allowance: The benefit is the service retirement allowance computed on the basis that service continues until normal retirement age without any change in rate of earnable compensation. If disability occurs after age normal retirement age, the benefit is based on creditable service at time of retirement.

**Accidental**

Eligibility:

- Totally and permanently disabled as the direct result of a specific accident which occurs at a definite time and place;
- Accident occurs while person is performing assigned duties;
- Person is not responsible for the accident through willful negligence;
- No other available assignment for which the employee is capable or qualified of performing.

Allowance: The benefit is 66 2/3% of average final compensation for the three highest years as a member (five years if hired on or after July 1, 2011), plus the annuity provided by accumulated member contributions. When the individual attains normal retirement, the amount of service-related disability (accidental disability) benefit will revert to the normal retirement benefit.



## Summary of Benefits

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The individual will receive service credits as if one worked until his/her normal retirement date for the purpose of calculating benefits.

An individual eligible for a normal retirement benefit who is approved for service-related disability will continue to receive his/her normal retirement benefit.

### 6. Death Benefits

Eligibility: One year of eligibility service.

Benefit: One-time lump sum payment of member's annual earnable compensation at time of death plus accumulated contributions. If member dies prior to accruing one year of service, payment is only the return of accumulated member contributions.

#### Spouse Law

Eligibility:

Hired before July 1, 2011

Deceased member was eligible to retire (age 62 with five years) or was age 55 with at least 15 years of eligibility service.

Hired on or after July 1, 2011

Deceased member was eligible to retire (age 65 with 10 years) or was age 60 with at least 15 years of eligibility service.

Benefit: Surviving spouse may elect a one-time lump sum payment of member's annual earnable compensation at time of death plus accumulated member contributions, or a monthly allowance reduced for early retirement age.

### 7. Vested Retirement Allowance

Eligibility:

Hired before July 1, 2011

Five years of eligibility service.

Hired on or after July 1, 2011

10 years of eligibility service.

Allowance: Accrued retirement allowance payable at normal retirement age, provided member does not withdraw accumulated contributions.

### 8. Cost-of-Living Adjustments (COLA)

Retirement allowances may be adjusted each year based on the change in the Consumer Price Index (CPI) from September to September of the previous year. The index that is used is the Urban Wage Earners and Clerical Workers – United States City Average by the Bureau of Labor Statistics. The Cost-of-living adjustment is capped at the lesser of 3% or the increase in CPI for benefits attributable to





## Summary of Benefits

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service before July 1, 2011, and capped at the lesser of 2% or the increase in CPI for benefits attributable to service on or after July 1, 2011. The Cost-of-living adjustment is not capped for Retirement System members.

A simple COLA (increase based on the original benefit at retirement) is granted for members with no service on or after July 1, 1998, and is compound (increase based on the previous year's benefit including all prior COLAs) for members with service on or after July 1, 1998.

In years in which COLAs would be less than zero due to a decline in the CPI, retirement allowances will not be adjusted. COLAs in succeeding years are adjusted until the difference between the negative COLA that would have applied and the zero COLA is fully recovered.

The retirees of the MCPS core and/or supplemental plans must be retired for at least one month as of January 1 to receive a COLA.

Any adjustments are effective January 1.

Following are the COLA increases granted January 1.

| COLA Granted January 1 | Retired before January 1, 2016                                 | Retired on or after January 1, 2016                        |
|------------------------|--|--|
| 2017                   | 0.58%  | 1.22%  |
| COLA Granted January 1 | Benefit based on credited service earned prior to July 1, 2011 | Benefit based on credited service on or after July 1, 2011 |
| 2018                   | 2.31%  | 2.00%  |
| 2019                   | 2.33%  | 2.00%  |
| 2020                   | 1.50%  | 1.50%  |
| 2021                   | 1.50%  | 1.50%  |

### 9. Optional Forms of Payment

Normal service allowance is a single life annuity.

