

# Manchester Employees' Contributory Retirement System

GASB Statement Nos. 74 and 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions Measured as of December 31, 2022 for Fiscal Year Ending June 30, 2023





April 13, 2023

Board of Trustees  
City of Manchester Employees'  
Contributory Retirement System  
1045 Elm Street, Suite 403  
Manchester, New Hampshire 03101-1824

Dear Board Members:

This report provides information related to the City of Manchester Employees' Contributory Retirement System (MECRS) in connection with the Governmental Accounting Standards Board (GASB) Statement Nos. 74 and 75. GASB Statement No. 74 is the accounting standard, which applies to other postemployment benefits (OPEB) plans that are administered through trusts or equivalent arrangements. GASB Statement No. 75 establishes accounting and financial reporting requirements for State and local government employers that provide their employees with postemployment benefits other than pensions.

The calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement Nos. 74 and 75. 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. 74 and 75 may produce significantly different results. This report may be provided to parties other than MECRS and/or the City only in its entirety and only with the permission of MECRS and/or the City. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by MECRS, concerning other postemployment benefits (OPEB), active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited.

The data, actuarial assumptions, and benefit provisions used in this report are the same as those used in the December 31, 2022 actuarial valuation unless otherwise noted. Please refer to that valuation for additional discussion regarding the data, assumptions, benefit provisions, and the nature of actuarial calculations.

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.

Based on the available data, the information contained in this report is accurate and fairly represents the actuarial position of the retiree health subsidy provided by the City of Manchester Employees' Contributory Retirement System as of the reporting date. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as the Actuarial Standards of Practice. If you have reason to believe that the information provided in this report is inaccurate, or is in any way incomplete, or if you need further information in order to make an informed decision on the subject matter of this report, please contact the authors of the report prior to making such decision.

The benefits provided by MECRS are dollar benefits. Although the City may provide health insurance access, MECRS does not. The liabilities computed herein are based on the dollar benefits, not claims costs or premiums. Therefore, this report comprises only a portion of the City's reporting under GASB Statement No. 75. It is our understanding that liabilities associated with any implicit subsidies are provided from other sources. A review of those liabilities was outside the scope of this engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

Section G of the report details the calculation of the single discount rate and is not required to be included in your financial statements. However, this information may be requested by your auditors; therefore, we have included it in this report.

Heidi G. Barry and Kevin T. Noelke are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,  
**Gabriel, Roeder, Smith & Company**



Heidi G. Barry, ASA, FCA, MAAA



Kevin T. Noelke, ASA, FCA, MAAA

HGB/KTN:ah



Auditor's Note – This information is intended to assist in preparation of the financial statements of the retiree health subsidy provided by the Manchester Employees' Contributory Retirement 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

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## EXECUTIVE SUMMARY

# Executive Summary as of December 31, 2022

|   |                   |
|---|-------------------|
| Actuarial Valuation Date                            | December 31, 2022 |
| Measurement Date of the Net OPEB Liability          | December 31, 2022 |
| Employer's Fiscal Year Ending Date (Reporting Date) | June 30, 2023     |

## Membership

|                                |               |
|--------------------------------|---------------|
| Number of                      |               |
| - Retirees and Beneficiaries   | 438           |
| - Inactive, Nonretired Members | 123           |
| - Active Members               | 1,058         |
| - Total                        | 1,619         |
| Covered Payroll <sup>^</sup>   | \$ 56,969,297 |

## Net OPEB Liability

|   |               |
|---|---------------|
| Total OPEB Liability  | \$ 38,994,461 |
| Plan Fiduciary Net Position   | 18,064,442    |
| Net OPEB Liability  | \$ 20,930,019 |
| Plan Fiduciary Net Position as a Percentage of Total OPEB Liability | 46.33 %       |
| Net OPEB Liability as a Percentage of Covered Payroll               | 36.74 %       |

## 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*  | 4.05 % |
| Last year ending December 31 in the 2023 to 2122 projection period<br>for which projected benefit payments are fully funded | 2122   |

**Total OPEB Expense** \$ 2,814,574

## Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future OPEB Expenses#

|  | Deferred Outflows<br>of Resources | Deferred Inflows<br>of Resources |
|--|-----------------------------------|----------------------------------|
| Difference between expected and actual experience                                | \$ 862,045                        | \$ 446,463                       |
| Changes in assumptions   | 2,255,493                         | -                                |
| Net difference between projected and actual earnings<br>on OPEB plan investments | 3,261,542                         | 1,162,770                        |
| <b>Total</b>   | <b>\$ 6,379,080</b>               | <b>\$ 1,609,233</b>              |

<sup>^</sup> Based on valuation payroll as of December 31, 2022.

\*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 December 31, 2022, the most recent date available on or before the measurement date. 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.

# The deferred outflows and inflows originating from before 2019 that were used in the City's prior year's financial reports were provided by the City's auditor.



# Discussion

## Accounting Standard

For post-employment (OPEB) benefit plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 74, “Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans,” replaces the requirements of GASB Statement No. 43, “Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans.” Similarly, GASB Statement No. 75 establishes standards for State and local government employers (as well as non-employer contributing entities) to account for and disclose net OPEB liability, OPEB expense, and other information associated with providing OPEB to their employees (and former employees) on their 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 information, such as notes regarding accounting policies and investments, is not included in this report. As a result, the plan sponsor will be responsible for preparing and disclosing the non-actuarial information needed to comply with these accounting standards.

## Financial Statements

GASB Statement No. 75 requires State and local government employers to recognize the net OPEB liability and the OPEB expense on their financial statements, along with the related deferred outflows and inflows of resources. The net OPEB liability is the difference between the total OPEB 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.

GASB Statement No. 75 states the employer contributions made to the OPEB plan subsequent to the measurement date and before the end of the employer’s reporting period should be reported as a deferred outflow of resources. The information contained in this report does not incorporate any employer contributions made subsequent to the measurement date of December 31, 2022.

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

GASB Statement No. 74 requires defined benefit OPEB plans which are administered as trusts or equivalent arrangements to present two financial statements: a statement of fiduciary net position and a statement of changes in fiduciary net position. The statement of fiduciary net position presents the assets and liabilities of the OPEB plan at the end of the OPEB 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 expense, and net increase or decrease in the fiduciary net position.



# Discussion

## Notes to Financial Statements

GASB Statement No. 75 requires the notes of the employer's financial statements to disclose the total OPEB expense, the OPEB plan's liabilities and assets, and deferred outflows of resources and inflows of resources related to OPEB.

GASB Statement Nos. 74 and 75 require the notes of the financial statements for employers and OPEB plans to include certain additional information. The list of disclosure items should include:

- The name of the OPEB plan, the administrator of the OPEB plan, and the identification of whether the OPEB plan is a single-employer, agent, or cost-sharing OPEB plan;
- A description of the benefits provided by the plan;
- A brief description of changes in benefit terms or assumptions that affected the measurement of the total OPEB liability since the prior measurement date;
- The number of plan members by category and if the plan is closed;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The OPEB plan's investment policies;
- The OPEB plan's fiduciary net position and the net OPEB liability (if applicable);
- The net OPEB liability using +/- 1% on the discount rate;
- The net OPEB liability using +/- 1% on the healthcare trend rate;
- Significant assumptions and methods used to calculate the total OPEB liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

OPEB plans that are administered through trusts or equivalent arrangements are required to disclose additional information in accordance with GASB Statement No. 74. This information includes:

- The composition of the OPEB 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.

# Discussion

## Required Supplementary Information

GASB Statement No. 74 requires a 10-year fiscal history of:

- Sources of changes in the net OPEB liability;
- Information about the components of the net OPEB liability and related ratios, including the OPEB plan's fiduciary net position as a percentage of the total OPEB liability, and the net OPEB liability as a percent of covered-employee payroll;
- Comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy; and
- For plans with an actuarially determined contribution, the schedule covering each of the 10 most recent fiscal years of the actuarially determined contribution, contributions to the OPEB plan and related ratios.

## Frequency and Timing of the Actuarial Valuation

An actuarial valuation to determine the total OPEB liability is required to be performed at least every two years. For the employer's financial reporting purposes, the net OPEB liability and OPEB expense should be measured as of the employer's "measurement date," which may not be earlier than the employer's prior fiscal year-end date. If the actuarial valuation used to determine the total OPEB liability is not calculated as of the measurement date, the total OPEB liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total OPEB liability shown in this report is based on an actuarial valuation performed as of December 31, 2022 and a measurement date of December 31, 2022.

## Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate (SDR) that reflects (1) a long-term expected rate of return on OPEB plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits), and (2) tax-exempt municipal bond rate based on an index of 20-year 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 OPEB plan investments is 6.75%; the municipal bond rate is 4.05% (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 6.75%.

Analysis of any implicit rate subsidy that may exist was outside the scope of this engagement. In particular we have not analyzed whether or not the implicit subsidy would affect the calculation of the SDR; nor have we been provided the data to perform such an analysis.

# Discussion

## Future Uncertainty or Risk

Future results may differ from those anticipated in this valuation. Reasons include, but are not limited to:

- Actual medical trend differing from expected;
- Changes in the healthcare plan designs offered to active and retired members; and
- Participant behavior differing from expected; e.g.,
  - Elections at retirement;
  - Time of retirement or termination.

## Benefits Valued

The benefit provisions that were valued are described in Section E. The valuation is required to be performed on the current benefit terms and existing legal agreements. Consideration is to be given to the written plan document as well as other communications between the employer and plan members and an established pattern of practice for cost sharing. The summary of major plan provisions is designed to outline principal plan benefits. If the plan summary is not in accordance with the actual provisions, please alert the actuaries IMMEDIATELY, so they can both be sure the proper provisions are valued.

## Actuarial Assumptions

There were no assumption changes during the year.

## Benefit Changes

There were no benefit changes during the year.

## 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 Manchester Employees' Contributory Retirement 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 OPEB Expense under GASB Statement No. 75 for Fiscal Year Ending June 30, 2023 with Measurement Date December 31, 2022

## A. Expense

|   |           |                  |
|---|-----------|------------------|
| 1. Service Cost   | \$        | 836,879          |
| 2. Interest on the Total OPEB Liability                                     |           | 2,516,831        |
| 3. Current-Period Benefit Changes   |           | -                |
| 4. Employee Contributions (made negative for addition here)                 |           | (721,128)        |
| 5. Projected Earnings on Plan Investments (made negative for addition here) |           | (1,379,995)      |
| 6. OPEB Plan Administrative Expense   |           | 52,011           |
| 7. Other Changes in Plan Fiduciary Net Position                             |           | -                |
| 8. Recognition of Outflow (Inflow) of Resources due to Liabilities          |           | 982,962          |
| 9. Recognition of Outflow (Inflow) of Resources due to Assets               |           | 527,014          |
| <b>10. Total OPEB Expense</b>   | <b>\$</b> | <b>2,814,574</b> |

# Statement of Outflows and Inflows Arising from Current Reporting Period for Fiscal Year Ending June 30, 2023 with Measurement Date December 31, 2022

## A. Outflows (Inflows) of Resources due to Liabilities

|  |              |
|--|--------------|
| 1. Difference between expected and actual experience of the Total OPEB Liability (gains) or losses   | \$ (401,765) |
| 2. Assumption Changes (gains) or losses  | -            |
| 3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}   | 6.4952       |
| 4. Outflow (Inflow) of Resources to be recognized in the current OPEB expense for the difference between expected and actual experience of the Total OPEB Liability      | (61,856)     |
| 5. Outflow (Inflow) of Resources to be recognized in the current OPEB expense for assumption changes   | -            |
| 6. Outflow (Inflow) of Resources to be recognized in the current OPEB expense due to Liabilities   | \$ (61,856)  |
| 7. Deferred Outflow (Inflow) of Resources to be recognized in future OPEB expenses for the difference between expected and actual experience of the Total OPEB Liability | (339,909)    |
| 8. Deferred Outflow (Inflow) of Resources to be recognized in future OPEB expenses for assumption changes  | -            |
| 9. Deferred Outflow (Inflow) of Resources to be recognized in future OPEB expenses due to Liabilities  | \$ (339,909) |