The following options are available:

| Option                  | Option Description   |
|-------------------------|--|
| Cash Refund Option A    | Upon the retiree's death, provides a lump sum of the remaining accumulated employee contributions in excess of the retirement benefits paid out. |
| Cash Refund Option B    | Upon the retiree's death, provides a lump sum of the remaining present value of benefits in excess of the retirement benefits paid out.          |
| 50% Joint and Survivor  | Continuation of 50% of the retiree benefit to the beneficiary upon the retiree's death.  |
| 100% Joint and Survivor | Continuation of 100% of the retiree benefit to the beneficiary upon the retiree's death.   |

## Summary of Benefits

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### 10. Change in Benefits

There have been no changes in benefits since the last actuarial valuation as of July 1, 2020.

## SECTION F

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### **ACTUARIAL COST METHOD AND ACTUARIAL VALUATION ASSUMPTIONS**

## Actuarial Valuation Methods

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### Valuation Methods – Calculation of the Total Pension Liability Entry Age Normal Method

**Actuarial Cost Method** – Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using the Individual Entry-Age Actuarial Cost Method having the following characteristics:

- (i) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- (ii) Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

The Individual Entry-Age Actuarial Cost Method is the method used for the funding actuarial valuation for MCPS beginning with the actuarial valuation as of July 1, 2017.

### Valuation Methods – Calculation of Contributions Projected Unit Credit Method

The Projected Unit Credit Method is the method used for the funding actuarial valuation for MCPS prior to July 1, 2017.

The concept of this method is that funding of benefits should occur as benefits are accrued (earned) by active members of MCPS.

The Normal Cost ("NC") for a fiscal year under this method is the actuarial present value of all benefits expected to be accrued during the fiscal year adjusted for future expected salary increases. The Actuarial Accrued Liability ("AAL") under this method is the actuarial present value of all benefits accrued to the valuation date. To the extent that the assets of the fund are insufficient to cover the AAL, an Unfunded Actuarial Accrued Liability ("UAAL") develops. Under the classical application of this method, the contribution for a year is the NC for that year plus an amount to amortize the UAAL.

This contribution is determined as a level percentage of pay based on 15-year open period amortization of the unfunded liability (not attributable to plan changes) and 30-year closed period amortization attributable to plan changes.



# Actuarial Valuation Assumptions

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The actuarial assumptions are the same as those used in the actuarial valuation as of July 1, 2021.

**Rate of Investment Return.** 6.75% per annum. This assumption is net of investment expenses. (First effective with the actuarial valuation as of July 1, 2021.)

**Price Inflation (Increase in Consumer Price Index “CPI”).** The assumed rate is 2.50% per annum.

**Payroll Growth.** The assumed rate of total payroll growth is 2.75%.

**Social Security Taxable Wage Base Increase.** The assumed rate is 3.50% per annum.

**Cost of Living Adjustment “COLA.”**

Employees’ Retirement System

- 2.50% compound COLA

Employees’ Pension System

- Members in original pension plan (retired before July 1, 1998)
  - 2.50% simple COLA
- Members in the enhanced pension plan (retired after July 1, 1998)
  - 2.35% compound COLA for the benefit attributable to service prior to July 1, 2011
  - 1.85% compound COLA for the benefit attributable to service on/after July 1, 2011

**Annual Compensation Increases.** The total assumed increase follows:

**Staff**

| Age      | Years of Credited Service |        |       |       |       |       |       |
|----------|---------------------------|--------|-------|-------|-------|-------|-------|
|          | 0                         | 1-4    | 5-9   | 10-14 | 15-19 | 20-24 | 25+   |
| Under 25 | 13.50%                    | 12.50% | 8.50% | 6.50% | 3.75% | 3.25% | 3.25% |
| 25-29    | 11.50%                    | 10.50% | 7.00% | 6.50% | 3.75% | 3.25% | 3.25% |
| 30-34    | 9.50%                     | 8.50%  | 6.00% | 5.50% | 3.75% | 3.25% | 3.25% |
| 35-39    | 9.00%                     | 8.00%  | 5.75% | 5.25% | 3.75% | 3.25% | 3.25% |
| 40-44    | 9.00%                     | 8.00%  | 5.75% | 4.75% | 3.75% | 3.25% | 3.25% |
| 45-49    | 9.00%                     | 8.00%  | 5.75% | 4.75% | 3.25% | 3.00% | 3.00% |
| 50-54    | 9.00%                     | 8.00%  | 5.25% | 4.25% | 3.25% | 2.75% | 2.75% |
| 55-59    | 9.00%                     | 8.00%  | 5.25% | 3.75% | 3.00% | 2.75% | 2.75% |
| 60-64    | 9.00%                     | 8.00%  | 4.75% | 3.75% | 3.00% | 2.75% | 2.75% |
| 65-69    | 8.00%                     | 7.00%  | 4.75% | 3.75% | 3.00% | 2.75% | 2.75% |
| 70+      | 8.00%                     | 7.00%  | 4.25% | 2.75% | 2.50% | 2.50% | 2.50% |



## Actuarial Valuation Assumptions

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### Teachers

| Age      | Years of Credited Service |       |       |       |       |       |       |
|----------|---------------------------|-------|-------|-------|-------|-------|-------|
|          | 0                         | 1-4   | 5-9   | 10-14 | 15-19 | 20-24 | 25+   |
| Under 25 | 7.75%                     | 5.75% | 5.25% | 6.50% | 5.00% | 3.00% | 2.75% |
| 25-29    | 9.50%                     | 7.50% | 7.00% | 6.50% | 5.00% | 3.00% | 2.75% |
| 30-34    | 9.50%                     | 7.50% | 6.00% | 5.75% | 5.00% | 3.00% | 2.75% |
| 35-39    | 9.50%                     | 7.50% | 6.00% | 5.75% | 5.00% | 3.00% | 2.75% |
| 40-44    | 9.50%                     | 7.50% | 6.00% | 5.25% | 4.50% | 3.00% | 2.75% |
| 45-49    | 9.50%                     | 7.50% | 6.00% | 4.75% | 3.50% | 2.50% | 2.75% |
| 50-54    | 9.50%                     | 7.50% | 6.00% | 4.75% | 3.25% | 2.50% | 2.50% |
| 55-59    | 7.50%                     | 7.50% | 5.00% | 4.50% | 3.25% | 2.50% | 2.50% |
| 60-64    | 7.50%                     | 7.50% | 5.00% | 3.75% | 2.75% | 2.50% | 2.50% |
| 65-69    | 7.50%                     | 7.50% | 4.25% | 3.25% | 2.50% | 2.50% | 2.50% |
| 70+      | 7.50%                     | 7.50% | 3.75% | 3.25% | 2.50% | 2.50% | 2.50% |

**Mortality.** The mortality assumptions are as follows:

|                                  |   |
|----------------------------------|---|
| Pre-retirement                   | Pub-2010 Employee mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP-2018         |
| Post-retirement<br>Healthy lives | Pub-2010 Healthy Retiree mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP-2018  |
| Disabled lives                   | Pub-2010 Disabled Retiree mortality table (for General Employees), sex distinct, with generational mortality improvements from 2010 using scale MP-2018 |

The provision for future mortality improvement for healthy and disabled lives is based on the generational application of the MP-2018 improvement scales.