## B. Outflows (Inflows) of Resources due to Assets

|  |              |
|--|--------------|
| 1. Net difference between projected and actual earnings on OPEB plan investments (gains) or losses | \$ 4,076,927 |
| 2. Recognition period for Assets {in years}  | 5.0000       |
| 3. Outflow (Inflow) of Resources to be recognized in the current OPEB expense due to Assets        | 815,385      |
| 4. Deferred Outflow (Inflow) of Resources to be recognized in future OPEB expenses due to Assets   | \$ 3,261,542 |

# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods for Fiscal Year Ending June 30, 2023 with Measurement Date December 31, 2022

## A. Outflows and Inflows of Resources by Source to be Recognized in Current OPEB Expense

|  | Outflows<br>of Resources | Inflows<br>of Resources | Net Outflows<br>of Resources |
|--|--------------------------|-------------------------|------------------------------|
| 1. Differences between expected and actual experience                            | \$ 251,587               | \$ 105,307              | \$ 146,280                   |
| 2. Assumption changes  | 836,682                  | -                       | 836,682                      |
| 3. Net difference between projected and actual earnings on OPEB plan investments | 1,131,617                | 604,603                 | 527,014                      |
| <b>4. Total</b>  | <b>\$ 2,219,886</b>      | <b>\$ 709,910</b>       | <b>\$ 1,509,976</b>          |

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

|  | Deferred Outflows<br>of Resources | Deferred Inflows<br>of Resources | Net Deferred Outflows<br>of Resources |
|--|-----------------------------------|----------------------------------|---------------------------------------|
| 1. Differences between expected and actual experience                            | \$ 862,045                        | \$ 446,463                       | \$ 415,582                            |
| 2. Assumption changes  | 2,255,493                         | -                                | 2,255,493                             |
| 3. Net difference between projected and actual earnings on OPEB plan investments | 3,261,542                         | 1,162,770                        | 2,098,772                             |
| <b>4. Total</b>  | <b>\$ 6,379,080</b>               | <b>\$ 1,609,233</b>              | <b>\$ 4,769,847</b>                   |

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

| Year Ending<br>June 30 | Net Deferred Outflows<br>of Resources |
|------------------------|---------------------------------------|
| 2024                   | \$ 1,170,054                          |
| 2025                   | 1,121,778                             |
| 2026                   | 1,235,870                             |
| 2027                   | 1,254,796                             |
| 2028                   | 17,978                                |
| Thereafter             | (30,629)                              |
| <b>Total</b>           | <b>\$ 4,769,847</b>                   |

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

See paragraph 44 of GASB Statement No. 75 for single and agent employers with trusted plans.

Also, Question 4.32 of Implementation Guide No. 2017-1 provides additional guidance for trusted plans.



## Recognition of Deferred Outflows and Inflows of Resources

| (Reporting)<br>Year<br>Established  | Initial<br>Amount | Initial<br>Recognition<br>Period # | Current Year<br>Recognition | Remaining<br>Recognition | Remaining<br>Recognition<br>Period |
|---|-------------------|------------------------------------|-----------------------------|--------------------------|------------------------------------|
| <b>Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities</b>     |                   |                                    |                             |                          |                                    |
| 2018  | \$ (139,278)      | 6.9200                             | \$ (20,127)                 | \$ (18,516)              | 0.9200                             |
| 2019  | 871,321           | 7.2683                             | 119,880                     | 271,921                  | 2.2683                             |
| 2020  | 108,038           | 6.9381                             | 15,572                      | 45,750                   | 2.9381                             |
| 2021  | (158,010)         | 6.7747                             | (23,324)                    | (88,038)                 | 3.7747                             |
| 2022  | 776,644           | 6.6874                             | 116,135                     | 544,374                  | 4.6874                             |
| 2023  | (401,765)         | 6.4952                             | (61,856)                    | (339,909)                | 5.4952                             |
| <b>Total</b>  |                   |                                    | <b>\$ 146,280</b>           | <b>\$ 415,582</b>        |                                    |
| <b>Deferred Outflow (Inflow) due to Assumption Changes</b>  |                   |                                    |                             |                          |                                    |
| 2018  | \$ 2,188,276      | 6.9200                             | \$ 316,225                  | \$ 290,926               | 0.9200                             |
| 2019  | -                 | 7.2683                             | -                           | -                        | 2.2683                             |
| 2020  | -                 | 6.9381                             | -                           | -                        | 2.9381                             |
| 2021  | 3,525,938         | 6.7747                             | 520,457                     | 1,964,567                | 3.7747                             |
| 2022  | -                 | 6.6874                             | -                           | -                        | 4.6874                             |
| 2023  | -                 | 6.4952                             | -                           | -                        | 5.4952                             |
| <b>Total</b>  |                   |                                    | <b>\$ 836,682</b>           | <b>\$ 2,255,493</b>      |                                    |
| <b>Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments</b> |                   |                                    |                             |                          |                                    |
| 2019  | \$ 1,581,168      | 5.0000                             | \$ 316,232                  | \$ -                     | 0.0000                             |
| 2020  | (1,120,662)       | 5.0000                             | (224,132)                   | (224,134)                | 1.0000                             |
| 2021  | (1,013,890)       | 5.0000                             | (202,778)                   | (405,556)                | 2.0000                             |
| 2022  | (888,466)         | 5.0000                             | (177,693)                   | (533,080)                | 3.0000                             |
| 2023  | 4,076,927         | 5.0000                             | 815,385                     | 3,261,542                | 4.0000                             |
| <b>Total</b>  |                   |                                    | <b>\$ 527,014</b>           | <b>\$ 2,098,772</b>      |                                    |

# The Initial Recognition Period for 2018 was provided to GRS by the City auditor.

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

At the beginning of the current measurement period, the expected remaining service lives of all active employees in the plan was approximately 10,483 years. Additionally, the total plan membership (active employees and inactive employees) was 1,614. 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 6.4952 years.

Additionally, differences between projected and actual earnings on OPEB plan investments should be recognized in OPEB 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 OPEB expense as a level dollar amount over the closed period identified above.



## Statement of Fiduciary Net Position as of December 31, 2022

### Assets

|   |           |                    |
|---|-----------|--------------------|
| Cash and Deposits                         | \$        | 7,780,006          |
| Receivables                               |           |                    |
| Accounts Receivable - Sale of Investments | \$        | 437,106            |
| Accrued Interest and Other Dividends      |           | 330,325            |
| Additional Contribution Account           |           | 828,696            |
| Property, Plant, Equipment                |           | 10,780             |
| Total Receivables                         | \$        | 1,606,907          |
| Investments                               | \$        | 256,401,200        |
| <b>Total Assets</b>                       | <b>\$</b> | <b>265,788,113</b> |

### Liabilities

|   |           |                    |
|---|-----------|--------------------|
| Payables                                |           |                    |
| Accounts Payable and Accrued Expenses   | \$        | 132,724            |
| Benefits Payable                        |           | 1,995,225          |
| <b>Total Liabilities</b>                | <b>\$</b> | <b>2,127,949</b>   |
| <b>Assets Held for Pensions</b>         | <b>\$</b> | <b>245,595,722</b> |
| <b>Net Position Restricted for OPEB</b> | <b>\$</b> | <b>18,064,442</b>  |

## Statement of Changes in Fiduciary Net Position for Year Ended December 31, 2022

### Additions

|   |                       |
|---|-----------------------|
| Contributions                                 |                       |
| Employer                                      | \$ 1,615,726          |
| Nonemployer contributing entities             | -                     |
| Active Employees                              | 721,128               |
| Other   | -                     |
| Total Contributions                           | <u>\$ 2,336,854</u>   |
| Investment Income                             |                       |
| Net Appreciation in Fair Value of Investments | \$ (2,784,807)        |
| Interest and Dividends                        | 143,186               |
| Less Investment Expense                       | <u>(55,311)</u>       |
| Net Investment Income                         | <u>\$ (2,696,932)</u> |
| Other   | -                     |
| <b>Total Additions</b>                        | <u>\$ (360,078)</u>   |

### Deductions

|                                     |                     |
|-------------------------------------|---------------------|
| Benefit Payments                    | \$ 1,650,847        |
| OPEB Plan Administrative Expense    | 52,011              |
| Other                               | -                   |
| <b>Total Deductions</b>             | <u>\$ 1,702,858</u> |
| <b>Net Increase in Net Position</b> | \$ (2,062,936)      |

### Net Position Restricted for OPEB

|                       |                      |
|-----------------------|----------------------|
| Beginning of Year     | \$ 20,127,378        |
| Prior Year Adjustment | -                    |
| End of Year           | <u>\$ 18,064,442</u> |

## Schedule of Proportionate Employer Share for Fiscal Year Ending June 30, 2023 with Measurement Date December 31, 2022

### Deferred Outflows of Resources

| Covered Payroll      | Employer                       | Prop. Share<br>End of<br>Year | Prop. Share<br>Beginning of<br>Year | Net OPEB Liability   | Differences<br>Between<br>Expected and<br>Actual<br>Experience | Net Difference<br>Between<br>Projected and<br>Actual<br>Investment<br>Earnings on<br>OPEB Plan<br>Investments* | Changes of<br>Assum. | Changes in<br>Proportion and<br>Differences<br>Between<br>Employer Cont.<br>and Share of<br>Cont. | Total Deferred<br>Outflows of<br>Resources |
|----------------------|--------------------------------|-------------------------------|-------------------------------------|----------------------|--|--|----------------------|---|--|
| \$ 5,415,622         | Airport                        | 9.51%                         | 8.83%                               | \$ 1,990,445         | \$ 81,980  | \$ 199,594   | \$ 214,497           | \$ 288,984  | \$ 785,055                                 |
| 459,423              | Parking Control                | 0.81%                         | 1.03%                               | 169,533              | 6,983  | 17,000   | 18,269               | 28,227  | 70,479                                     |
| 2,611,316            | Environmental Protection       | 4.58%                         | 4.77%                               | 958,595              | 39,482   | 96,124   | 103,302              | 139,726   | 378,634                                    |
| 10,794,220           | School District                | 18.95%                        | 16.22%                              | 3,966,238            | 163,358  | 397,717  | 427,416              | 305,731   | 1,294,222                                  |
| 5,410,576            | Water Works                    | 9.50%                         | 9.96%                               | 1,988,352            | 81,894   | 199,383  | 214,272              | 248,545   | 744,094                                    |
| 32,278,140           | General Fund City Departments  | 56.65%                        | 59.19%                              | 11,856,856           | 488,348  | 1,188,954  | 1,277,737            | 29,958  | 2,984,997                                  |
| <b>\$ 56,969,297</b> | <b>Total for All Employers</b> | <b>100.00%</b>                | <b>100.00%</b>                      | <b>\$ 20,930,019</b> | <b>\$ 862,045</b>  | <b>\$ 2,098,772</b>  | <b>\$ 2,255,493</b>  | <b>\$ 1,041,171</b>   | <b>\$ 6,257,481</b>                        |



**Schedule of Proportionate Employer Share  
for Fiscal Year Ending June 30, 2023  
with Measurement Date December 31, 2022  
(Concluded)**

| Deferred Inflows of Resources                                  |                      |   |   | OPEB Expense                        |   |                                |  |
|--|----------------------|---|---|-------------------------------------|---|--------------------------------|--|
| Differences<br>Between<br>Expected and<br>Actual<br>Experience | Changes of<br>Assum. | Changes in<br>Proportion and<br>Differences<br>Between<br>Employer Cont.<br>and Share of<br>Cont. | Total Deferred<br>Inflows of<br>Resources | Prop. Share of Plan<br>OPEB Expense | Net Amortization of<br>Deferred Amounts<br>from Changes in<br>Proportion and<br>Differences<br>Between Employer<br>Contributions and<br>Proportionate Share<br>of Contributions | Total Employer<br>OPEB Expense |  |
| \$ 42,459  | \$ -                 | \$ 81,941   | \$ 124,400                                | \$ 267,666                          | \$ 52,067   | \$ 319,733                     |  |
| 3,616  | -                    | 25,745  | 29,361                                    | 22,798                              | 2,129   | 24,927                         |  |
| 20,448   | -                    | 16,195  | 36,643                                    | 128,907                             | 32,355  | 161,262                        |  |
| 84,605   | -                    | 313,298   | 397,903                                   | 533,362                             | (26,043)  | 507,319                        |  |
| 42,414   | -                    | 34,948  | 77,362                                    | 267,385                             | 58,501  | 325,886                        |  |
| 252,921  | -                    | 569,044   | 821,965                                   | 1,594,456                           | (119,009)   | 1,475,447                      |  |
| <b>\$ 446,463</b>  | <b>\$ -</b>          | <b>\$ 1,041,171</b>   | <b>\$ 1,487,634</b>                       | <b>\$ 2,814,574</b>                 | <b>\$ -</b>   | <b>\$ 2,814,574</b>            |  |

\* We understand that the recommendation of the American Institute of Certified Public Accountants (AICPA) is for the deferred inflows resulting from the net difference between projected and actual investment earnings on pension plan investments to be shown net of the respective outflows resulting from this difference. Beginning in the 2019 report, only the net amount is shown.