## Actuarial Valuation Assumptions

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**Disability.** A table of disability incidence with rates follows:

| Age      | Staff |        | Teacher |        |
|----------|-------|--------|---------|--------|
|          | Male  | Female | Male    | Female |
| Under 25 | 0.02% | 0.02%  | 0.01%   | 0.01%  |
| 25       | 0.02% | 0.02%  | 0.01%   | 0.01%  |
| 26       | 0.04% | 0.02%  | 0.01%   | 0.01%  |
| 27       | 0.06% | 0.02%  | 0.01%   | 0.01%  |
| 28       | 0.08% | 0.02%  | 0.01%   | 0.01%  |
| 29       | 0.10% | 0.02%  | 0.01%   | 0.01%  |
| 30       | 0.10% | 0.04%  | 0.03%   | 0.02%  |
| 31       | 0.11% | 0.06%  | 0.03%   | 0.02%  |
| 32       | 0.12% | 0.08%  | 0.03%   | 0.02%  |
| 33       | 0.13% | 0.10%  | 0.03%   | 0.02%  |
| 34       | 0.14% | 0.12%  | 0.03%   | 0.02%  |
| 35       | 0.15% | 0.12%  | 0.04%   | 0.03%  |
| 36       | 0.16% | 0.14%  | 0.04%   | 0.04%  |
| 37       | 0.17% | 0.16%  | 0.04%   | 0.05%  |
| 38       | 0.18% | 0.18%  | 0.04%   | 0.06%  |
| 39       | 0.19% | 0.20%  | 0.04%   | 0.07%  |
| 40       | 0.20% | 0.24%  | 0.06%   | 0.08%  |
| 41       | 0.22% | 0.26%  | 0.07%   | 0.09%  |
| 42       | 0.24% | 0.28%  | 0.08%   | 0.10%  |
| 43       | 0.26% | 0.30%  | 0.09%   | 0.11%  |
| 44       | 0.28% | 0.32%  | 0.10%   | 0.12%  |
| 45       | 0.30% | 0.36%  | 0.12%   | 0.13%  |
| 46       | 0.33% | 0.39%  | 0.14%   | 0.14%  |
| 47       | 0.36% | 0.42%  | 0.16%   | 0.15%  |
| 48       | 0.39% | 0.45%  | 0.18%   | 0.16%  |
| 49       | 0.42% | 0.48%  | 0.20%   | 0.17%  |
| 50       | 0.45% | 0.50%  | 0.22%   | 0.18%  |
| 51       | 0.48% | 0.56%  | 0.25%   | 0.21%  |
| 52       | 0.51% | 0.62%  | 0.28%   | 0.24%  |
| 53       | 0.54% | 0.68%  | 0.31%   | 0.27%  |
| 54       | 0.57% | 0.74%  | 0.34%   | 0.31%  |
| 55       | 0.60% | 0.80%  | 0.35%   | 0.35%  |
| 56       | 0.63% | 0.85%  | 0.35%   | 0.35%  |
| 57       | 0.66% | 0.90%  | 0.35%   | 0.35%  |
| 58       | 0.69% | 0.95%  | 0.35%   | 0.35%  |
| 59       | 0.72% | 1.00%  | 0.35%   | 0.35%  |
| 60       | 0.75% | 1.05%  | 0.35%   | 0.35%  |
| 61       | 0.80% | 1.10%  | 0.35%   | 0.35%  |
| 62+      | 0.85% | 1.15%  | 0.35%   | 0.35%  |

20% of disabilities for Staff and 10% of disabilities for Teachers are assumed to be accidental disabilities. Disability rates do not apply once members are eligible for normal retirement.

# Actuarial Valuation Assumptions

**Retirement.** Upon eligibility, active members are assumed to retire as follows:

**Staff**

**Staff Hired Before July 1, 2011**  
Years of Eligibility Service

| Age      | 2    | 3    | 4    | 5-9  | 10-14 | 15-19 | 20-24 | 25-29 | 30+  |
|----------|------|------|------|------|-------|-------|-------|-------|------|
| Under 55 |      |      |      |      |       |       |       |       | 8%   |
| 55       |      |      |      |      |       | 4%    | 4%    | 4%    | 9%   |
| 56       |      |      |      |      |       | 6%    | 7%    | 7%    | 9%   |
| 57       |      |      |      |      |       | 6%    | 7%    | 7%    | 9%   |
| 58       |      |      |      |      |       | 6%    | 7%    | 7%    | 9%   |
| 59       |      |      |      |      |       | 6%    | 7%    | 7%    | 9%   |
| 60       |      |      |      |      |       | 6%    | 7%    | 7%    | 11%  |
| 61       |      |      |      |      |       | 6%    | 7%    | 7%    | 13%  |
| 62       |      |      |      | 6%   | 10%   | 10%   | 10%   | 20%   | 20%  |
| 63       |      |      | 4%   | 6%   | 10%   | 10%   | 10%   | 20%   | 25%  |
| 64       |      | 4%   | 4%   | 6%   | 10%   | 10%   | 10%   | 20%   | 25%  |
| 65       | 4%   | 4%   | 4%   | 15%  | 15%   | 20%   | 20%   | 20%   | 25%  |
| 66       | 4%   | 4%   | 4%   | 15%  | 15%   | 20%   | 20%   | 20%   | 25%  |
| 67       | 4%   | 4%   | 4%   | 15%  | 15%   | 20%   | 20%   | 20%   | 35%  |
| 68       | 4%   | 4%   | 4%   | 12%  | 15%   | 20%   | 20%   | 20%   | 30%  |
| 69       | 4%   | 4%   | 4%   | 12%  | 15%   | 20%   | 20%   | 20%   | 30%  |
| 70-79    | 4%   | 4%   | 4%   | 20%  | 25%   | 25%   | 30%   | 30%   | 35%  |
| 80+      | 100% | 100% | 100% | 100% | 100%  | 100%  | 100%  | 100%  | 100% |

**Staff Hired On or After July 1, 2011**  
Years of Eligibility Service

| Age      | 10   | 11-14 | 15   | 16-19 | 20-24 | 25-29 | 30+  |
|----------|------|-------|------|-------|-------|-------|------|
| Under 55 |      |       |      |       |       |       | 8%   |
| 55       |      |       |      |       |       |       | 9%   |
| 56       |      |       |      |       |       |       | 9%   |
| 57       |      |       |      |       |       |       | 9%   |
| 58       |      |       |      |       |       |       | 9%   |
| 59       |      |       |      |       |       |       | 9%   |
| 60       |      |       | 6%   | 6%    | 7%    | 7%    | 11%  |
| 61       |      |       | 6%   | 6%    | 7%    | 7%    | 13%  |
| 62       |      |       | 10%  | 6%    | 7%    | 10%   | 20%  |
| 63       |      |       | 15%  | 6%    | 7%    | 15%   | 25%  |
| 64       |      |       | 20%  | 6%    | 7%    | 20%   | 25%  |
| 65       | 25%  | 15%   | 35%  | 20%   | 20%   | 20%   | 25%  |
| 66       | 35%  | 15%   | 20%  | 20%   | 20%   | 20%   | 25%  |
| 67       | 40%  | 15%   | 20%  | 20%   | 20%   | 20%   | 35%  |
| 68       | 45%  | 15%   | 20%  | 20%   | 20%   | 20%   | 30%  |
| 69       | 50%  | 15%   | 20%  | 20%   | 20%   | 20%   | 30%  |
| 70-79    | 50%  | 25%   | 25%  | 25%   | 30%   | 30%   | 35%  |
| 80+      | 100% | 100%  | 100% | 100%  | 100%  | 100%  | 100% |