## 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 Manchester Employees' Contributory Retirement 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 OPEB Liability and Related Ratios**  
**Current Reporting Period**  
**for Fiscal Year Ending June 30, 2023**  
**with Measurement Date December 31, 2022**

|   |                      |
|---|----------------------|
| <b>A. Total OPEB liability</b>  |                      |
| 1. Service cost   | \$ 836,879           |
| 2. Interest on the total OPEB liability   | 2,516,831            |
| 3. Changes of benefit terms   | 0                    |
| 4. Difference between expected and actual experience<br>of the total OPEB liability   | (401,765)            |
| 5. Changes of assumptions   | 0                    |
| 6. Benefit payments, including refunds<br>of employee contributions                   | (1,650,847)          |
| <b>7. Net change in total OPEB liability</b>  | <b>1,301,098</b>     |
| <b>8. Total OPEB liability – beginning</b>  | <b>37,693,363</b>    |
| <b>9. Total OPEB liability – ending</b>   | <b>\$ 38,994,461</b> |
| <b>B. Plan fiduciary net position</b>   |                      |
| 1. Contributions – employer   | \$ 1,615,726         |
| 2. Contributions – nonemployer contributing entities                                  | 0                    |
| 3. Contributions – employee   | 721,128              |
| 4. Net investment income  | (2,696,932)          |
| 5. Benefit payments, including refunds<br>of employee contributions                   | (1,650,847)          |
| 6. OPEB plan administrative expense   | (52,011)             |
| 7. Other  | 0                    |
| <b>8. Net change in plan fiduciary net position</b>                                   | <b>(2,062,936)</b>   |
| <b>9. Plan fiduciary net position – beginning*</b>                                    | <b>20,127,378</b>    |
| <b>10. Plan fiduciary net position – ending</b>                                       | <b>\$ 18,064,442</b> |
| <b>C. Net OPEB liability</b>  | <b>\$ 20,930,019</b> |
| <b>D. Plan fiduciary net position as a percentage<br/>of the total OPEB liability</b> | <b>46.33 %</b>       |
| <b>E. Covered-employee payroll</b>  | <b>\$ 56,969,297</b> |
| <b>F. Net OPEB liability as a percentage<br/>of covered-employee payroll</b>          | <b>36.74 %</b>       |

\* Net of post-valuation adjustment (if any).

# Schedules of Required Supplementary Information

## Schedule of Changes in Net OPEB Liability and Related Ratios Multiyear

Ultimately 10 Fiscal Years Will be Displayed (which may be built prospectively)

| Measurement Period Ending December 31,                                     | 2022          | 2021          | 2020          | 2019          | 2018          | 2017 | 2016 | 2015 | 2014 | 2013 |
|--|---------------|---------------|---------------|---------------|---------------|------|------|------|------|------|
| <b>Total OPEB liability</b>  |               |               |               |               |               |      |      |      |      |      |
| Service cost   | \$ 836,879    | \$ 800,532    | \$ 750,882    | \$ 722,950    | \$ 667,057    |      |      |      |      |      |
| Interest on the total OPEB liability                                       | 2,516,831     | 2,355,738     | 2,103,564     | 1,993,098     | 1,834,405     |      |      |      |      |      |
| Changes of benefit terms   | 0             | 0             | 0             | 0             | 0             |      |      |      |      |      |
| Difference between expected and actual experience                          | (401,765)     | 776,644       | (158,010)     | 108,038       | 871,321       |      |      |      |      |      |
| Changes of assumptions   | 0             | 0             | 3,525,938     | 0             | 0             |      |      |      |      |      |
| Benefit payments, including refunds of employee contributions              | (1,650,847)   | (1,478,210)   | (1,318,384)   | (1,201,543)   | (1,065,835)   |      |      |      |      |      |
| <b>Net change in total OPEB liability</b>                                  | 1,301,098     | 2,454,704     | 4,903,990     | 1,622,543     | 2,306,948     |      |      |      |      |      |
| <b>Total OPEB liability - beginning</b>                                    | 37,693,363    | 35,238,659    | 30,334,669    | 28,712,126    | 26,405,178    |      |      |      |      |      |
| <b>Total OPEB liability - ending (a)</b>                                   | \$ 38,994,461 | \$ 37,693,363 | \$ 35,238,659 | \$ 30,334,669 | \$ 28,712,126 |      |      |      |      |      |
| <b>Plan fiduciary net position</b>   |               |               |               |               |               |      |      |      |      |      |
| Employer contributions   | \$ 1,615,726  | \$ 1,439,820  | \$ 1,252,923  | \$ 1,075,844  | \$ 856,677    |      |      |      |      |      |
| Nonemployer contributing entities contributions                            | 0             | 0             | 0             | 0             | 0             |      |      |      |      |      |
| Employee contributions   | 721,128       | 710,291       | 702,739       | 682,470       | 674,011       |      |      |      |      |      |
| OPEB plan net investment income  | (2,696,932)   | 2,085,283     | 2,074,039     | 2,002,516     | (688,995)     |      |      |      |      |      |
| Benefit payments, including refunds of employee contributions              | (1,650,847)   | (1,478,210)   | (1,318,384)   | (1,201,543)   | (1,065,835)   |      |      |      |      |      |
| OPEB plan administrative expense   | (52,011)      | (48,968)      | (58,908)      | (47,490)      | (37,111)      |      |      |      |      |      |
| Other  | 0             | 0             | (128)         | (2,239)       | (3,484)       |      |      |      |      |      |
| <b>Net change in plan fiduciary net position</b>                           | (2,062,936)   | 2,708,216     | 2,652,281     | 2,509,558     | (264,737)     |      |      |      |      |      |
| <b>Plan fiduciary net position - beginning</b>                             | 20,127,378    | 17,419,162    | 14,772,702    | 12,268,459    | 12,535,536    |      |      |      |      |      |
| <b>Adjustment</b>  | -             | -             | (5,821)       | (5,315)       | (2,340)       |      |      |      |      |      |
| <b>Plan fiduciary net position - ending (b)</b>                            | \$ 18,064,442 | \$ 20,127,378 | \$ 17,419,162 | \$ 14,772,702 | \$ 12,268,459 |      |      |      |      |      |
| <b>Net OPEB liability - ending (a) - (b)</b>                               | \$ 20,930,019 | \$ 17,565,985 | \$ 17,819,497 | \$ 15,561,967 | \$ 16,443,667 |      |      |      |      |      |
| <b>Plan fiduciary net position as a percentage of total OPEB liability</b> | 46.33 %       | 53.40 %       | 49.43 %       | 48.70 %       | 42.73 %       |      |      |      |      |      |
| <b>Covered-employee payroll</b>  | \$ 56,969,297 | \$ 55,323,580 | \$ 54,254,463 | \$ 52,895,992 | \$ 51,787,265 |      |      |      |      |      |
| <b>Net OPEB liability as a percentage of covered-employee payroll</b>      | 36.74 %       | 31.75 %       | 32.84 %       | 29.42 %       | 31.75 %       |      |      |      |      |      |
| <b>Notes to Schedule:</b>  | N/A           | N/A           | N/A           | N/A           | N/A           |      |      |      |      |      |



# Schedules of Required Supplementary Information

## Schedule of the Net OPEB Liability Multiyear

(Ultimately 10 Years Will Be Displayed)

| Measurement Date<br>December 31 | Total OPEB Liability | Plan Net Position | Net OPEB Liability | Plan Net Position as a % of Total OPEB Liability | Covered Payroll* | Net OPEB Liability as a % of Covered Payroll |
|---------------------------------|----------------------|-------------------|--------------------|--|------------------|--|
| 2017                            | \$ 26,405,178        | \$ 12,535,536     | \$ 13,869,642      | 47.47 %  | \$ 53,364,536    | 25.99 %                                      |
| 2018                            | 28,712,126           | 12,268,459        | 16,443,667         | 42.73 %  | 51,787,265       | 31.75 %                                      |
| 2019                            | 30,334,669           | 14,772,702        | 15,561,967         | 48.70 %  | 52,895,992       | 29.42 %                                      |
| 2020                            | 35,238,659           | 17,419,162        | 17,819,497         | 49.43 %  | 54,254,463       | 32.84 %                                      |
| 2021                            | 37,693,363           | 20,127,378        | 17,565,985         | 53.40 %  | 55,323,580       | 31.75 %                                      |
| 2022                            | 38,994,461           | 18,064,442        | 20,930,019         | 46.33 %  | 56,969,297       | 36.74 %                                      |

*\*Based on valuation payroll as of plan year ending December 31.*



# Schedule of Contributions Multiyear

(Ultimately 10 Years Will Be Displayed)

| Fiscal Year<br>Ending<br>June 30 | Actuarially<br>Determined<br>Contribution (ADC) <sup>#</sup> | Actual<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Covered<br>Payroll* | Actual Contribution<br>as a % of<br>Covered Payroll |
|----------------------------------|--|------------------------|--|---------------------|---|
| 2018                             | \$ 715,870   | \$ 715,870             | \$ 0                                   | \$ 53,364,536       | 1.34 %  |
| 2019                             | 856,677  | 856,677                | 0                                      | 51,787,265          | 1.65 %  |
| 2020                             | 1,075,844  | 1,075,844              | 0                                      | 52,895,992          | 2.03 %  |
| 2021                             | 1,252,923  | 1,252,923              | 0                                      | 54,254,463          | 2.31 %  |
| 2022                             | 1,439,820  | 1,439,820              | 0                                      | 55,323,580          | 2.60 %  |
| 2023                             | 1,615,726  | 1,615,726              | 0                                      | 56,969,297          | 2.84 %  |

\* Based on valuation payroll as of plan year ending December 31.

# Employer contributions based on percent of payroll. Employer pays ADC percentage.



# Notes to Schedule of Contributions

**Valuation Date:** December 31, 2020 and December 31, 2021  
**Notes** Actuarially determined contribution rates are calculated as of December 31 for the contribution period starting 6 months later. Actual contributions reported during the plan year are therefore based on two consecutive ADCs.

## Methods and Assumptions Used to Determine the Fiscal Year Ending June 30, 2022 Contribution Rate:

|                               |  |
|-------------------------------|--|
| Actuarial Cost Method         | Entry Age Normal   |
| Amortization Method           | Level Percentage of Payroll, Closed  |
| Remaining Amortization Period | 19 years   |
| Asset Valuation Method        | 5-Year smoothed market; 20% corridor   |
| Wage Inflation                | 2.50%  |
| Salary Increases              | 3.25% to 5.96%, including inflation  |
| Investment Rate of Return     | 6.75% (net of investment expenses)   |
| Retirement Age                | Age and Experience-based table of rates that are specific to the type of eligibility condition.  |
| Mortality                     | Pub-2010 Mortality Table projected to 2039 for males and females using projection scale MP-2019. |
| Expense Load                  | None.  |
| Increases                     | Annual health subsidy amounts are assumed to increase by 4% annually.                            |
| Health Care Trend Rates       | Not applicable, given that the benefits are fixed stipends.                                      |
| Aging Factors                 | Not applicable, given that the benefits are fixed stipends.                                      |

## Other Information:

**Notes** There were changes to assumptions including many demographic assumptions, assumed rates of investment return, wage inflation, and price inflation, and administrative expenses following the 3-year experience study for period ending December 31, 2019. There were no changes to benefit provisions.