# Actuarial Valuation Assumptions

**Retirement.** Upon eligibility, active members are assumed to retire as follows:

## Teachers

**Teachers Hired Before July 1, 2011**  
Years of Eligibility Service

| Age      | 2    | 3    | 4    | 5-9  | 10-14 | 15-19 | 20-24 | 25-29 | 30+  |
|----------|------|------|------|------|-------|-------|-------|-------|------|
| Under 55 |      |      |      |      |       |       |       |       | 11%  |
| 55       |      |      |      |      |       | 4%    | 4%    | 4%    | 13%  |
| 56       |      |      |      |      |       | 6%    | 7%    | 7%    | 13%  |
| 57       |      |      |      |      |       | 6%    | 7%    | 7%    | 13%  |
| 58       |      |      |      |      |       | 6%    | 7%    | 7%    | 13%  |
| 59       |      |      |      |      |       | 6%    | 7%    | 7%    | 13%  |
| 60       |      |      |      |      |       | 6%    | 7%    | 7%    | 15%  |
| 61       |      |      |      |      |       | 6%    | 7%    | 7%    | 17%  |
| 62       |      |      |      | 10%  | 10%   | 17%   | 17%   | 21%   | 25%  |
| 63       |      |      | 4%   | 10%  | 10%   | 17%   | 17%   | 21%   | 25%  |
| 64       |      | 4%   | 4%   | 10%  | 10%   | 17%   | 17%   | 21%   | 25%  |
| 65       | 4%   | 4%   | 4%   | 20%  | 20%   | 20%   | 25%   | 25%   | 30%  |
| 66       | 4%   | 4%   | 4%   | 20%  | 20%   | 20%   | 25%   | 25%   | 30%  |
| 67       | 4%   | 4%   | 4%   | 20%  | 20%   | 20%   | 25%   | 25%   | 30%  |
| 68       | 4%   | 4%   | 4%   | 15%  | 15%   | 20%   | 25%   | 25%   | 30%  |
| 69       | 4%   | 4%   | 4%   | 15%  | 15%   | 20%   | 25%   | 25%   | 30%  |
| 70-79    | 4%   | 4%   | 4%   | 25%  | 25%   | 25%   | 30%   | 30%   | 35%  |
| 80+      | 100% | 100% | 100% | 100% | 100%  | 100%  | 100%  | 100%  | 100% |

**Teachers Hired On or After July 1, 2011**  
Years of Eligibility Service

| Age      | 10   | 11-14 | 15   | 16-19 | 20-24 | 25-29 | 30+  |
|----------|------|-------|------|-------|-------|-------|------|
| Under 55 |      |       |      |       |       |       | 11%  |
| 55       |      |       |      |       |       |       | 13%  |
| 56       |      |       |      |       |       |       | 13%  |
| 57       |      |       |      |       |       |       | 13%  |
| 58       |      |       |      |       |       |       | 13%  |
| 59       |      |       |      |       |       |       | 13%  |
| 60       |      |       | 6%   | 6%    | 7%    | 7%    | 15%  |
| 61       |      |       | 6%   | 6%    | 7%    | 7%    | 17%  |
| 62       |      |       | 17%  | 6%    | 7%    | 10%   | 25%  |
| 63       |      |       | 22%  | 6%    | 7%    | 15%   | 25%  |
| 64       |      |       | 27%  | 6%    | 7%    | 25%   | 25%  |
| 65       | 35%  | 20%   | 35%  | 25%   | 25%   | 30%   | 30%  |
| 66       | 45%  | 20%   | 20%  | 25%   | 25%   | 30%   | 30%  |
| 67       | 55%  | 20%   | 20%  | 25%   | 25%   | 30%   | 30%  |
| 68       | 55%  | 15%   | 20%  | 25%   | 25%   | 30%   | 30%  |
| 69       | 60%  | 15%   | 20%  | 25%   | 25%   | 30%   | 30%  |
| 70-79    | 60%  | 25%   | 25%  | 30%   | 30%   | 35%   | 35%  |
| 80+      | 100% | 100%  | 100% | 100%  | 100%  | 100%  | 100% |



# Actuarial Valuation Assumptions

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**General Turnover.** A sample of these rates follows:

|            |          | Staff  |        |            |        |  |
|------------|----------|--------|--------|------------|--------|--|
|            |          | Age    |        |            |        |  |
| Service    | Under 30 | 30-34  | 35+    | Service    |        |  |
| <b>0</b>   | 15.50%   | 12.50% | 11.00% | <b>0</b>   | 11.00% |  |
| <b>1</b>   | 14.00%   | 11.00% | 9.50%  | <b>1</b>   | 9.00%  |  |
| <b>2</b>   | 12.50%   | 9.50%  | 8.00%  | <b>2</b>   | 7.50%  |  |
| <b>3</b>   | 11.50%   | 8.50%  | 7.00%  | <b>3</b>   | 6.75%  |  |
| <b>4</b>   | 10.00%   | 7.00%  | 5.50%  | <b>4</b>   | 6.00%  |  |
| <b>5</b>   | 8.00%    | 5.00%  | 3.50%  | <b>5</b>   | 5.50%  |  |
| <b>6</b>   | 7.75%    | 4.75%  | 3.25%  | <b>6</b>   | 5.00%  |  |
| <b>7</b>   | 7.50%    | 4.50%  | 3.00%  | <b>7</b>   | 4.25%  |  |
| <b>8</b>   | 7.25%    | 4.25%  | 2.75%  | <b>8</b>   | 4.00%  |  |
| <b>9</b>   | 7.00%    | 4.00%  | 2.50%  | <b>9</b>   | 3.50%  |  |
| <b>10</b>  | 6.75%    | 3.75%  | 2.25%  | <b>10</b>  | 3.00%  |  |
| <b>11</b>  | 6.50%    | 3.50%  | 2.00%  | <b>11</b>  | 2.75%  |  |
| <b>12</b>  | 6.25%    | 3.25%  | 1.75%  | <b>12</b>  | 2.50%  |  |
| <b>13+</b> | 6.00%    | 3.00%  | 1.50%  | <b>13</b>  | 2.25%  |  |
|            |          |        |        | <b>14</b>  | 2.00%  |  |
|            |          |        |        | <b>15</b>  | 1.75%  |  |
|            |          |        |        | <b>16</b>  | 1.50%  |  |
|            |          |        |        | <b>17</b>  | 1.25%  |  |
|            |          |        |        | <b>18</b>  | 1.00%  |  |
|            |          |        |        | <b>19+</b> | 0.75%  |  |

**Benefit Commencement Age.** Terminated vested members eligible for a deferred benefit are assumed to commence benefits at the following ages:

Employees' Retirement System

- Age 60

Employees' Pension System

- Age 60 with 15 or more years of eligibility service
- Age 62 with less than 15 years of eligibility service

**Administrative Expenses.** Assumed administrative expenses were added to the Normal Cost and are equal to 105% of the average administrative expenses over the past three years. (First effective with the actuarial valuation as of July 1, 2017.)

**Unused Sick Leave.** Benefit service is increased by 1.7% to take into account benefit service credited for unused sick leave.

**Marital Status.** 80% of active members are assumed to be married.



# Actuarial Valuation Assumptions

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**Spouse Age.** The female spouse is assumed to be three years younger than the male spouse.

**Part Time Employees.**

Employees' Retirement System

- Assumed to annually earn a full year of credited service. Benefit equals scheduled pay times credited service.

Employees' Pension System

- Assumed to annually earn a full year of eligibility service and a partial year of credited service. The partial year of credited service is based on the employee's full time equivalent factor. Benefit equals full time equivalent pay times credited service.

**Form of Payment Election.** Members are assumed to elect a life annuity.

**Benefit Service.** Exact fractional years of service are used to determine the amount of benefit payable.

**Decrement Timing.** Retirements and terminations are assumed to occur at the end of the year and deaths and disabilities are assumed to occur in the middle of the year. (First effective with the actuarial valuation as of July 1, 2017.)

**Decrement Operation.** Turnover decrements do not operate after the member reaches retirement eligibility. Disability decrements operate during retirement eligibility.

Pay Increase rates are applied based on credited service.

Retirement rates are applied based on eligibility service.

Termination rates are applied based on the difference between participant age based on Date of Birth and hire age based on Plan Entry Date.