## Methods and Assumptions Used to Determine the Fiscal Year Ending June 30, 2023 Contribution Rate:

|                               |  |
|-------------------------------|--|
| Actuarial Cost Method         | Entry Age Normal   |
| Amortization Method           | Level Percentage of Payroll, Closed  |
| Remaining Amortization Period | 18 years   |
| Asset Valuation Method        | 5-Year smoothed market; 20% corridor   |
| Wage Inflation                | 2.50%  |
| Salary Increases              | 3.25% to 5.96%, including inflation  |
| Investment Rate of Return     | 6.75% (net of investment expenses)   |
| Retirement Age                | Age and Experience-based table of rates that are specific to the type of eligibility condition.  |
| Mortality                     | Pub-2010 Mortality Table projected to 2039 for males and females using projection scale MP-2019. |
| Expense Load                  | None.  |
| Increases                     | Annual health subsidy amounts are assumed to increase by 4% annually.                            |
| Health Care Trend Rates       | Not applicable, given that the benefits are fixed stipends.                                      |
| Aging Factors                 | Not applicable, given that the benefits are fixed stipends.                                      |

## Other Information:

**Notes** None.



## 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 Manchester Employees' Contributory Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

## Single Discount Rate

A Single Discount Rate of 6.75% was used to measure the total OPEB liability. This Single Discount Rate was based on the expected rate of return on OPEB plan investments of 6.75%. The projection of cash flows used to determine this Single Discount Rate assumed that employer contributions will be made at rates equal to the actuarially determined contribution rate. Based on these assumptions, the OPEB 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 OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

## Summary of Population Statistics

|   |              |
|---|--------------|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits | 438          |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits    | 123          |
| Active Plan Members   | <u>1,058</u> |
| Total Plan Members  | 1,619        |

## Sensitivity of Net OPEB Liability

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

### Sensitivity of Net OPEB Liability to the Single Discount Rate Assumption

|                                  | <b>1% Decrease<br/>5.75%</b> | <b>Current Single Discount<br/>Rate Assumption<br/>6.75%</b> | <b>1% Increase<br/>7.75%</b> |
|----------------------------------|------------------------------|--|------------------------------|
| Total OPEB Liability (TOL)       | \$ 44,179,382                | \$ 38,994,461  | \$ 34,688,134                |
| Net Position Restricted for OPEB | 18,064,442                   | 18,064,442   | 18,064,442                   |
| Net OPEB Liability               | \$ 26,114,940                | \$ 20,930,019  | \$ 16,623,692                |

# SECTION E

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## SUMMARY OF BENEFITS

## Summary of Health Subsidy Benefits

Current and future retired members who are in receipt of an annuity benefit may elect to participate in a monthly health insurance subsidy. Spouses, dependents, and/or beneficiaries are not eligible for any subsidy. The full amount of the monthly health insurance subsidy is \$200 as of January 1, 2006 and increases by 4% annually beginning January 1, 2007. The full \$200 is prorated based on the member's service at retirement, as shown in the schedule below. Members who were already retired as of March 2006 are entitled to 50% of the subsidy available to members retired after March 2006. Active members must contribute 1.25% of pay. Member contributions for the health subsidy are non-refundable.

| Service at Retirement                    | % of Full Subsidy Payable           |  |
|--|-------------------------------------|--|
|  | Active on or after<br>March 1, 2006 | Terminated Vested or Retired<br>on March 1, 2006 |
| Less than 10 years                       | 25.0%                               | 12.5%  |
| 10 years or more, but less than 15 years | 50.0%                               | 25.0%  |
| 15 years or more, but less than 20 years | 75.0%                               | 37.5%  |
| 20 years or more                         | 100.0%                              | 50.0%  |

## SECTION F

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



## Actuarial Cost Method

**Normal cost and the allocation of benefit values** between service rendered before and after the valuation date was determined using the *individual entry-age actuarial cost method*. GASB Statement Nos. 74 and 75 require the use of this method having the following characteristics:

- 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;
- Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay; and
- The use of Market Value of Assets for the Net Position Restricted for OPEB.

## Actuarial Assumptions

The contribution requirements and benefit values of the System are calculated by applying actuarial assumptions to the benefit provisions and member information furnished, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experience are:

- Long-term rates of investment return to be generated by the assets of the System;
- Patterns of pay increases to members;
- Rates of mortality among members, retirees and beneficiaries;
- Rates of withdrawal of active members;
- Rates of disability among members; and
- The age patterns of actual retirement.

In a valuation, the monetary effect of each assumption is calculated for as long as a present covered person survives - - - a period of time which can be as long as a century.

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Actual experience of the System will not coincide exactly with assumed experience, regardless of the accuracy of the assumptions, or the skill of the actuary and the precision of the many calculations made. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). The Board has established a policy of performing an Experience Study every 3-5 years to evaluate/modify valuation assumptions. Assumptions used in this report are based on the January 1, 2017 – December 31, 2019 experience study of the MECRS and were adopted by the Board. These assumptions were first used in the December 31, 2020 actuarial valuation. We believe the assumptions are reasonable individually and in the aggregate.

## Valuation Assumptions

**The rate of investment return was 6.75% per year**, compounded annually (net of investment expenses). This assumption is used to make money payable at one point in time equal in value to a different amount of money payable at another point in time. The assumed real rate of return (the net return in excess of the wage inflation rate) is 4.25%. Experience over the last 5 years has been as follows:

|                                  | Year Ended December 31 |        |        |        |         | 5-Year Average |
|----------------------------------|------------------------|--------|--------|--------|---------|----------------|
|                                  | 2022                   | 2021   | 2020   | 2019   | 2018    |                |
| 1) Nominal rate of return#       | 4.00 %                 | 9.70 % | 8.60 % | 5.60 % | 3.40 %  | 6.23 %         |
| 2) Increase in CPI               | 6.50 %                 | 7.00 % | 1.40 % | 2.30 % | 1.90 %  | 3.79 %         |
| 3) Average Salary Increase (ASI) | 4.14 %                 | 3.69 % | 5.49 % | 4.24 % | (0.07)% | 3.48 %         |
| 4) Real Return                   |                        |        |        |        |         |                |
| - Total: CPI (1) - (2)           |                        |        |        |        |         | 2.44 %         |
| - Total: ASI (1) - (3)           |                        |        |        |        |         | 2.75 %         |
| - Assumption                     | 4.25 %                 | 4.25 % | 4.25 % | 4.25 % | 4.25 %  | 4.25 %         |

# The nominal rate of return was computed using the approximate formula:  $i = I$  divided by  $\frac{1}{2}(A+B-I)$ , where  $I$  is realized investment income net of expenses,  $A$  is the beginning of year asset funding value and  $B$  is the end of year funding asset value.

**The rate of assumed price inflation** was 2.00% per year. This results in a real rate of return over price inflation of 4.75%.

These economic assumptions were updated for the December 31, 2020 valuation.

## Valuation Assumptions (Continued)

*The rates of salary increase* used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

| Years of Service | Salary Increase Assumptions<br>for an Individual Member |                 |                    |
|------------------|---|-----------------|--------------------|
|                  | Merit & Seniority                                       | Base (Economic) | Increase Next Year |
| 1                | 3.46%   | 2.50%           | 5.96%              |
| 2                | 4.43%   | 2.50%           | 6.93%              |
| 3                | 4.22%   | 2.50%           | 6.72%              |
| 4                | 3.70%   | 2.50%           | 6.20%              |
| 5                | 3.38%   | 2.50%           | 5.88%              |
| 6                | 2.93%   | 2.50%           | 5.43%              |
| 7                | 2.55%   | 2.50%           | 5.05%              |
| 8                | 2.26%   | 2.50%           | 4.76%              |
| 9                | 2.06%   | 2.50%           | 4.56%              |
| 10               | 1.85%   | 2.50%           | 4.35%              |
| 15               | 1.08%   | 2.50%           | 3.58%              |
| 20               | 0.77%   | 2.50%           | 3.27%              |
| 25               | 0.75%   | 2.50%           | 3.25%              |
| 30               | 0.75%   | 2.50%           | 3.25%              |
| 35               | 0.75%   | 2.50%           | 3.25%              |
| 40               | 0.75%   | 2.50%           | 3.25%              |

If the number of active members remains constant, then the total active member payroll will increase 2.50% annually, the base portion of the individual salary increase assumptions. This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities.

Rates of salary increase were updated for the December 31, 2020 valuation.

## Valuation Assumptions (Continued)

*The rates of retirement* used to measure the probability of eligible members retiring during the next year were updated for the December 31, 2020 valuation and are as follows:

| Active Members Retiring Next Year<br>Under Normal Retirement |            |        | Active Members Retiring Next Year<br>Under Early Retirement |                 |        |            |
|--|------------|--------|---|-----------------|--------|------------|
| Ages   | % Retiring |        | Ages  | % Retiring      |        |            |
|  | Male       | Female |   | Age and Service |        | Rule of 80 |
|  |            |        |   | Male            | Female |            |
| 60   | 12%        | 8%     | 50  |                 |        | 10%        |
| 61   | 11%        | 15%    | 51  |                 |        | 4%         |
| 62   | 22%        | 19%    | 52  |                 |        | 7%         |
| 63   | 18%        | 10%    | 53  |                 |        | 5%         |
| 64   | 18%        | 10%    | 54  |                 |        | 5%         |
| 65   | 24%        | 19%    | 55  | 5%              | 10%    | 5%         |
| 66   | 38%        | 27%    | 56  | 5%              | 15%    | 4%         |
| 67   | 15%        | 19%    | 57  | 5%              | 8%     | 8%         |
| 68   | 39%        | 15%    | 58  | 5%              | 7%     | 8%         |
| 69   | 15%        | 22%    | 59  | 5%              | 7%     | 10%        |
| 70   | 27%        | 25%    |   |                 |        |            |
| 71   | 50%        | 19%    |   |                 |        |            |
| 72   | 42%        | 19%    |   |                 |        |            |
| 73   | 50%        | 19%    |   |                 |        |            |
| 74   | 50%        | 19%    |   |                 |        |            |
| 75   | 100%       | 19%    |   |                 |        |            |
| 76   | 100%       | 19%    |   |                 |        |            |
| 77   | 100%       | 19%    |   |                 |        |            |
| 78   | 100%       | 19%    |   |                 |        |            |
| 79   | 100%       | 19%    |   |                 |        |            |
| 80   | 100%       | 100%   |   |                 |        |            |

A member was assumed to be eligible for normal retirement after attaining age 60 regardless of service. A member was assumed to be eligible for early retirement after attaining age 55 with at least 20 years of service or if the sum of age and service is at least 80.

## Valuation Assumptions (Continued)

**The post-retirement healthy mortality table** was the Pub-2010 General Healthy Retiree Table projected to 2039 using projection scale MP-2019.

| Sample Attained Ages | Single Life Retirement Values         |          |                         |         |                                |        |
|----------------------|---------------------------------------|----------|-------------------------|---------|--------------------------------|--------|
|                      | Present Value of \$1 Monthly for Life |          | Percent Dying Next Year |         | Future Life Expectancy (Years) |        |
|                      | Male                                  | Female   | Male                    | Female  | Male                           | Female |
| 50                   | \$158.10                              | \$162.48 | 0.2552%                 | 0.1899% | 34.83                          | 37.64  |
| 55                   | 150.84                                | 156.27   | 0.3655%                 | 0.2572% | 30.30                          | 33.01  |
| 60                   | 141.83                                | 148.25   | 0.5441%                 | 0.3494% | 25.91                          | 28.46  |
| 65                   | 130.71                                | 137.94   | 0.7880%                 | 0.5138% | 21.66                          | 23.99  |
| 70                   | 117.05                                | 125.04   | 1.2298%                 | 0.8314% | 17.58                          | 19.67  |
| 75                   | 101.05                                | 109.55   | 2.0765%                 | 1.4535% | 13.77                          | 15.59  |
| 80                   | 83.40                                 | 91.89    | 3.6906%                 | 2.6437% | 10.36                          | 11.86  |

This assumption is used to measure the probabilities of members dying after retirement. The projection to 2039 is the margin for mortality improvement.

**Post-retirement disabled mortality table** is the Pub-2010 General Disabled Retiree Table projected to 2039 using projection scale MP-2019.

**Pre-retirement mortality** is modeled using the Pub-2010 General Employee Table projected to 2039 using projection scale MP-2019.

These tables were updated for the December 31, 2020 valuation in accordance with an experience study for the System of the 3-year period ended December 31, 2019.

## Valuation Assumptions (Concluded)

**Rates of separation from active membership** are shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment. These rates were updated for the December 31, 2020 valuation.

| Sample Ages | Years of Service | % of Active Members Separating within Next Year |        |
|-------------|------------------|---|--------|
|             |                  | Male  | Female |
|             | 0-1              | 24.00%  | 36.00% |
|             | 1-2              | 18.00%  | 26.00% |
|             | 2-3              | 13.00%  | 22.00% |
|             | 3-4              | 7.00%   | 14.00% |
|             | 4-5              | 7.00%   | 14.00% |
|             | 5-6              | n/a   | 11.00% |
| 30          | 5 & Up (Men)     |   |        |
|             | 6 & Up (Women)   | 4.00%   | 6.89%  |
| 35          |                  | 2.96%   | 5.79%  |
| 40          |                  | 2.33%   | 5.01%  |
| 45          |                  | 2.00%   | 4.42%  |
| 50          |                  | 1.87%   | 3.84%  |

**Rates of disability** are divided two-thirds toward duty and one-third toward non-duty disability and are as follows:

| Sample Ages | % of Active Members Becoming Disabled within Next Year |        |
|-------------|--|--------|
|             | Male   | Female |
| 20          | 0.003%   | 0.003% |
| 25          | 0.003%   | 0.003% |
| 30          | 0.003%   | 0.003% |
| 35          | 0.013%   | 0.013% |
| 40          | 0.051%   | 0.051% |
| 45          | 0.105%   | 0.105% |
| 50          | 0.173%   | 0.173% |
| 55          | 0.256%   | 0.256% |
| 60          | 0.382%   | 0.382% |

## Miscellaneous and Technical Assumptions

|                                    |  |
|------------------------------------|--|
| <b>Decrement Timing:</b>           | Decrements of all types are assumed to occur mid-year.   |
| <b>Eligibility Testing:</b>        | Eligibility for benefits is determined based upon the age nearest birthday and exact fractional service on the date the decrement is assumed to occur.   |
| <b>Decrement Relativity:</b>       | Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.  |
| <b>Decrement Operation:</b>        | Disability and withdrawal decrements do not operate after member reaches retirement eligibility.   |
| <b>Benefit Service:</b>            | Exact fractional service as of the valuation date is used to determine the amount of benefit payable.  |
| <b>Incidence of Contributions:</b> | Contributions are assumed to be received continuously throughout the year based upon the actual payroll payable at the time contributions are made.  |
| <b>Subsidy COLA Assumption:</b>    | The only increases in subsidy benefits valued are the 4% annual increases called for in the plan provisions.   |
| <b>Utilization:</b>                | 55% of current actives and 25% of current terminated vested members were assumed to elect to receive the post-retirement health subsidy upon retirement. Current retirees were assumed not to alter their initial election after retirement.   |
| <b>Data Processing:</b>            | The Retirement System provides data in Excel format. GRS reviews the data for reasonableness and completeness. Questions are sent to the System. Data is then modified based on the answers provided. For new members with less than one year of earnings, reported pay is annualized based on reported service. |
| <b>Data Adjustments:</b>           | For members who have no salary provided, their prior year's salary was used.   |



## **SECTION G**

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### **CALCULATION OF THE SINGLE DISCOUNT RATE**

## Calculation of the Single Discount Rate

GASB Statement No. 74 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total OPEB Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on OPEB plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year 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 OPEB plan investments is 6.75%; the municipal bond rate is 4.05%; and the resulting Single Discount Rate is 6.75%.

The tables in this section provide background for the development of the Single Discount Rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan. Contribution amounts shown are strictly for the purpose of testing for a GASB depletion date and may differ from those determined by a funding valuation.

This analysis was performed without regard to any implicit rate subsidy that might exist. An analysis of how the implicit rate subsidy (if any) affects this calculation was outside the scope of this engagement.

# Single Discount Rate Development

## Projection of Contributions Ending December 31 for 2023 to 2072

| Year | Projected Payroll for Current Employees | Projected Contributions from Current Employees | Projected Service Cost and Expense Contributions | Projected UAL Contributions | Projected Total Contributions |
|------|---|--|--|-----------------------------|-------------------------------|
| 2022 | \$ 56,969,297                           |  |  |                             |                               |
| 2023 | 59,535,477                              | \$ 744,193                                     | \$ 156,639                                       | \$ 1,726,192                | \$ 2,627,024                  |
| 2024 | 54,798,243                              | 684,978  | 121,824  | 1,769,346                   | 2,576,148                     |
| 2025 | 51,422,131                              | 642,777  | 97,031   | 1,813,580                   | 2,553,388                     |
| 2026 | 48,624,592                              | 607,807  | 80,641   | 1,858,920                   | 2,547,368                     |
| 2027 | 45,960,076                              | 574,501  | 65,995   | 1,905,393                   | 2,545,888                     |
| 2028 | 43,567,329                              | 544,592  | 55,886   | 1,953,027                   | 2,553,505                     |
| 2029 | 41,354,652                              | 516,933  | 47,411   | 2,001,853                   | 2,566,197                     |
| 2030 | 39,176,867                              | 489,711  | 38,176   | 2,051,899                   | 2,579,786                     |
| 2031 | 37,101,673                              | 463,771  | 31,981   | 2,103,197                   | 2,598,949                     |
| 2032 | 35,134,418                              | 439,180  | 26,322   | 2,155,777                   | 2,621,279                     |
| 2033 | 33,222,452                              | 415,281  | 22,244   | 2,209,671                   | 2,647,196                     |
| 2034 | 31,472,325                              | 393,404  | 18,444   | 2,264,913                   | 2,676,761                     |
| 2035 | 29,758,639                              | 371,983  | 14,907   | 2,321,536                   | 2,708,425                     |
| 2036 | 28,086,980                              | 351,087  | 11,782   | 2,379,574                   | 2,742,443                     |
| 2037 | 26,565,037                              | 332,063  | 9,122  | 2,439,064                   | 2,780,249                     |
| 2038 | 25,082,807                              | 313,535  | 6,425  | 2,500,040                   | 2,820,000                     |
| 2039 | 23,688,970                              | 296,112  | 4,073  | 2,562,541                   | 2,862,726                     |
| 2040 | 22,290,061                              | 278,626  | 1,885  | 0                           | 280,511                       |
| 2041 | 21,002,768                              | 262,535  | 0  | 0                           | 262,535                       |
| 2042 | 19,764,919                              | 247,061  | 0  | 0                           | 247,061                       |
| 2043 | 18,597,654                              | 232,471  | 0  | 0                           | 232,471                       |
| 2044 | 17,433,484                              | 217,919  | 0  | 0                           | 217,919                       |
| 2045 | 16,286,797                              | 203,585  | 0  | 0                           | 203,585                       |
| 2046 | 15,203,350                              | 190,042  | 0  | 0                           | 190,042                       |
| 2047 | 14,089,505                              | 176,119  | 0  | 0                           | 176,119                       |
| 2048 | 13,043,116                              | 163,039  | 0  | 0                           | 163,039                       |
| 2049 | 11,921,678                              | 149,021  | 0  | 0                           | 149,021                       |
| 2050 | 10,887,841                              | 136,098  | 0  | 0                           | 136,098                       |
| 2051 | 9,812,223                               | 122,653  | 0  | 0                           | 122,653                       |
| 2052 | 8,834,767                               | 110,435  | 0  | 0                           | 110,435                       |
| 2053 | 7,852,297                               | 98,154   | 0  | 0                           | 98,154                        |
| 2054 | 6,914,363                               | 86,430   | 0  | 0                           | 86,430                        |
| 2055 | 6,047,667                               | 75,596   | 0  | 0                           | 75,596                        |
| 2056 | 5,215,548                               | 65,194   | 0  | 0                           | 65,194                        |
| 2057 | 4,443,732                               | 55,547   | 0  | 0                           | 55,547                        |
| 2058 | 3,749,544                               | 46,869   | 0  | 0                           | 46,869                        |
| 2059 | 3,124,884                               | 39,061   | 0  | 0                           | 39,061                        |
| 2060 | 2,519,162                               | 31,490   | 0  | 0                           | 31,490                        |
| 2061 | 2,021,424                               | 25,268   | 0  | 0                           | 25,268                        |
| 2062 | 1,613,167                               | 20,165   | 0  | 0                           | 20,165                        |
| 2063 | 1,235,005                               | 15,438   | 0  | 0                           | 15,438                        |
| 2064 | 963,548                                 | 12,044   | 0  | 0                           | 12,044                        |
| 2065 | 734,674                                 | 9,183  | 0  | 0                           | 9,183                         |
| 2066 | 544,779                                 | 6,810  | 0  | 0                           | 6,810                         |
| 2067 | 392,672                                 | 4,908  | 0  | 0                           | 4,908                         |
| 2068 | 291,863                                 | 3,648  | 0  | 0                           | 3,648                         |
| 2069 | 202,011                                 | 2,525  | 0  | 0                           | 2,525                         |
| 2070 | 141,352                                 | 1,767  | 0  | 0                           | 1,767                         |
| 2071 | 103,783                                 | 1,297  | 0  | 0                           | 1,297                         |
| 2072 | 71,234                                  | 890  | 0  | 0                           | 890                           |



# Single Discount Rate Development

## Projection of Contributions Ending December 31 for 2073 to 2122

| Year | Projected Payroll for Current Employees | Projected Contributions from Current Employees | Projected Service Cost and Expense Contributions | Projected UAL Contributions | Projected Total Contributions |
|------|---|--|--|-----------------------------|-------------------------------|
| 2073 | \$ 51,023                               | \$ 638   | \$ 0   | \$ 0                        | 638                           |
| 2074 | 34,211                                  | 428  | 0  | 0                           | 428                           |
| 2075 | 24,160                                  | 302  | 0  | 0                           | 302                           |
| 2076 | 16,079                                  | 201  | 0  | 0                           | 201                           |
| 2077 | 10,947                                  | 137  | 0  | 0                           | 137                           |
| 2078 | 7,278                                   | 91   | 0  | 0                           | 91                            |
| 2079 | 4,510                                   | 56   | 0  | 0                           | 56                            |
| 2080 | 2,151                                   | 27   | 0  | 0                           | 27                            |
| 2081 | 1,305                                   | 16   | 0  | 0                           | 16                            |
| 2082 | 580                                     | 7  | 0  | 0                           | 7                             |
| 2083 | 275                                     | 3  | 0  | 0                           | 3                             |
| 2084 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2085 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2086 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2087 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2088 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2089 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2090 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2091 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2092 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2093 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2094 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2095 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2096 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2097 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2098 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2099 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2100 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2101 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2102 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2103 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2104 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2105 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2106 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2107 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2108 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2109 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2110 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2111 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2112 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2113 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2114 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2115 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2116 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2117 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2118 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2119 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2120 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2121 | 0                                       | 0  | 0  | 0                           | 0                             |
| 2122 | 0                                       | 0  | 0  | 0                           | 0                             |