**Eligibility Testing.** Eligibility for benefits is determined based upon the exact age and service on the date the decrement is assumed to occur.

**Pay Increase Timing.** Beginning of the (fiscal) year. (First effective with the actuarial valuation as of July 1, 2017.)

**Assumption for Missing Data.** If the scheduled pay provided was equal to \$0, the scheduled pay was set equal to the annualized pay provided. If scheduled and annualized pay that were provided were both equal to \$0, then the scheduled pay was assumed to be \$45,000.



## **SECTION G**

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### **GLOSSARY OF TERMS**

## Glossary of Terms

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|   |   |
|---|---|
| <b><i>Accrued Service</i></b>   | Service credited under the system that was rendered before the date of the actuarial valuation.   |
| <b><i>Actuarial Accrued Liability (AAL)</i></b>   | The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."  |
| <b><i>Actuarial Assumptions</i></b>   | These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation. |
| <b><i>Actuarial Cost Method</i></b>   | A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.   |
| <b><i>Actuarial Equivalent</i></b>  | A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.  |
| <b><i>Actuarial Gain (Loss)</i></b>   | The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.   |
| <b><i>Actuarial Present Value (APV)</i></b>   | The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.  |
| <b><i>Actuarial Valuation</i></b>   | The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability and related actuarial present value of projected benefit payments for pensions.  |
| <b><i>Actuarial Valuation Date</i></b>  | The date as of which an actuarial valuation is performed.   |
| <b><i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i></b> | A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the Actuarially Determined Contribution has a normal cost payment and an amortization payment.  |

## Glossary of Terms

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|---|---|
| <b><i>Amortization Method</i></b>   | The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).   |
| <b><i>Amortization Payment</i></b>  | The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.   |
| <b><i>Cost-of-Living Adjustments</i></b>  | Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.  |
| <b><i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i></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><i>Covered-Employee Payroll</i></b>  | The payroll of employees that are provided with pensions through the pension plan.  |
| <b><i>Deferred Inflows and Outflows</i></b>   | The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.   |
| <b><i>Deferred Retirement Option Program (DROP)</i></b>   | A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report. |
| <b><i>Discount Rate</i></b>   | For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none"><li>1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and</li><li>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</li></ol>                         |

## Glossary of Terms

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|--|---|
| <b><i>Entry Age Actuarial Cost Method (EAN)</i></b>          | The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is 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 the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits. |
| <b><i>Fiduciary Net Position</i></b>                         | The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.  |
| <b><i>GASB</i></b>   | The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.   |
| <b><i>Long-Term Expected Rate of Return</i></b>              | The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.  |
| <b><i>Money-Weighted Rate of Return</i></b>                  | The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.  |
| <b><i>Multiple-Employer Defined Benefit Pension Plan</i></b> | A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.   |
| <b><i>Municipal Bond Rate</i></b>                            | The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.   |
| <b><i>Net Pension Liability (NPL)</i></b>                    | The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.  |
| <b><i>Non-Employer Contributing Entities</i></b>             | Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.  |
| <b><i>Normal Cost</i></b>                                    | The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.  |

## Glossary of Terms

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|   |   |
|---|---|
| <b><i>Other Postemployment Benefits (OPEB)</i></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><i>Real Rate of Return</i></b>                         | The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.   |
| <b><i>Service Cost</i></b>                                | The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.  |
| <b><i>Total Pension Expense</i></b>                       | <p>The total pension expense is the sum of the following items that are recognized at the end of the employer’s fiscal year:</p> <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total Pension Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. Pension Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow (Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow (Inflow) of Resources due to Assets</li></ol> |
| <b><i>Total Pension Liability (TPL)</i></b>               | The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.   |
| <b><i>Unfunded Actuarial Accrued Liability (UAAL)</i></b> | The UAAL is the difference between actuarial accrued liability and valuation assets.  |
| <b><i>Valuation Assets</i></b>                            | The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.  |