# Single Discount Rate Development Projection of Plan Net Position Ending December 31 for 2023 to 2072

| Year | Projected<br>Beginning<br>Plan Net Position | Projected<br>Total<br>Contributions | Projected<br>Benefit Payments | Projected<br>Administrative<br>Expenses | Projected Investment<br>Earnings at 6.75% | Projected<br>Ending<br>Plan Net Position |
|------|---|-------------------------------------|-------------------------------|---|---|--|
|      | (a)   | (b)                                 | (c)                           | (d)                                     | (e)                                       | (f)=(a)+(b)-(c)-(d)+(e)                  |
| 2023 | \$ 18,064,442                               | \$ 2,627,024                        | \$ 1,248,334                  | \$ 0                                    | \$ 1,265,121                              | \$ 20,708,253                            |
| 2024 | 20,708,253                                  | 2,576,148                           | 1,407,722                     | 0                                       | 1,436,598                                 | 23,313,277                               |
| 2025 | 23,313,277                                  | 2,553,388                           | 1,569,965                     | 0                                       | 1,606,295                                 | 25,902,995                               |
| 2026 | 25,902,995                                  | 2,547,368                           | 1,748,251                     | 0                                       | 1,774,982                                 | 28,477,093                               |
| 2027 | 28,477,093                                  | 2,545,888                           | 1,929,729                     | 0                                       | 1,942,660                                 | 31,035,912                               |
| 2028 | 31,035,912                                  | 2,553,505                           | 2,105,988                     | 0                                       | 2,109,781                                 | 33,593,210                               |
| 2029 | 33,593,210                                  | 2,566,197                           | 2,288,999                     | 0                                       | 2,276,744                                 | 36,147,153                               |
| 2030 | 36,147,153                                  | 2,579,786                           | 2,468,526                     | 0                                       | 2,443,627                                 | 38,702,039                               |
| 2031 | 38,702,039                                  | 2,598,949                           | 2,652,397                     | 0                                       | 2,610,613                                 | 41,259,205                               |
| 2032 | 41,259,205                                  | 2,621,279                           | 2,832,150                     | 0                                       | 2,777,996                                 | 43,826,329                               |
| 2033 | 43,826,329                                  | 2,647,196                           | 3,000,781                     | 0                                       | 2,946,539                                 | 46,419,282                               |
| 2034 | 46,419,282                                  | 2,676,761                           | 3,170,512                     | 0                                       | 3,116,910                                 | 49,042,440                               |
| 2035 | 49,042,440                                  | 2,708,425                           | 3,336,970                     | 0                                       | 3,289,498                                 | 51,703,393                               |
| 2036 | 51,703,393                                  | 2,742,443                           | 3,492,378                     | 0                                       | 3,465,082                                 | 54,418,541                               |
| 2037 | 54,418,541                                  | 2,780,249                           | 3,649,833                     | 0                                       | 3,644,382                                 | 57,193,339                               |
| 2038 | 57,193,339                                  | 2,820,000                           | 3,805,565                     | 0                                       | 3,827,831                                 | 60,035,605                               |
| 2039 | 60,035,605                                  | 2,862,726                           | 3,951,110                     | 0                                       | 4,016,270                                 | 62,963,491                               |
| 2040 | 62,963,491                                  | 280,511                             | 4,088,404                     | 0                                       | 4,123,618                                 | 63,279,216                               |
| 2041 | 63,279,216                                  | 262,535                             | 4,221,332                     | 0                                       | 4,139,919                                 | 63,460,338                               |
| 2042 | 63,460,338                                  | 247,061                             | 4,343,508                     | 0                                       | 4,147,575                                 | 63,511,466                               |
| 2043 | 63,511,466                                  | 232,471                             | 4,458,453                     | 0                                       | 4,146,726                                 | 63,432,210                               |
| 2044 | 63,432,210                                  | 217,919                             | 4,561,847                     | 0                                       | 4,137,460                                 | 63,225,742                               |
| 2045 | 63,225,742                                  | 203,585                             | 4,655,041                     | 0                                       | 4,119,954                                 | 62,894,240                               |
| 2046 | 62,894,240                                  | 190,042                             | 4,735,113                     | 0                                       | 4,094,470                                 | 62,443,639                               |
| 2047 | 62,443,639                                  | 176,119                             | 4,808,109                     | 0                                       | 4,061,169                                 | 61,872,818                               |
| 2048 | 61,872,818                                  | 163,039                             | 4,873,736                     | 0                                       | 4,020,025                                 | 61,182,146                               |
| 2049 | 61,182,146                                  | 149,021                             | 4,938,693                     | 0                                       | 3,970,783                                 | 60,363,257                               |
| 2050 | 60,363,257                                  | 136,098                             | 4,980,106                     | 0                                       | 3,913,704                                 | 59,432,952                               |
| 2051 | 59,432,952                                  | 122,653                             | 5,010,751                     | 0                                       | 3,849,445                                 | 58,394,299                               |
| 2052 | 58,394,299                                  | 110,435                             | 5,025,635                     | 0                                       | 3,778,436                                 | 57,257,535                               |
| 2053 | 57,257,535                                  | 98,154                              | 5,032,800                     | 0                                       | 3,701,059                                 | 56,023,947                               |
| 2054 | 56,023,947                                  | 86,430                              | 5,037,299                     | 0                                       | 3,617,253                                 | 54,690,330                               |
| 2055 | 54,690,330                                  | 75,596                              | 5,024,477                     | 0                                       | 3,527,300                                 | 53,268,749                               |
| 2056 | 53,268,749                                  | 65,194                              | 4,997,045                     | 0                                       | 3,431,908                                 | 51,768,807                               |
| 2057 | 51,768,807                                  | 55,547                              | 4,957,143                     | 0                                       | 3,331,667                                 | 50,198,878                               |
| 2058 | 50,198,878                                  | 46,869                              | 4,902,556                     | 0                                       | 3,227,221                                 | 48,570,412                               |
| 2059 | 48,570,412                                  | 39,061                              | 4,838,161                     | 0                                       | 3,119,178                                 | 46,890,490                               |
| 2060 | 46,890,490                                  | 31,490                              | 4,765,754                     | 0                                       | 3,007,936                                 | 45,164,161                               |
| 2061 | 45,164,161                                  | 25,268                              | 4,680,763                     | 0                                       | 2,894,023                                 | 43,402,689                               |
| 2062 | 43,402,689                                  | 20,165                              | 4,585,527                     | 0                                       | 2,778,116                                 | 41,615,443                               |
| 2063 | 41,615,443                                  | 15,438                              | 4,483,428                     | 0                                       | 2,660,710                                 | 39,808,162                               |
| 2064 | 39,808,162                                  | 12,044                              | 4,372,588                     | 0                                       | 2,542,286                                 | 37,989,904                               |
| 2065 | 37,989,904                                  | 9,183                               | 4,255,856                     | 0                                       | 2,423,334                                 | 36,166,566                               |
| 2066 | 36,166,566                                  | 6,810                               | 4,135,167                     | 0                                       | 2,304,186                                 | 34,342,394                               |
| 2067 | 34,342,394                                  | 4,908                               | 4,010,043                     | 0                                       | 2,185,146                                 | 32,522,406                               |
| 2068 | 32,522,406                                  | 3,648                               | 3,881,432                     | 0                                       | 2,066,524                                 | 30,711,146                               |
| 2069 | 30,711,146                                  | 2,525                               | 3,750,042                     | 0                                       | 1,948,589                                 | 28,912,218                               |
| 2070 | 28,912,218                                  | 1,767                               | 3,615,055                     | 0                                       | 1,831,617                                 | 27,130,547                               |
| 2071 | 27,130,547                                  | 1,297                               | 3,477,174                     | 0                                       | 1,715,917                                 | 25,370,587                               |
| 2072 | 25,370,587                                  | 890                                 | 3,336,506                     | 0                                       | 1,601,776                                 | 23,636,747                               |



# Single Discount Rate Development Projection of Plan Net Position Ending December 31 for 2073 to 2122

| Year | Projected<br>Beginning<br>Plan Net Position | Projected<br>Total<br>Contributions | Projected<br>Benefit<br>Payments | Projected<br>Administrative<br>Expenses | Projected Investment<br>Earnings at 6.75% | Projected<br>Ending<br>Plan Net Position |
|------|---|-------------------------------------|----------------------------------|---|---|--|
|      | (a)   | (b)                                 | (c)                              | (d)                                     | (e)                                       | (f)=(a)+(b)-(c)-(d)+(e)                  |
| 2073 | 23,636,747                                  | 638                                 | 3,192,820                        | 0                                       | 1,489,503                                 | 21,934,069                               |
| 2074 | 21,934,069                                  | 428                                 | 3,046,262                        | 0                                       | 1,379,431                                 | 20,267,665                               |
| 2075 | 20,267,665                                  | 302                                 | 2,896,832                        | 0                                       | 1,271,906                                 | 18,643,041                               |
| 2076 | 18,643,041                                  | 201                                 | 2,744,797                        | 0                                       | 1,167,288                                 | 17,065,733                               |
| 2077 | 17,065,733                                  | 137                                 | 2,590,391                        | 0                                       | 1,065,943                                 | 15,541,422                               |
| 2078 | 15,541,422                                  | 91                                  | 2,434,075                        | 0                                       | 968,240                                   | 14,075,679                               |
| 2079 | 14,075,679                                  | 56                                  | 2,276,491                        | 0                                       | 874,533                                   | 12,673,777                               |
| 2080 | 12,673,777                                  | 27                                  | 2,118,245                        | 0                                       | 785,157                                   | 11,340,717                               |
| 2081 | 11,340,717                                  | 16                                  | 1,960,101                        | 0                                       | 700,426                                   | 10,081,058                               |
| 2082 | 10,081,058                                  | 7                                   | 1,803,016                        | 0                                       | 620,613                                   | 8,898,663                                |
| 2083 | 8,898,663                                   | 3                                   | 1,647,914                        | 0                                       | 545,951                                   | 7,796,703                                |
| 2084 | 7,796,703                                   | 0                                   | 1,495,761                        | 0                                       | 476,620                                   | 6,777,562                                |
| 2085 | 6,777,562                                   | 0                                   | 1,347,599                        | 0                                       | 412,747                                   | 5,842,709                                |
| 2086 | 5,842,709                                   | 0                                   | 1,204,494                        | 0                                       | 354,395                                   | 4,992,610                                |
| 2087 | 4,992,610                                   | 0                                   | 1,067,492                        | 0                                       | 301,562                                   | 4,226,679                                |
| 2088 | 4,226,679                                   | 0                                   | 937,592                          | 0                                       | 254,174                                   | 3,543,262                                |
| 2089 | 3,543,262                                   | 0                                   | 815,687                          | 0                                       | 212,090                                   | 2,939,665                                |
| 2090 | 2,939,665                                   | 0                                   | 702,485                          | 0                                       | 175,106                                   | 2,412,286                                |
| 2091 | 2,412,286                                   | 0                                   | 598,513                          | 0                                       | 142,959                                   | 1,956,732                                |
| 2092 | 1,956,732                                   | 0                                   | 504,134                          | 0                                       | 115,343                                   | 1,567,941                                |
| 2093 | 1,567,941                                   | 0                                   | 419,525                          | 0                                       | 91,908                                    | 1,240,324                                |
| 2094 | 1,240,324                                   | 0                                   | 344,671                          | 0                                       | 72,279                                    | 967,932                                  |
| 2095 | 967,932                                     | 0                                   | 279,371                          | 0                                       | 56,061                                    | 744,622                                  |
| 2096 | 744,622                                     | 0                                   | 223,233                          | 0                                       | 42,851                                    | 564,240                                  |
| 2097 | 564,240                                     | 0                                   | 175,699                          | 0                                       | 32,253                                    | 420,794                                  |
| 2098 | 420,794                                     | 0                                   | 136,093                          | 0                                       | 23,885                                    | 308,586                                  |
| 2099 | 308,586                                     | 0                                   | 103,648                          | 0                                       | 17,389                                    | 222,326                                  |
| 2100 | 222,326                                     | 0                                   | 77,536                           | 0                                       | 12,433                                    | 157,223                                  |
| 2101 | 157,223                                     | 0                                   | 56,913                           | 0                                       | 8,723                                     | 109,034                                  |
| 2102 | 109,034                                     | 0                                   | 40,949                           | 0                                       | 6,000                                     | 74,085                                   |
| 2103 | 74,085                                      | 0                                   | 28,850                           | 0                                       | 4,043                                     | 49,278                                   |
| 2104 | 49,278                                      | 0                                   | 19,882                           | 0                                       | 2,666                                     | 32,062                                   |
| 2105 | 32,062                                      | 0                                   | 13,391                           | 0                                       | 1,720                                     | 20,391                                   |
| 2106 | 20,391                                      | 0                                   | 8,807                            | 0                                       | 1,084                                     | 12,668                                   |
| 2107 | 12,668                                      | 0                                   | 5,651                            | 0                                       | 668                                       | 7,685                                    |
| 2108 | 7,685                                       | 0                                   | 3,535                            | 0                                       | 401                                       | 4,551                                    |
| 2109 | 4,551                                       | 0                                   | 2,155                            | 0                                       | 236                                       | 2,632                                    |
| 2110 | 2,632                                       | 0                                   | 1,280                            | 0                                       | 135                                       | 1,487                                    |
| 2111 | 1,487                                       | 0                                   | 741                              | 0                                       | 76  | 821                                      |
| 2112 | 821   | 0                                   | 419                              | 0                                       | 42  | 444                                      |
| 2113 | 444   | 0                                   | 231                              | 0                                       | 22  | 236                                      |
| 2114 | 236   | 0                                   | 125                              | 0                                       | 12  | 123                                      |
| 2115 | 123   | 0                                   | 66                               | 0                                       | 6   | 63                                       |
| 2116 | 63  | 0                                   | 34                               | 0                                       | 3   | 31                                       |
| 2117 | 31  | 0                                   | 18                               | 0                                       | 2   | 15                                       |
| 2118 | 15  | 0                                   | 9                                | 0                                       | 1   | 7  |
| 2119 | 7   | 0                                   | 4                                | 0                                       | 0   | 3  |
| 2120 | 3   | 0                                   | 2                                | 0                                       | 0   | 1  |
| 2121 | 1   | 0                                   | 1                                | 0                                       | 0   | 0  |
| 2122 | 0   | 0                                   | 0                                | 0                                       | 0   | 0  |



# Single Discount Rate Development

## Present Values of Projected Benefits

### Ending December 31 for 2023 to 2072

| Year | Projected<br>Beginning<br>Plan Net Position | Projected<br>Benefit Payments | Funded Portion of<br>Projected<br>Benefit Payments | Unfunded Portion of<br>Projected<br>Benefit Payments | Present Value of<br>Funded Benefit<br>Payments using<br>Expected Return Rate<br>(v) | Present Value of<br>Unfunded Benefit<br>Payments using<br>Municipal Bond Rate<br>(vf) | Present Value of<br>All Benefit<br>Payments using<br>Single Discount Rate<br>(SDR) |
|------|---|-------------------------------|--|--|---|---|--|
| (a)  | (b)   | (c)                           | (d)  | (e)  | (f)=(d)*v <sup>(a)-.5</sup>   | (g)=(e)*vf <sup>(a)-.5</sup>  | (h)=(c)/(1+SDR) <sup>(a)-.5</sup>  |
| 2023 | \$ 18,064,442                               | \$ 1,248,334                  | \$ 1,248,334                                       | \$ 0   | \$ 1,208,223  | \$ 0  | \$ 1,208,223   |
| 2024 | 20,708,253                                  | 1,407,722                     | 1,407,722  | 0  | 1,276,336   | 0   | 1,276,336  |
| 2025 | 23,313,277                                  | 1,569,965                     | 1,569,965  | 0  | 1,333,430   | 0   | 1,333,430  |
| 2026 | 25,902,995                                  | 1,748,251                     | 1,748,251  | 0  | 1,390,965   | 0   | 1,390,965  |
| 2027 | 28,477,093                                  | 1,929,729                     | 1,929,729  | 0  | 1,438,272   | 0   | 1,438,272  |
| 2028 | 31,035,912                                  | 2,105,988                     | 2,105,988  | 0  | 1,470,390   | 0   | 1,470,390  |
| 2029 | 33,593,210                                  | 2,288,999                     | 2,288,999  | 0  | 1,497,112   | 0   | 1,497,112  |
| 2030 | 36,147,153                                  | 2,468,526                     | 2,468,526  | 0  | 1,512,442   | 0   | 1,512,442  |
| 2031 | 38,702,039                                  | 2,652,397                     | 2,652,397  | 0  | 1,522,339   | 0   | 1,522,339  |
| 2032 | 41,259,205                                  | 2,832,150                     | 2,832,150  | 0  | 1,522,725   | 0   | 1,522,725  |
| 2033 | 43,826,329                                  | 3,000,781                     | 3,000,781  | 0  | 1,511,373   | 0   | 1,511,373  |
| 2034 | 46,419,282                                  | 3,170,512                     | 3,170,512  | 0  | 1,495,887   | 0   | 1,495,887  |
| 2035 | 49,042,440                                  | 3,336,970                     | 3,336,970  | 0  | 1,474,870   | 0   | 1,474,870  |
| 2036 | 51,703,393                                  | 3,492,378                     | 3,492,378  | 0  | 1,445,955   | 0   | 1,445,955  |
| 2037 | 54,418,541                                  | 3,649,833                     | 3,649,833  | 0  | 1,415,594   | 0   | 1,415,594  |
| 2038 | 57,193,339                                  | 3,805,565                     | 3,805,565  | 0  | 1,382,665   | 0   | 1,382,665  |
| 2039 | 60,035,605                                  | 3,951,110                     | 3,951,110  | 0  | 1,344,773   | 0   | 1,344,773  |
| 2040 | 62,963,491                                  | 4,088,404                     | 4,088,404  | 0  | 1,303,514   | 0   | 1,303,514  |
| 2041 | 63,279,216                                  | 4,221,332                     | 4,221,332  | 0  | 1,260,793   | 0   | 1,260,793  |
| 2042 | 63,460,338                                  | 4,343,508                     | 4,343,508  | 0  | 1,215,254   | 0   | 1,215,254  |
| 2043 | 63,511,466                                  | 4,458,453                     | 4,458,453  | 0  | 1,168,537   | 0   | 1,168,537  |
| 2044 | 63,432,210                                  | 4,561,847                     | 4,561,847  | 0  | 1,120,034   | 0   | 1,120,034  |
| 2045 | 63,225,742                                  | 4,655,041                     | 4,655,041  | 0  | 1,070,647   | 0   | 1,070,647  |
| 2046 | 62,894,240                                  | 4,735,113                     | 4,735,113  | 0  | 1,020,199   | 0   | 1,020,199  |
| 2047 | 62,443,639                                  | 4,808,109                     | 4,808,109  | 0  | 970,423   | 0   | 970,423  |
| 2048 | 61,872,818                                  | 4,873,736                     | 4,873,736  | 0  | 921,470   | 0   | 921,470  |
| 2049 | 61,182,146                                  | 4,938,693                     | 4,938,693  | 0  | 874,708   | 0   | 874,708  |
| 2050 | 60,363,257                                  | 4,980,106                     | 4,980,106  | 0  | 826,270   | 0   | 826,270  |
| 2051 | 59,432,952                                  | 5,010,751                     | 5,010,751  | 0  | 778,786   | 0   | 778,786  |
| 2052 | 58,394,299                                  | 5,025,635                     | 5,025,635  | 0  | 731,709   | 0   | 731,709  |
| 2053 | 57,257,535                                  | 5,032,800                     | 5,032,800  | 0  | 686,419   | 0   | 686,419  |
| 2054 | 56,023,947                                  | 5,037,299                     | 5,037,299  | 0  | 643,590   | 0   | 643,590  |
| 2055 | 54,690,330                                  | 5,024,477                     | 5,024,477  | 0  | 601,360   | 0   | 601,360  |
| 2056 | 53,268,749                                  | 4,997,045                     | 4,997,045  | 0  | 560,259   | 0   | 560,259  |
| 2057 | 51,768,807                                  | 4,957,143                     | 4,957,143  | 0  | 520,642   | 0   | 520,642  |
| 2058 | 50,198,878                                  | 4,902,556                     | 4,902,556  | 0  | 482,350   | 0   | 482,350  |
| 2059 | 48,570,412                                  | 4,838,161                     | 4,838,161  | 0  | 445,915   | 0   | 445,915  |
| 2060 | 46,890,490                                  | 4,765,754                     | 4,765,754  | 0  | 411,468   | 0   | 411,468  |
| 2061 | 45,164,161                                  | 4,680,763                     | 4,680,763  | 0  | 378,576   | 0   | 378,576  |
| 2062 | 43,402,689                                  | 4,585,527                     | 4,585,527  | 0  | 347,422   | 0   | 347,422  |
| 2063 | 41,615,443                                  | 4,483,428                     | 4,483,428  | 0  | 318,208   | 0   | 318,208  |
| 2064 | 39,808,162                                  | 4,372,588                     | 4,372,588  | 0  | 290,718   | 0   | 290,718  |
| 2065 | 37,989,904                                  | 4,255,856                     | 4,255,856  | 0  | 265,065   | 0   | 265,065  |
| 2066 | 36,166,566                                  | 4,135,167                     | 4,135,167  | 0  | 241,263   | 0   | 241,263  |
| 2067 | 34,342,394                                  | 4,010,043                     | 4,010,043  | 0  | 219,169   | 0   | 219,169  |
| 2068 | 32,522,406                                  | 3,881,432                     | 3,881,432  | 0  | 198,725   | 0   | 198,725  |
| 2069 | 30,711,146                                  | 3,750,042                     | 3,750,042  | 0  | 179,858   | 0   | 179,858  |
| 2070 | 28,912,218                                  | 3,615,055                     | 3,615,055  | 0  | 162,420   | 0   | 162,420  |
| 2071 | 27,130,547                                  | 3,477,174                     | 3,477,174  | 0  | 146,347   | 0   | 146,347  |
| 2072 | 25,370,587                                  | 3,336,506                     | 3,336,506  | 0  | 131,547   | 0   | 131,547  |



# Single Discount Rate Development

## Present Values of Projected Benefits

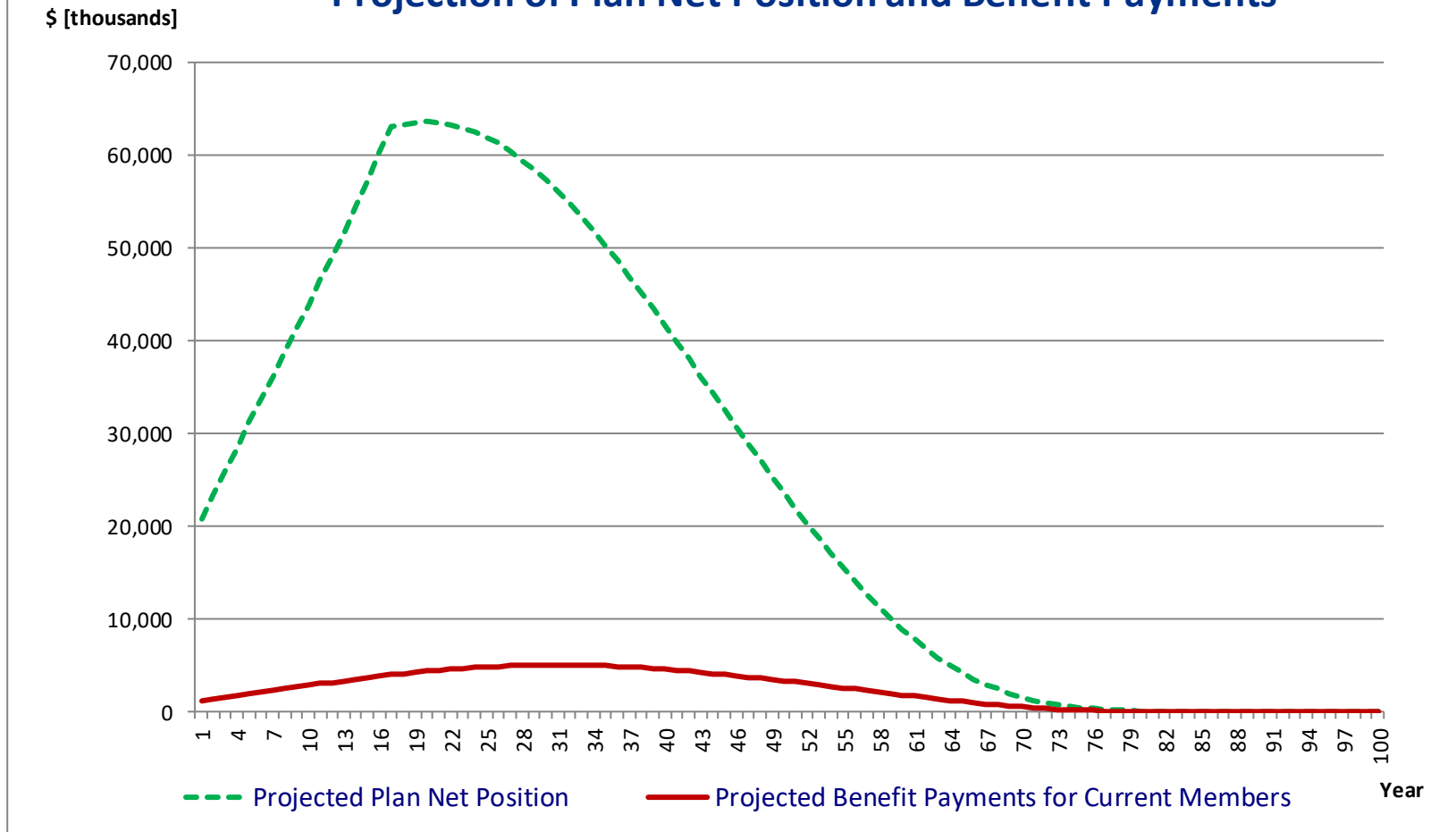
### Ending December 31 for 2073 to 2122

| Year          | Projected<br>Beginning<br>Plan Net Position | Projected<br>Benefit Payments | Funded Portion of<br>Projected<br>Benefit Payments | Unfunded Portion of<br>Projected<br>Benefit Payments | Present Value of<br>Funded Benefit<br>Payments using<br>Expected Return Rate<br>(v) | Present Value of<br>Unfunded Benefit<br>Payments using<br>Municipal Bond Rate<br>(vf) | Present Value of<br>All Benefit<br>Payments using<br>Single Discount Rate<br>(SDR) |            |
|---------------|---|-------------------------------|--|--|---|---|--|------------|
| (a)           | (b)   | (c)                           | (d)  | (e)  | (f)=(d)*v <sup>((a)-.5)</sup>   | (g)=(e)*vf <sup>((a)-.5)</sup>  | (h)=(c)/(1+SDR) <sup>((a)-.5)</sup>  |            |
| 2073          | \$ 23,636,747                               | \$ 3,192,820                  | \$ 3,192,820                                       | \$ 0   | \$ 117,922  | \$ 0  | \$ 117,922   |            |
| 2074          | 21,934,069                                  | 3,046,262                     | 3,046,262  | 0  | 105,395   | 0   | 105,395  |            |
| 2075          | 20,267,665                                  | 2,896,832                     | 2,896,832  | 0  | 93,888  | 0   | 93,888   |            |
| 2076          | 18,643,041                                  | 2,744,797                     | 2,744,797  | 0  | 83,335  | 0   | 83,335   |            |
| 2077          | 17,065,733                                  | 2,590,391                     | 2,590,391  | 0  | 73,674  | 0   | 73,674   |            |
| 2078          | 15,541,422                                  | 2,434,075                     | 2,434,075  | 0  | 64,851  | 0   | 64,851   |            |
| 2079          | 14,075,679                                  | 2,276,491                     | 2,276,491  | 0  | 56,817  | 0   | 56,817   |            |
| 2080          | 12,673,777                                  | 2,118,245                     | 2,118,245  | 0  | 49,525  | 0   | 49,525   |            |
| 2081          | 11,340,717                                  | 1,960,101                     | 1,960,101  | 0  | 42,930  | 0   | 42,930   |            |
| 2082          | 10,081,058                                  | 1,803,016                     | 1,803,016  | 0  | 36,992  | 0   | 36,992   |            |
| 2083          | 8,898,663                                   | 1,647,914                     | 1,647,914  | 0  | 31,672  | 0   | 31,672   |            |
| 2084          | 7,796,703                                   | 1,495,761                     | 1,495,761  | 0  | 26,930  | 0   | 26,930   |            |
| 2085          | 6,777,562                                   | 1,347,599                     | 1,347,599  | 0  | 22,728  | 0   | 22,728   |            |
| 2086          | 5,842,709                                   | 1,204,494                     | 1,204,494  | 0  | 19,030  | 0   | 19,030   |            |
| 2087          | 4,992,610                                   | 1,067,492                     | 1,067,492  | 0  | 15,799  | 0   | 15,799   |            |
| 2088          | 4,226,679                                   | 937,592                       | 937,592  | 0  | 12,999  | 0   | 12,999   |            |
| 2089          | 3,543,262                                   | 815,687                       | 815,687  | 0  | 10,594  | 0   | 10,594   |            |
| 2090          | 2,939,665                                   | 702,485                       | 702,485  | 0  | 8,547   | 0   | 8,547  |            |
| 2091          | 2,412,286                                   | 598,513                       | 598,513  | 0  | 6,821   | 0   | 6,821  |            |
| 2092          | 1,956,732                                   | 504,134                       | 504,134  | 0  | 5,382   | 0   | 5,382  |            |
| 2093          | 1,567,941                                   | 419,525                       | 419,525  | 0  | 4,196   | 0   | 4,196  |            |
| 2094          | 1,240,324                                   | 344,671                       | 344,671  | 0  | 3,229   | 0   | 3,229  |            |
| 2095          | 967,932                                     | 279,371                       | 279,371  | 0  | 2,452   | 0   | 2,452  |            |
| 2096          | 744,622                                     | 223,233                       | 223,233  | 0  | 1,835   | 0   | 1,835  |            |
| 2097          | 564,240                                     | 175,699                       | 175,699  | 0  | 1,353   | 0   | 1,353  |            |
| 2098          | 420,794                                     | 136,093                       | 136,093  | 0  | 982   | 0   | 982  |            |
| 2099          | 308,586                                     | 103,648                       | 103,648  | 0  | 701   | 0   | 701  |            |
| 2100          | 222,326                                     | 77,536                        | 77,536   | 0  | 491   | 0   | 491  |            |
| 2101          | 157,223                                     | 56,913                        | 56,913   | 0  | 338   | 0   | 338  |            |
| 2102          | 109,034                                     | 40,949                        | 40,949   | 0  | 228   | 0   | 228  |            |
| 2103          | 74,085                                      | 28,850                        | 28,850   | 0  | 150   | 0   | 150  |            |
| 2104          | 49,278                                      | 19,882                        | 19,882   | 0  | 97  | 0   | 97   |            |
| 2105          | 32,062                                      | 13,391                        | 13,391   | 0  | 61  | 0   | 61   |            |
| 2106          | 20,391                                      | 8,807                         | 8,807  | 0  | 38  | 0   | 38   |            |
| 2107          | 12,668                                      | 5,651                         | 5,651  | 0  | 23  | 0   | 23   |            |
| 2108          | 7,685                                       | 3,535                         | 3,535  | 0  | 13  | 0   | 13   |            |
| 2109          | 4,551                                       | 2,155                         | 2,155  | 0  | 8   | 0   | 8  |            |
| 2110          | 2,632                                       | 1,280                         | 1,280  | 0  | 4   | 0   | 4  |            |
| 2111          | 1,487                                       | 741                           | 741  | 0  | 2   | 0   | 2  |            |
| 2112          | 821   | 419                           | 419  | 0  | 1   | 0   | 1  |            |
| 2113          | 444   | 231                           | 231  | 0  | 1   | 0   | 1  |            |
| 2114          | 236   | 125                           | 125  | 0  | 0   | 0   | 0  |            |
| 2115          | 123   | 66                            | 66   | 0  | 0   | 0   | 0  |            |
| 2116          | 63  | 34                            | 34   | 0  | 0   | 0   | 0  |            |
| 2117          | 31  | 18                            | 18   | 0  | 0   | 0   | 0  |            |
| 2118          | 15  | 9                             | 9  | 0  | 0   | 0   | 0  |            |
| 2119          | 7   | 4                             | 4  | 0  | 0   | 0   | 0  |            |
| 2120          | 3   | 2                             | 2  | 0  | 0   | 0   | 0  |            |
| 2121          | 1   | 1                             | 1  | 0  | 0   | 0   | 0  |            |
| 2122          | 0   | 0                             | 0  | 0  | 0   | 0   | 0  |            |
| <b>Totals</b> | \$  | 45,639,051                    | \$   | 0  | \$  | 0   | \$   | 45,639,051 |





## Projection of Plan Net Position and Benefit Payments



**SECTION H**

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**GLOSSARY OF TERMS**

## Glossary of Terms

|  |   |
|--|---|
| <b>Accrued Service</b>                   | Service credited under the system that was rendered before the date of the actuarial valuation.   |
| <b>Actuarial Accrued Liability (AAL)</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>Actuarial Assumptions</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>Actuarial Cost Method</b>             | A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the OPEB 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>Actuarial Equivalent</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>Actuarial Gain (Loss)</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>Actuarial Present Value (APV)</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>Actuarial Valuation</b>               | The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total OPEB liability, and related actuarial present value of projected benefit payments for OPEB.  |
| <b>Actuarial Valuation Date</b>          | The date as of which an actuarial valuation is performed.   |

## Glossary of Terms

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| <b>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</b>   | A calculated contribution into an OPEB 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.   |
| <b>Amortization Method</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>Amortization Payment</b>  | The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.  |
| <b>Cost-of-Living Adjustments</b>  | Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.   |
| <b>Cost-Sharing Multiple-Employer Defined Benefit OPEB Plan (cost-sharing OPEB plan)</b> | A multiple-employer defined benefit OPEB plan in which the OPEB obligations to the employees of more than one employer are pooled and OPEB plan assets can be used to pay the benefits of the employees of any employer that provides benefits through the OPEB plan.  |
| <b>Covered-Employee Payroll</b>  | The payroll of employees that are provided with benefits through the OPEB plan.  |
| <b>Deferred Inflows and Outflows</b>   | The deferred inflows and outflows of OPEB resources are amounts used under GASB Statement No. 75 in developing the annual OPEB expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in the OPEB expense should be included in the deferred inflows or outflows of resources.   |
| <b>Discount Rate</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 OPEB 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

### **Entry Age Actuarial Cost Method (EAN)**

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.

### **Fiduciary Net Position**

The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.

### **GASB**

The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

### **Long-Term Expected Rate of Return**

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.

### **Money-Weighted Rate of Return**

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. 74, the money-weighted rate of return is calculated as the internal rate of return on OPEB plan investments, net of OPEB plan investment expense.

### **Multiple-Employer Defined Benefit OPEB Plan**

A multiple-employer plan is a defined benefit OPEB plan that is used to provide OPEB payments to the employees of more than one employer.

### **Municipal Bond Rate**

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.

### **Net OPEB Liability (NOL)**

The NOL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit OPEB plan.

### **Non-Employer Contributing Entities**

Non-employer contributing entities are entities that make contributions to an OPEB plan that is used to provide OPEB payments to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.

## Glossary of Terms

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| <b>Normal Cost</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.  |
| <b>Other Postemployment Benefits (OPEB)</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 post-employment benefits do not include termination benefits.  |
| <b>Real Rate of Return</b>                         | The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.   |
| <b>Service Cost</b>                                | The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.  |
| <b>Total OPEB Expense</b>                          | The total OPEB expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total OPEB 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. OPEB 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>Total OPEB Liability (TOL)</b>                  | The TOL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.   |
| <b>Unfunded Actuarial Accrued Liability (UAAL)</b> | The UAAL is the difference between actuarial accrued liability and valuation assets.  |
| <b>Valuation Assets</b>                            | The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 74 and 75, the valuation assets are equal to the market value of assets.  |